National rural health mission and the interstate variations in public healthcare spending in India: A study of the Indian North-Eastern states

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Abstract

Background/Objectives: The North-Eastern region of India comprised of eight states of which seven states come under small states and special category states. The region has a very large rural population which is highly agrarian in nature. The performances of the states in many of the health indicators have been better than most of big Indian states yet the status of health infrastructure and health accessibility in the region are still a grave concern. The study aims to find the interstate variations before and after the implementation of National Rural Health Mission (NRHM) Act of 2005, on the public health expenditure in the North-Eastern states. Methodology: The data on public health expenditure has been obtained from the State Finance Reports of the Reserve Bank of India (RBI), on population from the office of the Registrar General & Census Commission of India and the Gross State Domestic Product (GSDP) from the Directorate of Economics and Statistics of respective state governments, Central Statistics Office. The study is of twenty-six years, 1990-91 to 2015-16. The study uses the coefficient of variation to determine the extent of interstate variations. Findings: The study found that the interstate variation in public healthcare expenditure with all the eight states in the region is on a decline. Further, the study found that post NRHM, the states have equalised their proportion of health spending. Novelty/Improvement: There have been no studies to compare the interstate disparity in public health expenditure in the North-Eastern states before and after the implementation of NRHM in recent years.

Keywords: Public health expenditure; interstate variations; National rural health mission; North Eastern States; India
1 Introduction

The North-Eastern states comprises eight States, namely, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The North-Eastern region is known as land of diversity and the states’ diversity is found in their economy and social factors. The states vary in terms of the adopted culture, tradition and demography. With limited source for income generating activities, all states barring Assam, rely extensively on agriculture as the main source for income. The difference is also observed concerning Assam which falls under big States according to the sample Registration System, whereas all other North-Eastern states fall under the small state category. The most densely populated state is Assam followed by Tripura and the least being Arunachal Pradesh. The Government of India has been pursuing policies to bring about equitable distribution of funds for improving the situation of these small and backward states in order to bring them at par with other states of India.

India being one of the fastest growing economies in the World is expected to have very high population, public expenditure is also expected to be very high, especially in the social service sectors expenditure. This large expenditure is observed by the massive amount allocated to the different sectors as revealed by the Union Budget. Through the Union Budget, the priority given by the government to the social and economic sectors can be observed. For instance, in India the public expenditure on health was only about 1.3% of GDP in 1990-91(1). In(2) 1996-97, total government spending on Health was around 1% of GDP and the public expenditure elasticity with respect to GDP was at 0.94, lower than the average for low-income countries (1.16) for the same period. It has been pointed out that the low budget for social services including education and health reflects the low priorities given to these areas(3).

Over the years, the inequality in per capita health expenditure across states has created an increasing trend which shows the failure of the spending mechanism to equalize public expenditures on healthcare services(4). The importance of wiping out the interstate disparities on public health expenditure is needed for improving the health status of the states(5). The interstate variation in public health expenditure is high even after implementation of NRHM(6,7). The variation of public health spending among the Indian states is the main cause of inequality in the health outcomes(8).

2 Methodology

Public expenditure on health includes revenue and capital expenditures on the Medical and Public Health and Family Welfare, as presented in the budget but excluding Water and Sanitation and Nutrition. The data of public expenditure available from the RBI State Finances are at current prices therefore the data is converted into constant 2004-05 prices using the constructed deflator.

For finding the interstate variations of public health expenditure the Co-efficient of Variation is used.

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\text{Coefficient of variation (CoV)} = \frac{\text{Standard deviation(SD)}}{\text{Mean}}
\]

3 Results

(a) Real Per capita health expenditure and Real Per capita GSDP across the states: The North Eastern states have significant variations in incomes, and thus in GSDP per capita. The analysis of per capita expenditures on health provides useful results when compared against per capita GSDP figures. Generally, it is seen that richer states spend more on health services in comparison to the poorer states.
The Per capita health expenditure and the Per capita GSDP along with their correlation, for three years, has been shown in the **Table 1**. The coefficient of variation of the per capita health expenditure across the states has shown an increase in inequalities from 1990-91 to 2004-05. The disparity has widened in 2005 as the highest spender, Sikkim spent Rs. 936 per head, while the lowest spender, Assam spent only Rs. 65 per head. But in the period 2015-16 we observe that the inequality has declined as more states spend around the mean. The coefficient of variation of the per capita GSDP across the states has shown a declining inequality from 1990-91 to 2004-05 but it then increased in 2015-16. The period 2004-05 during which inequality in PCHE has seen to have increased, the PCGSDP is seen to have decreased. This could be due to the fact that the states were adjusting to the implementation of the NRHM. We also observe a high positive correlation between per capita health expenditure and per capita GSDP, which is as expected; states with higher resources tend to spend more on provision of public utilities.

**Table 1.** Per capita health expenditure and per capita GSDP across the states

| State            | Per capita Health expenditure(PCHE) | Per capita GSDP (PCGSDP) | Correlation coefficient of PCHE and PCGSDP |
|------------------|-------------------------------------|--------------------------|-------------------------------------------|
|                  | 1990-91    | 2004-05   | 2015-16 | 1990-91    | 2004-05   | 2015-16               |
| Arunachal Pradesh| 612        | 596       | 1692    | 17317      | 29462      | 54329     | 0.8998                 |
| Assam            | 191        | 65        | 563     | 15797      | 9339       | 28804     | 0.8614                 |
| Manipur          | 342        | 302       | 889     | 14385      | 20787      | 32574     | 0.8836                 |
| Meghalaya        | 482        | 416       | 861     | 17762      | 27190      | 38801     | 0.7953                 |
| Mizoram          | 347        | 750       | 2414    | 7625       | 28955      | 69542     | 0.8993                 |
| Nagaland         | 283        | 473       | 1782    | 6524       | 25705      | 61940     | 0.8886                 |
| Sikkim           | 451        | 936       | 1796    | 10455      | 31181      | 104126    | 0.8649                 |
| Tripura          | 366        | 435       | 1119    | 12446      | 27676      | 57422     | 0.9165                 |
| Mean             | 384        | 497       | 1389    | 12789      | 25037      | 55942     |                         |
| SD               | 129.17     | 268.02    | 626.26  | 4281.25    | 7063.20    | 24271     |                         |
| CoV              | 0.34       | 0.54      | 0.45    | 0.33       | 0.28       | 0.43      |                         |

Source: Calculated by authors

(b) **Interstate differences in the share of public health expenditure**: the share of public health expenditure in (a) Total public expenditure (budgetary expenditure) (b) Social Service Sector and (c) the GSDP, expressed as a percentage, is given in **Table 2**.

The share of public health expenditure in the budgetary expenditure of the state shows the state’s priority on this sector. The higher the percentage would imply the higher the priority accorded to this sector. In 1990-91 this share among the North-Eastern states ranges from 4.27% to 6.25%. But in 2004-05 the mean came down to 4.28% and goes up to 6.11%. However, if we observe the variations we can say that the interstate disparities have come down drastically in 2015-16 (0.09).

The share of public health expenditure in the social sector reveals the relative importance given to the health sector in the social sector. For the three years taken for examination, the mean declined from 16% to 13% but increased to 18% in 2015-2016. The interstate inequalities were very high in the year 2004-05 but have declined in 2015-16.

The aggregate health spending as a ratio to the GSDP is seen to have decline in most states during the period of study; the decline in most of the states (except Sikkim) is more acute in the year 2004-05. This implies that even when the per capita GSDP of the states have increased by many times the public health expenditure did not increase in the same proportion. The interstate disparity has however declined from
0.36 in 1990-91 to 0.25 in 2015-16. But the inequality is observed to be very high in 2004-05. So not only is the share of health expenditure in GSDP very low in 2004-05, the inequalities are also more pronounced.

Table 2. Interstate differences in the share of public health expenditure

| State             | % of public health expenditure to total public expenditure | % of public health expenditure to total social service expenditure | % of Health expenditure to GSDP |
|-------------------|----------------------------------------------------------|------------------------------------------------------------------|---------------------------------|
|                   | 1990-91 | 2004-05 | 2015-16 | 1990-91 | 2004-05 | 2015-16 | 1990-91 | 2004-05 | 2015-16 |
| Arunachal Pradesh | 4.69    | 4.99    | 5.70    | 17.92   | 17.26   | 19.22   | 3.53%   | 2.02%   | 3.11%   |
| Assam             | 5.92    | 3.40    | 6.36    | 15.78   | 9.79    | 14.14   | 1.21%   | 0.69%   | 1.96%   |
| Manipur           | 4.50    | 3.07    | 5.57    | 13.68   | 8.51    | 18.83   | 2.38%   | 1.45%   | 2.73%   |
| Meghalaya         | 6.25    | 5.48    | 6.60    | 17.50   | 15.13   | 21.17   | 2.71%   | 1.53%   | 2.22%   |
| Mizoram           | 4.27    | 4.53    | 7.24    | 14.11   | 14.09   | 18.87   | 4.55%   | 2.59%   | 3.47%   |
| Nagaland          | 5.53    | 6.30    | 5.79    | 18.61   | 22.83   | 19.00   | 4.34%   | 1.84%   | 2.88%   |
| Sikkim            | 5.66    | 2.74    | 5.91    | 17.65   | 13.00   | 17.77   | 4.32%   | 3.00%   | 1.73%   |
| Tripura           | 5.18    | 3.71    | 5.71    | 13.14   | 10.36   | 15.54   | 2.94%   | 1.57%   | 1.95%   |
| Mean              | 5.25    | 4.28    | 6.11    | 16.05   | 13.87   | 18.07   | 3.25%   | 1.99%   | 2.50    |
| SD                | 0.71    | 1.25    | 0.58    | 2.16    | 4.66    | 2.23    | 1.16    | 0.91    | 0.63    |
| CoV               | 0.14    | 0.29    | 0.09    | 0.13    | 0.34    | 0.12    | 0.36    | 0.46    | 0.25    |

Source: Calculated by Authors

4 Discussion

World Bank has recommended that 15% of the country's budget should be allocated to the health sector (WHO 2010 World Health Development indicator statistical Bulletin). However, the share of health expenditure to states’ budget is short of the stated figure in the North-Eastern states and India with 5.04%. The share of health expenditure to social service expenditure serves as an indicator for priority given to the health sector. However, there seems to be more scope for the states to increase this share in order to raise the productivity of the people. National Health Mission 2002 has set a target to increase the proportion of health expenditure to 2-3 % of the GSDP and evidently in most of the North-Eastern states the 2 % share has been achieved (Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland) but only Arunachal Pradesh and Mizoram are actually spending 3% of their GSDP. The share of health expenditure to GSDP is however declining in majority of the North-Eastern states which thus implies that the state governments are unable to provide the required healthcare facilities. The share of health expenditure in total expenditure and in social service expenditure has shown no commendable change in their priority post 2005 with the exception of Sikkim.

The variation in the per capita health expenditure is high for all North-Eastern states, however, the fluctuations seemed to be higher post 2005. The variation in the per capita health expenditure across the states is found to be high and highest in the year 2004-05. The variation in the per capita GSDP across the states is high and highest in 2015-16. Per capita health expenditure and per capita GSDP show high positive correlation which implies that both the variables move in the same direction as expected.

The proportion of public health expenditure to total expenditure, social service expenditure and GSDP across the states shows a similar pattern which implies that the union to state transfer is equalizing the proportion of health expenditure in the states. The coefficient of variation has declined for all the parameters which thus implies the convergence of public healthcare spending. The North-Eastern states sharing common features and with a more or less same level of socio-economic conditions can be seen to
converge to a similar pattern of healthcare spending as indicated by the declining coefficient of variation.

The other possible factors that could have contributed to the decreasing interstate variations are the increase in centrally sponsored schemes (CSS) under the National Health Mission in which NRHM is an integral part, the increase in vertical tax devolution (under the 14th Finance Commission), increase in grants and aid on special category states and allocation of revenue deficit grants on 11 states which includes majority of the North-Eastern states.

5 Conclusion

The interstate differences in health spending of the states can be due to deliberate choice, and the preferences of the individual state's choice or due to the differences in the state's capacity to provide the resources to the sector. The North-Eastern states are considered to be economically backward and hence kept in special category states. The fact that they are way behind other states in terms of development is often mentioned in government's report and surveys. The present paper has shown that per capita GSDP of these states has increased but the per capita public health spending has not increased in tandem. This implies that the private health spending must be very high to compensate for the shortage in government spending. A minimum level of health spending must be ensured in each state and this can be achieved when the states have enough of the resources to allocate to the health sector. Within the social sector, education has been given the top priority, claiming more or less 50% of the budget allocation to the social sector. The health sector must also receive more funds if we are to fully realise the gain to be had from the increased expenditure on education sector.

Another point that is worth mentioning here is the absence of consistency in the public healthcare expenditure in these states: there is no definite pattern in public health expenditure. This can be seen as the lack in long term policy by the governments of the states when it comes to the health sector. The quantum of spending is dictated by the availability of funds and resources rather than by a well defined policy. Without long term objectives and targets, increasing the resources would not yield the maximum benefits of the public expenditures.

Lastly, high expenditure does not automatically translate into positive health outcomes unless the healthcare infrastructure is improved and more so in the rural areas to bridge the rural-urban disparity. The share of public health spending to their GSDP is found to be higher than that of the entire country, yet given the fact that this particular region lags behind in terms of health infrastructure there is a need to raise the level of spending to a greater extent. The Union government needs to play a proactive role to gap the infrastructure spending in these states. This can be fulfilled by raising the state's own resources by enlarging their fiscal space. One way of enlarging the fiscal space could be broadening the tax base as these states are known for having low capacity for tax revenue. The NRHM is a centrally sponsored programme; the state governments should not neglect the provision of healthcare through its own programmes if they are really committed to bettering the health outcomes in their states.

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