

Interstate Inequalities in Disease Burden and Health Expenditure: Evidence from Regional Health Accounts in India

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In past decade, evaluation of macro- and micro-economic impact of disease/injury has become an integral part of global growth assessment. The concern is greater for developing nations like India that faces the dual burden of communicable and non-communicable diseases. World economic forum report 2014 estimates a loss of \$4.58 trillion for India between 2015-2030 due to lost output owing to increasing rate of non-communicable diseases and mental health conditions. On the other hand, communicable diseases like tuberculosis and diarrheal still rank among topmost causes of premature death (IHME, 2013). Looking at the health care expenditure trend since a decade(2005-15), out of pocket expenditure hovers around 68 percent which annually pushes around 63 million people back to poverty (National Health Policy, 2015). Such figures flag the issue of allocative inefficiency and demand further inquiry. Though the efforts to estimate and mitigate health care system issues have significantly scaled up at the national level, regional bodies remain under-equipped to make evidence-based policy decisions. National Health Accounts 2001-02, 2004-05, and 2013-14 provides bird eye view of regional disparities in terms of resource allocation and disease proportions but particulars remain fragmented in government reports and limited regional studies. This study carries out a retrospective analysis of resource allocation for different functions of healthcare at the state level and its linkage with disease burden. To determine resource allocation, System of Health Accounts SHA 2011 framework is employed in the development of regional health account. Disease burden in a state is determined by Disability Adjusted Life Years (DALY) (Murray and Lopez 1996) approach using National Sample Survey Office (NSSO) Health and Morbidity survey 2014. The study further elaborates on various methodological means, challenges, and limitations of disease burden estimates, economic burden and its link with resource allocation. Eight states have been chosen for the analysis; Andhra Pradesh (including Telangana), Chhattisgarh, Karnataka and Himachal Pradesh that have policy akin to universal health coverage (UHC) in place and Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh that are known for poor health indicators. Analysis has been carried out quintile wise (based on Monthly Per Capita Expenditure) for rural and urban household type separately. To capture the sensitivity of estimates, DALY has been calculated with and without social weighting (i.e. not all life years lost valued equally) and converted to economic burden. Further, allocative efficiency is determined by linking DALY and corresponding economic burden to governments' spending at varied levels of care. Preliminary analysis indicates invariably higher DALY across all quintiles

in rural areas compared to urban. While economic burden remains high for lowest quintile in both rural and urban areas, it declines at a higher rate for the urban population as we move to higher quintiles. States with UHC like scheme shows high DALY for lower quintiles yet lower economic burden which can be attributed to efficient allocation of funds by such schemes. Findings of the study would be useful in tailoring health care expenditures at regional level based on population health needs thus improving technical and allocative efficiency of health systems.

Keywords: Regional Health accounts, DALY, India, Health, disease burden