CHAPTER-1
INTRODUCTION

The adage ‘Health is wealth’ continues to be relevant in any economy irrespective of the level of development. The definition of health and what constitutes health is an unsettled debate. The debate around the world on the definition of health surrounds the one proposed in the preamble to the Constitution of World Health Organisation (WHO) that “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 2006). This definition encompasses a wide spectrum of services that promote and cure health. In this context health assumes a much larger significance in any economy and hence there have been considerable efforts to invest in health, primarily by the governments. Spending on health is considered as a productive investment because healthy people can engage in income earning activities especially the vulnerable population groups. In a seminal paper on health, human capital and economic growth, Fogel (1994) found that about a third of income growth in Britain during 1790 and 1980 are attributable to developments in health care. Income growth can be effected by health through increased effort and productivity of human resources (Bhargava, et.al., 2001). This suggests that health human capital investment and income growth are jointly determined. Hence good health is seen as a fundamental goal of development and also as a tool to accelerate growth.
Health being a key factor in development process, government is anticipated to invest in the sector. Bloom and Günther (2013) put forward four classical arguments for why governments should invest in health are:

1. Allocating resources to improve the health of population is ethical, just, and a fair course of action.
2. Health is a fundamental human right and hence the people are entitled for the opportunity to enjoy good health.
3. Health leads to the formation of social capital, which in turn leads to form cohesive, peaceful, equitable and a secure society. Good health of population is also seen as a key determinant of political stability.
4. Private health behavior may lead to a suboptimal form and may impose indirect costs on others. In that perspective, government interventions can achieve welfare improvements. Investments by governments in disease prevention and control programmes can lead to substantial reductions in the costs of treatment and care. This is likely to yield high financial returns in the form of savings.

Further, inability of any government to satisfy the basic needs of its electorate, including health would lead to erosion of trust and may contribute to instability or even and collapse of the system.

1.1 Public Financing of Health in India:

Health is a State Subject in the Indian Constitution. Accordingly the primary responsibility of organisation and delivery of health care services rests with state governments. But certain programmes of public health and family
welfare with externality characteristics are classified under Concurrent List of the Constitution of India. Responsibility of delivering the services under Concurrent List rests with both Central and State governments. This form of division of roles and responsibilities have resulted in a wide spread network of health care facilities across the country. At the bottom of the system is the Sub-Centre facility located in a village extending preventive and promotive services to the people in and around the sub-centre. On the top of the pyramid is the district hospital equipped to deliver tertiary care services and often with super specialty services. In between these are the providers of primary and secondary care services, i.e. primary health centres and community health centres.

Health sector was considered as an important player in the development of the country as revealed through the governments’ actions even during the early independence period. To support the orderly development of the sector, government had set up Bhore Committee (GoI, 1946) and Mudaliar Committee (GoI, 1959). The public health system in India has been founded on these suggestions. The recommendations of these committees are highly relevant even in the current context. The Bhore Committee prepared an exhaustive plan for the health sector of the country with a vision to provide universal health coverage to the entire population free of charges through a comprehensive state run health services network. The Committee also suggested various levels of facilities required for different population size for efficient delivery of services.

Alma Ata Declaration in 1978 with emphasis on primary health care forced many countries to revisit their strategy for ensuring free primary health
care for all. As an offshoot of this, India formulated its first National Health Policy in 1983, after three and a half decades of independence and later another National Health Policy in 2002. Health policies invariably emphasized increasing the access, infrastructure and provision of free health care services through the public health system. However, the foundations laid by the Bhore Committee and Mudaliar Committee remained the guiding principles for the health policies and programmes developed during the later years in India.

In terms of financing, public financing and public provisioning of health was the core recommendation of all the policies. After the National Health Policy 1983, the government initiated the fiscal/structural adjustment programme in the early 1990s. This led to a contraction in the quantum of resources and particularly the allocations for health from the Central Government to State governments shrank considerably. The overall public expenditures on health began declining because the state governments were unable compensate for the falling central grants.

The Government of India formulated another National Health Policy-2002 which recommended that budgetary allocation to health be raised to 2 percent of GDP by 2010 from 0.9 percent prevailing at that time. This NHP-2002 anticipated much of this proposed increase coming from the increased allocations to health by state governments in their budgets. Around the same time, World Health Organisation attempted to review health sector across countries for assessing the progress of reform programs. India as part of this exercise also constituted the Commission on Macroeconomics and Health in
2001 which submitted its recommendations in 2003. One of the recommendations of this Commission was in line with the Government of India’s NHP-2002, i.e., to increase the public spending on health from about 1 percent of GDP to around 2 to 3 percent of GDP in a phased manner.

Increasing the public spending on health was a major challenge due to low absorptive capacities at the institutional level. Therefore the Government designed programs on a mission mode to accelerate the implementation process. Thus born the National Rural Health Mission (NRHM) in 2005. NRHM was designed as an umbrella programme which consolidated most of the existing national programmes and executed them through autonomous societies established under the public systems by bye-passing state treasuries with the sole of accelerating programme implementation process. The primary objective of bye-passing the state treasury was to ensure the timely and smooth flow of funds for programme implementation at the district level and below. Also funds allocated were non-lapsing at the end of fiscal year unlike budget funds allocated through treasuries.

Mechanism of financing health by the Central Government has undergone a number of changes during the past few decades. From individual program based societies during 1980’s at the national and state levels to a more consolidated district level societies at present for administration and monitoring of centrally sponsored health programs. On the other hand, financing mechanisms by the state governments have remained nearly the same over decades, both structurally as well as in composition. However, few states made
attempts to reform in the functioning and financing the sector through decentralization of functions and financing, insurance / voucher schemes of various kinds, etc. These initiatives have not made any considerable improvements in the size of health budget in relation to the total budget of the state governments in India.

The National Health Policy 2002, the India Health Report (Misra, Rao and Chatterjee, 2001), Commission on Macroeconomics and Health (WHO, 2001) as well as National Commission on Macroeconomics and Health and various other forums urged that the public spending on health in India needs to be stepped up from the level of about 1 percent of GDP to about 2 to 3 percent of GDP. The Central Government is striving hard to increase the levels of spending on health but the fiscal space available at the levels of state governments have not provided the leverages necessary to match the Central Government’s attempts. Central Government in its endeavor launched the National Rural Health Mission (NRHM) in 2005 to accelerate the pace of progress especially in 18 vulnerable states, including Chhattisgarh and Jharkhand. The launch of NRHM as a Central sector program, in principle, necessitated an increased financial commitment from the state governments to implement the programmes under NRHM.

1.2: Private Health Sector in India:

Alongside the public health system, private sector providers grew over the years and it constitutes a much larger size in India. Private health providers
range from solo providers/ clinics to highly specialized super specialty hospitals. Currently the private providers play a major role in service delivery. After many decades of this sector came into existence, registration and regulation of these providers has been initiated by the government as well co-opted by the government as partners in delivering certain identified services.

Health expenditure in India is largely private out-of-pocket expenditure. Weak and less accessible public health system initially forced people to seek health care from private providers. As the private health sector grew, public health system remained a mute spectator constrained with inadequate infrastructure, manpower and a host of institutional bottlenecks. This indirectly facilitated the growth of private health sector in a short span of time, and more rapidly after 1980s. The World Bank in its report observed that poor quality of care and high out-of-pocket expenditures are partly due to the political equilibrium between the different actors involved in the process of adopting and implementing health policy (World Bank, 2017).

In the private health sector, solo providers are spread across the country, and also in small and inaccessible areas. These providers are often, the only service providers in inaccessible areas such as hilly and tribal areas. But the quality of services provided by them is always questioned by the mainstream service providers as well as the regulators. Many of these providers were often found be less qualified and violate medical ethics by providing services/procedures for which they are not certified or adequately trained. But with the enactment of Clinical Registration Act and the NRHM covering identified
inaccessible areas with its high focus approach are expected to ensure quality services even in difficult to reach areas.

The organized segments of the private health providers mainly are concentrated in and around larger cities and towns. Service provision varies from primary and secondary care to super specialty care. In many states, private providers dominate the specialty health care provision.

1.3: Health Status in India:

India has made substantial progress on many indicators of health during the past few decades. International declarations and United Nations initiatives such as a Millennium Development Goals (MDGs), Alma Atta Declaration to which India was a signatory, etc., facilitated the country in achieving this progress since 1970s. Improvements in health status as revealed through life expectancy at birth (LEB) and infant mortality rate (IMR) are commendable. LEB increased from 58 years in 1990 increased to 66 years in 2013; similarly IMR declined from 88 per thousand in 1990 to 41 per thousand live births in 2013 (Table 1.1).

Major states in India have also experienced a considerable decline in the IMR. Of all the states, Kerala continues to have the lowest IMR ranging from 10 to 15 during 1996 to 2012 while Orissa has the highest IMR ranging from 83 to 98 during 1997 to 2003. After 2003, Madhya Pradesh slipped into high IMR category with 56 in 2004 to 98 in 2012. IMR among the seven major states
namely, Gujarat, Karnataka, Kerala, Maharashtra, Punjab, Tamil Nadu and West Bengal remained lower than the all India average during this period.

It is observed that inter-state differences appear to be widening, with developed states improving at more rapid rate than less developed states. Though the less developed states are spending a higher amount of public expenditure on health, the health status in terms of IMR of these states has not improved in line with public health expenditure which shows the inefficiency of these states in utilisation of funds allocated to health sector (Selvaraju and Annigeri, 2001).

However, a comparison of these achievements with our neighboring SAARC countries, our progress is dismally low. China, Indonesia and Sri Lanka have reached LEB above 70 years in 2013 while India could reach only upto 66 years, a level similar to Pakistan. On IMR too, India lacks behind all the countries listed in Table 1.1 below, except Pakistan.

Table 1.1 Health Status Indicators of India in Comparison to Select Countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>Life Expectancy at Birth</th>
<th>Life Expectancy at Age 60</th>
<th>Infant Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>60</td>
<td>71</td>
<td>17</td>
</tr>
<tr>
<td>China</td>
<td>69</td>
<td>75</td>
<td>18</td>
</tr>
<tr>
<td>Indonesia</td>
<td>62</td>
<td>71</td>
<td>16</td>
</tr>
<tr>
<td>Pakistan</td>
<td>60</td>
<td>66</td>
<td>17</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>69</td>
<td>75</td>
<td>19</td>
</tr>
<tr>
<td>Thailand</td>
<td>69</td>
<td>75</td>
<td>18</td>
</tr>
<tr>
<td>India</td>
<td>58</td>
<td>66</td>
<td>15</td>
</tr>
</tbody>
</table>

This raises the question whether India spends adequately on health sector?.

A quick review of level of spending on health and income of India suggests that the per-capita income of India is comparable to that of Sri Lanka and a level above Indonesia, Bangladesh and Pakistan (Table 1.2). As a result, India allocated 3.8 percent of its GDP towards health which is higher than the share of allocations made by Sri Lanka, Indonesia and Bangladesh towards health.

In terms of public and private shares in total health expenditures, India has the highest private share of health expenditure at about 70 percent and lowest public spending at 30 percent on health. Private spending dominates the country’s health care spending. Private spending is primarily the spending by households’ out-of-pocket expenditures as the coverage through insurance and other forms of coverage are negligible in size in India. For decades, the share of household expenditures on health has remained between 70 and 75 percent of total health expenditure in India. The shares of private spending on health in Indonesia and Sri Lanaka are about 60 percent. Despite, their progress in health status have been far ahead of India.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Health Expenditure as % GDP</th>
<th>Total Expenditure</th>
<th>Health</th>
<th>Government Health Expenditure as % of Total Government Expenditure</th>
<th>External Health Resources as % of Total Health Expenditure</th>
<th>Per-Capita GNP (in PPP $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>3.5</td>
<td>31.9</td>
<td>68.1</td>
<td>6.8</td>
<td>8.3</td>
<td>2,810</td>
</tr>
<tr>
<td>China</td>
<td>5.4</td>
<td>56.0</td>
<td>44.0</td>
<td>12.5</td>
<td>0.1</td>
<td>11,850</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.0</td>
<td>39.6</td>
<td>60.5</td>
<td>6.6</td>
<td>1.1</td>
<td>5,350</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2.8</td>
<td>36.9</td>
<td>63.1</td>
<td>4.7</td>
<td>4.9</td>
<td>4,920</td>
</tr>
</tbody>
</table>
1.4: Rational and Focus of Present Study:

Political instability and level of development are often cited as primary factors influencing the progress in health indicators, indirectly of a country (Bloom and Fink, 2013). Also smaller economies are considered as efficient ones in governance and service delivery and indicators listed in the tables above for Sri Lanka and Thailand corroborate this widely held assertion. Deducting this analogy to Indian states, the present study intends to review and analyse the commitments of state governments towards improving health care service delivery.

At present there are 35 states and union territories in the Indian Union. Of these, three states namely Uttarakhand, Jharkhand and Chhattisgarh were carved newly in the year 2000. All these three states were part of commonly known BIMARU\(^1\) states, namely Uttar Pradesh, Bihar and Madhya Pradesh. All the three new states are geographically disadvantaged states with hilly terrain and forests. However, Uttarakhand as a separate new state shows early indications of accelerated progress in the areas of human development. The state also had the advantage of political stability in addition to proximity to the national capital and the central government.

\(^1\) BIMARU in hindi means sick. The four erstwhile states with poor health indicators namely, Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh were together termed as BIMARU states.
Contrary to the levels of progress of Uttarakhand, development indicators of the other two new states Chhattisgarh and Jharkhand have not been impressive. As new states, theoretically there were opportunities for building governance systems, reforms, etc., to place the state in an accelerated developmental path. Chhattisgarh had the additional advantage of political stability. Whereas, Jharkhand continued to experience frequent political change and turmoil, in addition to frequent social unrest in few pockets of the state.

In this context, the present study intends to review and analyse the health care system in Chhattisgarh and Jharkhand to identify the possible factors for their stagnation in the broader areas of human development. Towards this end, this study analyses the level, composition and variation in health spending of these two states since their inception, i.e., 2010. Researchers often focus on major states of India and some specific cases by ignoring the smaller states and union territories. States like Jharkhand and Chhattisgarh generally fall outside the purview and focus of researchers. It is hoped that the lessons from these states study would be of much use for similarly placed states as well as other major states which face or likely to face political and social unrest with difficult geographical terrain.

1.5: Objectives of the Study:

Main focus of this study is to assess how these two states have performed in advancing health status through budgetary allocations to health sector. In addition to this, how the households cope up with the increasing financial burden
of health care by analyzing the household information on morbidity, utilization and expenditures on health in Chhattisgarh and Jharkhand. Specific objectives of the study are;

1. To study the trends, patterns and growth of public spending on health care
2. To examine the level of household out-of-pocket expenditure on health
3. To analyse the determinants of household spending on health
4. To examine the linkages or interrelationship between public and household spending on health

1.6: Hypotheses of the Study:

1. Policy changes alters the trends and pattern of financing health care
2. Household expenditure on health is substantially larger than public expenditure on health
3. Higher the level of public spending on health, lower will be household spending on health.

1.7: Research Methodology:

Health expenditure has been defined to include both public and household expenditures in the present study. The definition of health is debated widely and varies depending on the purpose at hand. For instance, World Development Report-1993 defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (World Bank, 1993). If one goes by this definition of health, then the health acre activities
undertaken by a number of government entities beyond the Ministry of Health and Family Welfare need to be taken into account. For instance, there are health care services which are undertaken by Ministry of Railways through its own network of hospitals and dispensaries for the workforce under railways. Similarly, Ministry of Defence has established and manages its own health care facilities as well as medical education facilities. Ministry of Social Welfare, Department of Women and Child Development and few other public entities extend health care facilities to their employees. However, these health care services are restricted to the employees and their dependents of these entities. General public cannot have access to these facilities. Therefore, in a study of the present nature, it is confined to the health care services provided in an unrestricted manner to the public, which is through the Ministry of Health and Family Welfare and their corresponding finances.

While data on public expenditure are available in the budget documents published by governments, household expenditures are collected through exhaustive household surveys by the National Sample Survey Organisation (NSSO). Therefore, two distinctive data sets are used in this study for analysis, i). public or the government expenditures, and ii). household expenditures.

1.8: Public Health Expenditures – Data source and issues

Public health expenditures of state governments are defined as the amount of funds allocated and spent through the Central and State Governments Budgets for health care services in their respective domains. These budgets are usually
presented and passed at the respective legislative assemblies. State budget to health sector is allocated under two broad heads of budget, namely revenue/current and capital expenditures. Revenue expenditures are meant for current consumption while the capital expenditures are meant for consumption beyond one fiscal year. These are basically expended to create assets, infrastructures and machinery and equipment. Each of the two broad categories of expenditures, revenue and capital, are further categorised into allocations for medical, public health and family welfare by earmarking the funds for a number of line items further under each of these sub-heads of expenditures.

Public expenditure on health in this study is defined as expenditures incurred by governments in delivering health care services in a state. At the level of state governments, the primary responsibility of health care provision rests with the Department of Health and Family Welfare (DoHFW). The nomenclature and the structure of DoHFW may vary to some extent from one state to another. In addition to DoHFW, there are other departments such as water supply and sanitation; women and child development, labour, etc. also allocate a portion of their budget for health and related activities such as medical reimbursements, operating their own health facilities, school health programs, etc (Reddy and Selvaraju). For the present study, expenditure incurred by the DoHFW alone is considered, as it accounts for more than 95 percent of health spending by government in most states (GoI, 2009).

The present study utilises actual expenditures data rather than allocation data. The differences between these two are often enormous mainly because, the
allocations are reflections of ambitious outlook of the government at the beginning of the fiscal year while the actual expenditures reflect the actual money spent on delivering services at the end of the fiscal year. Therefore this study bases its analysis on actual expenditures reported in the budget documents. Actual expenditures invariably tend to be lower than what was originally allocated. Actual expenditure figures reported in the budget documents are figures already reconciled with the drawing and disbursing entities of the government for any discrepancy. Hence these are more reliable numbers to assess and analyse the actual amount of funds spent for health service delivery by the governments.

Funds for health in any typical state in India flow through the government’s treasury mechanism. Budget sanctioned for the sector is intimated to the concerned treasuries. The drawing and disbursing officers (DDOs) authorise and release funds for service providers. This treasury mechanism is under the purview of the concerned state governments which are audited, verified and authenticated through the prescribed audit procedures. A major proportion of public funds spent on health care in any state is channelled through this mechanism.

Some components of health care services extend beyond the jurisdictions of state governments and some are of national importance in broader development context. As a result, these services are listed under Concurrent List as per the Constitution of India. Both Central and State governments are
responsible for executing these programmes. Often Central government takes lead in designing and financing these programmes.

Mechanism of financing of health care services by the Central government has undergone a number of changes since independence. Central financing assumes two broad approaches. Allocation through plan schemes continues to go through the state treasury mechanism. Financing for certain Central health schemes are routed through societies created for those specific purposes, such as National Rural Health Mission, National AIDS Control Society, etc. Societies of these kind functioned as independent entities within the State Departments of Health as well as outside the Departments during the past. The primary motive for creating these societies was to ensure quick and smooth flow of funds to implement the schemes in a timely and planned manner.

The present study uses the data relating to the resources allocated and spent through the State Budgets for delivery of health services. These data are available from the Detailed Expenditure Estimates or Detailed Demand for Grants which form part of documents presented during the presentation of budgets.

Since the actual expenditure estimates are finalised after reconciliation with DDOs, the process of finalisation usually takes a longer time after the close of a fiscal year. As a result, the expenditure document of any given year presents three sets of figures: a). current year budget estimate, b). previous year’s revised estimate and c). second previous year’s actual expenditure estimates. Data from
this detailed demand for grants have been collected and collated for analysis in the present study.

1.9: Household Expenditures – Data Source and Issues:

Household expenditure on health refers to any expenditure incurred by households for treatment of any kind of illness as out-patients or as in-patients. Data on these are often not available because no agency collects and collates these details routinely. But these are highly useful for policy planning. Given this importance, the National Sample Survey Organisation (NSSO) of the Ministry of Statistics and Programme Implementation (MoSPI) collected detailed information on household expenditure on health by surveying a representative sample of households across the country.

NSSO regularly conducts surveys to collect detailed information on consumption expenditure, land holdings, employment and unemployment and a number of other aspects of the economy relevant for planning purposes of the country. During one such surveys, data on health care utilisation and expenditures are collected. The most recent survey by the NSSO on morbidity, health care utilisation and expenditure was for the year 2014, as part of its 71st Round Survey.

1.10: Sampling Design Adopted by NSSO in its 71st Round Survey:

The 71st Round Survey of NSSO on health was carried out as Social Consumption: Health during January-June 2014 and consisted of two sub-
rounds. 71st round survey also collected data on education and consumption expenditures, which are outside the purview of the present study. The sample for this survey covered the whole country. This survey adopted the stratified multi-stage design for data collection. In the rural sector, the first stage units (FSU) were the census villages of the states. But in the state of Kerala, panchayat wards were treated as FSUs. In the urban sector, blocks were treated as FSUs. Households were the ultimate sample units in rural and urban sectors. More detailed discussion on sampling is presented in the report of the NSSO (NSSO, 2016).

Stratum was formed at the district level. Within each district, two basic strata namely rural and urban strata were formed. However, if a district had one or more towns with one lakh or more population, each of them formed a separate basic stratum. The remaining urban areas of the district were considered as another basic stratum.

The survey was carried out during January to June 2014. The details such as household size, number of people who were ill during the last 15 days, number of members hospitalised during the last 365 days, nature of ailment, type of treatment, level of health facility, amount paid for various services like, fees, medicines, x-ray, etc., were collected through a structured questionnaire. Number of households surveyed in rural and urban sectors of various states are presented in Table 3.1.
<table>
<thead>
<tr>
<th>States</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jammu&amp;Kashmir</td>
<td>735</td>
<td>544</td>
<td>1,279</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>704</td>
<td>192</td>
<td>896</td>
</tr>
<tr>
<td>Punjab</td>
<td>768</td>
<td>761</td>
<td>1,529</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>64</td>
<td>120</td>
<td>184</td>
</tr>
<tr>
<td>Uttarakhand</td>
<td>352</td>
<td>320</td>
<td>672</td>
</tr>
<tr>
<td>Haryana</td>
<td>720</td>
<td>704</td>
<td>1,424</td>
</tr>
<tr>
<td>Delhi</td>
<td>63</td>
<td>905</td>
<td>1,588</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>1,678</td>
<td>234</td>
<td>1,912</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>4,918</td>
<td>3,003</td>
<td>7,921</td>
</tr>
<tr>
<td>Bihar</td>
<td>2,111</td>
<td>556</td>
<td>2,667</td>
</tr>
<tr>
<td>Sikkim</td>
<td>320</td>
<td>192</td>
<td>512</td>
</tr>
<tr>
<td>Arunachal Pradesh</td>
<td>379</td>
<td>247</td>
<td>626</td>
</tr>
<tr>
<td>Nagaland</td>
<td>352</td>
<td>224</td>
<td>576</td>
</tr>
<tr>
<td>Manipur</td>
<td>768</td>
<td>640</td>
<td>1,408</td>
</tr>
<tr>
<td>Mizoram</td>
<td>384</td>
<td>384</td>
<td>768</td>
</tr>
<tr>
<td>Tripura</td>
<td>832</td>
<td>576</td>
<td>1,408</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>544</td>
<td>288</td>
<td>832</td>
</tr>
<tr>
<td>Assam</td>
<td>1,695</td>
<td>560</td>
<td>2,255</td>
</tr>
<tr>
<td>West Bengal</td>
<td>2,592</td>
<td>2,427</td>
<td>5,019</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>832</td>
<td>621</td>
<td>1,453</td>
</tr>
<tr>
<td>Orissa</td>
<td>1,696</td>
<td>746</td>
<td>2,442</td>
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<tr>
<td>Chattisgarh</td>
<td>680</td>
<td>525</td>
<td>1,205</td>
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<td>Madhya Pradesh</td>
<td>1,984</td>
<td>1,629</td>
<td>3,613</td>
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<td>Gujarat</td>
<td>1,456</td>
<td>1,432</td>
<td>2,888</td>
</tr>
<tr>
<td>Daman&amp;Diu</td>
<td>64</td>
<td>64</td>
<td>128</td>
</tr>
<tr>
<td>DNH</td>
<td>64</td>
<td>64</td>
<td>128</td>
</tr>
</tbody>
</table>
1.11: Analysis of Public Expenditure - Methodology

The two states under present study came into existence in the year 2000. Since their formation, a major change in health sector financing happened in 2005 with the introduction of National Rural Health Mission (NRHM) by the Central government. Under NRHM most central health programmes were organized and implemented through NRHM society in a mission mode. Finances for these programmes were directly routed to the society from the Central government bye-passing the state treasury. In addition, states were liable to contribute 15% of total funds for these schemes as matching contribution. This reportedly strained the health budgets in many states (Berman and Ahuja 2008). To ascertain how this policy change has impacted the health sector budget in Chhattisgarh and Jharkhand, the present study analysed the government health expenditures of these states in detail since their creation.
A more rigorous attempt has been made to analyse the growth of public health expenditure in the two states; specifically to assess the impact of policy change, i.e. NRHM as a policy change on the public financing of health care. Impact has been assessed through changes in the growth of public health expenditures. Growth rate of any variable is generally estimated through the standard equation as given below;

\[ y = \alpha t + \beta \]

This form of equation would be conducive to estimate growth rates of variables with a smooth time series. But in real world this is not the case usually. Variables tend to reflect policy changes, change in political regimes, structural changes, etc. Under these circumstances, the growth of a variable would change its path. The equation mentioned above subsumes such changes in the series in the process of estimation and yields a growth rate that is average of pre and post change.

To understand the growth separately in the two scenarios, i.e., pre and post policy change, one can estimate two different equations, one for pre-policy time period and the other for post-policy time period. Often the variables under study are available for limited durations such as for 10 to 15 years. When the ‘n’ is small or limited, segregating the variable by pre and post policy change time period would limit the applications of statistical procedures such as above owing to the lesser degrees of freedom.
In order to overcome the issue of limited number of observations and yet derive reasonably reliable estimates of growth rates separately and simultaneously for pre-post periods without distorting the statistical properties of the parameters, one can employ the following form of equation, commonly known as “kinked exponential growth model”.

\[ \ln Y_t = \alpha + \beta_1 (D_1 t + D_2 k) + \beta_2 (D_2 t - D_2 k) + u_t \]

where,

- \( Y \) = per-capita public expenditure on health
- \( D \) = dummies
- \( k \) = break (kink) point

This kinked exponential model is preferred over the conventional growth rate estimation models primarily because, this model makes use of entire time series information available even while estimating the growth rate for a sub-period in that series (Boyce, 1986). The break or the kink in the estimation process is introduced in the model by two different methods. In the first method, the movements in the series are identified and shifts are introduced at the desired point in the series while in the second method the series is allowed to break statistically in the process of estimation itself. In the present study, the kink is introduced for the year 2006-07 after the policy shift was introduced by the government in the form of NRHM.

1.12: Analysis of Household Expenditure – Methodology:

The information available on health care utilization by households from the National Sample Surveys Organisation (NSSO) will be analysed in detail to assess the changes in health expenditures by households. Household expenditure
on health is not collected by the NSSO on regular basis. Latest available survey is for the year 2014 which collected data on morbidity, utilization and expenditures. A similar such survey available for previous period is for the year 2004.

These surveys collected data on ailments, type of health service utilized, expenditures incurred for availing the treatment, in addition to household characteristics. Present study examines the changes in the per-capita health expenditure in India with additional focus on the two states for various health services. Also attempts to explore the determinants of household health expenditures. Studies report that household income, household size, literacy, age among other factors influence spending on health (Damme W.V., et.al (2004), Hotchkiss, D.R. and A.Gordillo, (1999), Sanyal, S.K, (1996)). To examine these in the context of all-India as well as Chhattisgarh and Jharkhand, the present study proposes the following equation.

\[ Y = \alpha + \beta_1 Inc + \beta_2 HSize + \beta_3 Age \]

where,
\[ Y = \text{expenditure on health} \]
\[ Inc = \text{income} \]
\[ HSize = \text{household size} \]
\[ Age = \text{age (in years) of the member} \]

**1.13: Variable Definition:**

Health expenditure is defined here as the amount of money spent by an individual for availing treatment from a health service provider when unwell. The payments include doctor fees, medicines, and diagnostic and laboratory charges, etc. In-patient and out-patient expenditures have been analysed.
separately because of the very different nature of treatment itself. To enable the comparison, data of rural and urban households have been segregated further.

Income is not collected in any of the NSSO surveys because of complexities involved in eliciting reliable data from households during the interview. Reporting of income during surveys are susceptible substantial exaggerations either way. Therefore, NSSO does not explicitly collect data on household income. It is widely accepted and believed that households report expenditures more reliably than the incomes. Hence, household expenditures have been collected the NSSO which is used as proxy indicator or representative of household / individual income. This is also widely an accepted practice in India for any research purpose. Therefore, the present study also treats household expenditure as household income. Instead of total income, per-capita household income is used for analyzing the relationship in the above equation.

Household size and age in completed years as reported in the survey are used as other independent variables. Use of household size in this equation is justified on the grounds that when household size is larger, per-capita income will be lower and hence expenditure on health will also be lower. Age is an important demographic variable which influences health expenditure. It is a widely established fact that health expenditures will be higher among lower age groups as well as among older population. Hence these variables have been included for analysis.
1.14: Chapter Scheme:

Chapter – 1: Introduction: A detailed description of public and household financing of health, rationale for public financing of health, evolution and policies which have shaped the health sector in India have been presented in this chapter. In addition to these Research gap, objectives, Hypotheses, Research Methods used for the study are given in greater detail.

Chapter – 2: Review of Literature: A detailed review of studies relating to health care financing is presented in this chapter.

Chapter – 3: Evolution of Health Care in India since the Eve of Independence: This chapter contains the Processes and Development of Administrative Structure of Health care in India.

Chapter – 4: An Analysis of Health Expenditure in India: This chapter deals with the detailed description and growth of Public Expenditure as well as Household Expenditure on Health in India.

Chapter – 5: Profiles and Health Expenditure of Two States - Chhattisgarh and Jharkhand. This Chapter includes Socio-Economic Conditions of Chhattisgarh and Jharkhand with a focus on Health Sector. In addition to this, Financing Pattern and Structure of Health Sector have been analysed and presented.

Chapter – 6: Major Findings and Policy Suggestions

References: In the references list only the books, articles, reports and other such material referred in the text only are included.