THE SOUTH ASIA REVIEW
Vol. 1, No. 2, 2025, pp. 75-94

ISSN: 3107-586X
URL: http://www.pbjournals.com/tsar

Health-Wealth Chronicles: Unravelling Trends in Public Health Expenditure and Health Outcomes Across Indian States

E. Neethu[1] and T. J. Joseph[2]

[1]Assistant Professor, Department of Economics and Centre for Research, St Teresa's College, Park Ave, Marine Drive, Ernakulam, Kerala. E-mail: edavalathneethu@gmail.com.

[2]Assistant Professor, Department of Economics, Central University of Kerala, Tejaswini Hills, Kasaragod, Kerala. E-mail: .tjjoseph@gmail.com

To Cite this Article

Neethu, E., & Joseph, T.J. (2025). Health-Wealth Chronicles: Unravelling Trends in Public Health Expenditure and Health Outcomes Across Indian States. *The South Asia Review,* 1: 2, pp. 75-94.

Abstract: *The study examines the trend, pattern, and composition of public health expenditure in India from 2004–05 to 2019–20, both at the national and state levels. The findings indicate that per capita public health expenditure recorded a significant positive growth rate of 15.64 percent during the study period. Simultaneously, key health outcome indicators such as the Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR) exhibited a consistent decline, reflecting notable improvements in public health. The analysis further reveals a negative correlation between public health expenditure and both IMR and MMR, suggesting that higher levels of public spending are associated with better health outcomes. In terms of composition, revenue expenditure consistently exceeded capital expenditure across both levels, indicating a greater emphasis on operational and maintenance costs relative to infrastructure development. Moreover, the distribution of public health expenditure by level of care displays significant inter-state disparities, pointing to unequal allocation and prioritization of health resources among Indian states. The study highlights the need for increased and well-balanced investment in the public health sector to ensure equitable and sustainable improvements in health outcomes across the country.*

Keywords: *High Focused States, IMR, MMR, Non-High Focused States, Public health expenditure,*

Introduction

It is widely acknowledged that increasing the level of public spending on health not only helps the fight against major communicable and non-communicable

Received : 11 August 2025 • **Revised :** 14 September 2025 • **Accepted :** 29 September 2025 • **Published :** 30 December 2025

diseases but also helps in the eradication of extreme poverty, achieving Sustainable Development Goals (SDGs) and boosting economic growth and development of the country (Hooda, 2017). The developed countries devote more public health expenditure and have better health outcomes than the developing countries. Furthermore, the average per capita health expenditure in low-income countries was $41 in 2007 (National Commission on Macroeconomics and Health, 2005), while high-income countries spent an average of $2937 as per capita health expenditure (World Health Organization, 2019). Over time, India's government has enacted a series of policies and convened multiple committees with the aim of augmenting public health expenditure. The Bhore Committee was formed in 1946 and the committee recommended the establishment of a Primary Health Centre (PHC) with 75 beds for every 10,000-20,000 people (Das and Guha, 2023). Similarly, the programmes like the Community Development Programme (1951-1955), the Alma Ata Declaration of 1978, the first National Health Policy of 1983, and India's strategy to achieve "Health for All by the Year 2000 AD" were to improve India's healthcare infrastructure by expanding Public Health Centres, Sub-Centres, and Community Health Centres (CHC) across states (Selvaraju and Annigeri, 2001). In a similar vein, the National Health Policy (2002), National Rural Health Mission (2005), and Universal Health Coverage Report (2012) set an ambitious target of raising government health spending to 2 to 3 percent of GDP (Ministry of Health and Family Welfare, 2023). Moreover, the recent National Health policy report (2018) has set a target to increase the level of public health spending from the existing 1.5 percent of GDP to 2.5 percent of GDP by 2025 (Das and Guha, 2023).

Although public health expenditure in India has increased over the years, the share is woefully inadequate and is constantly lagging behind private sector spending (Global Burden of Disease Health Financing Collaborator Network, 2019). This has affected India's progress in various health outcomes. The Infant Mortality Rate (IMR) of India is 28.3 while Sri Lanka's is 6.1 in 2019 (World Bank, 2020). In 2019, 68.4 percent of children and 66.4 percent of women were anaemic in India (Ministry of Health and Family Welfare, 2020). Against this backdrop, this paper analyses the trends, composition and pattern of public health expenditure and health outcomes in India both at the national and at the state level.

Health Expenditure and Health Outcome: The International Experience

Expenditure on health is highly unequal among the countries globally (Economic Research Foundation, 2006). The health expenditure and various health outcomes

of the selected countries for the year 2020 are presented in Table 1. The United States leads in highest health spending (Current Health Expenditure (CHE)) among the selected countries (US$11702.41), followed by Norway (US$7704.4). Health spending is the lowest in Pakistan (US$38) among the given countries, followed by Bangladesh (US$51), India (US$56.6) and Nepal (US$58). This shows that health expenditure is higher among the developed countries compared to the developing countries (World Bank, 2020). Among the developed countries in Table 1, Brazil registers the highest health expenditure, spending US$ 700 in 2020. In contrast, Pakistan stood at the bottom. Among the least health-spending economies in the developing world, India is among the bottom three. India is also one of the lowest health-spending economies in the OECD countries. The per capita health expenditure in India is just 6 percent of the OECD average (OECD Health Statistics, 2021).

Table 1: Health Expenditure and Health Outcome in Selected Countries

States	*CHE*	*Govt. Health expenditure as % of CHE*	*OOPE as a % of CHE*	*Govt. Expenditure as a % of GDP*	*GDP per capita (Current US$)*	*IMR*	*MMR*
Afghanistan	80.29	7.64	74.81	1.19	516.87	44.8	620
Austria	5585.09	76.37	16.80	8.76	48809.23	3	5
Azerbaijan	191.23	34.50	65.20	1.59	4229.91	17.4	41
Bangladesh	50.66	18.05	74.00	0.47	2233.31	24.1	123
Brazil	700.71	44.75	22.39	4.62	6923.70	13.1	72
Canada	5619.42	74.97	12.43	9.70	43349.68	4.5	11
Colombia	477.27	72.66	13.59	6.53	5304.29	11.4	75
Croatia	1094.53	81.88	10.45	6.36	14236.54	4	5
Cuba	1186.16	91.02	8.92	11.37	9499.59	4.1	39
Denmark	6438.39	84.86	12.83	8.93	60915.42	3.2	5
Egypt	150.91	31.93	59.31	1.39	3571.56	16.8	17
France	4768.73	76.72	8.94	9.36	39055.28	3.4	8
Georgia	320.01	36.53	46.84	2.78	4255.74	8.5	28
Germany	5930.33	78.44	12.54	10.06	46772.83	3.1	4
Iceland	5636.94	83.30	15.02	7.96	58813.80	2.1	3
India	**56.63**	**36.65**	**50.59**	**1.08**	**1913.22**	**26.8**	**103**
Indonesia	132.96	55.05	31.79	1.88	3895.62	19.5	173
Italy	3057.04	76.08	21.28	7.33	31918.69	2.4	5
Japan	4388.10	84.24	12.57	9.19	39986.93	1.8	4
Malaysia	418.66	52.75	35.89	2.18	10160.83	6.6	21

States	*CHE*	*Govt. Health expenditure as % of CHE*	*OOPE as a % of CHE*	*Govt. Expenditure as a % of GDP*	*GDP per capita (Current US$)*	*IMR*	*MMR*
Myanmar	72.11	15.95	78.20	0.74	1477.45	34.7	179
Nepal	58.31	30.05	54.17	1.55	1139.19	23.6	174
Norway	7704.44	85.72	13.90	9.79	68340.02	1.8	2
Pakistan	38.18	35.21	55.44	1.04	1322.31	54.4	154
South Africa	489.64	62.10	53.37	5.33	5741.64	26.9	127
Sri Lanka	151.06	45.81	53.37	1.86	3852.39	6	29
Sweden	6027.97	85.91	13.03	9.78	52837.90	2.1	5
Thailand	305.09	85.91	10.54	3.07	7001.79	7.4	29
Turkiye	395.24	78.85	16.43	3.64	8561.06	8.1	17
United Kingdom	4926.63	83.70	13.60	10.02	40318.42	3.7	10
United States	11702.4	56.77	9.89	10.68	63528.63	5.4	21

CHE = Current Health Expenditure, OOPE = Out-Of-Pocket Expenditure
Source: World Bank, 2020

Similar trend is also visible in terms of government health expenditure as a percentage of the Current Health Expenditure (CHE). More than 50 percent of the health expenditure in developed countries is financed by their respective government. For example, in Norway and Sweden, public health expenditure constitutes 85 percent of the health expenditure. Among the developing countries, the lowest public health spending was found in Afghanistan (7.64 percent of the CHE). In India, only 36 percent of the health expenditure is financed by the government and 50 percent is by Out-Of-Pocket Expenditure (OOPE). Thus, the ratio of public health expenditure to OOPE is higher in developed countries, whereas OOPE dominates health spending in low- and middle-income countries (Hooley et al., 2022).

The share of public health expenditure as a percentage of GDP is highest in Cuba. The government of Cuba spent 11 percent of GDP on healthcare as opposed to 0.47 percent in Bangladesh. The share of public health expenditure as a percentage of GDP in India (1.08 percent) is the lowest even compared to neighbouring countries like Sri Lanka (1.86 percent) and Nepal (1.55 percent). Similarly, although India's GDP per capita (US$1913) is almost three times higher than that of Afghanistan (US$516), Afghanistan allocates a greater portion of its GDP to healthcare (1.19 percent).

In terms of health outcomes, as seen in Table 1, IMR is highest in Pakistan (54.4) followed by Afghanistan (44.8 per 1000 live births), while IMR is lowest in Norway

and Japan (1.8). With regards to maternal deaths, Norway has registered the lowest MMR among the selected countries, with 2 maternal deaths per 10000 live births. Therefore, the health outcomes in developed countries are much better compared to those in developing countries (World Health Organisation, 2021). India is one of the countries with higher IMR and MMR. The IMR and MMR stood at 26.8 and 103, respectively.

Table 1 further reveals that countries with higher public health spending have better health outcomes. For example, in countries like Norway, Denmark, Iceland, Croatia and Japan more than 80 percent of the health expenditure is financed by the government and both IMR and MMR in these countries are less than 10 percent. The existing studies also show that more public finance on health will enhance public health standards (World Bank, 2020; Mohanty and Behrea, 2020; Lone et al., 2021). Whereas Out-Of-Pocket Expenditure dominates Current Health Expenditure in countries with poor health outcomes. For example, In Afghanistan, government health expenditure as a percentage of GDP was only 7 percent while it stood at 15 percent in Myanmar.

Public Health Expenditure and Health Outcome in India at National Level: An Overview

The trajectory of public health expenditure and health outcome indicators of IMR and MMR in India from 2004-05 to 2020-21 is given in Table 2. The per capita public health expenditure in India stood at ₹174 in 2004-05. It has drastically increased to ₹1532 per capita in 2020-21. On average, the per capita public health spending in India has been increasing with an annual growth rate of 13.80 percent during this period. Continuous efforts from the government through the implementation of various policies and measures like the National Health Mission (NHM) and budgetary allocations have increased public health expenditure in India (Ministry of Health and Family Welfare, 2023). In terms of maternal and child health outcomes, both IMR and MMR chart a declining trend during the period. The IMR in India was 57.80 percent in 2004-05 which has been reduced to 45.10 percent in 2010-11. The IMR has further dropped to 26.80 in 2020-21. Thus, on average, the IMR has registered a negative growth rate of 5 percent. Similarly, the MMR has also shown a declining trend from 2004-05 to 2020-21. More specifically, the MMR in India has reduced from 301 to 103 with an average decline of 6.83 percent. The decline in MMR is higher compared to the decline in IMR (See Table 2). One of the possible

reasons for the decline in both IMR and MMR is the introduction of NHM in 2005. Maternal and child health is a key focus of NHM through its 'Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A)' (Government of India, 2020). The key strategies of this programme are to increase the level of public health spending for primary healthcare, decentralisation of health planning and management to the local level using Accredited Social Health Activist (ASHA) and provide cash incentives to pregnant women for encouraging the use of facility-based maternal and child health services (Government of India, 2020). Besides this, a few state governments have launched several programmes with similar objectives. For example, Rajasthan enhanced NHM by implementing Janani Shishu Suraksha Yojan in 2011 (Government of Rajasthan, 2020). In 2011, the state of Odisha introduced the MAMTA scheme (Government of Odisha, 2020). These efforts have increased the number of institutional deliveries, immunizations, and the number of antenatal care visits, which eventually helps to reduce maternal and child deaths (Singh and Vellakkal, 2021).

Table 2: Trends and Pattern of Public Health Expenditure and Health Outcomes in India

Year	*Total Public health expenditure*	*Population (in Lakhs)*	*Per capita Public health exp*	*IMR*	*MMR*
2004 - 2005	1877162	18771.62	173.95	57.80	301.00
2005 - 2006	2203122	22031.22	201.07	55.70	286.00
2006 - 2007	2537472	25374.72	228.15	53.60	248.00
2007 - 2008	2890770	28907.7	256.16	51.50	234.00
2008 - 2009	3435317	34353.17	300.10	49.30	221.00
2009 - 2010	4233509	42335.09	364.70	47.20	207.00
2010 - 2011	4913931	49139.31	417.59	45.10	179.00
2011 - 2012	5660907	56609.07	474.71	42.90	170.00
2012 - 2013	6630100	66301	548.80	40.90	162.00
2013 - 2014	7440398	74403.98	608.08	38.80	154.00
2014 - 2015	9653430	96534.3	779.20	36.90	135.00
2015 - 2016	11007720	110077.2	877.80	35.00	128.00
2016 - 2017	12518906	125189.06	986.55	33.20	121.00
2017 - 2018	14638260	146382.6	1140.41	31.50	119.00
2018 - 2019	16537714	165377.14	1274.05	29.80	116.00
2019 - 2020	19263550	192635.5	1467.99	28.30	116.00
2020-2021	20521795.4	13397.41	1531.77	26.80	103.00

Source: Reserve Bank of India (RBI) State Finances- Study of Budgets, 2020; Population projection report, 2001; World Bank data, 2020.

Figure 1 gives the trend in the per capita public health expenditure and IMR & MMR in India from 2004-05 to 2020-21. The per capita public health expenditure shows an increasing trend while the health outcome indicators, both IMR and MMR, depict a decreasing trend during the study period. It is evident from Figure 1 that as the level of public health expenditure increases the IMR and MMR decline.

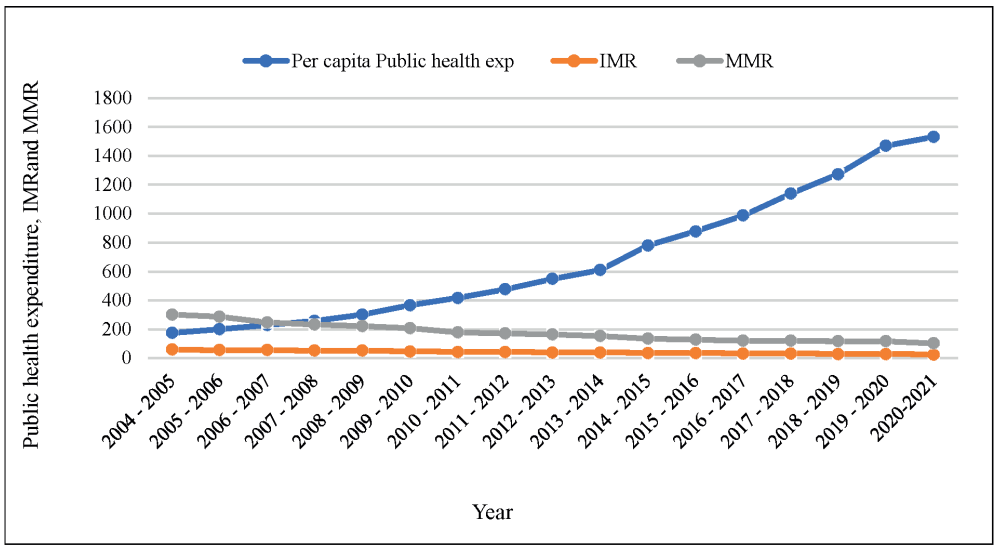

Figure 1: Public health expenditure and IMR and MMR

Source: Author's Estimation based on Table 2

Public Health Expenditure as a percentage of Gross Domestic Product (GDP)

The public health expenditure as a percentage of GDP shows the level of resources allocated to the health sector compared to other sectors. It highlights the significance of the health sector within the economy and reflects societal priority assigned to health, measured in money terms (World Health Organization, 2024). Figure 2 shows the trends in government health expenditure as a percentage of GDP in India compared to the world average. The government health expenditure as a percentage of GDP of the world was 5.49 percent in 2004-05, which increased to 5.71 percent in 2011-12 and further increased to 6.90 in 2020-21. The percentage of GDP allocated for healthcare in the world has registered a positive growth of 1.44 percent during the study period. The proportion of GDP spent on healthcare was highest (6.9 percent) during 2020-21 and was the lowest (5.43 percent) in 2008-09. The Covid-19 pandemic has resulted in a sudden increase in allocations to the

health sector during 2019-20 and 2020-21, mainly as an initial response to mobilize resources to control the spread of the pandemic.

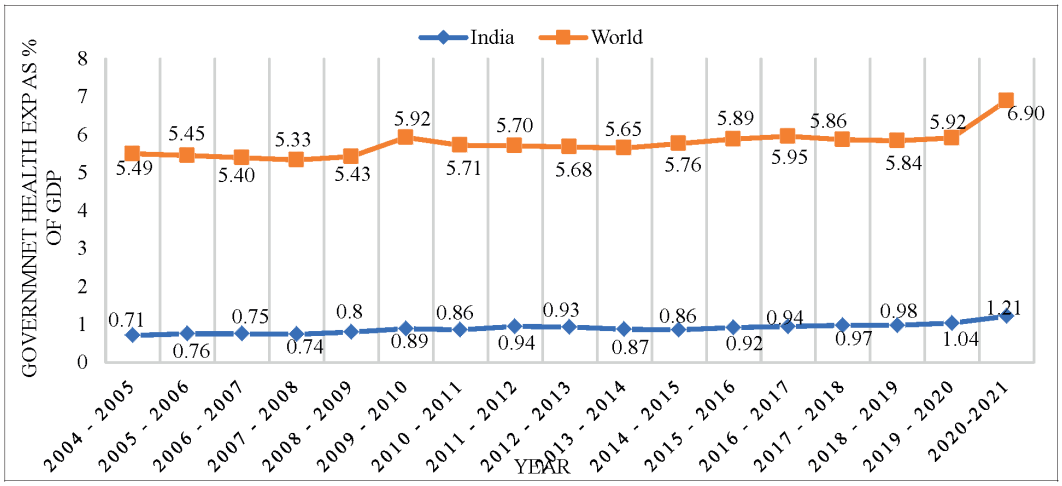

Figure 2: Government Health Expenditure as a Percentage of GDP

Source: World Bank data, 2020

In 2004-05, about 0.71 percent of GDP was spent on healthcare in India, which has increased to 0.93 percent in 2010-11, and further increased to 1.08 percent in 2020-21. Therefore, the proportion of GDP spent on healthcare has been increasing in India with an average annual growth of 2.65 percent during 2004-05 to 2020-21. A close observation of Figure 2 indicates that there was sluggishness in government health expenditure as a percentage of GDP during the period from 2011-12 to 2015-16.

Correlation between Public Health Expenditure and Maternal & Child Health Outcomes

Figure 3 and Figure 4 exhibit the correlation between public health expenditure and IMR and MMR, respectively. Public health expenditure has a negative correlation with both IMR and MMR. It shows an increase in the level of public health expenditure alongside declining IMR and MMR during the study period. During the initial periods when public health expenditure was low, both IMR and MMR were high. As public health expenditure increased, both IMR and MMR began to decline as well.

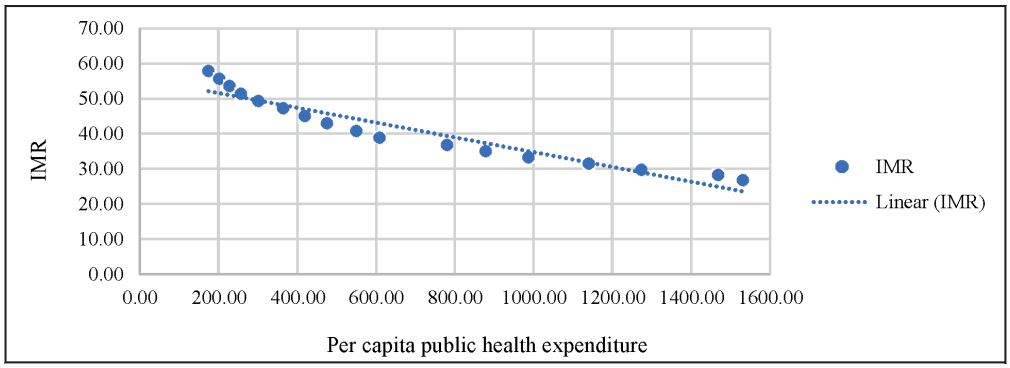

Figure 3: Correlation between Public Health Expenditure and IMR

Source: Author's estimation based on Table 2

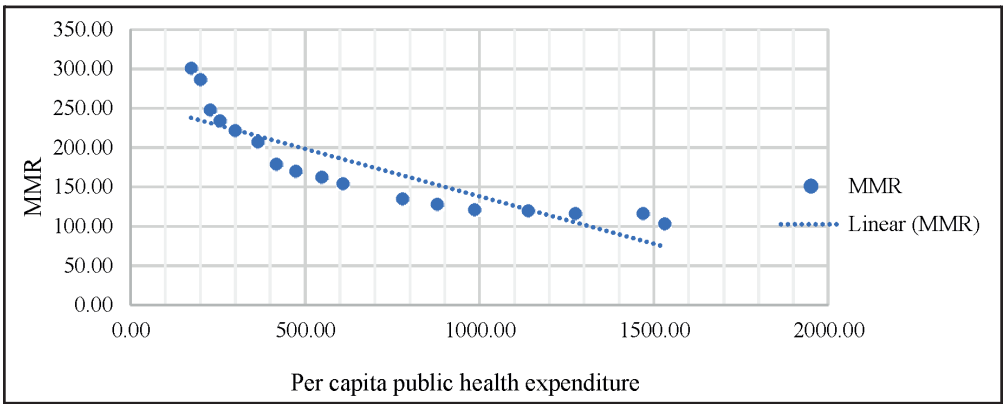

Figure 4: Correlation of Public Health Expenditure and MMR

Source: Author's estimation based on Table 2

Composition of Public Health Expenditure by Revenue and Capital Account

The allocation of public health expenditure in India under the revenue and capital account is given in Table 3. On the revenue side, the public health expenditure on health has increased from 165 rupees per capita in 2004-05 to 381 rupees per capita in 2010-11. The same increased to 1439 rupees per capita in 2020-21. The revenue health expenditure has shown an increasing trend with an average annual growth rate of 16 percent from 2004-05 to 2020-21. Similarly, on the capital side, public health expenditure has increased to 36 rupees per capita in 2010-11 from 9 rupees per capita in 2004-05. The capital health expenditure exhibits a continuously increasing trend with an average annual growth rate of 24 percent. Furthermore, the

proportion of revenue health expenditure is higher in total public health expenditure compared to capital health expenditure (see Figure 5).

Table 3: Composition of Revenue and Capital Health Expenditure in India

Year	*Revenue health exp (in lakh)*	*Capital health exp (in lakh)*	*Population (in lakhs)*	*Revenue health exp (per capita)*	*Capital health exp (per capita)*
2004- 2005	1776035	101127	1011.27	164.58	9.37
2005- 2006	2030554	172568	1725.68	185.32	15.75
2006- 2007	2220505	316967	3169.67	199.65	28.50
2007 -2008	2545180	345590	3455.9	225.53	30.62
2008 -2009	3064869	370448	3704.48	267.74	32.36
2009 -2010	3830116	403393	4033.93	329.95	34.75
2010 -2011	4489366	424565	4245.65	381.51	36.08
2011 -2012	5152897	508010	5080.1	432.11	42.60
2012 -2013	6016699	613401	6134.01	498.02	50.77
2013 -2014	6652890	787508	7875.08	543.72	64.36
2014 -2015	8570564	1082866	10828.66	691.80	87.41
2015 -2016	9747075	1260645	12606.45	777.27	100.53
2016 -2017	11147144	1371762	13717.62	878.45	108.10
2017 -2018	13272201	1366059	13660.59	1033.98	106.42
2018 -2019	14898571	1639143	16391.43	1147.77	126.28
2019 -2020	17293470	1970080	19700.8	1317.86	150.13
2020 -2021	19085771	2535294	13397.41	1439.18	191.18

Source: Reserve Bank of India (RBI) State Finances- Study of Budgets,2020; Population Projection Report,2001.

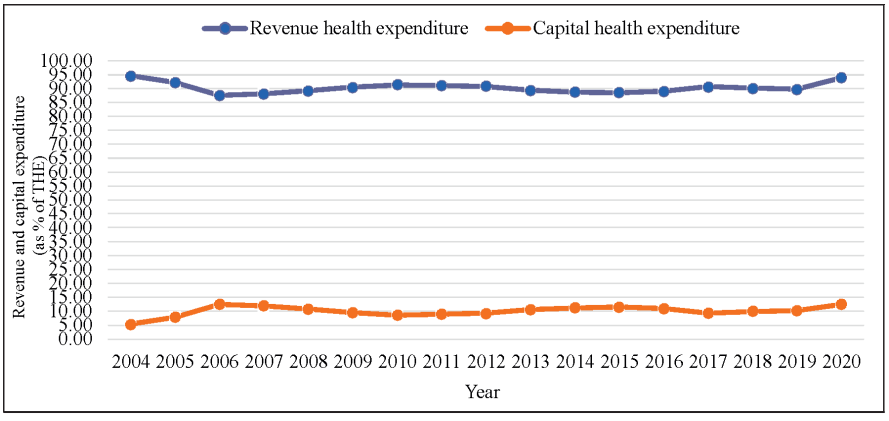

Figure 5: The proportion of Revenue and Capital Health Expenditure as a Percentage of Total Health Expenditure (THE)

Source: Author's estimation based on Table 3

Composition of Public Health Expenditure by Level of Care

The allocation of government health expenditure to the primary, secondary and tertiary healthcare is given in Figure 6. The primary health expenditure and secondary health expenditure stagnated from 2013-14 up to 2016-17, but the trend reversed, and primary health expenditure continued to surge till 2019-20. On the other hand, secondary health expenditure increased from 23 percent in 2016-17 to 31 percent in 2017-18 but experienced a drop from 2017-18 to 2019-20. The tertiary health expenditure witnessed a continuous decline during the period. The tertiary health expenditure was 13 percent of current health expenditure in 2013-14, which declined to 6.4 percent in 2019-20. Moreover, primary health expenditure constitutes a larger share of total public health expenditure at the national level than secondary and tertiary health expenditure. This may be due to India's commitment to achieve Universal Health Coverage (UHC). The concept of primary healthcare was outlined in the Alma-Ata declaration (1978) which was considered to be a whole-of-government and whole-of-society approach to health for achieving improved health and wellbeing of the population (World Health Organization, 2021). Recognizing the importance of primary healthcare, India also initiated several programmes and legislations for strengthening primary healthcare like the National

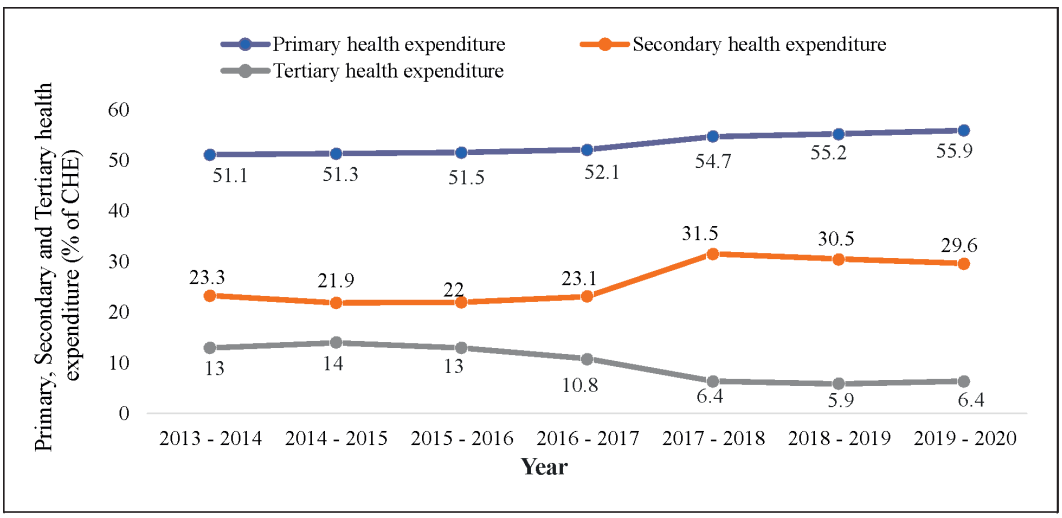

Figure 6: Composition of Primary, Secondary and Tertiary Health Expenditure as a Percentage of Current Health Expenditure (CHE)

Source: National Health Account (NHA) Reports, 2020

Health Mission (2005), National Health Policy (2017) and Ayushman Bharat Yojana (2018). Systematic efforts from the part of the government have resulted in a steady increase in primary health expenditure in the country compared to secondary and tertiary health expenditure (Kadarpeta et al., 2024).

Public Health Expenditure and Maternal & Child Health Outcome: State-Level Analysis

Table 4 examines inter-state variation in average public health expenditure, IMR and MMR in India during the study period of 2004-05 to 2019-20. The table shows a considerable degree of disparity in terms of average health expenditure and health outcomes among the 15 major Indian states. Kerala stood in the first place for the highest government spending on healthcare (979 rupees per capita). On the other hand, the public health expenditure in Bihar has been the lowest (326 rupees per capita). In terms of health outcomes, the lowest IMR and MMR are found in Kerala, which is 11 and 62, respectively. IMR is higher in Madhya Pradesh, where on average 60 infants per 1000 live births die before reaching one year of age during the study period. Likewise, Assam has registered the highest MMR in the selected states. In Assam on average, 304 mothers died per 100000 live births during 2004-05 to 2019-20. It is interesting to note that some of the High Focused States (HFS)[1] which spend a larger amount as public health expenditure than Non-High Focused States (NHFS)[2], still have poor IMR and MMR in comparison with NHFS. For example, the average public health expenditure in Rajasthan is 716 rupees per capita which is higher than public health expenditure in Andhra Pradesh (527 rupees per capita), Maharashtra (577 rupees per capita), Punjab (635 rupees per capita) and West Bengal (543 rupees per capita). However, the average IMR and MMR in Rajasthan is 52 and 240 respectively, which is higher than average IMR and MMR in Andhra Pradesh (IMR=43 and MMR=96), Maharashtra (IMR =26 and MMR=74), Punjab (IMR=31 and MMR=151) and West Bengal (IMR=31 and MMR=118) from 2004-05 to 2019-20.

Similarly, in other HFS like Assam and Odisha, the average public health expenditure are 687 and 592 rupees per capita, respectively. The government health expenditure in these states is larger than the average public health spending in some of the NHFS like Andhra Pradesh, Maharashtra, and West Bengal, yet average IMR in Assam and Odisha is 55 and 57 per 1000 live births, which is higher than the average IMR and MMR in Andhra Pradesh (43), Maharashtra (26), and West Bengal

(31) during the study period. In the same vein, the average MMR in Assam (304 per 10000 live births) and Odisha (207 per 100000 live births) are higher than the average MMR in Andhra Pradesh (96), Maharashtra (74) and West Bengal (118). The study reveals that there is a mismatch between the level of health expenditure and health outcomes as a few states with higher public health expenditure do not exhibit better health outcomes. It necessitates the need to examine whether the allocation pattern within the public health expenditure is the reason for such a mismatch.

Table 4: Inter-state Disparity in Average Public Health Expenditure and Maternal & Child Health Outcome in India from 2004-05 to 2019-20

States	*Average public health exp (per capita)*	*Average IMR*	*Average MMR*	*Rank Based on*		
				Public health expenditure	*IMR*	*MMR*
High Focused States						
Assam	688	55	304	7	12	15
Bihar	326	46	204	15	10	10
Madhya Pradesh	491	60	220	13	15	12
Odisha	592	57	207	9	14	11
Rajasthan	717	52	240	4	11	13
Uttar Pradesh	459	56	275	14	13	14
Non-High Focused States						
Andhra Pradesh	528	43	96	12	8	4
Gujrat	761	41	108	3	7	5
Haryana	698	44	125	6	9	7
Karnataka	710	35	135	5	6	8
Kerala	979	12	62	1	1	1
Maharashtra	577	27	74	10	3	2
Punjab	635	31	151	8	5	9
Tamil Nadu	845	25	79	2	2	3
West Bengal	543	31	118	11	4	6

*The ranking of states based on average public health expenditure is in descending order and the Ranking of states based on average IMR and MMR is in ascending order.
Source: Author's estimation

Inter-State Disparity in Composition of Public Health Expenditure by Revenue and Capital Account

The state-wise analysis of revenue and capital health expenditure along with IMR and MMR for the period from 2004-05 to 2019-20 is given in Table 5. The average revenue health expenditure is higher in Kerala (941 rupees per capita) during the

study period. Whereas Uttar Pradesh stands at the bottom in terms of average revenue health expenditure (383 rupees per capita). In terms of capital health expenditure, Gujrat is in first place. On average, the Gujrat government spent 149 rupees per capita of capital health expenditure during the study period. On the other hand, the average capital health expenditure is very low in Punjab (14.44 rupees per capita). Thus, there is an inter-state disparity in terms of revenue and capital health expenditure in India. Furthermore, the percentage of revenue health in total health expenditure is higher than the capital health expenditure in all the selected states. However, the ratio of revenue and capital health expenditure is also differ in the selected states.

Table 5: Inter-state Disparity in Revenue and Capital Health Expenditure and Health Outcome in India from 2004-05 to 2019-20

States	*Average Revenue health exp (per capita)*	*Average Capital health exp (per capita)*	*Revenue: Capital Ratio*	*Average IMR*	*Average MR*
High Focused States					
Assam	657	31	96:4	55	304
Bihar	275	51	84:16	46	204
Madhya Pradesh	447	44	91:9	60	220
Odisha	533	59	90:10	57	207
Rajasthan	679	38	95:5	52	240
Uttar Pradesh	383	75	84:16	56	275
Non-High Focused States					
Andhra Pradesh	510	18	97:3	43	96
Gujrat	612	149	80:20	41	108
Haryana	654	44	94:6	44	125
Karnataka	626	84	88:12	35	135
Kerala	941	39	96:4	12	62
Maharashtra	539	38	93:7	27	74
Punjab	621	14	98:2	31	151
Tamil Nadu	786	59	93:7	25	79
West Bengal	480	63	88:12	31	118

Source: Author's estimation

Inter-State Disparity in Composition of Public Health Expenditure by Level of Care

The allocation of public health expenditure on primary, secondary and tertiary healthcare during the period from 2015-16 to 2021-22 is given in Table 6. Inter-state disparities exist in the composition of public health expenditure by level of care. In some states like Gujrat, Odisha, Andhra Pradesh, and Tamil Nadu, the average primary health expenditure is higher than the average secondary and tertiary health expenditure. On the other hand, in Kerala, Haryana, Rajasthan, Punjab, Bihar and West Bengal, the average secondary health expenditure is higher. The allocation of tertiary health expenditure is smaller compared to the allocation of primary and secondary health expenditure. Even though the proportion of primary health expenditure to current health expenditure is higher at the national level, there is a disparity in the proportion of primary, secondary and tertiary health expenditure in total health expenditure at the state level. Thus, from the observation above, it is evident that there are interstate disparities in the allocation of public health expenditure in terms of primary, secondary and tertiary health expenditure. Therefore, this study examines whether these differences in the allocation pattern of public health expenditure by level of care have any significant impact on maternal and child health outcomes in India.

Table 6: Inter-state Disparity in Primary, Secondary and Tertiary Health Expenditure in India from 2015-16 to 2021-22

States	*Average Primary health exp (per capita)*	*Average Secondary health exp (per capita)*	*Average Tertiary health exp (per capita)*	*Average IMR*	*Average MMR*
Andhra Pradesh	659.02	147.615	103.95	29.3	42.71
Bihar	132.07	155.69	54.79	32.57	120.57
Gujarat	815.48	329.13	112.26	27.14	54.14
Haryana	523.66	534.36	318.9	30.42	115.57
Kerala	689.81	722.81	396.55	8.14	27.14
Odisha	395.65	192.21	125.28	39.85	118.28
Punjab	446.84	581.65	91.91	19.85	104.42
Rajasthan	349.9	407.71	151.63	36.42	110.71
Tamil Nadu	589.8	374.14	183.14	15.14	53.28
West Bengal	267.4	8.9	97.04	22	96.71

Source: Author's estimation

Major Findings

This paper examined the overview of public health expenditure and major health outcomes (maternal and child health) in India. Recognizing the importance of government allocation in healthcare, the Government of India has initiated several measures to augment public health financing. However, India is one of the lowest public health spending economies. The public health expenditure in India is low in terms of the percentage of public health expenditure to the current health expenditure and as a percentage of GDP. Similarly, maternal and child mortality in India proxied by IMR and MMR are higher in comparison with its neighboring countries. Furthermore, the analysis also shows that countries with higher levels of public health spending display better health outcomes (Thomson et al.,2024)

At the national level, per capita public health expenditure has been on an increasing trend with a positive growth rate during the study period. The public health expenditure as a percentage of GDP has been on an upward trend from 2004-05 to 2020-21. Similarly, the nation achieved significant improvements in maternal and child health outcomes. The maternal and child mortality rate proxied by IMR, and MMR has drastically reduced during the study period. Furthermore, the scatter plot has exhibited a negative correlation between the level of public health expenditure and IMR, and MMR. In terms of composition of public health expenditure, both revenue and capital health expenditure showed continuous increases with a positive growth rate during the study period. However, the share of revenue health expenditure is consistently higher than capital health expenditure in total health expenditure throughout the years. The composition of public health expenditure by level of care reveals that primary health expenditure constitutes a major share of public health expenditure in India.

The state-level analysis of public health expenditure and maternal and child health outcomes exhibits interstate disparities in public health spending and maternal & child mortality rates. The state-level analysis reveals that some of the HFS like Rajasthan, Assam and Odisha are allocating more public funds to healthcare than some of the NHFS states, namely Andhra Pradesh, Maharashtra, Punjab, and West Bengal. Despite having higher allocations of public health expenditure, the maternal and child mortality rate is higher in HFS than in NHFS. The composition of public health expenditure by revenue and capital account also reveals significant inter-state disparity. Similar to the national story, the proportion of revenue expenditure

outweighed capital health expenditure in total public health expenditure among the Indian states. The composition of public health expenditure by level of care also exhibits inter-state disparities. The allocation of public funds favoured primary healthcare in Gujrat, Odisha, Andhra Pradesh, and Tamil Nadu, while secondary health expenditure constituted a major share of total public health expenditure in Kerala, Haryana, Rajasthan, Punjab, Bihar, and West Bengal.

Conclusion and Policy implication

The present study has examined the trend, composition, and pattern of public health expenditure in India from 2004–05 to 2019–20. The analysis reveals a steady and positive growth in public health spending during this period, indicating the government's increasing commitment to the health sector. However, despite this upward trend, the overall level of public health expenditure in India remains insufficient when compared to the growing health needs of the population. India's aspiration to increase public health expenditure to 2.5 percent of GDP, as envisaged in the National Health Policy 2017, still remains unfulfilled. The persistent gap between policy goals and actual expenditure highlights the need for stronger fiscal prioritization of health in national and state budgets.

In this context, deliberate and well-structured policy measures are essential to enhance the level and efficiency of public health expenditure. The government must not only focus on raising the total allocation to the health sector but also ensure that funds are utilized effectively to achieve equitable and sustainable health outcomes. Particular emphasis should be placed on increasing the share of capital health expenditure in the total health outlay. Investments in health infrastructure, medical equipment, and human resources create lasting improvements in service delivery and contribute to the long-term economic and social development of the country.

Furthermore, addressing the significant inter-state disparities in public health spending is crucial to ensuring equitable access to quality healthcare across regions. States with lower fiscal capacity and weaker health systems require targeted financial and technical support from the central government. Strengthening cooperative federalism in health financing will help reduce inequality and improve overall population health. In sum, a strategic, equitable, and sustainable increase in public health expenditure is imperative for achieving better health outcomes and advancing inclusive economic growth in India.

Notes

1. The HFS are those states with high mortality and fertility indicators. These states have poor health indicators and health infrastructure compared to NHFS. The HFS are Uttar Pradesh, Uttaranchal, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Orissa, Rajasthan, Himachal Pradesh, Jammu and Kashmir, Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Mizoram, Sikkim, and Tripura.
2. The NHFS are Andhra Pradesh, Goa, Haryana, Kerala, Karnataka, Punjab, Tamil Nadu, Gujrat, and West Bengal (Mohanty and Behera, 2020).

Reference

Das, T., & Guha, P. (2023). Pattern of Public Healthcare Expenditure and Preparedness for COVID-19 in India: An Interstate Analysis. *Journal of Health Management*, 09720634231215390. https://doi.org/10.1177/09720634231215390.

Global Burden of Disease Health Financing Collaborator Network. (2019). Past, present, and future of global health financing: a review of development assistance, government, out-of-pocket, and other private spending on health for 195 countries, 1995–2050. *The Lancet*, *393*(10187), 2233-2260. https://doi.org/10.1016/S0140-6736(19)30841-4.

Government of India. (2020). Sample Registration System (SRS)-Bulletin 2020, Vol. 55-I. Office of the Registrar General. https://censusindia.gov.in/nada/index.php/catalog/42687

Government of Odisha, (2020). MAMATA Scheme. Department of Women & Child Development and Mission Shakti, Goverment of Odisha. Mamata | Department of Women and Child Development (odisha.gov.in)

Government of Rajasthan, (2020). Rajasthan Janani-Shishu Suraksha Yojana (RJSSY). Department of Medical, Health and Family Welfare, Government of Rajasthan. Official Website (rajswasthya.nic.in).

Hooda, S. K. (2017). Out-of-pocket payments for healthcare in India: who have affected the most and why?. *Journal of Health Management*, *19*(1), 1-15. https://doi.org/10.1177/0972063416682535.

Hooley, B., Afriyie, D. O., Fink, G., & Tediosi, F. (2022). Health insurance coverage in low-income and middle-income countries: progress made to date and related changes in private and public health expenditure. *BMJ Global Health*, *7*(5), e008722.

Kadarpeta, R. S. R., Anand, J. S., & Achungura, G. (2024). Strengthening Public Financing of Primary Healthcare in India: A Perspective. *Health Services Insights*, *17*, 11786329241249289.

Lone, T. A., Sheereen, Z., Dar, J. A., & Lone, P. A. (2021). Does health expenditure affect health outcomes? A cointegration based approach to the Indian healthcare system. *International*

Journal of Behavioural and Healthcare Research, *7*(3), 227-240. http://doi.org/101504/IJBHR.2021.10036938.

Ministry of Health and Family Welfare. (2020). *National Family Health Survey (NFHS-5), 2019-20: India report*. International Institute for Population Sciences. Retrieved from https://main.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf.

Ministry of Health and Family Welfare. (2023). National Health Policy Repot,2002. http://mohfw.nic.in/np2002.htm.

Mohanty, R. K., & Behera, D. K. (2020). How Effective is Public Health Care Expenditure in Improving Health Outcomes? An Empirical Evidence from Indian States. *NIPFP working paper series.* Retrieved from https://www.nipfp.org.in/publications/working-papers/1897/.

National Commission on Macroeconomics and Health (2005). Financing and delivery of healthcare services in India. National Commission on Macroeconomics and Health Background Papers, Ministry of Health and Family Welfare, Government of India, New Delhi. Details for: Report of the National Commission on Macroeconomics and Health. › WHO Searo Library catalog.

OECD Health Statistics. (2021). WHO Global Health Expenditure Database. Health expenditure per capita | Health at a Glance 2021 : OECD Indicators | OECD iLibrary (oecd-ilibrary.org)

Selvaraju, V., & Annigeri, V. B. (2001). Trends in Public Spending on Health in India. *New Delhi: National Institute of Public Finance and Policy. Background paper for the Commission on Macro Economics and Health (India)*. Trends in Public Spending on Health (researchgate.net).

Singh, A., & Vellakkal, S. (2021). Impact of public health programs on maternal and child health services and health outcomes in India: A systematic review. *Social Science & Medicine*, *274*, 113795. https://doi.org/10.1016/j.socscimed.2021.113795.

Thomson, S., Cylus, J., Al Tayara, L., Martínez, M. G., García-Ramírez, J. A., Gregori, M. S., ... & Evetovits, T. (2024). Monitoring progress towards universal health coverage in Europe: a descriptive analysis of financial protection in 40 countries. *The Lancet Regional Health–Europe*, *37*.

World Bank. (2020). *World development Indicators-health.* Washington: World Bank. Indicators | Data (worldbank.org)

World Bank. (2020). *World development Indicators-health.* Washington: World Bank. Indicators | Data (worldbank.org)

World Health Organisation. (2024, June 1). Current Health Expenditure as a percentage of Gross Domestic Product (GDP) (%). Current health expenditure (CHE) as percentage of gross domestic product (GDP) (%) (who.int)

World Health Organization (2021). Measuring Primary Health Care Expenditure under SHA 2011. Technical Note: December 2021. Geneva: WHO; 2021. Measuring Primary Health Care Expenditure under SHA 2011 (who.int).

World Health Organization. (2019). *Global spending on health: a world in transition* (No. WHO/HIS/HGF/HF WorkingPaper/19.4). World Health Organization. Available at: Global Spending on Health: A World in Transition (who.int).

World Health Organization. (2021). World health statistics 2020. 21072_WHS 2021 (who.int)