COMPARATIVE ANALYSIS OF THE HEALTH FINANCING INDICATORS TO ASSESS THE OUT-OF-POCKET EXPENDITURE IN THE STATES OF BIHAR AND UTTAR PRADESH IN INDIA

Dissertation Submitted to

The IIHMR University, Jaipur for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Dr. Sayali Shankar Lawate

Under the Supervision and Guidance of

Dr. Mamta Chauhan

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DECLARATION BY STUDENT

I hereby declare that this dissertation is titled **Comparative analysis of the Health Financing Indicators to assess the out-of-pocket expenditure of hospital service in states of Bihar and Uttar Pradesh India** is the bonafide record of my original research work. I declare that it is no submitted by any other university or institution for the award of any degree of diploma. Information derived from published and unpublished work has been duly acknowledged in the text.

Dr. Sayali Lawate

Name of student

Date 25/05/23

CERTIFICATE

This is to certify that **Dr. Sayali Shankar Lawate** in partial fulfillment of the requirements for the award of the degree of **MBA (Hospital and Health management**) from the IIHMR University, Jaipur has successfully completed her/his internship at **Blu Ocean innovations Pvt Ltd** during February 20- May 19, 2023.

Place: Preceptor/Head of Organization:

Date Name of Organization:

CERTIFICATE

This is to certify that dissertation titled **Comparative analysis of the Health Financing Indicators to assess the out-of-pocket expenditure in states of Bihar and Uttar Pradesh India** is a record of the research work undertaken by **Dr. Sayali Lawate** in partial fulfillment of the requirements for the award of the degree of **MBA (Hospital and Health Management)** from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide **Dr Mamta Chauhan**
IIHMR University, Jaipur

School Dean
IIHMR University, Jaipur

Date

ABBREVATIONS

Sr No		Abbreviations
1	SDG	Sustainable Development Goals
2	NSS	National Sample Survey
3	NHA	National Health Accounts
4	NRHM	National Rural Health Mission
5	AB-PMJAY	Ayushman Bharat Pradhan Mantri Jan Arogya Yojana
6	THE	Total Health Expenditure

1. ABSTRACT

In India, out-of-pocket expenses have been the main factor disrupting families' financial situations. To analyse out-of-pocket spending for Bihar and Uttar Pradesh, this descriptive study focuses on the health finance indicators of the states of Bihar and Uttar Pradesh. Studies and research on out-of-pocket expenses that focus on the situation in India have identified the causes of out-of-pocket expenses, health insurance coverage, the government's contribution to total health expenditures, and the average cost of hospitalisation, childbirth, and immunization, among other things.

Objectives:

- To compare Health Financing Indicators to assess out-of-pocket expenditure in hospital service in the Bihar and Uttar Pradesh India.
- To discuss various mechanisms to cope with the financial burden adopted by the patients.

Methods:

Descriptive study based on National Health Accounts 2019-20 data and National Sample Survey Health Data 2017-18 for the state of Uttar Pradesh and Bihar. Indicators used in the study were limited to inpatient hospitalization cases and immunization. In addition, various research articles on out-of-pocket expenditure, publications, and reports were reviewed to find the evidence and relationship on the topic.

Results and discussion:

Both states continue to have substantial out-of-pocket expenses, as seen by the NHA 2019–20 statistics and NSS 75-round data. Savings from household budgets continue to be a significant source of funding for both states to cover out-of-pocket expenses. Medical expenditures continued to be significantly influenced by medical costs. In comparison to Uttar Pradesh, the government's contribution to health spending in Bihar continues to be very low.

Conclusion:

The expansion of insurance coverage is still a concern despite the introduction of health insurance programmes in both states. Due to inadequate insurance coverage, both states have relatively high out-of-pocket costs. In comparison to Bihar, Uttar Pradesh needs to pay particular attention to improving and building the healthcare infrastructure. Reduced out-of-pocket costs for both states will result from a more specialised approach to the state of Bihar.

2. INTRODUCTION

Under SDG objective 3.8, sustainable development goals aspire to attain equitably universal health coverage by providing quality, affordable access to healthcare as well as financial risk protection. As a result, the government of India has made strengthening healthcare services in India a top priority. To accomplish this, the Indian government undertook several initiatives, and projects were developed and implemented. Even though these programmes have been developed to provide monetary incentives and increase healthcare accessibility and affordability, out-of-pocket household expenses remain the primary source of healthcare spending. According to the National Health Accounts Report 2019–2020, India has one of the largest out-of-pocket expenses, accounting for around 47.07% [1] of overall health spending. This quantity of out-of-pocket spending has a significant impact on the vulnerable. They are the most vulnerable to financial risk due to a lack of financial protection. As a result, it is critical to comprehend the elements and causes that influence out-of-pocket spending. Out-of-pocket expenses are typically incurred when a healthcare emergency or urgent disease necessitates the diversion of household funds to healthcare. This resulted in a reduction in their expenditure on other requirements such as food, clothing, shelter, education, and so on. In most situations, these families are forced to borrow and lend money, further compounding their debt. To reduce out-of-pocket spending [2,] India launched the National Health Policy in 2017, with the goal of reducing catastrophic spending by 25% from current levels. The goal of lowering out-of-pocket health-care costs was to improve healthcare. Another strategy to reduce out-of-pocket expenses is to ensure that healthcare services are regulated to offer quality care at an affordable cost and to provide universal healthcare coverage.

The Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) is the single largest health insurance scheme in India, covering crore families and 49 crore people. It was launched by the government of India in 2018 to reduce out-of-pocket expenses. Deeper packages are offered to state extension plans for additional groups linked with AB-PMJAY. According to a recent NITI AYOG 2021 report, 40.5 crore people are uninsured, while the remaining 55.5 crore are covered by AB-PMJAY, ESIS, private voluntary health insurance, the Central Government Health Scheme, and the AB-PMJAY State Scheme. The missing middle, which accounts for 40.5 percent of the overall population, contains the non-poor segment of the population, which is still vulnerable to substantial catastrophic health spending despite the ability to pay

contributory insurance. As a result, individuals are vulnerable to out-of-pocket expenses, making fair access to health insurance systems to provide financial protection crucial.

Despite the fact that several state-level plans are being developed to provide financial security, out-of-pocket expenses remain an issue. Uttar Pradesh is one of the top states in terms of out-of-pocket spending, accounting for 71.8% of total health expenditure (THE), while Bihar accounts for 54.3% of THE. Bihar and Uttar Pradesh have very different socioeconomic profiles, healthcare facilities, and healthcare outcomes. Comparing health funding indicators and out-of-pocket expenditures can provide valuable insights into differences in healthcare affordability, financial risk protection, and the performance of health financing schemes. This comparative study will help to inform evidence-based policy and suggest solutions for lowering financial barriers and improving healthcare access and affordability, i.e., the performance of health financing schemes. This comparative investigation will add to the body of evidence.

3. LITERATURE REVIEW

Sr.no	Title of Study (Author, Year)	Objective	Methodology	Key Findings
1	Effect of Health insurance program for the poor on out of pocket in patient cost in India: evidence from nationally repressed cross-sectional survey Shriram.S., Khan, M.M, 2020	Examine the effect of public health insurance program for the poor on the Hospitalization and inpatients out of pocket costs.	Tobit model, two-part Binary logistic regression model, were used to study to assess the enrolment the effect of public health insurance scheme on poor.	• Poor Individuals enrolled in health insurance scheme are more likely to get admitted in the hospital than those who are not covered by health insurance scheme. • Having insurance for inpatient service increase the incidence of Hospitalization among poor individuals. • Insurance status did not have any relation with the level of use of hospital service measured by duration of hospital stay. • There is lower incidence of insurance among large household. • Scheduled tribe in India have low hospital utilization due to low enrolment in the health insurance schemes due to barrier in access. • The government regulation over private hospital industry is very low leading to high OPPE
2	Out of Pocket expenditure in the hospital for Haryana state of India Extent determinants and financial risk protection Sharma, Deepshikha; Prinja, Shankar; etc. (2017)	To assess the extent of out-of-pocket expenditure and extent of financial risk protection in state of Haryana, India	Data from large cross sectional household survey 'Concurrent Evaluation of NRHM':'The Haryana Health Survey 2012-15'were analysed.	• Median out of pocket expenditure of hospitalization incurred was 4 times higher in private hospital than in public. • The occurrence of catastrophic health expenditure for hospitalization was 25.2% • The chances of Facing catastrophic household expenditure were 1.7 times higher in insured than those of non-insured. • Occurrence of both out of pocket expenditure and catastrophic health expenditure were higher for

				higher for hospitalization related to injury and noncommunicable disease than that of non-communicable disease. • Hospital Charge was the second major contributor for out-of-pocket expenditure
3	Impoverishing effects of out-of-pocket healthcare expenditure in India Sriram, Shyam Kumar; Albadryan, Muayad November 2022	Identify impoverishing effects of out-of-pocket health expenditures in India.	Data collected from national sample survey organization social consumption in health 2014	• Incidence of poverty has raised among the households belonging to different socioeconomic categories after making out of pocket payments. • The proportion of people making out of pocket expenditure has increased in the urban area but have reduced in the rural area. • Chronic illness has found to be an important determinant causing out of pocket expenditure. • The probability of out-of-pocket expenditure is considerably decreased if at least one person in the family is insured.
4	Health insurance coverage and its impact on out-of-pocket expenditure at public sector hospital in Kerala, India Harish, Ravindran; Suresh, Ranjana; etc 2020	To find the health insurance coverage and its impact of out-of-pocket expenditure for public sector tertiary care hospitalization.	Cross sectional study at tertiary hospital Kerala	• Out of pocket expenditure spending among insured is significantly less than that of uninsured. • Both the categories, patients seem to incur most of out-of-pocket expenditure on treatment and investigations. • The coping mechanism as a result in order adopt to out of pocket expenditure

				include borrowing money, loan etc
5	Component of out-of-pocket expenditure and their relative contribution to economic burden of disease in India Ambade, M; Sarwal. R, Mor. N, etc 2022	To analyse the contribution of diagnostic tests, doctor and surgeon fees, drug and expenditure on other medical services and nonmedical health-related services, by sociodemographic characteristics of patients, geography, and type of illness.	National Sample Survey Data 2018 was analysed, and cross-sectional study was conducted	• Half of the population spent more than 60% on medicines. • Medicines contributed to majority for hospitalization expenditure.

4. METHODOLOGY

This Chapter includes research questions, aim and objective of the study**,** also includes**,** study design, study area, population considered, duration of study, data collection methods and statistical analysis for the research purpose.

RESEARCH QUESTION

The purpose of this study is to understand trends in Health Financing indicators in the states Bihar and Uttar Pradesh to assess the out-of-pocket expenditure and identify the mechanisms adopted by patients to cope with financial burden.

OBJECTIVES

- To analyse Health Financing Indicators to assess out of pocket expenditure in hospital service in states of Bihar and Uttar Pradesh India.
- To discuss various mechanisms to cope to financial burden adopted by the patients.

- **Study Design**: Descriptive Study
- **Study Area:** Bihar and Uttar Pradesh
- **Sample Size:** Data from NSS 75 and the National Health Accounts Report 2019–20 released by NHSRC.
- **Data Collection Method -**Secondary Data was taken from NSS 75 round and NHA 2019 -20 report for the state of Bihar and Uttar Pradesh
- **Data Collection Tool**: Data has been extracted from the National Sample Survey 75 report for health in India, Social Consumption in India 75 round, and the National Health Accounts 2019-2020 report for the states of Bihar and Uttar Pradesh. The surveys provide data on hospitalisation, average expenditures on hospitalisation, expenses on medical and nonmedical services, and health insurance coverage among the surveyed population.
- The information for both states was compared. The states were chosen because both the states are EAG states. The comparison was based on different health and financial indicators, which were as follows:

1. Total Health Expenditure
2. Government Health Expenditure
3. Out-of-pocket expenditure
4. Private health insurance expenditure
5. Inpatient hospitalisation cases: share of medical institutions
6. Inpatient hospitalisation cases: a major source of financing expenditure
7. Inpatient hospitalisation cases: population covered by health insurance.
8. Expenditure on hospitalisation cases for childbirth
9. Expenditure on Immunisation

- Statistical Methods-For the purpose of analysis, Microsoft excel was used.

5. RESULTS

Hospitalisation and health expenditure details for 28,115 persons for the state of Bihar and 68,904 for that of Uttar Pradesh according to the NSS report 2017-18 were analysed for indicators of inpatient hospitalisation expenditure, source of financing, and out-of-pocket medical expenditure, respectively, for the states of Bihar and Uttar Pradesh.

According to the data released by SECC 2011 the number of households in Bihar accounts to 20074242, while that of Uttar Pradesh amounts where 88.82% household amounted to rural areas while 11.18% amounted to urban area. The number of households in Uttar Pradesh amounts to 32475784,80.11% households in the rural area while 19.89% from urban area. Bihar and Uttar Pradesh are top populous states in India. The health indicators are poorest for both the states. According to the Niti Ayog round 3 report 2017-18 it shows that the health index for Bihar was 34.48 and that of Uttar Pradesh was 23.58.

5.1Comparison of key Financial Indicators for the state of Bihar and Uttar Pradesh

Fig. 1 represents the comparison of the distribution of key financial indicators for the states of Bihar and Uttar Pradesh. According to NHA data for 2019-20, the data shows that 84841crores accounted for total health expenditure for the state of Uttar Pradesh, out of which 25.6% accounted for government health expenditure while 71.8% accounted for out-of-pocket expenditure.

In the state of Bihar, 19218 crore was accounted for as total health expenditure, of which 44.1% was government health expenditure and 54.3% was out-of-pocket expenditure.

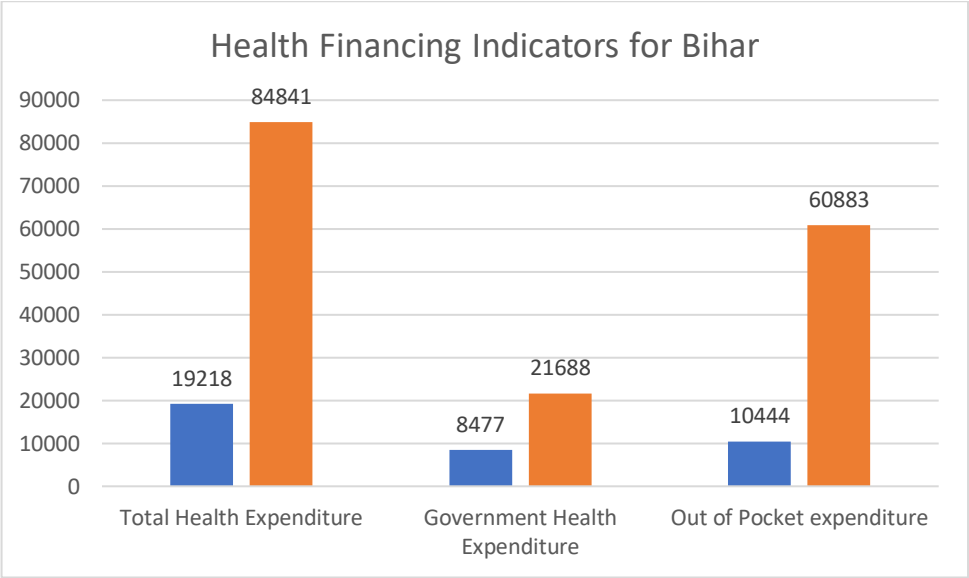

Figure 1 Comparison between Key Financial indicators the state of Bihar and Uttar Pradesh as per NSS 75 report 2019-20

HOSPITALIZATION IN BIHAR AND UTTAR PRADESH

Fig 2 reveals the comparative distribution of Hospitalization cases in rural and urban area which evidently shows that out of total cased only 10% of the hospitalized cases were from rural area while remaining are from urban area for Bihar. Uttar Pradesh shows 31.5% of hospitalized cases from Urban area and rest from rural area.

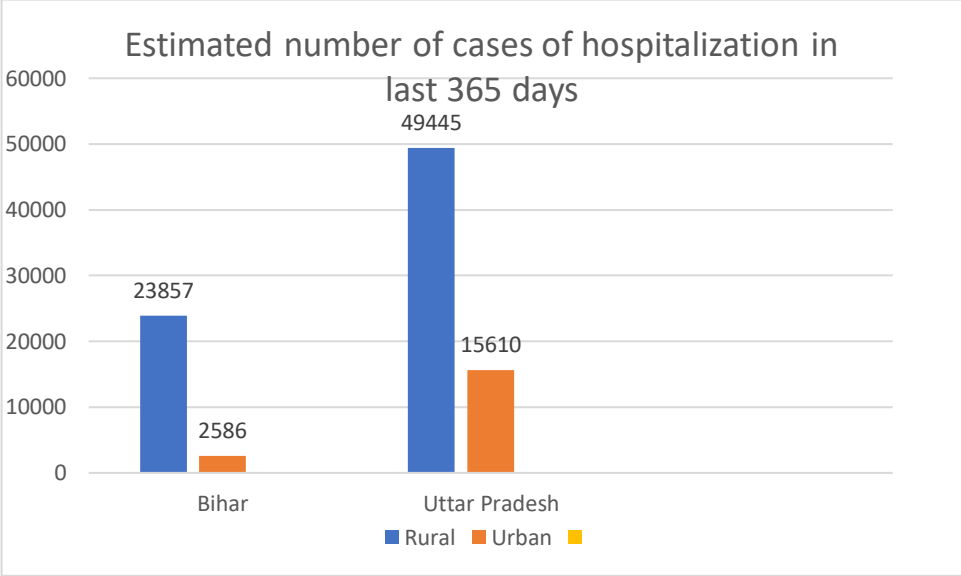

Figure 2 Distribution of the persons and number of hospitalized cases for the state of Bihar and Uttar Pradesh.

Figure 3 Distribution of percentage of hospitalization cases according to type of facility. The government hospital in Bihar amounted to 37.8% cases,60.2% in private hospital while 1.9% at charitable hospital.

Uttar Pradesh accounted for 27.1% cases from government hospital ,70.4% in private hospital and 2.4% cases from Charitable.

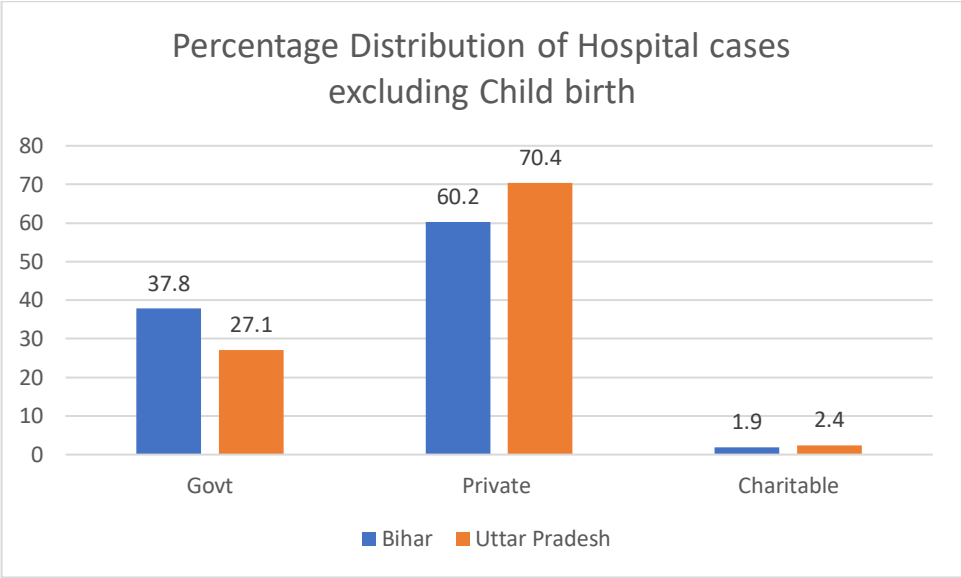

Figure 3 Comparison of Hospitalized cases in Bihar and Uttar Pradesh depending upon the type of facility.

Survey evaluated the reasons for hesitancy of the respondents to visit the government hospitals. For the state of Bihar,57.5% of the population reported the low quality of the services at the government hospital,12.9% responded unavailability of the services at the facility,19.3 % reported the preference for the trusted doctor.

In Uttar Pradesh 49.9% respondents reported the lack of quality service at the facility,12.1% reported unavailability of the service at the facility, while 22.9% due to preference of the trusted doctor.

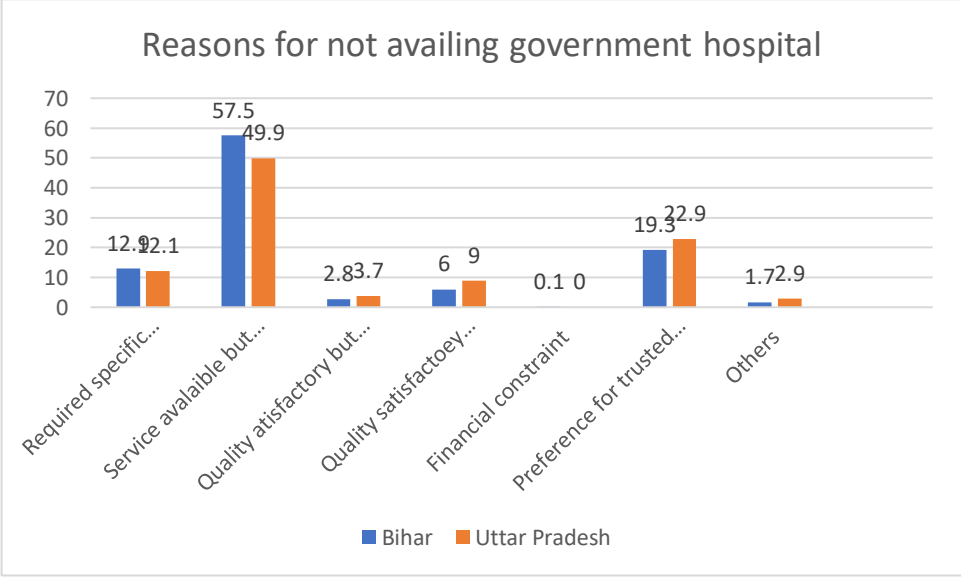

Figure 4 Comparison of the reasons for not availing medical services at government hospital in Bihar and Uttar Pradesh.

5.4Comparison of percentage cases of hospitalization received specific medical service and their breakup by payment category.

The Figure 5 shows distribution of the percentage of hospitalizations which received medical services and their payment category.69.6% medicines were distributed after the complete payment, while only 1.9% were free and 69.6% surgeries were paid, and 27.3% surgeries were free.

Figure 6 shows the distribution for the state of Uttar Pradesh which shows 81.8% medication services were on payment while 5.4% were free. The surgeries carried out were 81.8% paid while 15.8% were free.

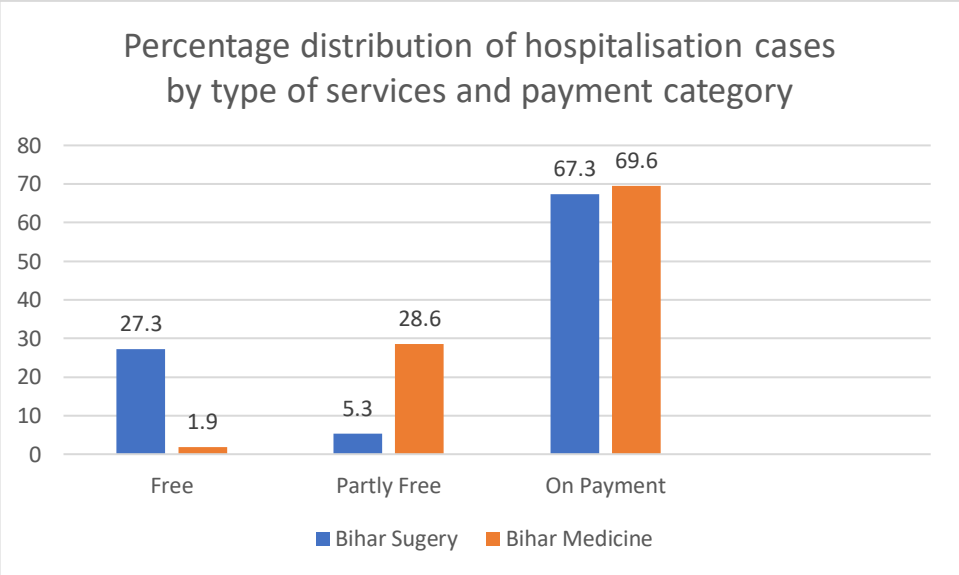

Figure 5 shows percentage distribution of hospitalization cases by the type of medical service by type of services and payment category for Bihar

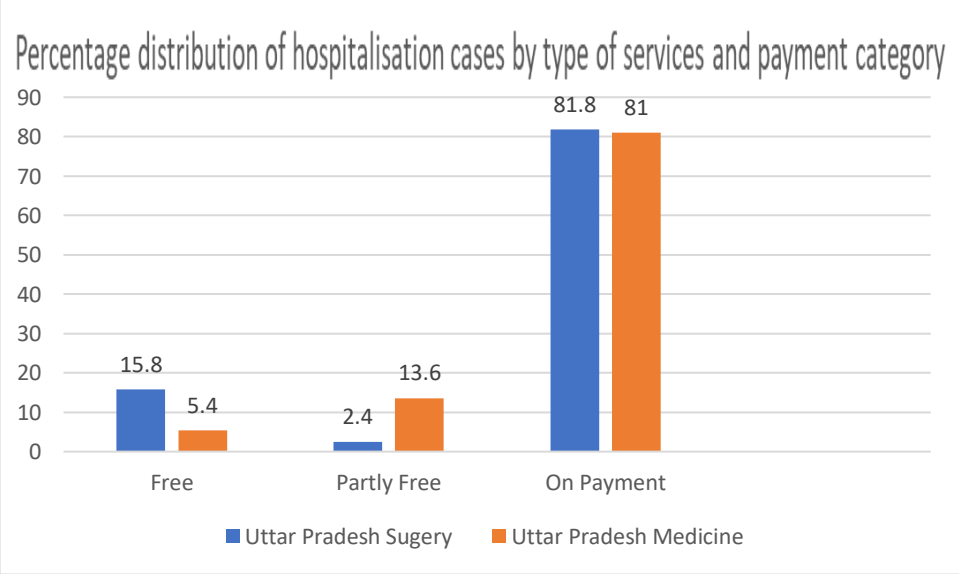

Figure 5 shows percentage distribution of hospitalization cases by the type of medical service by type of services and payment category for Uttar Pradesh.

5.2 Comparison of individual covered with health insurance scheme for two states for rural and urban area.

The insurance coverage of the individual for financial protection was analysed for two states in both urban and rural areas. 97.4% of the rural population of Bihar was not covered, while 99.5% of the rural Uttar Pradesh was not covered under any health insurance scheme. Only 1.7% of the urban population of Bihar and 4.8% of the urban population of Uttar Pradesh are covered under any health insurance.

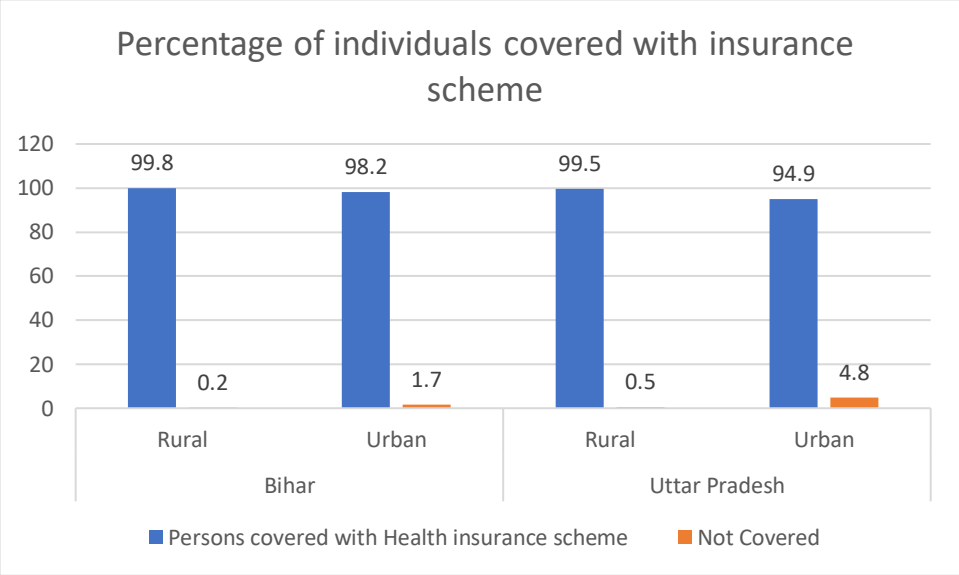

Figure 7 Comparison of coverage of health insurance in Bihar and Uttar Pradesh in rural and Urban area.

5.2 Comparison of average medical expenditure of hospitalization cases for the rural and urban area for the state of Bihar and Uttar Pradesh

Figure 8 shows the average expenditure of hospitalisation per case based on the expenditure at the hospital. For Bihar, at the government hospital, the average medical expenditure is 4064 in rural areas and 4027 in urban areas. Private hospitals in rural Bihar cost 16479 for hospitalisation, while those in urban areas tend to be higher, up to 25052.Charitable hospitals in rural Bihar account for expenditures of 10988, while expenditures at urban charitable hospitals cost around 10161 per hospitalisation case.

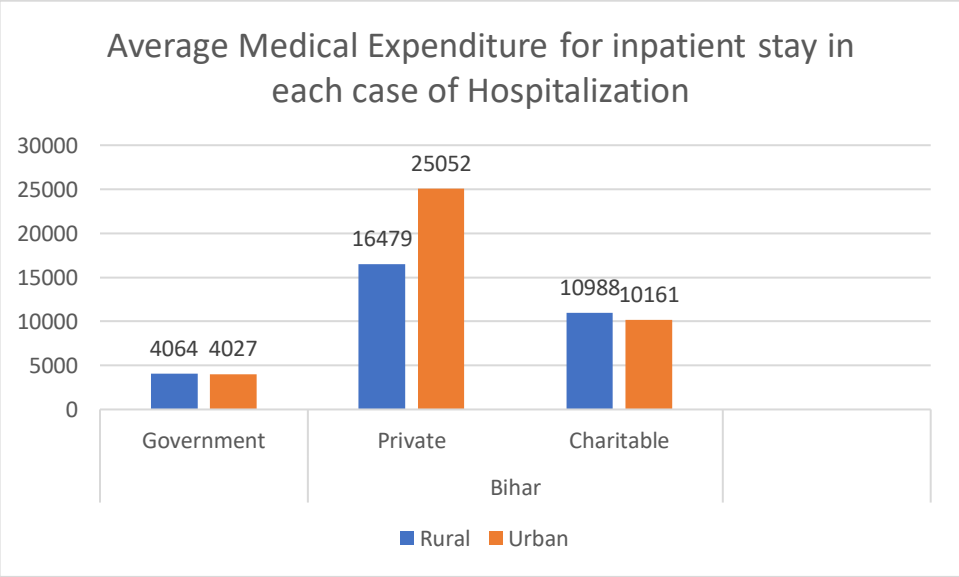

Figure 8Average medical expenditure for the state of Bihar in Government, Private and Charitable hospital.

Figure 9 shows the average medical expenditure for the case of hospitalization. Government hospital in Uttar Pradesh amounts to 6914 in rural area while 10239 in urban area. The average expenditure at the private facility is 29768 and 40706 in rural and urban facility respectively. Charitable hospital charges around 24207 in rural and 39179 in urban facility.

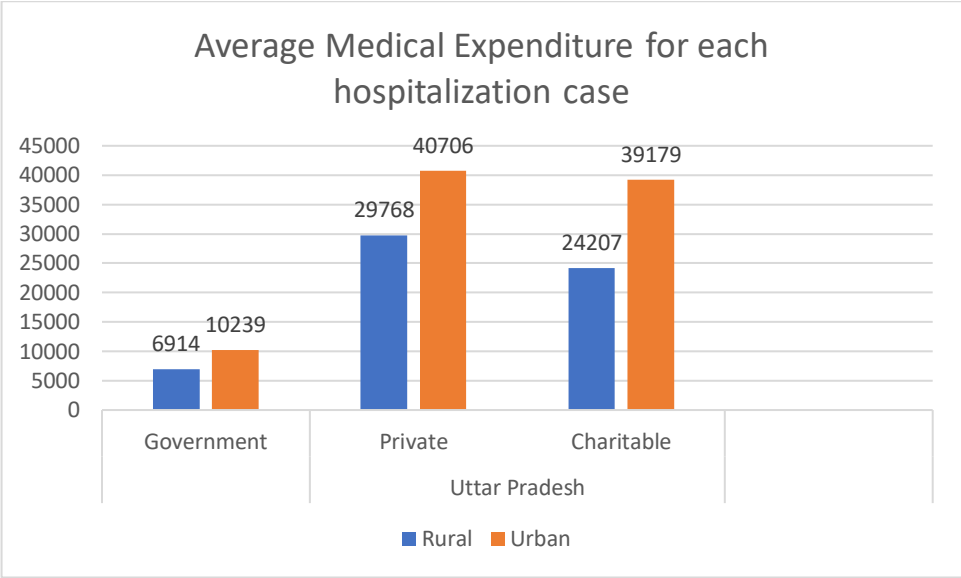

Figure 9 Average medical expenditure for the state of Uttar Pradesh in Government, Private and Charitable hospital

Figure 10 shows the distribution of the hospitalization cases by type of ward in Bihar, which shows that almost 60% of the hospitalization cases were from paying category while Figure 10 shows that 65% hospitalization cases of Uttar Pradesh were paying category.

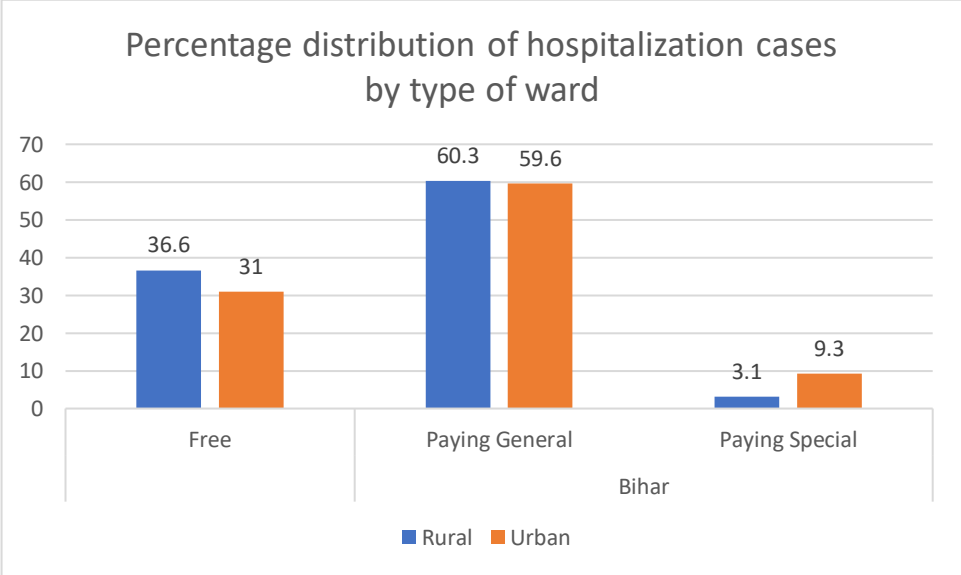

Figure 10 Percentage distribution of hospitalization cases by type of ward in Bihar

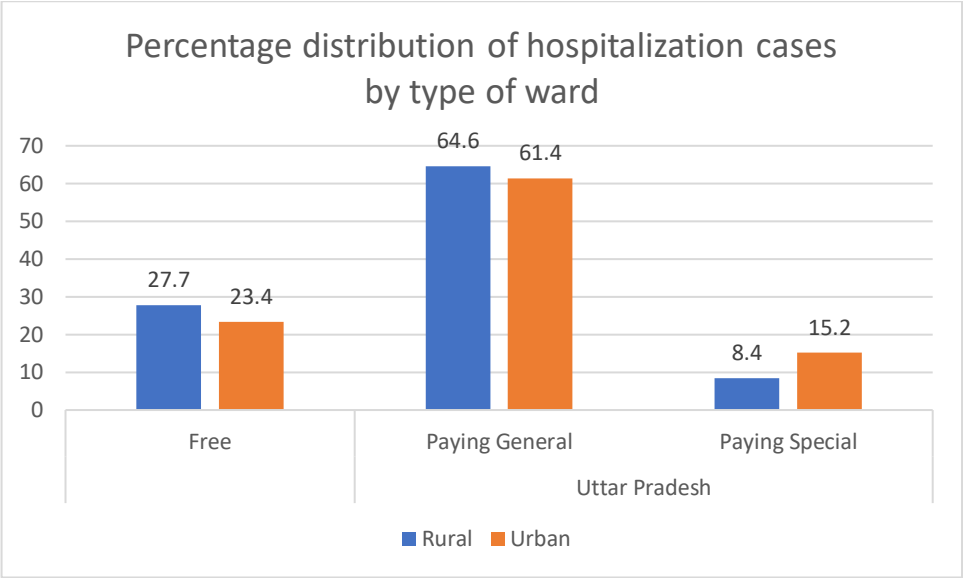

Figure 11Percentage distribution of hospitalization cases by type of ward in Uttar Pradesh

5.4 Comparison of average out of pocket expenditure per hospitalization for government, private and charitable health facility in state of Bihar and Uttar Pradesh

Figure 12 The average out of pocket expenditure in government hospital in Bihar in rural area is 4057 and around 4000 in urban area The private rural hospital expenditure is 16472 while in urban area it accounts for 24602 in Bihar.

Figure 13 shows out of pocket expenditure in the government hospital facility costs for 6911 in the rural area, and 9653in urban area. Private healthcare facility in the Uttar Pradesh costs around 29261 in the rural area and 36886 in the urban area. Out of pocket expenditure for the charitable hospital 24207 in rural area ,38015 in the urban area.

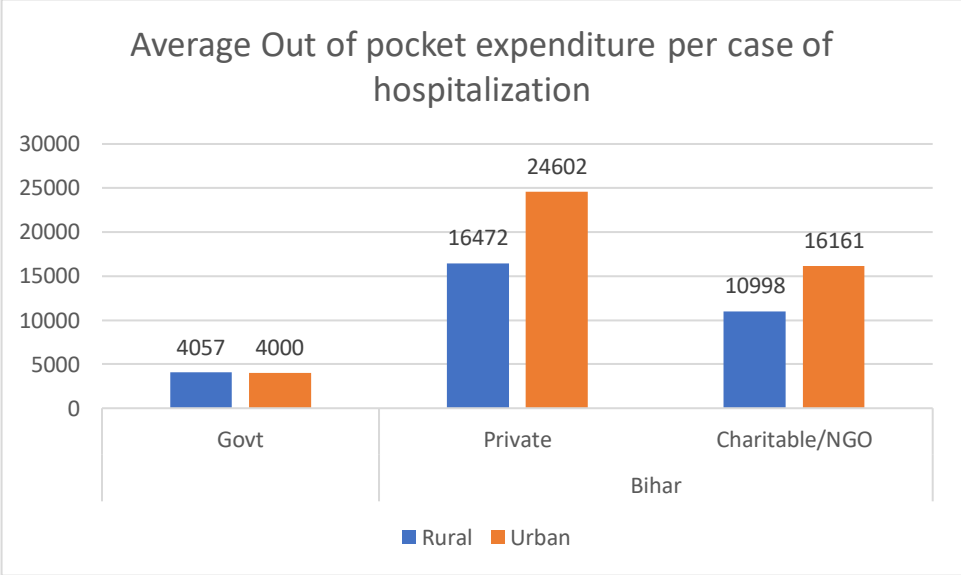

Figure 12 Average Out of Pocket medical expenditure for the state of Bihar in Government, Private and Charitable hospital

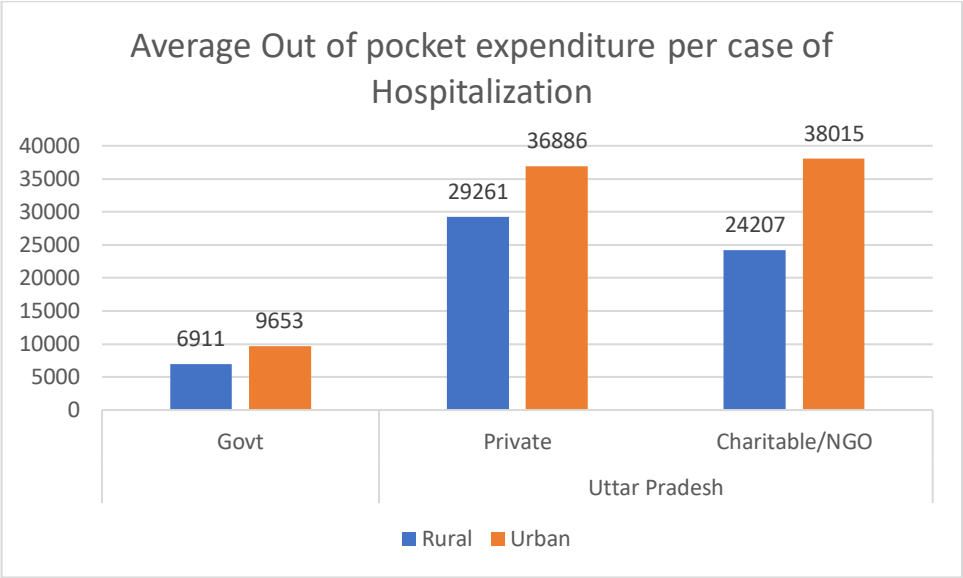

Figure 13 Average Out of Pocket medical expenditure for the state of Uttar Pradesh in Government, Private and Charitable hospital

5.5 Comparison of average medical expenditure based on category for states of Bihar and Uttar Pradesh.

Figure 14 depicts the breakdown of medical spending per hospitalisation case, encompassing factors such as the doctor's fee, bed charges, medical expenses, diagnostic tests, bed charges, and so on. Uttar Pradesh doctor's cost is about double that of Bihar, which is around 3438 INR. Medical expenses are the most expensive in cases of hospitalisation, with Uttar Pradesh charging 7913 and Bihar charging 3184. The charges for bed charges per case of hospitalisation in Uttar Pradesh are nearly double those in Bihar, which are 2909 and 991 respectively.

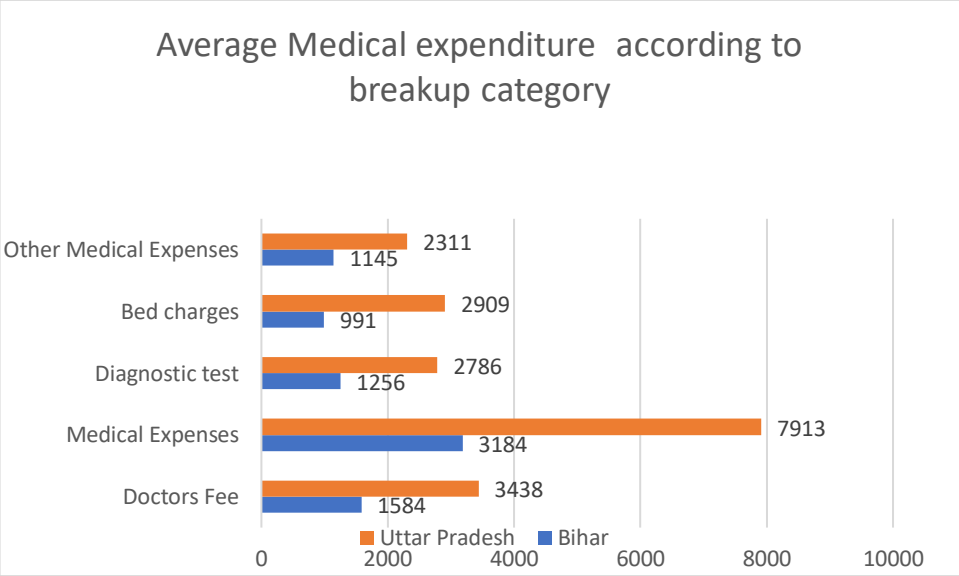

Fig 14 Shows average medical expenditure for the states of Bihar and Uttar Pradesh based on the breakup category.

5.6 Comparison of percentage of source of finance for Hospital expense in rural and Urban area of Uttar Pradesh and Bihar

Figure 15 depicts the percentage of hospitalisation expenditure sources in Bihar and Uttar Pradesh. Household savings, borrowing, the sale of physical assets, and contributions from friends were the primary sources of funding. Household savings are the primary source of expenditure in both states' rural and urban sectors. In Bihar, household savings are used as a source of finance in 80.7% of rural and 91.8% of urban regions. In Uttar Pradesh, household savings account for 80.4% of expenditure in rural areas and 83.7% in urban areas. Borrowing comes in second behind household savings in Bihar, accounting for 15% in rural regions and 6.9% in urban areas. Uttar Pradesh has an 13.9% rural population and a 10.1% urban population.

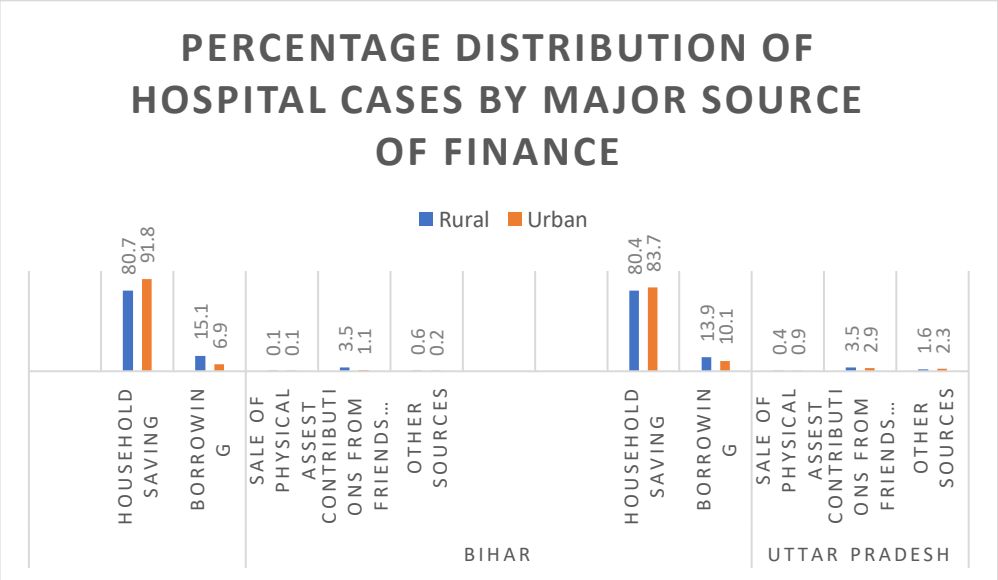

Fig 15 Shows average medical expenditure for the states of Bihar and Uttar Pradesh based on the breakup category.

INSTITUTIONAL DELIVERY IN BIHAR AND UTTAR PRADESH

Institutional delivery is another important indicator for the healthcare coverage and accessibility of the services. Below is the comparison of indicators for institutional delivery for Uttar Pradesh and Bihar.

5.7 Comparison of percentage of distribution of cases of childbirth according to the healthcare facility.

Fig. 16 shows that in Bihar, 80% of the deliveries take place at government healthcare facilities, 19.6% at private facilities, and 0.5% at charitable hospitals. In Uttar Pradesh, the utilisation of government healthcare facilities remains considerably lower, at 70.8%, while private hospital utilisation is higher, at 28.6%, and at 0.6% at charitable healthcare facilities.

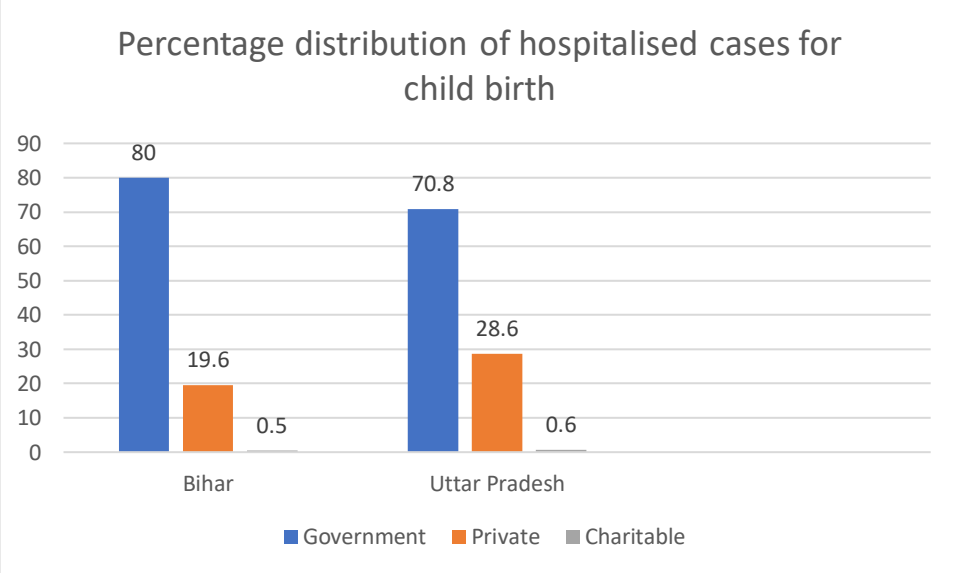

Figure 16 Percentage distribution of Cases of Childbirth in Bihar and Uttar Pradesh depending on the healthcare Facility.

Figure 17 shows the percentage distribution of hospitalized cases for childbirth by the type of ward. In case of Bihar 77 % of institutional childbirth were free while 67% for Uttar Pradesh.

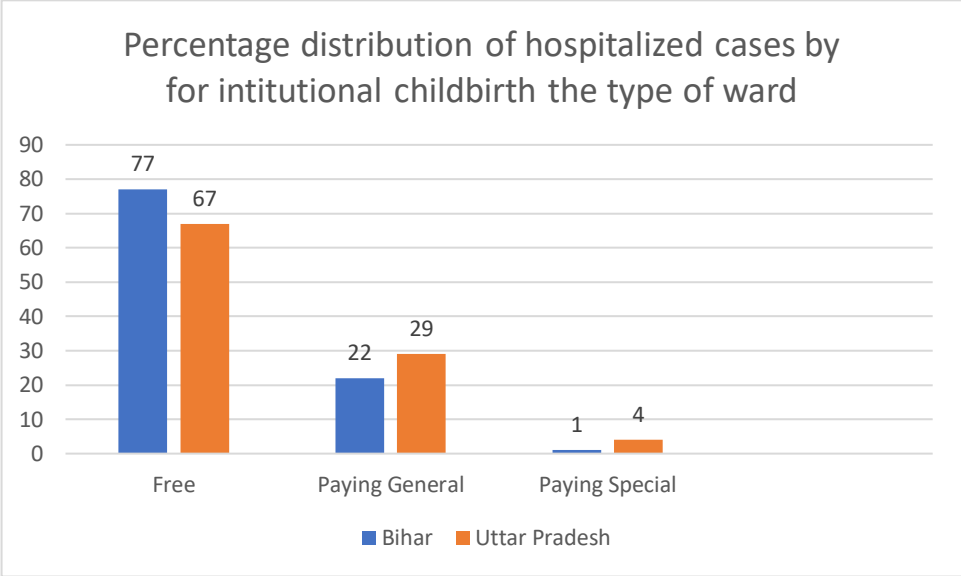

Figure 17 shows the percentage distribution of hospitalized cases for childbirth by the type of ward.

5.8 Comparison of average medical expenditure for the state of Uttar Pradesh and Bihar based on type of delivery.

Fig. 18 shows the average medical expenditure for each hospitalisation case by type of delivery. Normal delivery expenditure costs both in rural and urban areas. The average expenditure for Normal delivery in rural Bihar costs Rs. 2160, while it costs Rs. 4358 in urban areas. The private hospital in rural Bihar costs Rs. 22097 for the childbirth for caesarean delivery, while it costs Rs. 22822 for the urban caesarean delivery.

In Uttar Pradesh the government hospital expenditure in rural areas is Rs. 2130, while it is Rs. 5289 in urban areas. The private hospital in rural areas costs Rs.23891, while it costs Rs. 26234 in urban areas. The other sections in Uttar Pradesh cost on average 10673 in rural area while 8716 in urban area.

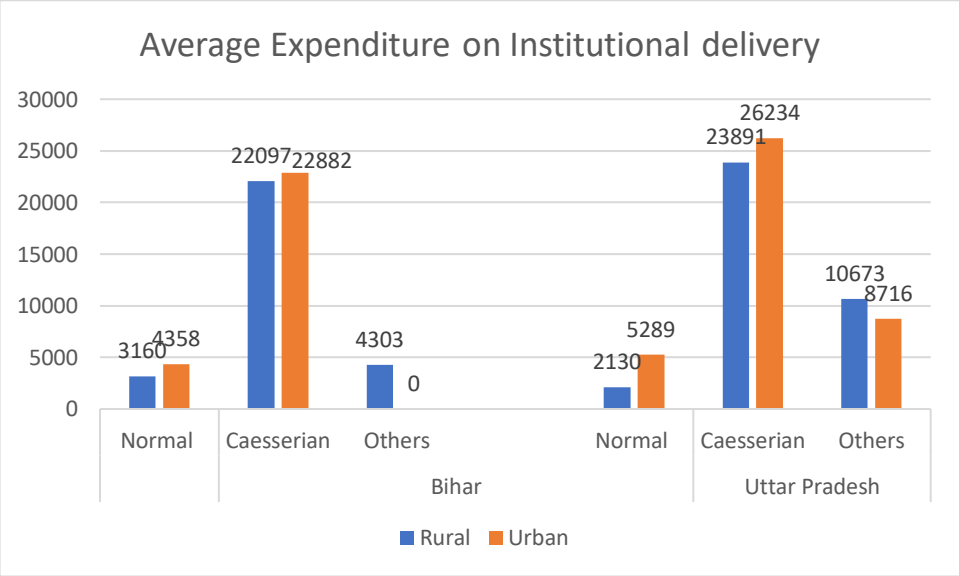

Figure 18 shows the comparison of average expenditure in the Uttar Pradesh and Uttar Pradesh depending on the type of hospital for the childbirth.

5.9 Comparison of average out of pocket expenditure for childbirth for the state of Bihar and Uttar Pradesh

The average out-of-pocket expenditure at the government hospital in Bihar was around Rs. 1631, Rs. 14361 at the urban hospital, and Rs. 16904 at a charitable hospital.

In Uttar Pradesh, the out-of-pocket expenditure at government hospitals is Rs 1056, Rs 18160 at private hospitals, and Rs 18185 at charitable hospitals.

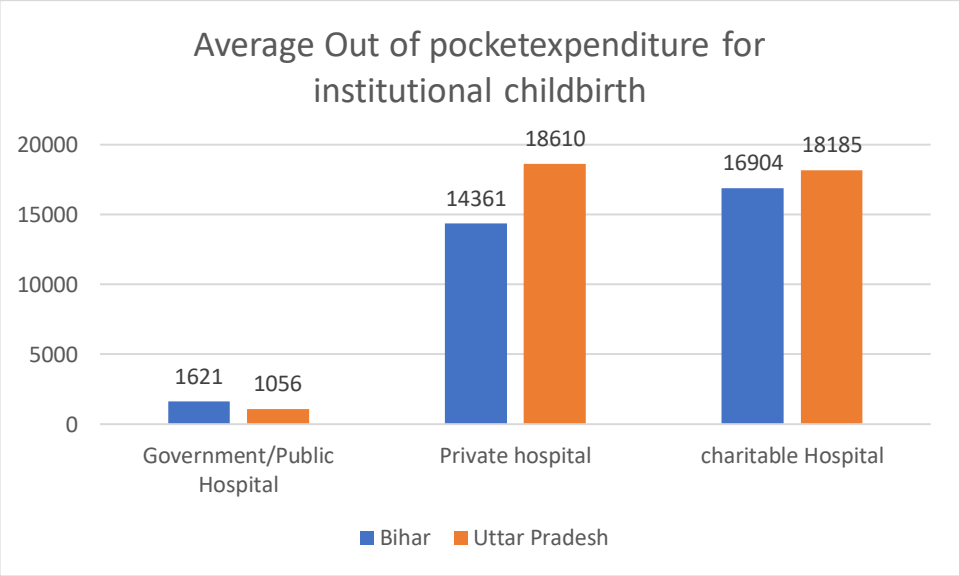

Figure 19 represents average out of pocket expenditure at the government, private and charitable hospital for the states of Bihar and Uttar Pradesh.

5.10 Comparison of average medical and non-medical expenditure for childbirth based on category for state of Uttar Pradesh and Bihar

The average expenditure of the institutional childbirth is categories like doctor's fee, medical expenses, diagnostic test, bed charges, other medical expenses, and non-medical expenses.

In Bihar the expenditure on fee is 550 comparatively less compared to Uttar Pradesh which costs around 1357. Medical expenses in Bihar accounts for 1169 and then 555 in Uttar Pradesh. The Diagnostic charges costs 616 in Uttar Pradesh while 511 in Bihar. The bed charges in Bihar are 237 while in the Uttar Pradesh it costs around 412 per case of hospitalization. Highest cost is incurred in Uttar Pradesh by Other Medical expenses which is 1816.

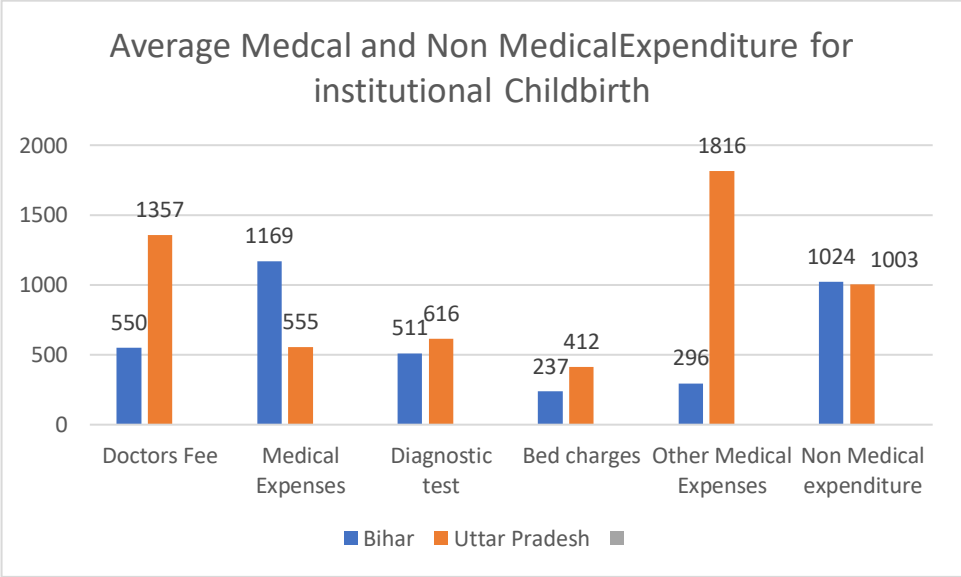

Figure 20shows the comparison average medical and non-medical expenditure for childbirth for the state of Bihar and Uttar Pradesh.

5.11 Comparison of the percentage of immunization in children and average expenditure on immunization for the state of Bihar and Uttar Pradesh.

Figure 21 shows that In Bihar ,96% of the children were immunization and average cost of immunization per case accounted for 34 rupees in the rural area while ,97% children were immunized while average expenditure for immunization costs 43 in Urban Bihar.

In Uttar Pradesh, the immunization coverage was 98% which average expenditure per immunization in rural area was 434, while that in urban area with coverage of 98% the expenditure was 210.

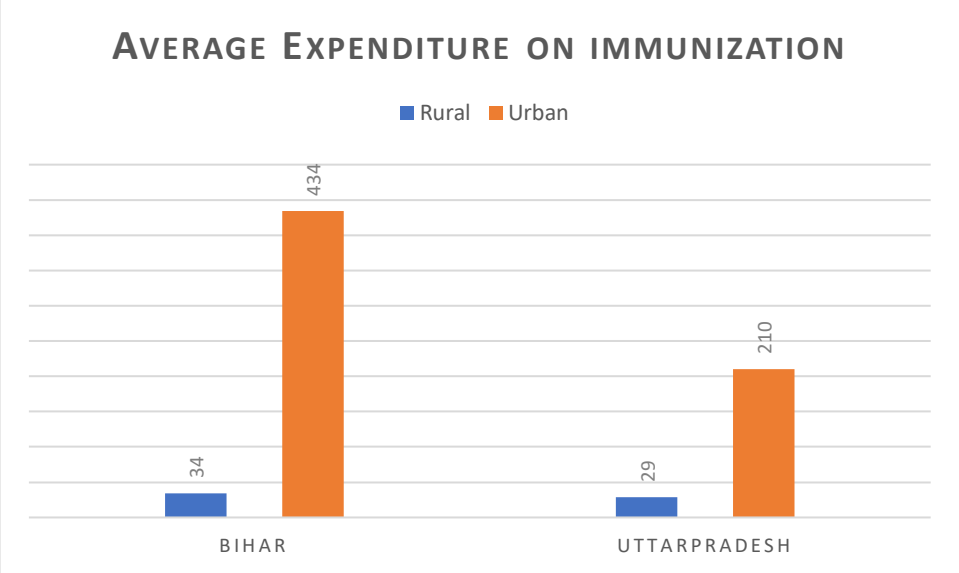

Figure 22 Percentage of children receiving immunization and average expenditure for state of Bihar and Uttar Pradesh

AB-MJAY EMPANELLEMENT AND ALLOCATION IN BIHAR AND UTTAR PRADESH

5.12 Comparison of the health facilities empanelled under the scheme of AB-PMJAY for the states of Bihar and Uttar Pradesh.

Fig 23 shows the number of healthcare facilities allocation for both states.

The total number of PHC in Bihar accounted to 1994 while 3650 in Uttar Pradesh.

Out of total PHC which were Bihar have considerably a smaller number of facilities allocated which include 265 PHC,152 CHC of ,266 private healthcare facilities and 193 other facilities total accounting for 876 healthcare facilities.

Uttar Pradesh on the other hand PHC's of 1,820 CHC of and 263 government hospital. Private healthcare facilities account highest number of 1612 facilities which are private hospital.

As per the recent data 2019-29 the resource allocation for the state of Bihar and Uttar Pradesh have been explained in Fig 15 According to the data, the resource allocation for the state of Bihar remains at a lower range as compared to Uttar Pradesh which is 330.85 crore.

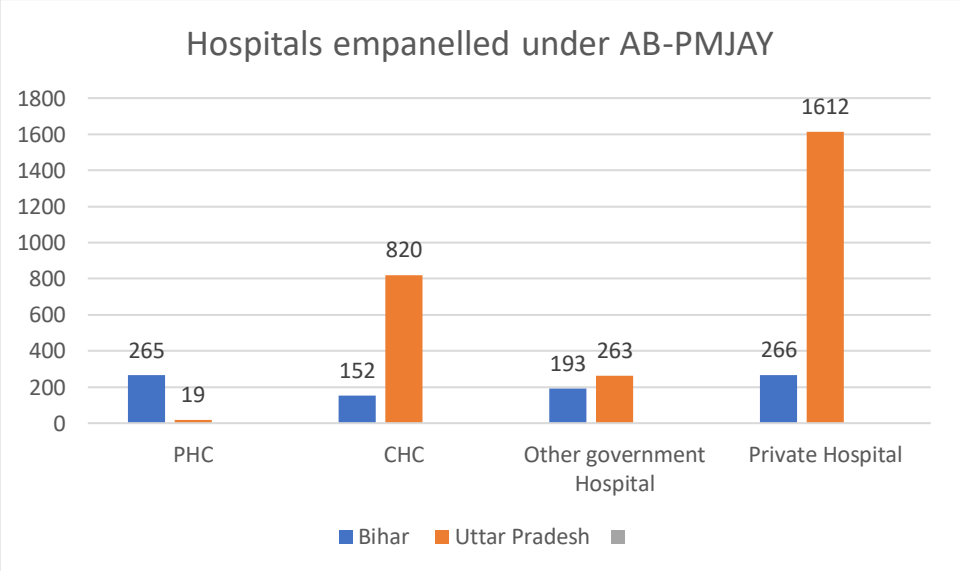

Figure 23 Comparison of the list of hospitals empanelled under the scheme AB-PMJAY for the state of Bihar and Uttar Pradesh.

As per the recent data 2019-29 the resource allocation for the state of Bihar and Uttar Pradesh have been explained in Fig 18

According to the data, the resource allocation for the state of Bihar remains at a lower range as compared to Uttar Pradesh which is 330.85 crore.

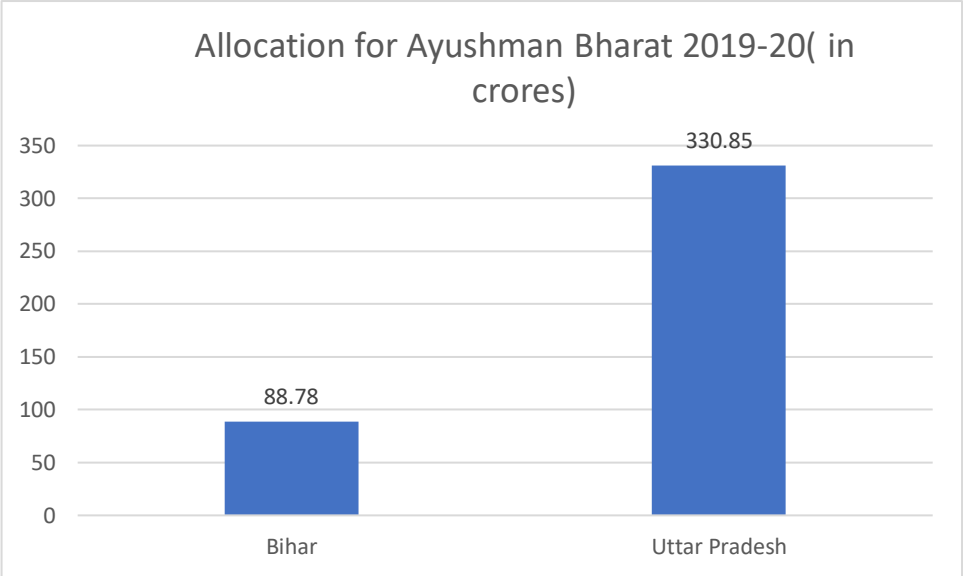

Figure 24 Comparison of resource allocation for the state of Bihar and Uttar Pradesh under AB-PMJAY scheme.

6.Discussion

After the launch of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, states of Bihar and Uttar Pradesh have launched and implemented programs to improve the health status. Although numerous indicators can be used to assess the health situation of the states for the purpose of the study only a few indicators have been considered to assess the out-of-pocket expenditure for both states.

Hospitalization cases in the rural and urban area of both Uttar Pradesh and Bihar is important indicator which has an alarming effect on health expenditure. For both the states of Bihar and Uttar Pradesh the states showed considerable higher amount of hospital admission in the private hospital as compared to government hospital which accounts for less than 60% for both the states. The low hospitalization rate at the government hospitals can be attributed to various reasons. According to the study the main contributing factor was the low quality of the service availability which accounted for 57.5% for the state of Bihar while 49.9% for Uttar Pradesh followed by lack of trust on doctor at the government facility which was 19.3% for Bihar and 22.9% in Uttar Pradesh. Other factors include unavailability of the service at government hospital, accessibility of the hospital due to long distance, financial constraints etc.

The average medical expenditure in the state of Bihar ranges between 4000 to 25000 INR per case of hospitalization depending on the type of hospital while that for the state of Uttar Pradesh it ranges between 6000 to 40000 INR per case of hospitalization. Medical expenses accounted highest contributory factor to the medical expenditure for both states followed by doctor's fee, diagnostic tests, bed charges respectively. High medical expenses can be due to the unavailability of the medicines at the public health facility, and high medicine cost in the private market. The high cost in the private industry can be attributed to the insufficient supply of medicines, demand supply insufficiency in pharma industry and doctor pharmaceutical sector nexus which gives them dominant power to charge the medications[1].

Doctor's fees form the second contributing factor for the high medical expenditure. The private healthcare facility hospitalization is much higher compared to government hospital. This also further explains the bearing of the doctor's fee in private healthcare facility. For both the states the expenditure for doctor's fee ranges between 1500 to 3500 per case of hospitalization. The higher doctors fee is due to the lack of regulation of the private healthcare industry.

The diagnostic testing forms the third major cause for the high medical expenditure. The government medical facilities lack the service required in majority of the cases. This unavailability pushes the patient to divert to private diagnostic centre further contributing to large expense. Also, unnecessary diagnostic prescribed by the physician adds on to the excess costs.

According to the study, Bihar spends considerably low expenditure on the healthcare out of which 54% is the out-of-pocket expenditure. While Uttar Pradesh allocates considerable amount on health spending but the out-of-pocket expenditure only 71.8% of the total Health expenditure. This can be accounted for the low financial protection in terms of coverage under health insurance scheme. According to the study only 0.2% of the rural population and 1.7% of the urban population of Biharis covered under the health insurance schemes. Uttar Pradesh on the other hand have considerable financial protection through health insurance schemes which accounts for 4.8% in the urban area while the rural is low. This low coverage under any insurance schemes makes the states of Bihar and Uttar Pradesh vulnerable to the sudden health expenses at the cost of household savings and other alternatives to cover the cost of Hospitalization. The major source of health expenditure in 91% cases for both the states is household saving which other sources include borrowings, sales of physical assets and contribution from friends and family.

Institutional childbirth is an important healthcare indicator owing to high risk factor like Maternal mortality rate and Neonatal mortality rate. The states have undertaken and implemented to improve these indicators. The institutional childbirth in Bihar accounts to 80% in government hospital ,19.6% in private facility and 0.4 in a charitable facility. In Uttar Pradesh the institutional delivery at the government facilities comparatively less as compared to that of Bihar which was 70.8% and 28.6% at the private facility. The caesarean delivery contributes to the highest expenditure costs approx. 22,000 in Bihar and around 26,000 in Uttar Pradesh. The other medical expenses formed the highest contributor in the institutional childbirth followed by non-medical expenditure,

doctors fee, medical expenses etc. Although various schemes have been launched specially to reduce the cost of expenditure on childbirth and promote the institutional childbirth, the preference for private healthcare facility has increased over the period. The Out-of-pocket expenditure for both the states remain high for both private and charitable hospital which accounts for about 20,000. Immunization is an important component considered for this study to assess the average expenditure for Bihar and Uttar Pradesh. Although the immunization coverage is around 97% in both states the cost of expenditure in much higher in Uttar Pradesh compared to Bihar.

Bihar on the other hand have CHC, PHC, government and private hospitals empanelled under the scheme. Uttar Pradesh has high number of empanelled hospitals under the scheme which amounted to 612 as compared to other facilities, empanelment in the PHC remains particularly low in Uttar Pradesh which needs to be improved to strengthen Primary healthcare services. Improvement in the government healthcare infrastructure, enrolment in the health insurance, quality of the services provided, government regulation on the private healthcare industry will assist in coping up with out-of-pocket expenditure.

6. Recommendation

- Out of pocket expenditure majority accounts for high out of pocket expenditure. The out-of-pocket expenditure of Bihar ranges between 4,000-25,000 for rural and urban area, while that of Uttar Pradesh ranges between 4,000- 40,000. Government health infrastructure should be improved esp. in case of Bihar where it has been always less. The resource allocation for the state of Bihar is only 88.78% for the year 2019-20 while that for Uttar Pradesh is 330.8 crores considering the population of Bihar which ranks second highest population in India. Improvement in the enrolment of the population under the health insurance scheme to provide the financial protection. Government allocation will help to improve public health infrastructure, accessibility of services, quality of services, thus reducing the pressure of out-of-pocket expenditure on the population.
- The current Health insurance coverage for both the states is very low esp. for the Bihar as compared to Uttar Pradesh where the enrolment is only 0.2 % for rural Bihar and 1.7% for urban area. Improving health insurance coverage for the targeted population to reduce the financial vulnerability in critical and emergency health situations. Public awareness regarding the public health insurance schemes to enhance the process of insurance enrolment.
- Strengthening the primary healthcare services by improving accessibility and affordability of primary healthcare service will help to reduce the out-of-pocket expenditure by managing the healthcare conditions in primary level.
- The medicine cost is the highest contributor to out of pocket expenditure. To reduce the cost of medication, Improving the availability of the medications at the public health facility. Ensuring strict regulation over the price of medication and promoting use of generic medicine will prove improve transparency and accountability thus benefiting the patients.
- The socio-economic profile of both states is completely different. So, ensuring and implementing policies and strategies as per the need of the state is important in overall improvement in the healthcare indicators.

7. Conclusion

Despite of launch of the health insurance schemes for both the states, the improvement in the insurance coverage remains an issue of concern. Due to low insurance coverage the out-of-pocket expenditure for both the states is very high. Considering the socioeconomic status Uttar Pradesh requires a close attention to improve and built the healthcare infrastructure compared to Bihar. A more tailored approach to the state of Bihar and Uttar Pradesh will prove beneficial to reduce the out-of-pocket expenditure for both the states.

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