INDIAN HEALTH ECONOMICS
AND POLICY ASSOCIATION (IHEPA)

(jointly organised by IHEPA, Pondicherry University
and Azim Premji University)

6th CONFERENCE ON

Health Economics and Policy:

Current Issues in India

IHEPA

BOOK OF ABSTRACTS

This collection contains abstracts accepted by Indian Health Economics and Policy Association from scholars. The index will guide you to the author and their abstracts. The collection is intended for use by the conference participants and others and will be available in the website **www.Ihepa.in** too. Abstracts of past conferences are also on the website. The views presented are those of authors and IHEPA respects the views but the usual disclaimers apply.

Compiled by Denny John

Edited by Dr Godwin SK

Conference Organising Committee

Prof. V Nirmala

Prof. M Ramachandran

Prof. Shreelata Rao Seshadri

Dr A Sankaran

Dr Yasmin Sultana

Dr. Subrata Mukherjee

Scientific Committee

Prof Achin Chakraborty

Prof D Narayana

Mr Denny John

About IHEPA

Indian Health Economics and Policy Association (IHEPA) is a professional body registered under the Societies Registration Act 1960. The need to have a formal body which would serve as a platform for discussing and sharing intellectual ideas pertaining to the Indian health sector was strongly felt by a group of like-minded health economists and policy experts. Over a period of four years, this group discussed, met and exchanged ideas towards the formation of an Association. The IHEPA is the culmination of this process, and has been created to enable economists and other social science researchers, policymakers and practitioners to exchange, deliberate and discuss key issues and strategies in the health sector, in India as well as globally.

Vision

A vibrant and dynamic association that encourages and facilitates the exchange and sharing of knowledge, ideas and experience among researchers, policymakers and practitioners working in and on the health sector

Objectives

- To offer a platform for learning, knowledge-sharing and networking to all those interested in contributing towards a more equitable and efficient health sector.
- To bridge the gap between research and practice by bringing together researchers/ academicians and policymakers, both national and international.

IHEPA welcomes young scholars and researchers, grassroots practitioners, the private sector and community-based organizations to become part of the organization, so that all views and experiences can be heard, debated and imbibed, if found useful.

While an Indian association, IHEPA would equally like to reach out to the international community of researchers, experts, managers and policymakers, and include them in its fold to make it into truly global association.

Membership

Membership of the Association is open to all individuals and institutions engaged and interested in contributing towards evidence-based discourse and discussion relating to the health sector. Membership is in the following categories: Individual-Annual, Individual-Life, Institutional-Annual, Institutional-Life and Student.

IHEPA welcomes all to join and strengthen the association to make it a vibrant and productive body of excellence in health research and policy.

For membership application form and other details please refer below, and for any addtional queries please contact secretary.ihepa@gmail.com or office.ihepa@gmail.com.

Our Collaborators

Pondicherry University: Pondicherry University was established under an Act of Parliament in the year 1985. The thrust areas of the University are Research and Innovations, both in Science and Social Sciences, which has gained national visibility. It has grown from strength to strength and is presently one of the sought after educational hubs of the country. It has the latest infrastructural facilities, offering the students a friendly and result-oriented academic environment. The intellectually stimulating milieu, good pedagogy, and a multi-cultural environment make the University very distinct and unique educational institutions of the country. School of Management (SoM) is one of the popular Schools of Excellence in the campus that primarily focuses on business related courses since the very inception of the University. This school includes Department of Economics, Department of Management Studies, Department of Commerce, Department of Tourism Studies, Department of Banking Technology and Department of International Business. **Department of Economics,** established in 1986, is one of the popular branches of study in Pondicherry University, primarily focusing on teaching, research and extension activities since its very inception. It offers M.Sc. (5 Year Integrated Course), M.A. and Ph.D. programme, with a wholesome competitive focus. Continuous research activities are conducted in the department in various areas like macroeconomics, entrepreneurship development, microfinance, development studies, public finance, international economics, monetary economics, financial economics, health economics, economics of education and gender studies. http://www.pondiuni.edu.in

Azim Premji University (APU): Azim Premji University was established in Karnataka by the Azim Premji University Act 2010 as a not-for-profit University and is recognized by The University Grants Commission (UGC) under Section 22F. The beginnings of the University are in the learning and experience of a decade of work in elementary education by the Azim Premji Foundation. The University was founded as one of the key responses to the constraints and challenges that the Foundation encountered both within and in the environment, and as part of a larger strategy to contribute to the Education and Development sectors in the country. More details are available at http://azimpremjiuniversity.edu.in/SitePages/index.aspx

SIXTH CONFERENCE OF INDIAN HEALTH ECONOMICS AND POLICY ASSOCIATION ON HEALTH ECONOMICS AND POLICY: CURRENT ISSUES IN INDIA

PONDICHERRY UNIVERSITY, 4-5 JANUARY 2018

Concept Note: Indian governments (including States) have been spending sub-optimally in health care since Independence and is getting worse over years. The National Health Policy pronouncements beginning with 1979 could make little headway in achieving goals like health for all. Even National Health Policy 2017 also aims changing health care landscape. Some reforms have been made viz., National Rural Health Mission (NRHM), Rashtriya Swastya Bima Yojana (RSBY) which address issues relating to increasing access to health care and the success has varied across States. The states too have come up with their own schemes for financing health to address their own issues. Recruitment, training and deployment have faced major challenges in different states and also within districts in states. However, the major promises in all National Health Policies (for example, public spending of 3 percent of GDP on health care) is still not achieved and health sector has become soft targets for the governments as it is not a political priority. Health care needs substantial policy attention to evolve so as to prevent avoidable mortality and morbidity. Tamil Nadu and Pondicherry health systems are one of the contemporary examples of well-functioning health care delivery systems and the rest of States can learn from them. It is in this context that we are organising the Health Economics and Policy Conference in association with Pondicherry University and APU.

Secretary

Presidential Address

Mutual Health Insurance: Ensuring Coverage to India's Missing Middle

Ramesh Bhat

President, IHEPA & Provost & Dean,
School of Business Management, NMIMS University

Abstract

India has seen impressive developments in health insurance space. The initiation of government-funded health insurance schemes and growth of private health insurance has paved the way to provide financial cover to a large section of the population. But the health sector still remains severely underfunded the health sector and leaving a large section of the population in the middle out of health insurance coverage. The government of India has a critical role in ensuring effective health coverage to the missing middle. There is lack of access to public facilities and qualified primary health care providers in urban areas often result in treatment delays or patients relying predominantly on out-of-pocket payments to informal providers. Most of the people in the middle are excluded from affordable health insurance markets. This address explores opportunities to fill an important gap in the access to health services specifically targeting the population in the middle by providing health insurance schemes that include primary health services through mutual health insurance approaches.

Panel Discussion 1
Use of Economic Evaluation in Health Policy Decision Making in India

The objective of all economic evaluations is to improve decisions, inform and support evidence on decision makers about the efficient allocation of scarce healthcare resources. Economic evaluations provide a means of translating relevant evidence of both cost and effects of alternative treatment strategies being compared. Though decisions are not purely based on economic considerations, they may be incorporated in the decision-making process in order to make efficient decisions.

Economic evaluations have been increasingly used in decision-making, and despite the large production of cost-effectiveness data, little is known about the actual use of such data, in countries such as India. The difficulties decision makers face in obtaining economic evaluations have been highlighted, due to shortage of relevant analyses or problems accessing those published. Outcomes (effects) are seldom viewed in relation to costs, i.e. clinicians are often concerned with clinical effectiveness. Local-level decision- makers often have no incentives to promote the status of economic evaluations.

Currently, the Medical Technology Assessment Board (MTAB) is being established within Department of Health Research, Ministry of Health, Government of India. This body is aimed to create guidelines, methodology, and processes for use of evidence using economic evaluations in the country in coming years. Thus, the topic is important for consideration in the current policy context.

Roundtable Discussion with Q&A

In this panel, the discussants will include members who are currently involved in conducting economic evaluations in healthcare and public health in India, USA, and UK.

Dr. Anil Gumber, Health Economist, Sheffield Hallam University

Dr. Miqdad Asaria, Health Economist, University of York

Mr. Denny John, Campbell Collaboration; NIMS-ICMR

Dr. Pravin Thokala, Health Economist, University of Sheffield

Dr Neethi Rao, Consultant, Imperial College, London

Moderator: Prof. Ramesh Bhat

Panel Discussion 2
Mathematical Modelling and Public Health

Abstract: Mathematical models for health, constructed based on realistic population dynamics and population interactions can be invaluable for policy makers. Historically such tools were found to be useful since 18th century. In recent two decades in India, mathematical models have been constructed for understanding disease transmission dynamics and policy formulations, for example for HIV, Swine flu, Avian Influenza, etc. In this panel discussion, an overview of modeling for Indian public health scenario with some historical world level prospects will be discussed and more in-depth overview will be provided by the panelists on HIV/AIDS modeling for Indian national planning and policy.

All the panelists participating in this discussion and the moderator served as members of national HIV/AIDS policy teams in India and they also served in committees of other disease policy formulations and model building studies in India and abroad.

Panelists:

Dr Arni S.R. Srinivasa Rao, Medical College of Georgia, and Laboratory for Theory and Mathematical Modeling, Augusta University, Georgia, USA.

Dr Kurien Thomas, Pondicherry Institute of Medical Sciences, Pondicherry, India.

Prof. Ramesh Bhat, Narsee Monjee Management Institute, Mumbai

Moderator: Kurapati Sudhakar, Centers for Disease Control and Prevention *(Formerly)*, US Embassy New Delhi.

Panel Discussion 3
Tamil Nadu and Pondicherry Health Systems: Issues and Challenges

Tamil Nadu: Tamil Nadu has made commendable progress in improving human development parameters like increased longevity, improved educational attainments, reducing poverty and increased health care coverage and improved maternal and child health conditions continuously since 1960s . Primary health care network has enhanced access to care along with improved social determinants of health. Since mid 1990s, a major innovation in the public health care delivery mechanism by way of a new drug distribution system that rationalised purchase and distribution of medicines to all public hospitals and primary health care centres. Rapid urbanisation also helped the State to improve its health care coverage and improved infrastructure. However, the State is facing two types of challenges: one of sustaining the existing achievements in the face of emerging health care problems and privatisation of health care and the other of meeting the unfinished agenda of ensuring access to all.

Pondicherry: Pondicherry, one of the most densely populated regions in the country has a wide network of public health care infrastructure. The population of Puducherry has an accessible medical care within an average distance of 1.18 kms through a network of Primary Health Centres, Sub Centres, Disease specific clinics besides 8 Hospitals. However, the serene UT is facing serious public health issues like suicide, alcoholism. Pondicherry has a suicide rate which is four times higher than the national average indicates the magnitude of the issue.

Discussion with Q&A

In this panel, the discussants will include members who had experience in the system and researchers of public health in the State.

Dr. Vaishnavi, IIT Madras, Chennai.

Mr. Ramasundaram IAS (Retd).

Mr Sundaravadivel IAS, Health Secretary, Pondicherry Government.

Moderator: Prof. Shreelata Rao Seshadri, Azim Premji University.

Special Lecture 1

Health Insurance Coverage and Financial Protection to the Poor in India: An Inter-State Analysis of National Sample Surveys Data

Anil Gumber[1], N. Lalitha[2] and Biplab Dhak[3]
[1]Sheffield Hallam University, Sheffield, UK
[2]Gujarat Institute of Development Research, Ahmedabad
[3] AN Sinha Institute of Social Studies, Patna

Abstract : This paper focuses on the cost of treatment, health insurance coverage, the extent of financial protection and key determinants of health insurance premium payments amongst BPL and APL households by examining the National Sample Survey data pertaining to four rounds of 1986-87, 1995-96, 2004 and 2014. The healthcare cost has increased over time, the gap between the public and private cost of treatment has reduced mainly due to the increased cost of treatment in public health facilities following the levying of users fees and reduced provision for free medicine. Since the mid-2000s, to address healthcare needs of the poor section of society, the public insurance companies introduced low-cost hospitalisation insurance schemes such as Jan Arogya Bima Policy and Rashtriya Swasthya Bima Yojana. The analysis of the insurance premium showed that a larger proportion of households who had paid premium in 2004 as well as in 2014 belonged to higher Monthly Per Capita Expenditure (MPCE) group and was economically non-poor. Further, the inter-quintile MPCE differential (between the top and bottom quintile) shows vast inter-state inequalities in terms of both percentage of households who paid a premium and percentage having health insurance coverage. The determinants of a household getting enrolled for health insurance suggest that the gaps in odds ratios of several attributes either got reduced in magnitude or disappeared mainly due to encouraging enrollment from the poor households in RSBY. At All-India level, the insured households on average had reported higher hospitalisation expenses than the non-insured households with much higher differential for urban households; thus indicating moral hazard and insurance collusions particularly in cities of economically prosperous states of Punjab, Haryana, Gujarat, and Maharashtra. The analyses further demonstrated that the insurance has provided a very minimal financial relief to BPL households especially living in rural India.

Special Lecture 11

Models of health-seeking behaviour: Insights from behavioural economics

Achin Chakraborty
Professor & Director, Institute of Development Studies Kolkata

Abstract: "Under-treatment" or non-compliance with treatment regime is an important issue in public health policy, particularly for communicable diseases. The standard policy idea is to reduce the costs and enhance the benefits as perceived by the individual patient. The externalities that characterise the communicable diseasesjustify subsidising the cost of care. However, even after the treatment is made available free of cost, which should raise the expected net benefit from treatment significantly, non-compliance persists. Given this apparently puzzling treatment-seeking behaviour, among the patients suffering from tuberculosis, for example, it is no surprise that the standard model of consumer choice can hardly be any guide to deriving the demand for health care. The highly unsatisfactory household models of health care-seeking behaviour developed in the 1970s – either of the utility-maximising type or the human-capital type a la Grossman – gradually gave way to an emerging behavioural psychological turn in explaining health-care-seeking behaviour. In his classic paper Kenneth Arrow (1963) identified reasons why the health care market and the behaviour of the agents in the market differ significantly from the standard markets that economic theory deals with. Institutions have evolved to address this market failure in the health care market. We argue,with examples drawn on the Indian experience, how certain concepts and analytical tools developed by behavioural economists help us analyse the effectiveness of alternative institutional arrangements.

Disparities in Health Outcomes: A Study on Indian States

Debabrata Mukhopadhyay & Nityananda Sarkar
Indian Statistical Institute, Kolkata

This paper focuses on the disparities that persist in India's health sector across different states. Following the conventional measures of disparites such as standard deviation, coefficient of variation and Gini-coefficient,this work investigate the spatial variations across the Indian states with three basic health indicators viz., infant mortality rate (IMR), under-five mortality rate and maternal mortality ratio. The temporal variations in state-wise disparities of IMR for the period 1998 to 2012 are also analyzed. Finally, a multiple regression of IMR on variables representing health infrastructure and social factors is done to find their roles in health outcomes.

Keywords: Health outcome indicators, Infant mortality rate, Under-five mortality rate, Maternal mortality ratio, Spatial differences, State-wise disparities.

Nutritional Status of Primary School going Children in Mumbai, India: A Case study

Niharika Rao
International Institute of Population Sciences, Mumbai

The study aims to understand the nutritional status of young school going children aged 6-9 years in eastern part of Mumbai. It explores the role of socio-economic characteristics, food intake practice, daily routine and morbidity pattern of children in determining the nutritional status. Primary school going children require adequate nutrition for their healthy growth. The study assesses the levels and determinants of nutritional status of primary school children of grade 1st and 2nd. An exhaustive list of schools in eastern suburb of Mumbai, India was prepared and the schools were requested to give permission for the survey. Data was collected from 557 students of 1st and 2ndgrade. Anthropometric measures like height and weight of children was measured using electronic machines. Height-for-age (Stunting), Weight-for-age (Underweight), Body Mass Index (BMI) were calculated to analyze the nutritional status. Nineteen percent children are found to be stunted, about a

quarter is having low BMI and27 percent are underweight. Factors that have significant negative impact on nourishment are intake of baby tin milk, avoidance of breakfast, use of certain types of cooking oil, drinking of inadequate water, and childhood chronic diseases. Undernourishment is much more dependent on food habits and morbidity rather than socio-economic factors. Provision of nutritious school breakfast, frequent intake of drinking water, school based de-worming programme can help curbing under nutrition among young children in India.

Prevalence of Multiple morbidities among older adults: A study of Urban Jaipur

Kshipra Jain
University of Rajasthan, Jaipur

Context: It is equally important to assess whether increasing age is adding healthy life years or an increased span of poor health and disability to human life. The World Health Organization's (2008) estimates show that non-communicable disease (NCD) account for 55% of the deaths among population in the age group of 15-60 years whereas it is as high as 73% for the older population aged 60 years and above. In India, more than half of the burden of NCDs and 25% of total disease burden occur in the age group of 45 years and above (Chatterji et al., 2008) which is projected to increase to more than 45% by the year 2030 (Arokiasamy et al., 2015). Further, owing to various unmet developmental needs and considering the huge demand for health care infrastructure, government is still struggling to provide for affordable health care services for all. Hence it becomes essential for an individual to adequately and appropriately arrange for own health care needs to the best possible extent;

Objective: The study attempts to explore the prevalence of morbidities and multiple morbidities among the older population aged 50 years and above. Also, the study delves into the self rated health status and determinants of multiple morbidities.

Data source and Methodology: The study is based on primary data collected from 400 older adults aged 50 years and above from urban Jaipur using self administered questionnaire. The study has used uni-variate, bi-variate and multi-varaite analysis to meet the specific objectives. In multi-variate analysis, Poisson regression is used to assess the effect of predictors on prevalence of multiple morbidities.

Conclusion: The study reveals that more than 50% elderly with high level of financial literacy reported good health status compared to 20% elderly with low level of financial literacy. The study also presents data on prevalence of multiple morbidities among elderly and results revealed that elderly belonging to non SC/ST/OBC group and non-poor household in the age group of 60+ were at a higher risk of multi-morbidities while those with high level of financial literacy were at a lower risk than their counterparts.

A State-Level Situational Analysis of Availability and Distribution of Public Health Services in Rural India

L.Ganesan and R. Senthamizh Veena
Bharathidasan University, Tiruchirappalli

India as a nation is committed to the attainment of 'Health for All' by 2020 AD through the universal provision of comprehensive primary health care services (Planning Commission, 2002). In order to materialize this goal of rendering health services to all, availability of adequate number of health centres with required facilities and health personnel with suitable skills are fundamental. Further, their appropriate deployment at different levels of health care set-up is also crucial for the attainment of this 'Health for All' vision. Thereby this study sees through the availability and distribution of health infrastructure and health personnel in rural areas of all the states of India. The study finds that there is large amount of non availability and uneven distribution of rural health centres and health personnel in rural areas of the Indian states and this problem will be a central challenge in meeting our health goals. Therefore the researchers call for sustainable and evidence based health infrastructure and health personnel plans to address the imbalance in rural health services.

Neglect of Menstrual Disorders in Reproductive Health Care in India: A Population-based Survey

Enu Anand[a], Prakash Kumar[a], Sayeed Unisa[a] Jayakant Singh[b]
[a] International Institute for Population Sciences, Mumbai.
[b] Tata Institute of Social Sciences, Mumbai

Background: Research on menstrual problem is largely a neglected concern within the reproductive health domain in low and middle-income countries. This study is an attempt to examine the prevalence of menstrual problems and its association with various socio-economic-demographic and reproductive health factors.

Methods: The study used fourth round of District Level Household and Facility Survey data conducted in 2012-13. Information on menstrual problem was gathered from a total of 2,28612 currently menstruating women aged 15-49 years. Menstrua problem and its association with reproductive health factors were examined employing bivariate and multivariate analysis.

Results: Twelve percent of the respondents complained of any menstrual problem of which pain during period (5.6%) followed by irregular periods (4.3%) were the most common menstrual problems reported. The odds of reporting menstrual problems were higher among women who had an abortion, ever used any contraception particularly female condom, those deliveries conducted by the use of instrument and any reproductive tract infections after controlling for the confounders.

Conclusion: The findings of the study indicate menstrual problem to be a serious public health concern. In fact, the burden of any menstrual problem is higher than any gynaecological complain among Indian women. Therefore, at the outset there is a need to recognize menstrual problems as concerns in reproductive health of the women. Emphasis must be made to provide and seek treatment of menstrual problems in the primary health care as part of reproductive health care services.

Occupational Health Problems at Ship-Breaking Industry: A Case Study of World's Largest Ship Breaking Yard

Hrudanand Misra
The Mandvi Education Society Institute of Management, Surat

Ship-breaking is the process of dismantling an obsolete vessel's structure for scrap. In India, the Alang ship-breaking yard is one of the active yards, which is also considered to be the world's largest ship-breaking yard. In developing countries like India, the ship-breaking activity is labour-intensive and is also considered as one of the hazardous industries. International Labour Organization also recognized that ship-breaking activity is harmful for human health. Health problems are common for all ship-breaking yards in the world and also for Alang. The main aim of this paper is to examine the health problems faced by workers at Alang ship-breaking yard and also to identify the various associated factors with health of the workers therein. The findings show that malaria is common disease outside the yard and 211 out of 300 workers faced health problems at Alang. It has also found that 9 out of 100 workers are vulnerable to illness at the yard. This ratio is very high for an organized industry.

Transformation in National Health Care System: A Critical Evaluation

Shailender Kumar Hooda
Institute for Studies in Industrial Development (ISID), New Delhi

This paper highlights that India has been compromising the goal of comprehensive provision of public health services, which are essential for making a healthier society, especially in the post liberalisation phase. Over a period of time the privatisation in healthcare has not only been promoted but also facilitated to expend and grow further especially with the adoption of financialisation approach in the health sector. Country's approach to finance healthcare has been shifting from the tax-funded provisioning of services for

achieving universal health access to the tax-funded health insurance merely to achieve health coverage. Insurance based financing mechanism, however, has largely been unsuccessful to deliver on either health outcomes or financial protection grounds. The comprehensive healthcare provision turned out be essential for ensuring equitable, accessible and affordable healthcare services and protecting households from the devastating consequences of out-of-pocket payments. The strategic purchasing idea of national health policy 2017 for promoting privatisation is not based on adequate empirical evidences and not sustainable which would further aggravate crisis in healthcare sector.

Socioeconomic Inequalities in Utilization of Delivery Care Services in Uttar Pradesh, India: Evidence from NSS 2004 and 2014

Saroj Kumar[a] and William Joe[b]

[a] University of Delhi, Delhi, [b] Institute of Economic Growth, Delhi

Improving the health of children and women remains a challenge for India. Uttar Pradesh has reduced major health indicator in the last decade but it is still below from national average and other states. The objective of this study is to examine inequalities in utilisation of delivery care services across geographic, social and economic groups in Uttar Pradesh. The data were taken from a nationally representative of National Sample survey (NSS) data from two round one from 60th round conducted in 2004 and latest round of health is 71st came out in 2014. The concentration index and concentration curve was used to measure the socioeconomic inequality and decompose into its determining factors. This study also used absolute and relative inequality to measure the pair-wise comparison across the socioeconomic gradients. The dependent variable is place of delivery has categorised into three forms: public, private and home delivery. This variable has created as a dichotomous variable to coded as a Yes=1, Otherwise=0. Socioeconomic and demographic variable included as independent variable for analysis. The result shows that the concentration index for public sector delivery in Uttar Pradesh shows negative sign (-0.103) and indicates greater concentration among women from low-income households. The concentration curve shows for public sector delivery in 2004 below the line

of equality and above the line of equality in 2014. The decomposition analysis find out that the variable like mother's education, mother's age between 30-39 years, occupation with regular based salaried, ST, education of head of the household with higher & above have significant contribution of inequality in institutional delivery. In conclusion, post-NRHM, there is significant reduction in socioeconomic inequality and poor households are able to benefit from expansion in public health delivery care services.

Keywords: Socioeconomic inequality, delivery care, maternal health, decomposition

Another look at the perceived current and changed health status among the elderly population in India: Insights from NSSO 71st round data

Rinshu Dwivedi, Jalandhar Pradhan and Pallavi Banajre
National Institute of Technology, Rourkela

Context: Self Rated Health (SRH) is a measure to express the general health conditions of health among the individuals and households. SRH studies are common in developed countries and in some developing regions. Plenty of literature is available on current SRH and changed SRH in context to developed countries, however in India only a limited number of studies have been carried out in the present context.

Objectives: This study is an attempt to examine the multidimensional aspect of SRH and its association with various socio-economic and demographic covariates. This study aims to, explore the current and changed perception of the own health status among the elderly and secondly to identify various factors that influences the perception of health among the elderly.

Conceptual framework: In order to investigate various factors associated with SRH among elderly we have partially derived the framework of the study from Ocampo (2010). The concept of SRH is associated with various factors like demographic variable, social factors, biological factors, mental and

psychological variables, physical health status, number of morbidities among elderly and use of health care services and institutionalization of the services.

Data and Methods: Data was extracted from the key indicators of social consumption in India: Health, National Sample Survey Organization (NSSO), 2014. Hierarchal Regression was used for the analysis five sets of models were introduced and the result of final model is presented after the introduction of 11 variables. Results shows that 5 variables were statistically significant for both current SRH (adj. R2=0.054) and changed SRH (adj. R2=0.026). The most important factor that was influencing SRH among elderly for both current and changed perception of health status are: individual's physical mobility,(β value; current = -0.237, Changed=0.287); State of economic dependence (β value; current =0.086, Changed =0.082); Age (β value; M=0.058, F=0.071); Marital status (β value; Current =-0.042, Changed = -0.476); Living arrangement (β value; Current= -0.286, Changed = -0.284).

Conclusion: Physical mobility, State of economic dependence and increasing Age were the important predictors of Self rated health in India. Lack of tertiary care, inadequate pension schemes and limited insurance coverage in India, has resulted into more vulnerable health outcomes among the elderly population.

Key words: Healthcare; Self rated health; Hierarchal Regression; elderly.

Macroeconomic growth empirics and diffusion of health care technologies

Deb Ray
University of Eastern Finland, Finland

Analysis of cancer and TB mortality rates with 144 and 196 countries respectively for 1970 – 2012 is done. To get more reliable picture how these rates are affected by health care technologies, health care resources and relevant socio-economic variables are added to the analysis. Methods of trend growth and convergence analysis, found in economic growth empirics, are used to analyze the effects of global catch-up of health care technologies through diffusion between more and less advanced countries. The results show that there is evidence of larger declining trend growth process in low income countries for both illnesses when compared to higher income countries. However, the speed of declining mortality rate processes has been slowing in high income countries in recent decades. Both σ- and β- convergence is found to be present for TB. Conditional β-convergence in TB is larger when HCT and socio-economic factors are added to the test models. For cancer mortality, no clear evidence of σ-convergence is found. However, when technologies and socio-economic factors are added to the β-convergence model, the convergence rates are the largest in lower income countries for both illness. Contrary to this, in 1995 – 2012, β-convergence of cancer with technologies and socio-economic variables disappear.

Tracing the trend, predicting the future value and finding influencing components of IMR in India and Tamil Nadu

M. Chitra & Muni Selvam

Today saplings will be tomorrow trees; like that today's infants will be tomorrow human capital. In addition, Infant mortality rate is an indicator used to monitor progress towards the Fourth Goal of the Millennium Development Goals of the United Nations for the year 2015. It is now a target in the Sustainable Development Goals for Goal Number three. ("Ensure healthy lives and promote well-being for all at all ages"). Health is a component of Human Capital Formation. The healthy human capital is formed from its root level; it means that from their childhood. Hence the childhood and infant stage is an important in human capital formation. The infant mortality rate mitigation is one of the goals for all kinds of economy. Hence, the researcher made an attempt to reveal the trends of infant mortality rate, its components, predicting the future rate of the same and estimated which components of IMR influencing the risk of infants in Tamil Nadu and India.

Patterns, factors associated and morbidity burden of asthma in India

Prakash Kumar, Usha Ram
International Institute for Population Sciences, Mumbai

Background: Asthma is a non-curable but preventable disease, responsible for higher morbidity worldwide. According to recent WHO report, nearly 235 million people are suffering from asthma leading to 383000 deaths in 2015. The burden of asthma morbidity is higher in developed countries and is increasing in developing countries..

Objective: The present study was aimed at studying the change in prevalence rate of asthma, associated risk factors and estimation of morbidity burden and avoidable cases of asthma in India.

Methods: The second round of Indian Human Development Survey (IHDS-II), 2011-12, was used for the study. For the present study, asthma was defines as ever diagnosed with asthma or having cough with short breath. Multiple-logistic regression was used to identify the possible risk factors associated with prevalence of reporting asthma. Population attributable fractions (PAFs) were computed to estimate the overall and risk factors specific burden of morbidity due to asthma using the extrapolated population of year 2015 using 2011 census.

Results: Overall prevalence rate of asthma increased from 41.9 (per 1000 population) in 2004-05 to 54.9 (per 1000 population) in 2011-12. The prevalence rate of reporting asthma was higher in poorer states compared to richer states, and also varied by sub-geographies, with higher prevalence rate in northern states of the country and lower rates in north-eastern states of the country. The odds of reporting asthma was higher for younger and older ages, individual with fewer years of schooling (OR: 1.41; 95% CI: 1.21-1.64) for individual with zero years of schooling compared to those with 11 or more years of schooling, individual from lower economic status, individual living in household using unclean fuels (OR:1.21; 95% CI: 1.08-1.34) and smokers (OR: 1.34; 95% CI: 1.17-1.55) compared to their counterparts. In the year 2015, the overall morbidity burden of asthma was estimated at nearly 65 million and more than 82 thousand deaths were attributed due to asthma. The burden was highest among individuals living in households using solid fuels (firewood~80%, Kerosene~78%). One-third of the cases could be eliminated by minimising the use of any solid fuels. Around 17% of all the asthma cases in population could be attributed to underweight.

Conclusion: Eliminating the modifiable risk factors could help reduce in huge amount of asthma cases for example by providing education, cessation in smoking, and schemes like Pradhan Mantri Ujjwala Yojana (PMUY), by providing clean fuel (LPG) to poor and vulnerable households.

Effect of contraceptive use on child mortality in India: A calendar data analysis

Ankita Shukla
International Institute for Population Sciences, Mumbai

Data from around the world suggest that benefits of contraception extends well beyond birth control and plays a pivotal role in health of mothers and their children. Indian scholars too have found the negative relationship between contraceptive use and child health outcomes mostly by investigating the relationship between birth interval and mortality risk. So far none of the studies done in India tried to directly examine the use of contraceptives before birth on child's risk of dying. Present study utilizes information of contraceptive history given in calendar data in NFHS-3 to understand the interlinkage between contraceptive use, birth interval and risk of child mortality. It was found that birth intervals in India increases significantly with the use of modern as well as traditional contraceptives. Independently both contraceptive use and birth intervals are protective against child mortality. The risk of infant mortality (Hazzard ratio=0.34; 95% CI = 0.15, 0.78) and under-five mortality (Hazzard ratio=0.28; 95% CI = 0.13, 0.64), is significantly reduced for each month when reversible contraception uses and birth interval overlaps. Here, it is concluded that by and large, the impact of contraceptive use on birth interval and child mortality is visible in India. Contraceptive use can reduce mortalityby preventing unwanted and high-risk pregnancies and making women more aware of maternal and child health services. Such information is important for evidence-based advocacy to expand family planning care in low-resource setting such as India.

A Simple Model of Health, Health Production and Input Financing

Saswati Chaudhuri & Biswajit Mandal
St. Xavier's College (Autonomous), Kolkata, India, Visva-Bharati University, Santiniketan, India

In this paper we developed a model of health production and input financing in line of standard health capital model. We also introduced the concept of governance and awareness that are important in health production. We first deduce the equilibrium condition in such backdrop. Then we further extend the model to examine how the optimum tax rate is determined in a system where some or all health inputs are financed by tax revenue. We start with Cobb-Douglas type of utility and production functions and show that the tax rate must not be an arbitrary one. It depends on how much importance we assign with what. Then we further extend the model for comparison between constant and increasing returns to scale cases where inputs are not identically used in health production. It has also been found in the end quite contrary to conventional understanding that increasing returns to scale in health production calls for higher tax rate.

Gender Disparities in Health Care Financing Strategies for inpatient care in India

Moradhvaj & NanditaSaikia
Jawaharlal Nehru University, New Delhi

Background: Despite the presence of vast literatures on health care financing strategies (HCFS) in developing countries, limited evidence exists on gender disparity in HCFS for inpatient care.

Objective: We aimed to examine gender disparity in HCFS for inpatient care in India, a South Asian population giant widely known for gender-based discrimination in sex-selective abortion, nutrition and access to health care.

Data and Methods: Using data from nationally representative large-scale population based survey, we investigated the relationship between gender of the patient and sources of health care financing. Simple percent distribution, cross-tabulation, Chi-square tests and multinomial logit regression were carried to examine the role of gender on sources of healthcare financing for inpatient care.

Results: Average healthcare expenditure is lower for females across all age groups, yet disparity was the highest in the adult age group. Over all, females are hospitalized lesser than males, females are discriminated more when healthcare requires borrowing, sale of assets, or contribution from friends and relatives. Multinomial logit results show, that the probability of distressed financing is less for females, compared to males (Borrowing: β=-0.19; p=0.001; selling assets/contribution from friends and relatives β=-0.21; p=0.001). The predicted probability of using health care finance reveals that men's health during adult age is considered to be more important, to resort to distressed financing, compared to the female counterpart.

Conclusion: Women in India are discriminated during the process of hospitalization because of distressed health care financing and because of their gender.

Major Morbidity and Consumption Smoothing in India: Evidence from IHDS

Mohammad Kashif Khan
University of Hyderabad, Telangana

Health shocks are one of the most prompt shock faced by households, which are unpredictable. Illness, with its unpredictability and the associated very high direct and indirect costs, is assumed to be one of the major idiosyncratic risks that affect the level, and most importantly, the stability of consumption in the rural areas of the country. The objective of this paper is to examine the consumption smoothing with health shock in India. We are using Indian Human development Survey (IHDS) I & II nationally representative. We have applied Fixed regression model to examined the consumption smoothing with health

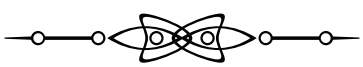
shock. We are taking major morbidity as an indicator of health shock and five different measure of consumption i.e. total consumption, food consumption, medical expenditure, non-food expenditure and non-food non-medical expenditure. The research hypothesis is that health will be insured. Second, a household with a better association and politically active will be able to insure household's consumption than their counterpart.

We found that household is able to insure their consumption face with major morbidity in India. The household that has network they have better insure among all category of consumption than a household with no network like a member of caste association, attended a public meeting and a member of credit association and development NGO. Model II, food consumption is unable to insure. The limitation of this study is that we are not including coping strategies for this paper.

High Spending on the Hospitalised Treatment of Accidental Injury, Road Traffic Accidents and Fall in India

Mohammad Zahid Siddiqui, Srinivas Goli, Shruti
Jawaharlal Nehru University, New Delhi

The objective of this study was to measure the levels of CHE on Accidental Injury, Road Traffic Accidents and Fall (AIF) bybackground characteristicsto identify key predictors and outline number of suggestive measures. The study used the 25th schedule of 71stround data from National Sample Survey (NSS). Two-part multivariate regression was the econometric model. The findings suggest that AIFaccount third largest ailment, showed the highest contribution to total OOPE of the households, even higher than heart diseases and cancers. OOPE on AIF imposes an inequitable financial burden on households, noticeable among lower economic status group living in rural area and seeking treatment in private health facility without having any health insurance.Provision of treatment to traumatic conditions through public health facilities and supporting lower economic status households with health insurance coverage will reduce the economic burden due to Catastrophic-OOPE on AIF by 15 to 30 percent.



Paying for On-Demand Treatment of Severe Haemophilia A Patients in the city of Mumbai.

Uma Jadhav
KEM Hospital, Mumbai

In India, the cost of treatment products of haemophilia and its erratic supply from government schemes compels persons with haemophilia to opt for on demand treatment than prophylactic treatment which is considered as gold standard as per WHO and World Federation of Haemophilia. However on demand treatment or episodic treatment of haemophilia is financially taxing for Indian patients. With bourgeoning population, demographic and epidemiological transition, rare diseases do not enjoy public health support. This has grave impact on higher out-of-pocket health expenditure (OOPHE) for families along with disease related impairments. The present study use haemophilia as a model to demonstrate higher medical expenses incurred by families suffering with rare diseases.

The broad objective of study was (1) to quantify expenses for payment of on demand treatment of severe haemophilia A paitents in the city of Mumbai (2) to describe utilization of health services by haemophilic family and (3) to study factors that contribute to high OOPHE. This was first comprehensive, cost-of-illness study in severe hemophilia patients in the city of Mumbai and its suburban region. It was cross sectional survey of 144 households reporting overall 160 severe haemophilic A patients of urban residents and the cost of care evaluated retrospectively concomitant with demographic, clinical and health system parameters. The average annual OOPHE for hemophilic households was INR 30028 of which, 59.79% of the costs constitute for Clotting Factor Concentrates, followed by 12.47% of indirect costs. The average annual share of OOPHE as a percentage of non- subsistence expenditure for households was 36.80% and 38.9% (n=56) of households facecatastrophic expenditure at 40% threshold. The study underscores the need to address rare disease patients in the policy formulation to ensure a better access to health care and high degree of financial protection against the impact of illness.

Distress financing of out-of-pocket (OOP) health expenditure in India: Evidence from NSS 71st Round

ShivendraSangar, Bhed Ram, and Ramna Thakur
Indian Institute of Technology, Mandi

Background: Out-of-pocket (OOP) payments are the principal means of health care financing in low and middle-income countries including India. Poor coverage of health insurance and inadequate public health care facilities are some of the contributing factors towards higher incidence of OOP health expenditure. Households use past savings, borrow money extensively and sell their assets to finance the OOP health expenditure. Therefore, the current study seeks to examine the incidence and socio-economic inequality among different sources of finance used as coping mechanism and the impact of different socio-economic and health-related covariates on the likelihood of using distress sources to finance the OOP health expenditure in rural and urban India.

Methods: We have used the cross-sectional data from National Sample Survey (NSS) 71st Round (2014) and concentration index, concentration curve and multivariate logistic regression to measure the level of inequality and association of various covariates and distress financing.

Results: Findings reveal that among inpatient cases, about 60% households in rural areas and 50% households in urban areas rely upon distress sources such as borrowings, contributions from friends and relatives and sale of assets to finance OOP health expenditure. Socio-economically deprived sections of society consisting of poor, Scheduled Castes, Scheduled Tribes, households practising minority religions such as Islam and households dependent upon casual/agriculture labour have greater likelihood of using distress financing to cover the OOP health expenditure.

Conclusion: We conclude that the higher incidence of distress financing is a major concern in India. Greater dependence of poor and marginalised groups on debt and sale of assets underpins the need of a comprehensive health financing system in the country. Adequate measures on the part of governmentare required to tackle this problem. The public health care facilities must be revamped so that the poor sections of population can utilize affordable health care. An extensive review of the existing PFHI schemes must be undertaken to remove any anomalies in their effective implementation.

Role of Insurance in Determining Utilization of Healthcare and Financial Risk Protection in India

Shankar Prinja, Pankaj Bahuguna, Indrani Gupta, Samik Chowdhury, Mayur Trivedi
Post Graduate Institute of Medical Education and Research, Chandigarh

Background: Universal health coverage has become a policy goal in most developing economies. However, paucity of evidence is a major barrier in choosing the path towards UHC. We assess the association of health insurance (HI) schemes in general, and RSBY (National Health Insurance Scheme) in particular, on extent and pattern of healthcare utilization. Secondly, we assess the relationship of HI and RSBY on out-of-pocket (OOP) expenditures and financial risk protection (FRP).

Methods: A cross-sectional study was undertaken to interview 62335 individuals among 12,134 households in 8 districts of three states in India i.e. Gujarat, Haryana and Uttar Pradesh (UP). Data was collected from both insured and uninsured individuals on socio-demographic characteristics, assets, education, occupation, consumption expenditure, illness in last 15 days or hospitalization during last 365 days, treatment sought and its OOP expenditure. We computed catastrophic health expenditures (CHE) as indicator for FRP. Hospitalization rate, choice of care provider and CHE were regressed to assess their association with insurance status and type of insurance scheme, after adjusting for other covariates.

Results: We found self-reported illness rate to be 13% and 12% and hospitalization rate to be 5% and 4% across insured and uninsured population, respectively. Mean OOP expenditures for outpatient care among insured and uninsured were INR 961 (USD 16) and INR 840 (USD 14); and INR 32573 (USD 543) and INR 24788 (USD 413) for an episode of hospitalization respectively. The prevalence of CHE for hospitalization was 28% and 26% among the insured and uninsured population respectively. No significant association was observed in multivariate analysis between hospitalization rate, choice of care provider or CHE with insurance status or RSBY in particular.

Conclusion: Health insurance in its present form does not seem to provide requisite improvement in access to care or financial risk protection.

Incidence and Correlates of Distressed Financing for Health Careby Householdsin India: Evidence from NSS 71st Round Data

Priyanka Dasgupta, Subrata Mukherjee
Institute of Development Studies Kolkata

Background: The paper examines households' "distress financing" for meeting out-of-pocket health expenses in order to get better insights on how individuals having different illness, individual, household and contextual characteristics meet their health expenses. We define distress financing as having to borrow money, selling of physical assets and contribution from friends and relatives to finance healthcare costs.

Objectives: (i) To examine distribution of various sources of financing out of pocket expenses vary by illness-, individual-, household and contextual-level characteristics of households. (ii)To identify the illness-, individual-, household- and contextual-level factors that show correlates with distress financing for health care by the household. (iii) To explore the relationship between the household and contextual factors with distressed financing for healthcare.

Method: Using NSS 71stround data (January – June 2014), we attempt to investigate factors influencing health-related distress financing with the use of a logistic regression.

Results: The study shows that 31.3 per cent of households reported distressed financing for availing medical care for male members as compared to female members while SC households (30.14 per cent) and rural households (27 per cent) face hardship financing for meeting healthcare expenses. Our logistic regression revealed that southern India (OR= 3.05, CI = 2.87-3.24) and eastern India (OR= 1.70, CI = 1.60-1.81) and households covered with government insurance (OR =1.23, CI = 1.16-1.31) are at a higher odds for facing distressed financing for meeting inpatient expenses. Also rural households (OR =1.26, CI = 1.20-1.32) and households with chronically ill members and having two or more spells of hospitalization face higher odds of facing distressed financing (OR =1.91) than households with single episode of hospitalization.

Conclusion: Rural households and households belonging to backward social groups are more prone to experience distress financing than other groups. Hospitalisation episodes of individuals having chronic illness and hospitalisation episodes of individuals having multiple spells of hospitalisation in their family are

more likely to incur distressed financing than their counterparts. Interestingly, households supported by government schemes are also at a high risk of facing distressed financing. This calls for an expansion of the social protection policies and various healthcare schemes to eliminate the volume of distress financing in India.

Effect of Government Health Expenditure on Health Outcomes in India

Lawal Muhammad
Loyola College (Autonomous), Chennai

Health care is a core component of human capital investment, which in turn rising its spending also raises quality of life, prolonged life expectancy, reducing morbidity and mortality rates. On the other hand, health outcomes symbolize how healthy a country is and assesses the quality of health care in the country. Basically, link health spending with population health status was getting it credit as far back as early 70's. The first approach is a micro level approach based on the human capital model of demand for health proposed by Grossman's (1972). The theory suggests a health production function for individuals where health is consider as capital good that depreciates over a period of time. Therefore, the objective of this study is to investigates the effect of government health expenditure on health outcomes in India, using time series data from 1990-2015. Four variables were used in this study namely, Infant mortality rate, maternal mortality rate (As proxy for health outcomes indicators), public health expenditure (Government health expenditure as percentage of GDP), GDP per capita and Literacy rate. The study employed Augmented Dickey-Fuller (ADF) procedure and multiple regression methodology.The regression results revealed that government health expenditure, GDP per capita and literacy rate are all positively related to maternal mortality rate. The result further shows that infant mortality rate has a negative relationship with other explanatory variables. Furthermore, the negative relationship of infant mortality rates with other variables brought out in clear terms, some issues in India namely: There is higher income inequality among the citizens. The government health expenditure as percentage of GDP is very low. Finally as a policy recommendation government should address the problem of income inequality by formulating more policies

that aimed at improving human capital development and per capital income of individual citizens. In addition government should improve budgetary allocation to the health care and improves the quality health care services in order to reduce all forms of mortality rate. The study concludes that public health expenditure is an important pillar in reducing maternal mortality rates and infant mortality rates.

Inequality in the utilisation of health care facilities in India: Evidence from NSS 71st Round

Bhed Ram, Shivendra Sangar and Ramna Thakur
Indian Institute of Technology, Mandi

Background: Utilisation of health care services depends upon availability and affordability of care, responsiveness of health care system and quality of care. In India, preference to seek inpatient and outpatient care at private health care facilities has witnessed an increasing trend over time. Within the utilisation of private health care facilities there is high level of socio-economic inequality. Given this context, the present study seeks to examine socio-economic inequalities in the utilisation of private and public health care facilities in India and the impact of different covariates on the utilisation of health care facilities.

Methods: The analysis is based on cross-sectional data from National Sample Survey (NSS), 71st Round (2014) on Key Indicators of Social Consumption in India: Health. The study uses concentration curve and multivariate logistic analysis to measure the level of inequality and association between different covariates and health care utilisation in India.

Results: Findings clearly reveal a rich-poor gap in the utilisation of public and private health care facilities in India. Overall, the share of private health care facilities is higher in total health care utilisation especially, in outpatient care. The utilisation of public health care facilities is more concentrated towards poorer consumption groups whereas, private health care facilities exhibit a positive relationship with the level of living. However, the rich-poor gap in the utilisation

of private health care facilities is much higher in inpatient care than outpatient care. Socio-economic covariates such as area of residence, religion, social categories and demographic variables like sex, age and education have important bearing on the utilisation of health care facilities.

Conclusion: At the end, we conclude that the problem of inequality in the utilisation of public and private health care facilities has to be addressed in an appropriate way. Enhanced public investments are required to revamp public health care system to ensure adequate and quality care for all especially, the poor and vulnerable. Alongside, private health care system needs to be regulated in accordance with the Indian public health standards to provide affordable health care facilities. Further, larger proportion of population needs to be included under the purview of health insurance. This will reduce inequalities in the utilisation of health care facilities and ensure equality in the access to private and public health care facilities.

An Analysis of Health Status And Health Expenditure of Tribal And Non-Tribal Population of Andaman and Nicobar Islands

Salma Begum
Bangalore University, Bangalore

The proposed study is an attempt identify the problems existing in health care system and evaluate its impact on population of three districts- South Andaman district, Nicobar district and North and Middle Andaman district of Andaman and Nicobar Islands which is situated in the remote part of India and among the inhabited of the 38 islands, having 6 important categories of primitive tribals which are only found in these islands such as 20,000 Nicobarese tribal, hundreds of other 5 categories of primitive tribals namely, Jarawas, Onges, Sentinals, Shompen and Great Andamanese, which are near extinction. The scattered and isolated location emphasis to examine the health status of the people of the islands, effectiveness of NRHM, their health issues, extent of public health care expenditure and measure the burden of disease on the

individual so that the problems that these people are facing could be resolved and better health accessibility can be provided to them. Primary data from the tribal and non- tribal islanders and govt. officials along with the secondary data of different government reports has been collected and analysed using descriptive statistical technique and Standard multiple regression analysis is performed to assess the ability of annual income, age and quality of public health care to predict the out of pocket expenditure by the people of South Andaman district of Andaman and Nicobar district. The result shows that both tribal and non-tribal population of the islands are not satisfied with the health care facility available within the islands but due to lack of financial support from the government they are bound to use the services available within the islands. Also, majority of the population are not aware of te NRHM program due to lack of awareness. The result of the multiple regression model shows as Annual income increase, the out of pocket expenditure will increase by 0.727 rupees. When age of the people increase, the out of pocket expenditure will increase at a rate of 0.782 and as quality of public health care services improves, out of pocket expenditure will increase to 0.533.

Cost of Cardiac Care at a tertiary care hospital in North India

Shankar Prinja, Jyoti Dixit, Shyam K Singh Thingnum, Yashpaul Sharma, Rajesh Kumar

Post Graduate Institute of Medical Education and Research, Chandigarh

Background: Lack of data on the cost of cardiac care is an impediment to the evidence based planning especially for determining provider payment rates under publically financed health insurance schemes.

Objective: To estimate the unit cost of outpatient consultation, hospitalization, intensive care, selected surgical procedures and diagnostics for providing cardiac care at tertiary level hospital in India.

Methods: We undertook an economic costing of cardiac care usingboth patient and health system perspective. For the health system cost, bottom-up costing methodology was used. Data on all resources (capital and recurrent) utilized for the delivery of cardiac care services for one year were collected. Data was analysed using Statistical Package for Social Sciences (SPSS) version 21 and MS Excel. Data on out-of-pocket (OOP) expenditures was collected from 100 cardiac patients who underwent valve replacements in last one year (2016-17).

Results: The health system cost of an out-patient cardiac consultation was INR 311(US$ 4.8) and INR 547(US$ 8.5) in cardiology and cardio-thoracic and vascular surgery (CTVS) departments respectively. The cost per bed-day hospitalization in cardiology, CTVS and Intensive Care Unit (I.C.U) was INR 1,040 (US$ 16), INR 3,853(US$ 60) and INR 12,635(US$ 197) respectively. Overall societal cost per valve replacement surgery was INR 216,569 (US$ 3384), of which the OOP cost borne by households was 81.4%.

Conclusion: Our findings can be used for planning cardiac care servicesin India, and for undertaking research on cost effectiveness of various models of cardiac care.

Skilled Birth Attendance in Rural India – A study of four States

Shreekant Iyengar[1] & Ravindra Dholakia[2]

[1]Institute of Law, Nirma University, Ahmedabad

& [2]Indian Institute of Management, Ahemdabad

Availability of skilled attendant (SBA) is a crucial factor in reducing maternal mortality rate. The low and middle income countries show low use of these service causing increased risk of maternal and child mortality. India has shown significant improvement in utilization of SBA services reaching the level of upper middle income countries. However, the level of mortality indicators is close to lower middle income country average. This raises significant doubt regarding the quality of SBA services in India. In this context the present study

attempts to examine the status of skilled birth attendant (SBA) services in public health system of rural areas of India. This is done using primary data collected through a survey of skilled attendants such as GNMs and ANMs at PHCs, CHCs and health sub-centres working in rural public health facilities of four large states of India - Bihar, Madhya Pradesh (MP), Rajasthan and Uttar Pradesh (UP). The study examines the SBA services in context of availability of attendants, infrastructure support and level of training of the skilled attendants. It is observed through this study that while there is availability of attendants there is lack sufficient training among them in order to effectively provide the services. Moreover, the utilization of these services through public health system is restricted due to lack of consistent availability of infrastructure at the public health facilities. Moreover, there is also a pressure of utilization at higher level of facilities such as PHCs and CHCs as compared to village level sub-centres.

Mapping the trend of health expenditure: Evidence from some countries

Nandini Suresh, Anurag Panicker, Krishnanand A.K & A. Sankaran

Pondicherry University, Puducherry

Development experience of both developed and developing countries portrays that good health condition plays a chief role in attaining paramount socio-economic development. Nobel Laureate Robert Fogel endorsed this view in his famous research work conducted in England. At the same time, the healthiness of the society is notably determined by the total financial resources earmarked towards the health sector. Against this theoretical background, the present research is an effort to examine the trend of health expenditure in 31 low income, 108 middle income countries and 77 high income countries. With the aim of executing this work, necessary statistics on total health expenditure, public and private health expenditure in terms of percentage in GDP, and per capita health expenditure have been sourced from the World Bank (2017) for the period of two decades from 1995 to 2014. In order to estimate the trend of the health care expenditure in these countries, various statistical measures have been administered. The result of the study revealed that there is a wide range of disparity existing across the developed and underdeveloped world.

At the same time there is no significant difference between middle and low income groups. Further, there is a significant difference between public and private health care expenditure across the groups and private health expenditure is higher than that of public in low income countries.

Key Words: *Health Finance, Health Expenditure, Private and Public Health Expenditure, Global Health Expenditure*

Notes

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....