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Missing links in the chain: How can governance matter? The case of inadequate financial risk protection against illness among low-income settlements in Delhi, India

Sumit Mazumdar

This paper attempts to reconcile evidence on ensuring adequate financial risk protection to the poor from the perspective of universal health coverage. We undertake an extensive health system review for the city-state of Delhi, India during 2013-14 to identify health system preparedness on key indicators of coverage, infrastructural capacities, health human resources, service delivery and quality of health services. Data from a public perception survey among 8000 households was used to supplement evidence on financing pattern for medical treatment and care-seeking during illness. The results of the review indicated high reliance on public health facilities, satisfactory coverage of services and several measures to strengthen service delivery among underserved population groups such as mobile health clinics and free drug supply schemes in health facilities. But while physical infrastructure was found adequate, a marked shortage of health workforce including physicians and overcrowding in the primary care facilities were critical challenges. However, in a follow-up survey 3100 households in shanty localities and slums conducted in late 2014, major gaps in adequate insurance and risk-protection against illness-induced financial catastrophe was identified. More than a third of the surveyed households reported significant out-of-pocket expenditure on medical treatment mostly incurred on drugs and hospitalisation even though more than 70% of the households relied on public facilities. Coverage of social health insurance schemes was almost non-existent indicating a major mismatch in official claims of extending adequate risk-protection through supply-side strengthening measures, and actual evidence on medical treatment from the poor. Interactions with health policy-makers and officials indicated that lack of adequate information from the users is a major handicap for evidence-based policy and corrective measures. We find recent measures such as community meetings with officials have been useful to identify and address pressing areas such as unavailability of drugs and medical supplies in dispensaries, irregular operation hours or non-availability of physicians.

Outsourcing of Human Resources for health: A case study from Chhattisgarh

Sulakshana Nandi, Deepika Joshi, Vandana Prasad, Pallavi Gupta, Rajesh Dubey

Introduction: In Chhattisgarh the shortage of human resources (HR) for health in the government health system is among the most acute in the entire country. As a strategy to address this, in 2014 the Chhattisgarh government decided to outsource the recruitment and management of health staff to private agencies for two of the most remote divisions, Sarguja and Bastar.

Aim: The study aimed to evaluate the HR outsourcing initiative as a part of a larger study to understand Private Public Partnerships in health that was carried out by Public Health Resource Network (PHRN) and Jan Swasthya Abhiyan (JSA).

Methodology : This qualitative study used the Case study method. Two districts (Kanker and Sarguja) and two blocks within each district were chosen. In-depth qualitative individual and group interviews were conducted of health officials at the block, district and state levels, regular staff nurses, 'outsourced' staff nurses, the community and Mitanins (ASHAs). Verbal informed consent was taken from all respondents. Official documents and media reports were collected and reviewed. Thematic analysis was undertaken based on emerging themes from primary data collection.

Findings: Outsourcing led to recruitment of 784 Staff Nurses and 13 Medical Officers from within and outside the state. Prior to posting, counselling of candidates for choice of posting location was done. Differential payments were made to staff depending on remoteness, with long delays in salary payments. Government was able to bypass constitutional safeguards for vulnerable social groups and circumvent rules related to gender and domicile. The opposition political party and the 'outsourced' nurses domiciled in Chhattisgarh started opposing it, prompting a huge media campaign critiquing it October 2015 onwards. The government was forced to cancel the outsourcing less than a year after it was introduced.

Main Conclusions: The study finds that though HR shortage was a real problem, evidence points to the fact that the government may not have done enough to resolve the issue prior to outsourcing. Adequate analysis regarding available HR in the state and strategizing how to make best use them was not done. Though outsourcing filled HR gaps it is not clear whether it resulted in better quality or expansion of services and gaps in Medical Officer and Specialist posts still remained. An aggressive recruitment policy, transparent transfer and posting policy, publicity about incentives to staff in remote areas through Chhattisgarh Rural Medical Corp (CRMC) and the willingness of the government to recruit regular staff could have led to resolution of the issue to an extent. The government needs to look beyond stopgap arrangements, to more long term and sustainable solutions, without bypassing constitutional safeguards and taking into account local strengths, resources and need.

Understanding financial literacy and its linkage with health care financing in Urban India: A study of elderly

Kshipra Jain

Context: In the world of increased individual responsibility, financial literacy emerges as the need of the hour. It empowers an individual to make informed decision; encourages savings, investment, and accumulation of wealth due to efficient management of funds. The developed countries have begun to examine financial literacy and its association with various factors; however, there is hardly any study focused on examining financial literacy in developing world. Also, the world is witnessing a phenomenal increase in its elderly population whose needs are different and need to be met differently. Financial literacy can help an individual to prepare well for his retirement and ensure wellbeing in older ages. This paper makes a novel attempt to examine financial literacy of elderly aged 50 years and above living in urban India and investigates its association with their health care financing.

Methodology: The study is based on the primary data collected from 400 elderly aged 50 years and above living in urban area of Jaipur. The information is collected using semi-structured questionnaire which is developed based on various longitudinal studies and surveys. Appropriate uni-variate and bi-variate analysis have been used to meet the specific objectives. Chi-square test is used to examine the association of dependent and independent variables.

Results: Financial literacy is assessed based on the proportion of correct responses of elderly to financial literacy questions. More than 60% of elderly correctly responded to questions of inflation and compound interest; however less than 50% correctly understood the concept of risk diversification. The result of joint probabilities showed that 27% of elderly gave correct response to all the three questions; 31% to atleast two questions and 29% gave correct response to any of the one question. Further, the responses of elderly to financial literacy questions were disaggregated by their age, gender and educational status. With regard to source of meeting health care expenditure, more than 50% of elderly were dependent on the facilities provided by the government/ employer and their own pensions/income followed by dependence on family. Further, elderly with higher level of financial literacy were self dependent to meet their health care expenditure compared to their counterparts and thus result establishes a positive association of financial literacy with self dependence as a source of meeting health care expenditure.

Conclusions: It is well established that health care expenditure increases in old age which demands for adequate health care infrastructure. However, with change in the social fabric of the society and limited capacity of the government to meet the demand of ever increasing elderly population has increased their vulnerabilities. In such scenario, financial literacy can enable an individual to efficiently utilize their funds and promote old age planning to ensure that own health and wellbeing in old age. Thus, the paper justifies the need of financial literacy.

Exploring the determinants of Smokeless Tobacco use in Bangladesh and India: Comparative analysis of two largest victims of the catastrophe

Anupam Bandyopadhyay

Context: Numerous studies depict the harmfulness of combustible tobacco but prevalence and pernicious effects of smokeless forms of tobacco use, remains largely understudied. There are around 250 million users of smokeless tobacco (SLT) in South Asia, of which more than 90% resides in Bangladesh and India alone, where increasing number of oral cancer incidences are reported.

Objectives: The present study is a comparative analysis of the determinants and prevalence of SLT use across these two countries using the Global Adult Tobacco Survey (GATS) data, which collected information about the tobacco use pattern of adults of more than 15 years of age.

Methodology: Test of proportions investigates the difference in prevalence while multivariate logistic regression reports the likelihood of SLT use across various sections of populations in Bangladesh and India.

Conclusions: The odds of SLT use is found to be more in rural areas and shows increase with age, lower economic and educational level in both the countries. The study establishes with ample evidence that socio-economic determinants associated with inequality such as education, economic conditions, and occupations are correlated with smokeless tobacco use behavior in both the countries. Findings provide feasible solutions to counter one of the greatest present day threats to the public health.

Regional Analysis of Sanitation Performance in India

Debasree Bose and Arijita Dutta

Introduction: India disproportionately bears the burden of open defecation in spite of growing allocation of fund and several institutional efforts including Swachh Bharat Mission (SBM), which has created public rhetoric nationally as well as internationally. A large share of households in rural India still lack basic sanitation facilities and hence the members are forced to practice open defecation.

Objective: The study endeavours to examine the existing anomaly between meagre sanitation productivity and enhanced resource allocation in rural sanitation in India. The study attempts to develop an instrument to monitor the regional performances (state and district wise) across India.

Methodology: The paper applied data exploratory method that fetches out existence of spatial inequality and economic inequity across the nation. The extent of inequality and inequity are measured through appropriate measure of dispersions, including Gini index. Moreover, inconsistency between the social expenditure and sanitation output calls for efficiency analysis. To quantity the level of efficiency of the districts in translating social spending in to sanitation coverage and usage, non-parametric data envelopment technique (DEA) has been applied to identify best-in-class performers. Finally, the main thrust of the paper is to construct a regional sanitation performance index that premises on three dimensions of performance: efficiency, equity and equality.

The paper utilizes a decentralized approach to investigate on existing inequity and inequality issues in sanitation access within and across regions of the country.

Findings: Efficiency analysis reveals huge potential of India to attain a far higher sanitation access and usage with the given flow of social spending. The study unfolds the fact that India is suffering from dual burden of spatial inequality and economic inequity. While the regional divergence in sanitation access escalates, households from lower income group increasingly construct toilets in comparison to their higher income counterpart even within the same region, originating a paradox in sanitation access in India.

Conclusion: The performance index has the potential to be served as an instrument to monitor and evaluate regional performances on sanitation and to inform investment decisions for targeted improvement. The index can be utilized as "future proof" for evaluation of regional performance towards attainment of Sustainable Development Goal (SDG) in the field of sanitation. This index is a useful tool for policy watch as it clearly identifies the best and the worst performers by allowing fair comparison among them.

Effects of Preventive and Risky Health Behaviours on Depression Across Different Gender and Age Cohorts in India

Reshmi Sengupta & Debasis Rooj

Depression is a common mental health problem across all ages. It is a major public health concern in almost every part of the world because of its spread, prevalence and sufferings. This mental health problem can be chronic and recurrent, and may cause significant dysfunction in daily life activities, morbidity, and even mortality. Major depression may also pose serious economic burden on the society through direct and indirect costs on individuals. Although depression is treatable, but it often remains undiagnosed or untreated. According to the World Health Organisation report on India, one out of every seven Indians was depressed in 2011 and one out of every five Indians was depressed in 2015. This shows an alarming increase in the rates of depression within a span of just four years. Yet, as any other mental health problem, depression has long been ignored in the India's health policy agenda. Studies have shown that depression rate varies by gender and age of individuals. In general, women are at higher risk of depression than men. Among several factors, individuals' health behaviour may affect the onset and severity of depression both positively through preventive health behaviours (such as regular exercising, nutritional food intake, etc.) and negatively through risky behaviours (such as smoking, alcohol consumption, etc.). However, no empirical study has so far analysed the effect of health behaviour on depression particularly across different demographic groups in India. Therefore, this paper empirically examines the effect of health behaviour (both preventive and risky behaviours) on the prevalence and severity of depression across different age and gender cohorts using the latest available data from the World Health Organization's study on Global Ageing and Adult Health: Wave 1 (2007-2010) for India. The results from a logistic regression analysis show that in general preventive health behaviour reduces depression prevalence and severity in individuals. In the sub-samples of females and males, although preventive behaviour reduces depression prevalence in men, but increases depression severity in females. It also decreases depression prevalence and severity across different age groups (18 to 30 years, 31 to 45 years, 46 to 60 years, and 61+ years). Interestingly, risk behaviour also reduces depression prevalence in females and in individuals aged 46 to 60 years and depression severity in individuals aged 61+ years.

Health Care Services in the Tribal Areas of Assam in the context of Sustainable Development Goals

Joel Basumatary and Nirankar Srivastav

This paper seeks to investigate the existing rural health infrastructure (physical and human resource) in the tribal areas of Assam in the context of sustainable development goals (SDGs) of the United Nations (UN). The health care utilization and health status of the deprived sections like Scheduled Tribes (STs) are much lower compared to other class and caste. However, if this phenomenon is allowed to sustain, India will not be able to achieve the SDGs which India is a signatory. As a result of which there will be social exclusion and the end result will be social distortions. Therefore, it is important to have a balanced development through micro-perspective strategy of development. For that equity in terms of region needs to be followed in government spending on health care amongst others. Thus, this paper tries to look into the quality and quantity of health care services in the tribal areas of Assam. In this background the following objectives are set to achieve in this paper:

1. To look into the health infrastructures both from the perspectives of physical and human resource in the tribal areas of Assam

2. To look into the health care utilization of the tribal (STs) population of the state vis-à-vis government health care infrastructure facilities in the tribal areas.

We looked into the health infrastructures in the tribal areas of Assam by taking data from Rural Health Statistics published by the Ministry of Health and Family Welfare (MoHFW). The physical rural health infrastructures and human resource in the health centers in all the three layers of rural health centers viz., Sub-centre (SC), Primary Health Centre (PHC), and the Community Health Centre (CHC) have been considered for the study. We compared the findings of 2008 and 2015 in order to see the improvement of health facilities in tribal areas of the state. To look into the health scenario and health care utilization of the tribal (STs) people data on antenatal care and vaccinations by caste have been taken from the National family Health Survey (NFHS), 2005-06, and District Level Household facility Survey, 2007-08. Increase in shortage (both in absolute and in percentage) has been found in the case of CHCs. Huge shortfalls of health workers in different tiers of health centers has been observed.

Is Clients' Satisfaction Determined to Quality and Utilisation of Health Care Services? An Assessment in Public Healthcare Institution in Odisha, India

Anjali Dash

Health impact assessment is globally gaining widespread credibility and adoption in the policy making process as it leads to a holistic view of health care and informs policy dialogue in a more coherent manner. Healthcare development determine by both demand for and supply of healthcare. Generally most of the poor, not only poor but middle and severely rich income group where coverage of health care facility as well as quality of treatment is not satisfactory going for private treatment. It may be essential to improve supply side of health care by improving health practisonner behavior, health infrastructure and quality of care. This type of problem not only found in a specific state in India but also all over the country. However, major focus of this paper is on quality of health care through impact assessment of client satisfaction level towards behavior of staff, infrastructure and overall service facility. Exit pool interview methods used to collect data from the patients treated in government health institution. As much as health expenditure increases the satisfaction level towards doctor increases. Quality of health care services should be improved by improving clients' satisfaction on behavior infrastructure and services.

FINANCING HEALTH CARE IN INDIA

Economic Growth, Components of Public Expenditure on Health and Impact on Health Outcomes – A SEM Approach in Indian Context

Subhalaxmi Mohapatra

The present study explores the effect of the economic growth on differential components of public expenditure on health namely revenue and capital components of public health expenditure and subsequently on major health outcomes. For this purpose, the study utilizes data at state level from India on economic growth, two broad components of public expenditure on health and six health outcomes. Using structural equation modeling, the causal models for economic growth affecting components of public expenditure on health and those components affecting health outcomes are computed simultaneously. The same set of generic models is used for a) expenditure and outcome data from the same period; and b) expenditure data from a past period than the outcome data. Major results indicate a significant effect of revenue component of public expenditure on health on major health outcomes while capital component of public expenditure on health is found to have a significant effect on only select health indicators. The major findings indicate a long-term effect of public expenditure on health in improving health outcomes. The study has theoretical and policy implications.

Achieving Universal Health Coverage in India: Role of Supply and Demand-Side Health Financing Approaches

Shailender Kumar Hooda

Ongoing health sector reform initiatives of India hope that health insurance is one of the effective health financing strategy for achieving Universal Health Coverage in the country, while role of traditional healthcare system of universal health service provision has been undermined. This study use recent rounds of NSSO and evident that health insurance is rather than reducing the catastrophic health payment burden on households pushing them below the poverty line and impoverishing their living standard. More worrisome, health insurance even dismantles the effectiveness of traditional way of health financing system to have its positive impact against the devastating consequences of out-of-pocket health payments. Public provisioning is the only way forward through which households health and well being can be enhanced in condition if India removes the existing inequality in basic health service provision across districts and ensure free/low cost medicines/diagnostics to the citizens.

Health Financing in Rajasthan

Alpana Kateja and Chitra Choudhary

Health care expenditure is very necessary for the social expenditure of any country. Like any other social expenditure, health expenditure also requires a significant contribution from the government. Whether it is developed or developing country the state's role in developing a good health infrastructure and assuring good health to everybody becomes very critical and important. Health is a concurrent subject under the Indian constitution, but state governments are dominantly responsible for most health provision, both curative and public health aspects. State government accounts for about two-third and the centre government about one-third of the total public spending on health.

Most of the health expenditure, around 90 per cent is financed through revenue expenditure and a minor percentage of resources have been allocated to capital expenditure for health. Health expenditure includes three account heads 'Medical', 'Public Health' and 'Family Welfare' the sum of revenue and capital account of these head in total health expenditure. A large proportion of expenditure on medical and public health and family welfare comes from the revenue account. A disaggregation of the benefits of public spending for curative and preventive services however, indicates that the pattern is different for preventive and curative services. For curative services, with the exception of inpatient services in urban areas (where the benefits accrue almost equally to the richer and the poorer half), the benefits of public spending accrue more to the richer half than the poorer half. For preventive services, the benefits of public spending accrue largely to the poorer half except for ante-natal care services in rural areas, where it is roughly shared equally. Notably, for preventive services, public spending is more pro-poor in urban areas than in rural areas.

What Works: Relooking into various covariates associated with Out of Pocket Expenditure (OOPE) on Accidental Injury from NSSO 71st round data

Rinshu Dwivedi and Jalandhar Pradhan

Background: Injuries are well acknowledged as a leading cause of death and disability globally. Despite the devastating burden of injuries, there is limited data on injury epidemiology and outcome in India. This study aims to examine: (1) describe the prevalence of injuries in adults; (2) identify associations between these injuries and multiple socio-demographic indicators; (3) assess the health care facility utilization following injury; (4) to measure the adjusted effect of various covariates on the level of Out of Pocket Expenditure (OOPE).

Methods: Data was extracted from the key indicators of social consumption in India: Health, National Sample Survey Organisation (NSSO), conducted by the government of India January - June-2014 i.e. 71st round. Multivariate Generalized Linear Regression Model (GLRM) has been used to analyze the various covariates of OOPE on accidental injury.

Findings: Multivariate analysis has demonstrated a significant association between socioeconomic statuses of the households and the level of OOPE on accidental injury care. Role of educational status, caste affiliation, economic status, and the nature of healthcare facility availed significantly influences the level of OOPE. Level of OOPE was also positively associated with the extent of borrowing to finance the healthcare expenditure. There have been evidences of significant regional variations in the level of OOPE.

Conclusion: Despite various efforts by the central and state governments to reduce financial burden, still large number of households are paying a significant amount from their own pockets. It is expected that the findings would provide insights into the prevailing magnitude of accidental injuries in India, indicate the epidemiological distribution, profile of the population affected and correlates to identify the level of OOPE among the households.

Do we provide affordable, accessible and administrable health care? Evidences on Out of Pocket Expenditure (OOPE) for Facility based Delivery Care in India from NSSO 71st round

Jalandhar Pradhan and Rinshu Dwivedi

Background: Reproductive and Child Health (RCH) financing is a key area of focus which can lead towards an overall empowerment of women through financial inclusion. The major objectives of this paper are: first; to examine the socio-economic differentials in Out of Pocket Expenditure (OOPE) on delivery care, second; to look into the role of insurance coverage, third; to analyse various sources of financing, and fourth; to measure the adjusted effect of various covariates on the level of OOPE.

Methods: Data was extracted from the key indicators of social consumption in India: Health, National Sample Survey Organisation (NSSO), conducted by the government of India January - June-2014 i.e. 71st round. Multivariate Generalised Linear Regression Model (GLRM) has been used to analyse the various covariates of OOPE on maternity care.

Findings: Multivariate analysis has demonstrated a significant association between socioeconomic statuses of women and the level of OOPE on delivery care. Level of education, urban residence, higher caste and social group affiliation, strong economic conditions, and use of private facilities for the child birth among the mothers were a significant predictor of the expenditure on maternity care.

Conclusion: Despite various efforts by the central and state governments to reduce financial burden, still large number of households are paying a significant amount from their own pockets. There is an immediate need to re-look in the aspects of insurance coverage and high level of OOPE in delivery care.

Health Shocks, Catastrophic Expenditure and Its Consequences on Welfare of the Household: Households engaged in Informal and Formal Sector

Nadeem Ahmad and Khushboo Aggarwal

Even though health being an imperative goal, health shocks accompanied with high treatment costs has devastating consequences for the many deprived sections in India. Despite of significant contribution by India's informal sector in terms of workforce employed, tattered conditions has inflated the burden of health shock in terms of high treatment cost, income loss, saving loss, assets depletion and expansion of debt. Although existing literature has extensively analyse health shock and its impact but still the informal sector witness a dearth in context of India. Therefore this study makes a novel attempt to analyse the impoverishment effect of Catastrophic Health Expenditure (CHE) on workers engaged in informal sector by focussing on two objectives. Firstly, compute distribution and magnitude of health shocks and health expenditure across occupational structure of formal and informal sector households. Secondly, evaluate the incidence, intensity and consequences of CHE on household's welfare engaged in informal sector followed by a comparative analysis (informal and formal sector). Unlike in the earlier analysis, we follow an integrated approach that includes direct cost, indirect costs as well as cost on both inpatient and outpatient care. For empirical analysis, we exploit the data from recent Indian Human Development Survey (IHDS-II), 2015.

Following results has been estimated using cross tabulation, standard catastrophic impoverishment measures and Heckman two-step model. The findings of this study provide the evidence that the individual engaged in informal sector are the prime victims of disease burden in terms of health shocks, high treatment costs, low insurance coverage and high impoverishment. As we find that around 27 percent of household engaged in informal sector spend more than 5 percent threshold of their non-food expenditure on their healthcare payment, while only 22 percent formal sector household exceed this threshold. We find that Out of Pocket (OOP) health expenditure pushes in poverty 7.12 percent of the households engaged in informal sector whereas the figure for the household of formal sector is merely 2.56 percent. The analysis also shows that impoverishment effects mainly rest on outpatient healthcare expenditure particularly for informal sector households.

Age Pattern of Hospitalization and Cost of Treatment in India, 1995-2014

Anshul Kastor and Sanjay K Mohanty

Purpose: Demographic change in India is associated with increase in longevity, increasing use of medical care and a rise in non-communicable diseases. The early onset of non-communicable diseases (NCDs) resulting from epidemiological transition is affecting the working adults and the elderly equally and has become the major cause of mortality and morbidity in India. This may result into a huge financial burden for government as well as for households. In this context, this paper examines the age pattern of hospitalization and cost of treatment in India.

Methods: The present study used the nationally representative data on morbidity and health from the 52nd (1995) and 71st (2014) rounds of the National Sample Survey. Hospitalization rate, descriptive statistics and logistic regression analyses were used in the analyses. The hospitalization rate and cost of treatment were estimated for selected diseases and in four broad categories- communicable, non-communicable diseases (NCDs), injuries and others.

Results: The hospitalization rate has increased from 1661 in 1995 to 3699 in 2014 (per 100000 population). Increase in hospitalization has more than doubled across all age groups. Hospitalization due to communicable, non-communicable diseases (NCDs) and injuries has shown rapid increase over time. Hospitalization among children was primarily because of communicable diseases, while NCDs were the leading cause of hospitalization for those above 40+ age. The mean cost of hospitalization has increased from Rs.11165 in 1995 to Rs.20373 (increased by 83%) in 2014. The mean cost of treatment of NCDs in 2014 was Rs.30661 compared to Rs.11055 for communicable diseases. The highest cost of hospitalization was reported by cancer patients (Rs.62349) followed by heart diseases (Rs.43243). The cost of treatment in private health centres was three to four times higher than that in public hospitals. Age and cost of hospitalization are two significant predictors of hospitalization for all of the selected diseases.

Conclusion: The increased public spending on health has a direct effect in reducing the out-of-pocket (OOP) health expenditure on these diseases and could be helpful for many households to overcome the medical poverty trap.

Gender Disparity in Intra-Household Health Care Expenditure: Empirical Evidence from India

Moradhvaj

Background: Gender disparity in health and morbidly in India has been well documented in recent decade. The female advantage in life expectancy at birth is a recent phenomenon in India, unlike in many parts of the world. In a patriarchal society where female face discriminatory behaviour in term of health care, nutrition intake, education and other opportunity, In India context are especially important to study the effect of gender on health. However, in India, the effect of gender on healthcare expenditure (HCE) within the household are relatively got less attention.

Objectives: 1) To examine the intra-household gender disparity in health care expenditure in treatment of illness in India and states. 2) To examine the factors affecting gender disparity in health care expenditure in India. Also to examine the contribution of demographic and socio-economic factors in the gender gap in health care expenditure.

Data Source: This study used 25th scheduled for two rounds (60th and 71st) of the National Sample Survey Organization (NSSO) data. This study used hospitalization case only.

Methods: The descriptive statistics and bivariate analysis are used to describe the characteristics of sample study (inpatients) and to estimate average (HCE) separately for male and female by background characteristics. We used Oaxaca-Blinder decomposition of the gender gap in HCE to understand the contribution of demographic and socio-economic factors.

Results showed that there is a huge difference in the average HCE between male and female. Average HCE significantly lesser for female compared to male in 2004 and 2014. The difference in average HCE increased in 2014. Decomposition results suggest that about 84% gender difference in HCE is due to male-female difference in socio-economic, demographic and healthcare-related factors. Type of education, type of disease, level of care and duration of stay in hospital are contributing towards widening the male-female gap in OOP health care expenditure. And 18% difference in male-female healthcare expenditure is due to the effect of these factors on healthcare expenditure.

Policy implication: Reduction of out of pocket health expenditure can reduce the gender disparity in health care substantially. It can achieve either by the expansion of healthcare financing mechanisms, such as the various form of health esurience program to reach economically backward people (e.g., pre-paid programs, micro-insurance programs or social health insurance approach), or minimizing the price of hospitalization. These schemes further should be more female friendly to counter intra-household gender disparity in health care resource allocation. At the same time, quality of services has to be ensured.

Out Of Pocket Spending for Natal Care Services: A comparative analysis among High and Less developed states of India

S. Gayathri and R. Devanathan

Objective: An attempt is made to assess the expenditure incurred on natal health care services in India at two different socio-economic settings.

Data Method: Data for the analyses are drawn from the 71st round of the National Sample Service Organization (NSSO) held between January and June 2014. Though the survey covered the whole of the Indian Union, this study made an attempt to classify the states into two different socio-economic settings. Based on the Human Development Index (2011), the top five rank states were grouped as High HDI states. The bottom five HDI states were grouped as Low HDI states. Totally 7,004 women (3285 from High HDI states and 3719 from Low HDI states) who had get pregnancy during the last 365 days were considered for this analysis. A logistic regression model used to assess the determinants such as socio-economic and demographic indicators on expenditure incurred for natal care services.

Results: It is found from the analysis that around 6 percent of the sample households among high HDI states and about 15 percent of households in the low HDI states reported that they have not paid any money from their pocket to receive the natal care services. It can be concluded a major proportion of women spent money for their natal care however a wide difference was noticed between high and low HDI states in India. The average amount spent from their pockets for natal care services was Rs. 6,685/- for high HDI states. It was almost double times higher than the low HDI sates' expenditure incurred for natal care (Rs. 3,400). Multilevel analyses show evidence of high burden of natal health care expenditure, which varied significantly across states. Multivariate regression analysis, as in the bivariate analysis, women's caste, education, and wealth index variables are continued to be strong predictors of the expenditure incurred for natal health care services. The results of the logistic regression analysis on expenditure incurred for natal care is positively and significantly associated with all the socio-economic, demographic variables (except age, religion).

Conclusion: In India, the natal health care services are offered free, yet many families face significant out-of-pocket expenditures. A similar finding is found from this analysis that the average out of pocket natal health care expenditure incurred during delivery was relatively high, however, a wide variation is witnessed among high and low HDI states. Hence, it is suggested to increase the share of state's expenditure on healthcare, especially those states which are socially and economically backward states, to reduce the state differences in the country on health outcomes.

Maternal Health Spending Characteristics of Households in India: A Regional Analysis

A.K. Ravisankar

This paper examines the household's maternal health spending characteristics using NSS 71st round conducted in 2014. The survey covered the whole of the Indian Union, however here an attempt was made to group all the States into six regions based on the geographical locations viz North, Central, East, North East, West and South. Totally 19,179 women who had get pregnancy during the last 365 days were considered for this analysis. Age composition of the respondents discloses the fact that the early pregnancy was slightly higher among East region. South region recorded the lowest average household size than the rest of regions. Invariably in all the regions, the predominant religion was Hindu followed by Muslim. A considerable proportion of sample population in North-East region was ST. Overwhelming majority of the women received the pre and post natal care however the regional differences were noticed. Data witnessed the regional difference with regard to expenditure incurred for prenatal care. The average money spent for prenatal care was Rs. 5,392 by southern region women which was highest among the regions and lowest recorded by North-East region. Again, the payments incurred for postnatal care data discloses a wide regional differences among the study population, however the pattern of difference was slightly differed from prenatal care payments. Overall, respondents were spent less amount for their postnatal care services when compare to prenatal care. The bivariate analysis results disclose the fact that expenditure incurred for prenatal care show a statistically significant relationship with socio-economic and demographic factors.

The above discussion revalidate that richer section of the population are spending more on healthcare as compared with the poor. Despite the progress that has been made in India in recent decades to ensure the availability of maternal care services for everyone through public facility system at free of cost, spending from their pockets still remain high in the community. Therefore, this research finding suggest to increase the share of state's expenditure on healthcare, especially in rural areas, improving the existing healthcare facilities, filling up of vacancies in these institutions, compulsory rural postings of staff and fixing accountability of employees are necessary to reduce the regional differences in the country.

Spending on Maternity Care for Hospital Births in Uttar Pradesh, India

Anu Rammohan, Srinivas Goli and Moradhvaj

Purpose: The aim of this study is to measure levels and factors of maternity care spending for hospital births by its detailed components.

Data and methods: Data was collected from women who gave birth 24-hours prior to the survey and for the complicated deliveries 48-hours prior to the survey in Uttar Pradesh [UP, India] during 2014. The simple random sampling design was used in selecting the samples from three different hospitals setting that account for heterogeneity in the sample. Bivariate analyses were used to estimate mean expenditures on ANCs, Delivery and Total Maternity Expenditure (TME) with ANOVA tests. Multivariate linear regression was employed to estimate marginal effect of factors associated with both the absolute and relative share of income spent on ANCs, delivery and TME.

Results: Our findings show that average spending on maternal health care is high ($86.03 at constant prices) in the study population. The share of the total spending on maternity care as a proportion of annual income ranges from 20% to 40% for lower middle income class to poor households. Findings from the multivariate regression suggest that factors such as income, place of ANCs, quality of ANCs, type and place of institutional delivery influence both absolute and relative spending on maternity care in UP.

Conclusion: Maternity spending is catastrophic for socioeconomically poor women, in particularly those who depend on private health care in a resource-poor setting like UP, India.

A cross sectional analysis on out of pocket expenditure to anti-natal care, institutional delivery and infant care in public hospitals of Chhattisgarh

Narayan Tripathi, Nitish Parganiha, Alka Gupta, Prabir K Chatterjee, Arti Brokar

Context: Janani Shishu Suraksha Karyakram (JSSK) was initiated in 2011 to ensure cost free delivery and thereby, reduce burden of maternal and infant mortality. However, despite the program, high Out of Pocket Expenditure (OOPE) continues on maternal care (antenatal, delivery and infant care), which act as barrier for institutional delivery and a major cause to encourage home delivery.

Objective: To assess the OOPE incurred by pregnant women while accessing ante-natal care, institutional delivery and post natal care at public health facilities.

Methods: A cross-sectional study was planned during the period of February 2016 to June 2016. All five divisions of Chhattisgarh were covered. Convenience sampling was done. 26 JSSK notifying health facilities were covered in 10 districts of the Chhattisgarh. Study population includes pregnant women (107), women who delivered in the last one year, interviewed at the village (120) and at the facilities (54). Informed consent was taken.Out of

Pocket Expenditure (OOPE) was calculated to know the economic burden on the study participants, during ANC care; at the time of delivery; and during infant care.

Main conclusion: Findings of the study reveal that even under the JSSK, beneficiaries incurred substantial out-of-pocket expenditure to avail services during child birth. There was a difference in the pattern of expenditure on various service components (user fee, diagnosis, tips, medicine and consumable). 26% beneficiaries reported about user fee (OPD/IPD slip) of 5-10 INR in the public health facilities. People pay high amount on tips or informal payments, median 550 INR and 350 INR amount respectively mentioned for normal and caesarean delivery.

Median out of pocket expenditure on medicine and consumables during ante-natal care, delivery and child care was 570 INR, 275 INR and 150 INR respectively. Different laboratory tests also contribute in OOPE. Expenditure of 475 INR was reported on diagnostic services during delivery. The findings emphasize the need for a mechanism to restrict OOPE for health services during child birth and to strengthen the availability of facilities under JSSK program.

Healthcare Seeking Behaviour, Healthcare Expenditure and Self Perceived Health Status of Elderly in India: Evidence from the NSS 2014-15

Rupa Dutta and Anirudha Barik

This study wanted to unveil the associations between healthcare seeking behaviour, healthcare expenditure and self-perceived health status in elderly population (60 years and more) in India using recently available unit-record data of National Sample Survey (NSS) 71st round collected in 2014. This paper analyses patterns in self perceived health status of old aged persons by looking at healthcare seeking behaviour and healthcare expenditure of them. However, even in our knowledge there is no study to date has examined the effects of healthcare seeking behaviours, healthcare expenditures and socioeconomic status on self-perceived health status of elderly. Therefore, it is important to gain a better understanding of what underlies self-perceived health status of elderly. This results shows that gap of different socioeconomic spectrum along with age structure is associated with poor self-rated health. Our study provides unique concrete evidence that the differing magnitude of education level, consumption groups, place of residence and position in the social hierarchy could have important health implications. More specifically, the age structure change has had significant impact on healthcare expenditure and health status.

HEALTH INSURANCE

How Health Insurance affects Healthcare spending in India

Apyayee Sil, Laishram Ladusingh and Preeti Dhilon

Financing for healthcare by the Government and individuals is a challenging priority in India where low public healthcare expenditure causing unaffordable healthcare cost of treatment.Introduction of health insurance is considered as a major invension in healthcare.The main focus is to study the changes in the disease pattern in India and to assess the relationship between health insurance and healthcare seeking behaviour emphasising out of pocket expenditure on healthcare using 71st round(2014-15) and 60th round (2004-05) data of National Sample Survey Organisation covering 65,932 and 73,868 households respectively, the paper uses bivariate and multivariate analysis including logistic regression and two-part model for analysis. It has been found that the insurance coverage has shown an excellent improvement between 2004-05and 2014-15 with a higher improvement among females. Insured persons are more likely to take treatment than that of uninsured both for inpatient and outpatient cases and also insurance coverage is more influencing the treatment seeking behaviour in a rural area than urban.It is to be noted that the insurance is helping people by reducing the out of pocket cost on treatment for both inpatient and outpatient cases but insured persons pays more for treatments than for uninsured(but it is not uniform on all the factors). The health insurance significantly determines the health-seeking behaviour and out of pocket cost paid for healthcare for both inpatient and outpatient care..There is a need to provide more insurance policies which should cover the outpatient cost including medicines.

Financial protection against catastrophic illnesses: Evaluation of Rajiv Health Insurance Scheme

Ayushi Jain and Sowmya Dhanaraj

In the recent years, a new wave of Government Sponsored Health Insurance Schemes (GSHIS) has hit India, which represents an alternative form of mobilizing and allocating government resources for health care. India is a country that is challenged by the low public financing in health and these schemes have enabled to govern, allocate and manage the public resources towards health. The aim of GSHIS is to provide financial protection against catastrophic health expenditure. These arrangements have laid down the promising foundations of reforming India's health finance and delivery system by introducing a bottom-up approach to reach universal coverage in healthcare starting from the inclusion of the poor. In this direction, in 2007 Rajiv Aarogyasri Scheme was rolled out in Andhra Pradesh to provide financial assistance to the below poverty line population against catastrophic illness and to prevent worsening of their economic condition. It is deemed to be a success especially in its coverage and several attempts have been made to introduce similar schemes in other states.

Aim of this study is to assess the impact of this scheme, if any and especially, its evaluation in terms of the financial support and reduction in out of pocket catastrophic health expenditure (OOPCHE) of the beneficiaries. Also this study identifies certain vulnerable groups or households that can be focused upon for future policy considerations. We found that RAS health insurance scheme does not have a significant effect in reducing the burden of health expenditure incurred by the households. The rural households are more severely affected by catastrophic spending. Also, factors like education and economic status reduce the incidence of catastrophic health expenditure. In addition, the elderly members and people who are disabled are likely to incur more catastrophic expenditure on healthcare. We also find that the socially vulnerable groups are more likely to spend catastrophically, even more so if they reside in rural areas.

Evaluation of 'Cashless scheme of health insurance for road accident victims'

Deepshikha Sharma, Swati Katoch, Shankar Prinja

The burden of traffic crashes, in terms of both mortality and morbidity, is increasing fastest in developing countries, due to rapid motorization associated with economic growth with acute situation in India. Keeping in mind the alarming situation, the Ministry of Road Transport and Highways (MoRTH), Government of India (GoI) implemented 'Cashless scheme of health insurance for road accident victims', on a pilot basis across three sampled stretches of national highways in India. The selected highways are Gurgaon-Jaipur stretch of NH 8, Mumbai-Vadodra stretch of NH 8 and Ranchi-Mahulia stretch of NH 33. The current paper tries to evaluate the current scheme along with assessment of economic burden in terms of out of pocket (OOP) expenditure; catastrophic health expenditure and distress financing associated with injury for hospitalisation among scheme beneficiaries and those not availing the scheme. The current case control study illustrated the utilization was better along the Gurgaon Jaipur stretch as compared to the rest. The emergency referral services timeliness was adequate. However, in terms of quality, they lacked behind in drugs and consumables. Overall, the scheme had a significantly beneficial impact on reduction of out-of-pocket (OOP) expenditure with enhanced financial risk protection for those who met with a road traffic injury.

A Gamble for Health? : Kerala's Experience with Financial Risk Protection Financing through the Karunya Benevolent Fund Scheme

Jaison Joseph and Devaki Nambiar

Financial risk protection is a major challenge in the current era of universal health coverage reforms. While tax-based financing remains the ideal mode of funding health and risk protection, in the face of low overall health allocations, there is a strong need to marshal funds from other sources. Kerala's Karunya Benevolent Scheme (KBF) is a unique innovation that may offer lessons on how sectors beyond health can contribute. This case study of KBF describes the design of the programme and district-level utilization data from 2012-2015 to assess its contribution to financial risk protection in the state.

Launchedin 2012, KBF is implemented through Kerala's Department of Lotteries, and provides financial assistance up to 2 Lakh as a one-time benefit to families with income below 3 Lakh per annum for high cost health conditions. Finance for the scheme is mobilized from the profit received through the sale of weekly lotteries.

An amount of Rs. 2632.77 crore INR has been generated through the sale of Karunya and Karunya Plus Lotteries from 2011 to 2015 in which Rs. 549.93 (20.9%) crore has been allotted to Karunya Benevolent Fund. KBF has empanelled 120 public and 48 private facilities across the state, where beneficiaries may seek care. Our district level analysis revealed that in Malappuram and Palakkad, 91.25% of financial assistance has been reimbursed to public facilities for providing the treatment to patients, with an administrative cost of merely 0.63%. This outlay actually exceeds the total funds under the National Health Mission disbursed in Malappuram and Palakkad districts in the same period. Critically, it is found that the 60% of KBF utilisation is by APL category families in the two districts.

This welfare measure adopted by the government is an example of out-of-the-box financing for health and provides much needed relief from catastrophic expenditure for low income families. However, the longer term impact of the scheme may be hampered by its temporary nature (it provides only a onetime benefit to a family), the cumbersome application procedure, and the lack of integration of these scheme with adopted for getting the benefits of the scheme.

Does social health insurance reduce Financial burden? Panel Data Evidence from India

Mehtabul Azam

Indian government launched a National Health Insurance Scheme, Rashtriya Swasthya Bima Yojana (RSBY), in 2008 that provides cashless health services to poor households. We evaluate the impact of RSBY on beneficiary households' (Average Treatment Impact on the Treated) utilization of health services, per capita out-of-pocket (OOP) expenditure, and per patient OOP expenditures. We use a large nationally representative longitudinal household survey to implement difference-in-differences (DID) with matching. We find some evidence of positive impact of RSBY on utilization of health services for beneficiary households in rural India but not in urban India. However, there is no evidence that the RSBY reduced per person OOP expenditure for RSBY households in both rural and urban areas. Conditional on having received medical treatment for major morbidity, we find lower expenditure on medicine for a RSBY patient in rural areas. We also conduct a placebo experiment to support the parallel trend assumption of DID.

Does Inflow of Remittances Protect the Household from Catastrophic Health Expenditure in India?

Milan Das

Using The Human Development Survey Data, IHDS-1(2005) & 2 (2011).This papers test the hypothesis that the Remittances received households and Catastrophic Health Expenditure in India. The household are classified into four mutually exclusive groups,in the basis of remittances receiving household, Not received in 2005 & 2011(%),Received in 2005 only (%),Received in 2011 only (%),Received in 2005 & 2011 both (%).The health spending include the institutional (hospitalization) and non-institutional health expenditure of the households, standardized for 12 months. Descriptive statistics and Multinomial logistic Regression are used to understand the differentials in Catastrophic health expenditures in 2011 and remittances received across background characteristics of households Results indicate that the. The results from the regression analysis suggest that the variables; wealth tertile for 2011, short term morbidity in the year 2011, long term morbidity in 2011, place of residence, number of child aged 0-5 year, number of elderly aged 60+ and household size are highly significant to explain the variation in the catastrophic health expenditure. Other than these variables the pattern of catastrophic health expenditure in 2005 and education of the household head has found significant at a level of 5%. A significant relation has been found between remittance received and catastrophic health expenditure and it shows that those households which have received remittances, the catastrophic health expenditure are less than the reference category. Based on the finding we suggest to remittances receiving household have significant impact on catastrophic health expenditure in India than Remittances non received household.

PUBLIC HEALTH & NUTRITION

Domestic Hygiene and Childhood Diarrhoeal Management in Selected States of India: Importance of Neighbourhood Effect for Interventions in Sanitation and Hygiene Practice Behavioural Change

Richa Goel and Papiya Guha Mazumdar

Fecal exposure through various transmission-routes is recognised as one the major risk towards childhood diarrhoea in developing countries, leading to the highest proportion of under-five deaths. While, India contributes to about half the world's childhood diarrhoeal deaths and 60 percent of open-defecation (OD) practisers, the ongoing pan Indian cleanliness mission (Swachh Bharat Mission; SBM) appropriately has set its target to terminate OD by 2019. Fetching health benefits from water sanitation and hygiene (WASH) programmes lean heavily on people's practices. Interventions grounded on understanding of socio- cultural practices influence mass WASH behaviour. Religion in particular, has strong social deterministic role in distinguishing domestic hygiene behaviour. Based on religious neighbourhood predominance, a lower risk for childhood diarrhoeal incidences has been assessed for Christian neighbourhoods, irrespective of religious background of household per se. India needs to consider such important external environmental stimuli for raising better WASH practices, if to make SBM a success.

The Effect of Birth Weight on Cognitive Development: Evidence from India

Santosh Kumar

This paper makes use of the longitudinal data from the Indian Young Lives study to examine the effects of birth endowment, measured by birth weight and birth size, on test scores. We find that initial birth endowment is strongly associated with Peabody Picture Vocabulary Test (PPVT) score. In the sentinal-fixed effect models, smaller birth size and lower birth weight are negatively associated with the PPVT score. A 10% increase in birth weight raises test score by 1.9% and 0.03 standard deviation. The strong association between birth weight and test score is robust to inclusion of several child and household characteristics. We do not find any evidence of heterogeneous effects as the effects are very similar across a wide range of family backgrounds. We conclude that negative effects of lower birth weight on cognition development may not be modified by nurture and policies should be designed to improve the initial birth endowment of the children.

Tobacco Consumption and Control in India: An Assessment

Sanchita Mukherjee

Tobacco is a widely available addictive substance. Use of tobacco products have been found to cause serious health hazards including cardio vascular diseases and various forms of cancer. The issue is of serious concern to India, since it is the second largest producer and consumer of tobacco in the world. In this context, this paper discusses the patterns in tobacco consumption, its socio-economic composition of usage and evaluates the policy strategies used for restricting its usage.

This paper analyzes the trends and patterns of tobacco usage in India using the GATS data. It is found that about thirty-five percentage of India's adult population use tobacco in some form or the other, of which the majority use it in 'smoke less' form. The highest usage is reported from the East and North-East states. Bidi seems to be most popular smoking tobacco product irrespective of age, occupation and gender. However, cigarette is slightly more preferred over bidi in urban regions. Khaini and Gutkha are the popular forms of smokeless tobacco. Tobacco usage is lower among young adults (15-24 age group), students and people with relatively higher education. Among the current tobacco users, the group which reports 'plans to quit within 12 months' is higher for (a) users with less than 24 years of age; (b) students and (c) the respondent education is above secondary level. Relatively higher proportion of users who are females, house makers, retired or unemployed individuals are less likely to quit.

Systematic efforts to control tobacco usage in India took shape only by 2003 with the ratification of COTPA, which was to meet the WHO obligation under the FCTC treaty. This was followed by the launch of NTCP in 2008, to further strengthen the implementation of tobacco control and enact the provisions under COTPA. A review of these policies shows their inadequacy not only in enforcement, but also issues related to (a) the interference of tobacco industry, (b) issues with tobacco taxation, and (c) the failure of government to rehabilitate people involved with cultivation, production and distribution of tobacco products.

Determinants of Insecticide Treated Net Utilisation for Under Five Children in Ghana

Mustapha Immurana and U. Arabi

Malaria is regarded as one of the most dangerous killers of children in the world of which Ghana is no exception. However, one of the most effective means of preventing malaria is the utilisation of insecticide treated net (ITN). This has necessitated various mass ITN distribution drives in Ghana. However, recent report shows very low ITN utilisation among under five children in Ghana. This study therefore using the 2014 Ghana Demographic and Health Survey investigated the determinants of ITN utilisation for children under five in Ghana. By employing the probit model, the study revealed that children from urban areas, older children, children with older household heads, children from Wealthy families, Muslim children, children from the Northern, Greater Accra and Upper East regions and children of mothers with big problems with regards to permission and money to seek self-medical care, were less likely to have utilised ITN. Also Mothers with primary and secondary education, mothers with health insurance and mothers with big problems concerning the distance to health facility, were revealed to be more likely to have utilised ITN for their children. Therefore deepening the free maternal health insurance policy, intensifying the regional behaviour change campaigns on ITN utilisation and Women empowerment through education as well as targeting uneducated mothers, could be some of the effective strategies that can increase ITN utilisation among children in Ghana.

Gender Differentials in Cardio-Vascular Diseases in India: Evidence from National Sample Survey Data

Shivendra Sangar, Ramna Thakur and Bhed Ram

Cardiovascular diseases (CVDs) are the leading threat to public health around the world including India. In this paper the authors provide a longitudinal gender-wise analysis of CVDs and their concentration in different decile of consumption distribution in India. In this analysis NSS data on 'health and morbidity' for the period of twenty years from 1995-2014 has been used. While analysing the data considerable gender differentials have been observed in the prevalence of CVDs over the period of time. The growth rate of out-of-pocket (OOP) health expenditure is higher for female in case of inpatients. Over the period of time the concentration of CVDs and the OOP health expenditure has increased for wealthier consumption expenditure deciles. We recommend the comprehensive national programme to address the growing incidence of CVDs in the country. Apart from this, government should also focus on the improvement in health infrastructure, human resources and research in health. Government should also devise measures to include more and more people under the insurance coverage to protect them from unexpected burden of OOP health expenditure.

Socioeconomics Explanation of Less-Wealthy and Wealthy Gap in Malnutrition in India

Debaprasad Sarkar

It is evident that the incidence of malnutrition of children among relatively wealthier section of population in India is substantially lower compared to less wealthy section. The present study systematically assesses the relative contribution of socioeconomic factors in explaining the wealthy-less wealthy gap in child malnutrition (z-scores (h/a) of height (h) for age (a)) using 3rd round National Family Health Survey (NFHS-III). The Fairlie (2005) decomposition method is used to explain the wealthy-less wealthy gap in average probability of being in malnourished among Indian children. The gap in wealth level, maternal education, mother's age at 1st baby birth, higher birth order etc. are found to be responsible in widening the wealthy-less wealthy gap in child malnutrition. Authors' views are in favour of the implementation of more integrated maternal and child health programmes along with pro-poor development programmes in order to reduce inequality of malnutrition.

Decomposing Nutritional Inequality by Caste and Class: A Quantitative Approach to Reckon Intersectionality

Achin Chakraborty and Simantini Mukhopadhyay

We decompose inequality in nutritional status of Indian children along the axes of caste and economic class. Inequality is measured by the most commonly decomposed measures of the General Entropy Class. We first use the traditional method of inequality decomposition and find out how the 'between group' component differs when we consider different groupings, namely caste, class, and caste-class intersections. However, since the traditional method of inequality decomposition is sensitive to the relative sizes and the number of groups under question, the decompositions are not comparable across alternative groupings. In this paper, we use a corrected method of inequality decomposition and show that compared to the traditional method, it is more meaningful even in the non-income space.

A Simple Model on Mothers' Autonomy, Health Inputs, and Child Health

Biswajit Mandal, Prasun Bhattacharjee and Souvik Banerjee

Using traditional health capital model of Grossman (1972) and Wagstaff (1986) this paper attempts to fill up the theoretical missing link between mothers' autonomy and household consumption behavior, particularly focusing on the consumption of child health inputs. It has been shown in this analysis that working mothers' children should be of better health status. Independent of working status of the mother, autonomy parameter always induces consumption of more health inputs for children. However, when autonomy is linked with mothers' income, basic results are further strengthened. In fact, income induced autonomy may result in redefining the composite consumption good for the family as an inferior one.

MATERNAL AND CHILD HEALTH

Migration and maternal health care services utilisation in Uttar Pradesh, India: A propensity score matching analysis

Ali Imtiyaz

This paper examines the impact of migration and remittances at the household level on the use of antenatal care, safe delivery, and postnatal care. We use data from the 2nd round of India Human development Survey. A vast disparity exists in the utilisation of maternal healthcare services among women's belongs to migrants' and non-migrants' households. Based on propensity score matching, the paper shows that 2.9 percent the higher probability of getting full anti-natal care in migrants' households than that of matched control group (women's belongs to non-migrants' households) households. It also applied Blinder –Oaxaca decomposition models to show the contribution of different socioeconomic variables in utilizing maternal health care services. The model shows that remittances have a highly correlated with inequality in maternal health care utilisation between women's belongs to migrants' and non-migrants' households.

Maternal Health Care; Policies, Programmes and the Outcomes: A case study of Odisha

Muktarani Mishra

International Conference on Population and Development (ICPD) in Cairo in 1994 and the Fourth World Conference on Women in Beijing in 1995 caused a change in the attitude towards the woman and her rights (including the health rights). As a consequence, woman friendly policies taking care of their reproductive health were designed by the Governments of different countries. India also initiated the Reproductive and Child Health (RCH) programme in 1997 aiming at providing integrated health and family welfare services. The announcement of the Millennium Development Goals (MDGs) that have, improving maternal health as one of the goals further encouraged the country to priorities maternal health on the policy agenda. Three major national policies were adopted by the Government of India (GOI) during this period 1) the National Population Policy 2000, 2) the National Policy for Empowerment of Women 2001, and 3) The National Health Policy 2002 and all of them approved the GOI's target of reducing the MMR to 100 maternal deaths per 100,000 live births. Further, the publication of the World Health Organisation (WHO) in 2004 revealing the largest number of maternal deaths in India (accounting approximately one-fourth of the total maternal deaths) activated the Government to take resinous measures for improving maternal healthcare situation in the country. As a result the flagship programme, the National Rural Health Mission (NRHM) was launched on 12th April 2005 for the period of seven years (2005-2012) and subsequently extended to 2017 in12th Five year plans, named as National Health Mission(NHM). The main aim of the NHM is to provide accessible, affordable and quality health care to both

the rural and urban(poor) population, especially the vulnerable sections. More than one decade has passed after the introduction of this programme. Some efforts (Rajalakshmi,2005; Lahariyan,2009;Gill,Kaveri.2009, Khan et al, 2010, Pritam,2014) made to evaluate the progress in the maternal health status. This is one among such evaluations from a poor and underdeveloped state of Odisha. Based on secondary data, the study finds unsatisfactory improvement in the maternal health status. It also finds higher regional disparity, in utilization of maternal health care. The paper suggests that a situational analysis on utilization of maternal health care would help to identify the needs and problems of the particular area and helpful in setting priorities and targets.

Barriers of Maternal Health Seeking Behavior: Survey Based Evidence from Assam

Pranti Dutta and Bodhisattva Sengupta

Health outcomes depend on both demand and supply side factors. While supply side factors ensure availability of different facilities, demand side factors determine actual usage of such facilities. In this regard, perhaps the most important decision is to seek care from a formal institution. Decision to seek care may depend on a number of factors. In case of maternity related issues, the decision will depend on inter-related factors like income, education, customs and beliefs, status of the patient within society and family, as well as perceived quality of healthcare services. A structured questionnaire has been employed to conduct an extensive village level door-to-door survey in Assam as many districts with a larger number of reported maternal deaths. Multistage sampling is used to select villages and for verbal autopsy, snowball sampling has been applied in this study. The present study attempts to delineate main barriers for districts of Assam with highest maternal death rates. Data is analyzed with a Bayesian logistic regression model. Non availability of ambulance and female health providers; family restriction, ignorance and hesitation; cost of transport, long queue at facilities, non availability of persons at home and heavy workload are main barriers of maternal health seeking behavior. Such evidence underlines the sectors where public money should be spent to improve maternal health outcome.

Impact of Health Interventions on Access to Maternal Health Care Services: A Self Help Group (SHG) Model Approach

Sanjit Sarkar S Srinivasan and Anurrag Chaturvedi

Introduction: Improving health care utilization through community mobilization and participation is being key strategy to meet the reproductive health goal. Considering health interventions through SHG as an exposure, this study aims to estimate the effect of receiving health intervention treatments on the maternal health care utilization.

Data and Method: The present study used a cross sectional data (N=4,706) collected across 20randomly selected districts from Uttar Pradesh. A propensity score matching (PSM) method has been used to estimate the effect of heath intervention treatments(i.eattended health meeting in the SHG; received health advice during home visit by SHG member; and received health leaflet/letter)on maternal health care utilization (i.e at-least 2 TT; 100+ IFA consumption; three ANC; & institutional delivery). PSM method is beneficial to eliminate most the bias attributed across covariates and produce robust estimation of program effect.

Results: Results showed that receiving any one treatment has significant positive impact on 100+ IFA tablet consumption. (ATT=0.090; ATE=0.077; $p < 0.001$). Further, receiving of two or more health intervention treatment has additional significant positive impact on receiving at least 2 TT injections (ATT=0.028; $p<0.05$) along with the 100+ IFA consumption (ATT=0.109; ATE=0.120; $p<0.001$).

Conclusion: This study has the evidence that exposure of interventions through SHG have effective impact in improving maternal health seeking behavior.

Impact of m-Health application used by community health volunteers for improving utilization of maternal, newborn and child health care (MNCH) services in a rural area of Uttar Pradesh, India

Shankar Prinja, Ruby Rani, Aditi Gupta, Pankaj Bahuguna, Madhu Gupta and Jarnail Singh Thakur

Background: With an aim to improve quality of counselling by community health volunteers, thereby resulting in improved uptake of maternal, neonatal and child health services (MNCH), an m-health application was used under a project named 'Reducing Maternal and Newborn Deaths (ReMiND)' in district Kaushambi in India. In this paper, we report the impact of this project on coverage of key MNCH services.

Methods: A pre and post quasi-experimental design was undertaken to assess the impact of intervention. This project was introduced in two community development blocks in district Kaushambi in 2012. Two other blocks from the same district were selected as controls after matching for coverage of two indicators at baseline - ante natal care and institutional deliveries. Annual Health Survey conducted by Ministry of Health and Family Welfare in 2011 served as pre-intervention data while a household survey for impact assessment was carried out in four blocks of Kaushambi district in 2015 to provide post-intervention coverage of key services. Propensity score matched sample from intervention and control areas in pre-intervention and post-intervention periods were analysed using difference-in-difference method to estimate the impact of ReMiND project.

Results: We found a statistically significant increase in coverage of iron-folic acid supplementation (12.7%), self-reporting of complication during pregnancy (13.20%) and after delivery (19.5%) in the intervention area. The coverage of 3 or more antenatal care visits, tetanus toxoid vaccination, full antenatal care and ambulance usage increased in intervention area by 9.7%, 4.2%, 1% and 2.5% respectively; however, the changes were statistically insignificant.

Conclusion: Three out of eight services which were targeted for improvement under ReMiND project registered a significant improvement as result of m-health intervention

Is there a Kerala model of health? A Comparison of Infant and Child Health indicators of Kerala with other Southern States

Jayamohan MK

Recent UNICEF report on the health indicators of India mirror poor maternal and child health conditions, along with practices of early marriage and childbirth during adolescence. At the same time the southern state of Kerala stand out as a beacon of hope. Most of the maternal and child health related indicators of Kerala are still comparable to many developed countries, even though the state's per capita income is low in comparison. The purpose of this paper is to examine the determinants of infant and child mortality in south India with a comparison to Kerala by using National Family and Health Survey round 3 (NFHS 3). Kerala has already achieved India's targeted Millennium Development Goals (MDGs) related to maternal and child health a decade ago. To identify the causation, Cox Proportional Hazard model is used. In the analysis all the determinants of infant and child mortality are considered for all the four south Indian states. The mortality of infant and child is found to depend on environmental, biological, socio- economic and behavioural factors. The employment status of women is proved to be a significant determinant of child mortality. Children of employed mothers are more vulnerable to mortality than non employed mothers. The educational status of women also showed a significant impact on the survival of their infants and children. The mortality of children of educated mothers is lower than that of non educated mothers in all south Indian states. The commendable position of Kerala in infant and child health related indicators among the south Indian states can be considered as an emulating model for nearby states.

Hindu-Muslim Differential in Childhood Deaths in India: Evidence from NFHS-3 (2005-06)

Amit Sachan

This paper focuses on percentage of childhood death among Hindu-Muslim (religion) in India and its selected regions. Sex differentials in infant and child death reflect strong son preference in many regions. Most regions exhibit excess male death during the neonatal period but excess female death during childhood. In the country as a whole, female child death is 40 percent higher than male child death. The sex differentials in infant and child death suggest that son preference and discrimination against female children are very strong in northern states but minimal or nonexistent in southern states. Among socioeconomic background characteristics, urban/rural residence, mother's exposure to mass media, and Mother's literacy, access to a flush or pit toilet are found to have substantial unadjusted effects on infant and child death, but these effects are much smaller when the effects of other socioeconomic variables and basic demographic factors are controlled. Wealth index, birth interval, women age at first birth, household head's religion and economic level of the household have substantial and often statistically significant adjusted effects on infant and child mortality. Both unadjusted and adjusted effects of most of these background characteristics are largest for child mortality and smallest for neonatal death.

COST AND COST EFFECTIVENESS ANALYSIS

Cost of Cancer Treatment for Head and Neck Cancers in India

Akashdeep Singh Chauhan, Shankar Prinja, Sushmita Ghoshal and Roshan Verma

Background: Government of India, through its various programs, is trying to provide free access to cancer care in public and private hospitals. Several state governments also offer free treatment for cancer. However, there is no scientific evidence on the health system cost of cancer treatment. On the contrary, cost of treatment is rising with introduction of newer technologies. The present study was designed to estimate the unit cost (both health system cost and patient level expenditures) of treating head and neck cancer patients, which would finally help in designing of package rates for various treatment options available for treating head and neck cancers in India.

Methodology: The present study was undertaken in the radiotherapy and otolaryngology department of a tertiary care hospital in India. Health system costs were assessed following economic costing and bottom up methodology. Data on all resources –capital or recurrent, on delivery of head and neck cancer treatment was collected for the financial year 2014 -15. Out of pocket expenditure (OOP) was estimated, following Cost of illness approach, by interviewing a sample of 333 patients, who had received radiotherapy treatment either alone or in combination with chemotherapy or surgery.

Results: In terms of health system cost, around INR 3.2 million and 34.5 million was spend for the provision of surgical and radiotherapy care in the study hospital. Input wise distribution of this annual cost shows that spending on the salaries of the human resource was maximum (46% and 70%) followed by expenditure on the equipment (19.5% and 24%) for both surgical and radiotherapy care. In addition to health system cost, patient also had to spend certain amount of OOP expenditure which varied from INR 24,919 to INR 66,203 while undergoing different various treatment therapies when given alone, cost for the chemotherapy was the cheapest (INR 16,251) and Intensity modulated radiotherapy given through IGRT machine was the costliest (INR 2,13,861). Among radiotherapies alone, conventional radiotherapy given through cobalt machine was the cheapest (INR 43,864). Likewise among therapies when given in combination, surgery plus chemotherapy plus IMRT through IGRT machine was the most expensive (INR 3,15,713).

Conclusion: The estimates for present study could be used for estimation of package rates under various cashless and government schemes. Future research to assess the cost effectiveness of various radiotherapy treatment options is recommended.

Cost estimation for screening and treatment of Sickle Cell Disease in Chhattisgarh

Narayan Tripathi, Areiba Arif, T. Sundararaman, Shiv K Binjhwar, Prabir K Chatterjee

Context: Sickle Cell Disease is a major public health problem in Chhattisgarh. There is a need for a structured plan for and vision on the sustained reduction of suffering due to this disease. There is also a need for policy clarity on the financial requirement to provide these services and to ensure protection for the patients so that they do not face hardship or impoverishment to as a consequence of seeking care. A workshop was held to discuss this. The workshop suggested that the cost of policy alternatives should be compared for feasibility.

Objective: This study is the next step after the workshop to estimate the overall cost for screening and treatment for strategic planning and; financing arrangements by the state.

Methods: Data Collection was done different web search engines have been used like PubMed and Google. Various government reports are also used for estimation of screening and treatment cost. After that reference costing has been taken from Shaheed Hospital Dalli-Rajhara, JSS Ganiyari, Bilaspur and Government approved test rates. Average cost on the basis of above three reference costs have been calculated in two scenarios:

1. Universal Newborn screening and
2. Parental screening with restricted newborn screening.

Epidemiological and clinical estimates were calculated based on available government data.

Results: In this study we calculated the estimated cost for screening in two scenarios (1=universal newborn screening route, 2=parental screening with restricted newborn) and did sensitivity analysis. In first case scenario all the newborns should be screened for Sickle Cell by HPLC method followed by screening of their parents and siblings by Electrophoresis test. In the second scenario the major screening route is from pregnant women followed by their husbands and then newborns of positive screened parents are screened by HPLC. In first scenario the annual estimated cost is 1.70 million US$ and for the second scenario the annual estimated cost is 0.26 million US$.

For the treatment estimates, cost here is calculated at two rates, one is at subsidized price in which government purchases the medicines, blood at approved government rates and vaccines at GAVI prices. Second is at the current market prices for pneumococcal and medicines, and blood at government (SACO) approved private rates. Estimated cost for treatment (at subsidized price) is 1.15 million US$ and 2.96 million US$ is at market prices.

Conclusion: Considering the current feasibility, implementation challenges, financial and political will- the suggested options for the state are- the second scenario (universal maternal solubility testing) for screening and subsidized price rates for treatment.

Cost estimation for the "Free Diagnostic Services" scheme in Chhattisgarh, India

Narayan Tripathi, Denny John, Pradeep Tandan, Fidius Kerketta, Samir Garg

Background: National Health Mission (NHM) is planning to roll out free diagnostic services initiative. Primarily aimed at reducing high out of pocket expenditure on diagnostics and to encourage rational decision making regarding disease management. Though it was never thought about to have an estimate of budget for functioning diagnostics services in the state. This was the first attempt by this study to estimate the annual operating cost for diagnostics services viz. facility wise as well as cost for diagnostics services under National Health Programs.

Methodology: The cost estimation was done to find out the operating costs i.e. by assuming the current setup and standards of HR deployment and equipment. Review of the guideline for free diagnostic services was done. Diagnostic services under national health programs i.e. malaria, tuberculosis, HIV and maternal and child health component were covered. Based on their current rates in the Chhattisgarh estimated number of cases which needs to be tested under these programs was calculated from the projected population of Chhattisgarh for year 2016-17.

For facility wise costing of diagnostic services data was collected from monthly field visits of Kondagaon and Surguja district. From both the districts facility-wise data were collected for the span of four regular months and cumulative utilization rates were estimated for each type of diagnostic tests. Unit costs for each diagnostic service have been derived from two non profit and non government hospitals. On the basis of IPD and OPD, first cost estimations at PHC, CHC and district hospital level have been done for these two districts. Further cost estimations for all the facility of Chhattisgarh have been done.

Results: This study suggests ₹3641 Lakh annually as an operational cost for diagnostic services under national health program and ₹4718 Lakh annual cost for facility wise diagnostic services. Thus a total of ₹8359 Lakh was estimated as an annual operational cost for diagnostics in the state assuming the current setup and standards of HR deployment and equipment.

Conclusion: The proposed estimated cost is feasible and is 2.5% of total medicine and public health budget of the state. With the estimates of this study government can allocate budget on diagnostics to the health facilities and starts the free diagnostic initiative in the state as a flagship program.

Capital and operational costs of civil hospitals in Chhattisgarh, India

Narayan Tripathi, Prabir Chatterjee, Denny John, Samir Garg, Rajesh Sharma

Background: The analysis of costs of operations and capital costs of civil hospitals can help hospital administrators and policy makers to the extent to which these institutions are able to meet the health needs of their constituencies. To the best of our knowledge, not many comprehensive studies has been carried out in Indian hospitals to calculate the operating costs of the hospitals or the unit costs of a Cost Centre (a program or department within a hospital). The present study is the first of this nature in Chhattisgarh to estimate the capital and annual operational expenses for public hospitals.

Methodology: IPHS Standards for Sub Divisional Hospitals were used to plan hospital equipment and staffing.30-50 bed was used as basis for 50 bed figures. 51-100 bed was used as basis for 100 bed figures. CHC standards of IPHS were used as a basis for 30 bed figures. Rates for most of the equipments were collected from CGMSC latest rate list and few were collected from internet sources. For Community Health Work (camps, travel, and National Programmes) we assumed that the Civil Hospital will cover one block and so CHC standards of IPHS (which assume significant community health action) were used in all three cases. For recurring costs (Stationery, Telephone, Laundry, Housekeeping, Water and Electricity and Contingency) for the hospitals we took real data from public hospitals with same 30,50 and 100 bed.

Results: The total cost estimations (capital and operational costs) for these hospitals are ₹378.4 lakhs, ₹776.7 lakhs, and ₹1082.7 lakhs for 30-bed, 50-bed and 100-bed hospitals. Equipment costs comprised the largest component of the capital costs and human resources cost the largest component of a hospital's total operating cost for the government's civil hospitals.

Conclusion: This study provides information on the capital expenses and annual running costs for 30 bed, 50 bed and 100 bed Civil Hospitals in Chhattisgarh at 2016 prices. Further research on estimating unit costs of service provision using data from these hospitals need to be conducted in state of Chhattisgarh and compared to these cost estimations to understand the real difference.

Cost analysis of implementing m-health intervention for maternal, newborn & child health care through community health workers: Assessment of ReMiND Project in Uttar Pradesh, India

Shankar Prinja, Aditi Gupta, Pankaj Bahuguna, Ruby Rani

Background: A mobile health application, which served as a job aid for strengthening counselling skills of community health volunteers, called as Accredited Social Health Activist, was introduced in a rural area of Uttar Pradesh state in India. The overall aim of the ReMiND project was to improve coverage of health services among pregnant women and thereby reduce maternal newborn and infant mortality. We undertook this study to assess the unit cost of implementing ReMiND intervention and estimating its scale up costs in Uttar Pradesh state.

Method and Materials: Economic costing was done from both the health system and societal perspectives. All resources used during designing & planning phase i.e., development of application; and implementation of the intervention, were quantified and valued. Capital costs were annualised, after assessing their useful life and accounting for depreciation. Shared or joint costs were apportioned for the purpose of the intervention. Total annual costs, besides cost per capita per year and per pregnant woman registered were estimated. Scale-up cost for implementing the intervention in entire Uttar Pradesh state was calculated under two scenarios – firstly, if no extra human resource were employed; and secondly, if the State Government employed the same pattern of human resource as employed under the ReMiND project.

Results: The annual cost for rolling out m-health intervention in two blocks of district Kaushambi was INR 12.1 million (US $ 191,894). The annualised start up cost constituted 9% of overall cost while 91% of cost was attributed to implementation of the intervention. The health system cost of providing m-health intervention under ReMiND was estimated to be INR 31.4 (US $ 0.49) per capita per year and INR 1294 (US $ 20.5) per registered women. From a societal perspective, the cost of ReMiND was INR 76.5 ($ 1.21) per capita per year and INR 2382.3 ($ 37.6) per beneficiary. The per capita incremental cost of scale up of the intervention in Uttar Pradesh was estimated to be INR 4.39 (US $ 0.07) when no additional supervisory staffs were added.

Conclusion: The cost of scale up of m-health intervention in Uttar Pradesh is 6% of annual budget for reproductive and child healthcare, and hence appears to be financially sustainable. An incremental cost effectiveness of this m-health intervention should be undertaken to assess the value for money.

Cost - Effectiveness of Autologous Stem Cell Treatment as compared to Conventional Chemotherapy for Treatment of Multiple Myeloma

Shankar Prinja, Gunjeet Kaur, Pankaj Malhotra, Gaurav Jyani, Raja Ramchandran

Introduction: Multiple myeloma is a malignant disorder which ranges from Monoclonal Gammopathy of Unknown Significance (MGUS) to Plasma Cell Leukemia. It constitutes 13% of all hematological malignancies in India. Recent innovations in its treatment include high dose chemotherapy with autologous stem cell transplantation. This study was undertaken to estimate incremental cost per quality adjusted life year gained (QALY) with use of High Dose Treatment (HDT) i.e. High Dose Chemotherapy and Autologous Stem Cell Transplantation as compared to Conventional Chemotherapy alone in treatment of Multiple Myeloma.

Methods: A combination of decision tree and Markov model was used to ascertain the cost effectiveness of High Dose Chemotherapy with Autologous Stem Cell Transplant as compared to Conventional Chemotherapy. Incremental costs and effects of Autologous Stem Cell Treatment were compared against the baseline scenario of Conventional Chemotherapy in the patients of Multiple Myeloma. Future costs and consequences were discounted at 5% for time preferences of cost and utility. Consequences were valued in terms of cost per QALY in both baseline and comparator scenarios. Results are presented in terms of Incremental Cost Effectiveness Ratio (ICER) of using Autologous Stem Cell Treatment as against Conventional Chemotherapy for treatment of Multiple Myeloma in both health system and societal perspective.

Results: From societal perspective, Incremental Cost per QALY gained is INR 334,433 for current mix of patients and INR 180,434 for early therapy. From health system perspective, Incremental Cost per QALY gained is INR 263,440 for current mix of patients and INR 193,270 for early therapy.The health system and out of pocket cost of bone marrow transplant per patient was estimated to be INR 160,027 and INR 235,500 respectively. From societal perspective, cost of treatment of multiple myeloma per patient per QALY is INR 160,922 for autologous stem cell treatment and INR 157,438 for conventional chemotherapy.

Conclusion: With current mix of patients, Stem cell treatment for multiple myeloma is marginally cost-effective as compared to conventional chemotherapy. Intervention to those detected early will be more cost effective than the current scenario. To our knowledge, this is the first economic analysis of treatment options for multiple myeloma in India. The clinical decisions for treatment of multiple myeloma should be based on value for money among different alternatives.

Economic Burden of Parkinson's on People with Condition, their Family and Society: Some Methodological Issues Emerged from the UK Study

Anil Gumber

Over 127,000 people and families are affected by Parkinson's in the UK; projected to rise to 161,000 by 2020. Parkinson's is a progressive, degenerative condition that primarily affects the nervous system. People with Parkinson's (PwP) experience varied motor and non-motor symptoms throughout its course. Provision of health and social care services to manage the condition poses a huge economic burden on PwP, the Government and society. There is a lack of research in estimating cost of Parkinson's in the UK. This study was conducted with following objectives: (a) to assess the economic cost of Parkinson's; (b) to improve understanding of economic and social consequences of Parkinson's on the individuals and their families; and (c) to investigate various cost dimensions related to treatment cost borne by the government, direct and indirect medical cost to PwP, social care costs borne by the local government, paid/unpaid carer costs to PwP and their families and societal costs (in terms of productivity loss arising due to PwP and Carers' inability to work).

A mixed-method approach was used (i.e. UK wide postal/online survey and select in-depth interviews with PwP and their carers). The quantitative survey covered all four countries of the UK and collected detailed information on various cost drivers of health care, social care, and informal care components. Responses were received from 853 PwPs/Carers; however due to missing information 776 PwP households were included in analysis. A majority of PwP were men, over aged 65 and studied beyond GCSE and currently married. In contrast, a majority of caregivers were women (mainly spouses of the PwP) with over-representation in younger age groups with a mean age of 62.6 years (compared to 67.1 years for PwP). About 74% of PwP and 56% of carers had retired from the workforce; only about 12% of PwP and 31% of carers were currently working. Nearly 72% of PwP were living in their ownership houses and with spouses or with their children and extended family. Just 14% of PwP were living alone. The mean household size was 2.

More than 50% of PwP and 33% of carers reported having a direct impact of Parkinson's on their employment and working conditions. Working PwP lost 62 workdays/year and reduced weekly hours by 12; caregivers lost 19 workdays/year and reduced 11 weekly hours 35% of PwP forced to take early retirement, or unable to work due to illness/incapacity or looking for a job adaptable to the needs of their Parkinson's. Direct and indirect annual employment earnings losses were £10,731 per PwP household; additional living and caring expenses were £3,622 and healthcare out-of-pocket expenses were £2,229; all these added up to £16,582 Thus the annual cost of Parkinson's care was a huge burden on their resources (as majority of PwP household had annual income under £30,000). The healthcare cost to the government was £2118 and exchequer loss £1423; thus societal costs amounted to £20,123 per PwP household. Parkinson's directly deteriorated their quality of life, squeezed financial budget due to increased expenditure and reduced income and shattered their economic wellbeing.

WEST BENGAL HEALTH SYSTEM

Willingness to invest in health: A study in Kolkata city

Anuradha Mondal

In India, the available options of health insurance are employment and income centric, but the coverage in the formal sector is still weak and assuming if income is not a constraint for many, all potential afforders are also not insured. This study seeks to explore the scope of enrollment of private or market-based insurance schemes by interviewing 389 households in Kolkata city in the year 2012-13. The households covered in the study are both insured and uninsured. It is hypothesized, those who are insured through 'employer' may need to join market schemes if they lose coverage through employer or feel the requirement of extra coverage and benefits and those who are covered by market schemes may also have additional requirements. The study findings reveal, overall 27 percent of all households have expressed desire for joining in health plan. Willingness to join for market-based insurance is significantly high among uninsured (41 percent) as against 19 percent of the insured households. Regression models shows households who had ill members during last 30 days of the survey, hospitalized during last 365 days of survey, anticipated risk and in professional, services and allied jobs are more likely to join for health plan in future. Further analysis show, besides expressing desire for enrollment, the decision to join may get influenced by household's ability to pay and the hospital care coverage cost needed from health plan. Considering percentage share of annual income on paying premium costs, majority of the households are willing to pay 1 to 3 percent of their annual income. Households with better income prefer to pay low premium amounts. Thus, within the mentioned premium amount, if households do not get desired hospitalization care coverage, then, 12 to 18 percent out of those who expressed any desire for buying health plan will stay as potential buyers. This situation can be avoided if households are well informed about the schemes and are not made to enroll when they find it age and time appropriate.

Measuring the Multidimensionality of Household Catastrophic Health Expenses: Evidence from Rural West Bengal

Priyanka Dasgupta, Subrata Mukherjee, Nandini Ghosh

Background: Following a seminal paper by Wagstaff and Doorslaer, large number of empirical literature appeared measuring the degree and extent of households' catastrophic health expenditure. One of the major limitations of this approach is that it solely depends on expenditure (health, total, food/non-food) reported by households generally in cross sectional survey for measuring catastrophe. A multi-tensional concept of catastrophe which goes beyond its dependency on expenditure data can probably portray a better picture to capture households' catastrophe due to high health expenditure. This paper is an attempt in this direction.

Objectives: (i) to suggest a multi-dimensional measure for capturing household catastrophic health expenses; (ii) to empirically capture the extent of health expenditure catastrophe applying the suggested measure and examine their distribution across socio-economic groups using a sample from rural West Bengal; and (iii) identify the factors which affect the multi-dimensional catastrophe of health expenses.

Methods and Data Source: Borrowing ideas from Alkire and Foster (2008) on multidimensional poverty, the paper suggests a multi-dimensional measure of household catastrophic health expenses which appears to be free from many of the limitations of Wagstaff-Doorslaer's method of catastrophic health expenditure. A logistic regression model has also been used to estimate the probability of the factors to render catastrophic impact on the households across socio-economic categories. Qualitative case studies has also been undertaken to explore the latent findings of the quantitative results. The analysis is based on data set which comes from large scale cross-sectional household surveys carried out in four select rural blocks of Birbhum district in West Bengal. The survey was conducted in 2012 by the Society for Health and Demographic Surveillance (SHDS).

Results: In this paper, household specific health dimensions are developed that attempts to capture the catastrophic impact due to high health expenditure which affects households disproportionately and multi-dimensionally. The analysis revealed that distribution of the household dimensions of health variables that make OOP payments catastrophic in nature are more focused on the Scheduled Tribes (STs) and Scheduled Castes (SCs) households. Logistic regression results indicate that important determinants of catastrophic medical expenditure appear to be hospitalization cases and hospitalization outside state and/or district as well as hospitalization in private facilities. Also selling of land or ornaments improves the probability of the household bearing catastrophic medical spending by 3.79 while borrowing or mortgaging of assets increases it by 2.08 times.

Conclusion: The multi-dimensional measure to capture the extent of catastrophic health payments seems to better gauge the conditions of the poorer households as it is dimension specific. However, there remains a gap in incorporation of the variables that highlight the scenario of households after the high medical payments have already been incurred. This calls for the design of policies that identify even those households who do not seek quality medical care or further treatment due to resource shortage.

Construction and Use of Reproductive and Child Health Deprivation Index: Districts of West Bengal in India, A Case Study

Gargi Bhattacharya and Sushil Kr. Haldar

We propose one composite health deprivation index of reproductive and child health (RCH) parameters based on power mean formula used in the estimation of multi-dimensional human poverty index using principal component analysis(PCA). Since health sector is exclusively state's responsibility, we have carried out an analysis at sub-state level where districts are taken as unit of analysis. In order to facilitate the analysis, we have considered West Bengal as an example. Here our objective is to find out the relative positions of the districts of West Bengal in overall RCH status over time (1997-98,2003-04,2007-08,2012-13) and to use such RCH deprivation index to formulate and apply a fund allocation rule for disbursement and distribution of some kind of development grants among the districts within a state. Another objective of such kind of study is to suggest in what way, a district will allocate fund among different health components in order to combat deprivation in one hand and to ensure health equity on the other with the application of specific fund allocation principle. Using DLHS-IV data of 2012-13, a generalized method of allocation of fund is proposed here to ensure health equity and social justice at the disaggregate level. We apply this rule across 17 districts of West Bengal, India. However, one can apply this rule across all 601 districts in India where the RCH data are available.

Client satisfaction in Thalassemia Control Unit North Bengal Medical College and Hospital, Darjeeling district, West Bengal

Nilanjana Ghosh

Background: Health of a nation lies in hands of its people. India harbours a huge load of thalassemia, the fatal yet preventable condition, in various forms. Haemoglobin E has prevalence of 3-10% in West Bengal and is believed to be harboured mostly by Rajbanshis, who form majority of the local population in this terrain. Hence effective utilization of services provided is of utmost importance. Satisfaction of clients determines optimum service utilization, an indicator of effective health outcome and desirable health indicators. Accountability, accessibility, availability and sensitivity to felt needs of community by health staffs engaged in service delivery ensure satisfaction among beneficiaries. Thalassemia control unit (TCU) is a state government endeavour which aids in case and carrier detection through screening programs and there further management.

Objective: To assess client satisfaction among beneficiaries regarding various aspects of services provided to them at TCU and resolve issues with managerial skills.

Materials and Methods: Study was conducted in TCU of North Bengal Medical College for six months. Study subjects were selected by systematic random sampling technique pertaining to study criteria. 120 beneficiaries were studied. Predesigned, pretested schedule adapted from CSQ8 Questionnaire was applied and exit interview was done. Satisfaction of clients in different components was assessed and means scores compared. Health staffs were also interviewed.

Results: Among selected beneficiaries 40 were known to health staffs at clinic. Majority were adults, Hindus, females and illiterates. Satisfaction level regarding different components varied among respondents. Significant difference was noted among two groups of respondents regarding behaviour of staffs at the clinic. Managerial issues were addressed after prioritization and categorization.

Conclusion: Satisfaction levels varied for different components among respondents. Significant difference was noted regarding behaviour of staff to known beneficiaries. Various issues existed which were neglected but could be addressed with managerial skills. Appropriate health education and sensitive interventions may prove beneficial. However, a larger study with more representative sample is warranted.

Rethinking Palliative Care and Public Health Services in Urban Indian Context

M.N. Milky and Arnab Das

The pioneering works of Cicely Saunders 1960s onwards made Palliative Care (PC) and hospices embrace the end-of-life care needs of patients across the world. In 1986, World Health Organisation defined palliative care as the 'total active care' of patients who is not responsive to curative treatment. However, the improvement in anti-cancer treatments and technology enhanced survivals rapidly and made PC more inclusive. WHO radically redefined PC (WHO 2002) as 'an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness[…]'. Although some gaps in palliative care recently surfaced for interdisciplinary research and never highlighted in India comprise my research area: I tried to understand the lived experiences of cancer and how people talk about their illness and treatment experiences, and more particularly on the topics that are the participant's own expressed concerns. With a focus on social relationships and embodied care practices, I showed how forms of attention, obligation, giving, and receiving in this setting do not always equate with their counterparts in standard global health accounts. The data was collected using semi- structured interview schedule from purposively selected participants (10) after gaining informed consent. The study was undertaken in a govt. hospital and in a private nursing home of Kolkata, West Bengal; and the collected data was transcribed verbatim, to include insider's perspectives. And the findings were organized uder the following themes- (i)effective-yet-multiple constructs of care, (ii)in-situ mutual and co-constitutive training, (iii)qualitative research-as-therapeutic care-service, (iv)empathic identifications of PC problems and feasible recommendations. The nature of the content the current article is descriptive, specific and subjective, which tried to caregiving from a qualitative perspective and stress that qualitative methodologies may be beneficial in enhancing the capabilities of palliative care and subjective well- being.

Role of Patient Help Desks in government health facilities: An evaluation of Rogi Sahayata Kendras in West Bengal

Sulakshana Nandi, Arun Shrivastava, Garima Gupta, Nisha Singh, Tushar Mokashi, Rajani Ved

Background: Patient Help Desks, called Rogi Sahayata Kendras (RSKs) were set up by West Bengal in selected public health facilities as an 'innovation' under the National Rural Health Mission during 2008-09. The aim was to provide facilitation, information to patients for ease and timely access of services at the hospital. They were set up in phases across districts at the levels of District and Sub-Divisional hospitals and Medical Colleges and outsourced to NGOs. Before expanding this initiative to all higher (104) facilities, an evaluation was undertaken on behalf of the state government in January 2014.

Methods: In this qualitative study, data was collected through in-depth interviews of key informers, exit interviews, observation and review of secondary documents like guidelines, programmatic and financial data, programme registers etc. Group discussions were held with the RSK facilitators and ASHAs (Community Health Workers). Ten RSKs were selected spread over seven health districts (Kolkata, Diamond Harbour, South 24 Parganas, Pashchim Mednipur, Jhargram, Darjeeling and Coochbehar).

Results: At the time of study, 43 RSKs were functional across 19 districts with some facilities with high patient load having two RSKs. The visibility of the RSK for people coming into the hospital was found to be quite low in most cases, especially for non-literate people and mostly other hospital staff would send patients to the RSK.

The RSKs were involved in providing information and guidance to patients, maintaining records and documentation for the hospital, facilitating grievance redressal and acted as a liason between the patient and health staff. However, nearly everywhere, due to lack of regular staff, the RSKs were engaged in tasks that should have been done by other staff of the hospital (e.g. dispensing OPD/IPD tickets, issuing gate pass, weighing biomedical waste) and additionally, they were made to operate the RSBY counters, limiting their time to play their primary facilitation role.

Most hospital administrators showed a lot of ownership and interest in the RSK. However its effectiveness towards the patients depended on how much autonomy was given by the facility head. The management and hand holding support to the programme was weak. Though the state had initiated RSK facilitator trainings, there was an absence of systems for regular supervision, review and capacity building, especially at the state level.

Discussion and Conclusion: The function of facilitating patients and redressing their grievances is a very critical one that leads to building trust and a responsive and people centered health system. It can be instrumental in increasing access, especially of the vulnerable groups, to health services and improved health system outcomes. There is need for the RSKs to be made more patient-centric rather than hospital-centric so that they provide direct benefit to the patients in assistance, facilitation and grievance redressal, instead of using them to substitute for other necessary human resource.

A System Analysis of Revised National Tuberculosis Control Programme in a Tuberculosis Unit (TU) of Hooghly by Logical Framework Approach

Rivu Basu

Introduction: Tuberculosis (TB) is a top infectious disease killer worldwide. In 2014, 9.6 million people fell ill with TB and 1.5 million died from the disease. Over 95% of TB deaths occur in low- and middle-income countries, and it is among the top 5 causes of death for women aged 15 to 44. In 2014, an estimated 1 million children became ill with TB and 140 000 children died of TB.

In India the occurrence of TB has shown a steady decline over a decade. As per WHO Global TB Report, 2015, out of the estimated global annual incidence of 9.6 million TB cases, 2.2 million were estimated to have occurred in India. Thus with around 25% percent of the Global TB Burden of the World, and newer challenges coming up every day, TB still poses to be a significant public health problem in India. In terms of treatment of patients, RNTCP (Revised National Tuberculosis Control Programme) is the largest and the fastest expanding programme in the world. But no comprehensive system analysis has been done for the programme till now except one study in Himachal Pradesh. This study aimed at a comprehensive review of RNTCP at a TU (Tuberculosis Unit) in Hooghly District, West Bengal

Materials and Methods: The study was done in Chandennagar TU under Chinsurah DTO, West Bengal for 3 months (January , 2011 March, 2011). It was a cross sectional study with both qualitative and quantitative techniques of study. Primary data was obtained using supervisory checklists provided in DOTS module. A schedule for data collection regarding managerial procedures was also developed. Interviews were taken by one investigator with the help of a recorder. In Depth Interviews were done and also Focus Group Discussions.

Results: Chandannagar TU is poor in case detection rate as also Hooghly itself, besides Retreatment smear positive cases among all smear positive cases (%) rate is also low. However default and failure rates are better than others. The causes were searched in regards to Human Resource, Material management, mechanisms of Primary Healthcare, Planning Monitoring and Evaluation. Results were mostly due to poor Organisational Behavioral factors like poor motivational techniques, non orientation to programme objectives, lack of proper leadership, lacking of feedback, some problems of excessive involvement of private sector, lack of good Health Promotional activities, lack of community ownership, etc

Conclusions and Recommendations: Recommendations were generated by Logic Models to ensure ways for better referral from community /community ownership, higher case detections, better job motivation, and improving quality of reporting

Covariates of Maternal Health Inputs and Child Mortality in West Bengal: An Analysis Based on NFHS-3

Saswati Chaudhuri and Biswajit Mandal

Using data from NFHS-3 for India this paper attempts to look at various socioeconomic factors that account for the demand for maternal health inputs and eventually child mortality in an Indian state-West Bengal. Conditional Mixed Process is used to estimate the effects of renatal care, hospital delivery, and child mortality. It has been observed that the place of residence, standard of living, and educational level of women are those covariates that remarkably increase the demand for both the maternal health inputs. However, the whole analysis becomes futile if we do not identify the factors that can expose mothers and the households to the hazards of child mortality. We find that hospital delivery translates to lower child mortality. Age group of the mother and religious groups, nature of mothers' occupation, say in the household decision making, birth order of the child are also very important to influence child mortality.

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