

COMPARATIVE STUDY OF COVERAGE, QUALITY, AND EQUITY OF REPRODUCTIVE AND ADOLESCENT HEALTHCARE INTERVENTIONS AT DISTRICTS OF WEST BENGAL

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Abstract

Reproductive and adolescent life-stages of any female are most vulnerable to diseases but often ignored for proper healthcare in most of the developing countries. The objectives of the study are assessment of change in coverage, quality, and inequity of reproductive and adolescent healthcare interventions at districts of West Bengal in India in between 2007-08 and 2012-13; evaluation of change in services at healthcare delivery points in between 2007-08 and 2012-13; and development of district ranking tables based on their performance on 2012-13. Major healthcare interventions for these stages are reduction of unmet need for family planning, enhancement of current use of family planning methods, increase of awareness regarding RTI/STI and HIV/AIDS etc. For this study, data were obtained from two nationally representative surveys, 4th round (2012-13), and 3rd round (2007-08) of District Level Household and Facility Survey. These surveys have been organized by Ministry of Health and Family Welfare, Government of India. Descriptive statistics were used for this analysis. Interventions like usage of modern types of family planning methods, consumption of pills, usage of condom, awareness of RTI/STI and HIV/AIDS have improved in West Bengal since 2007-08. On the same time, rate of unmet need of family planning, male and female sterilization rate, IUD insertion rate have deteriorated. There are huge disparities among districts' performances on interventions. Jalpaiguri, Paschim Medinipur, Koch Bihar, Purba Medinipur have shown very satisfactory coverage rate for majority of interventions. But quality and coverage of interventions are very poor at Nadia, North 24 Parganas, Uttar Dinajpur, Dakshin Dinajpur, Hugli, and Maldah districts. This paper summarizes the findings based on analyses of the above facts.

Keywords: Reproductive and adolescent healthcare interventions, coverage, quality, equity, West Bengal.

INTRODUCTION

In presence of officials of 189 countries at the Millennium Summit of United Nations (UN), eight targets were set up to eradicating extreme poverty, upholding human dignity, and abolishing inequity in basic human rights such as health, education etc. and those targets were titled as Millennium Development Goals (MDGs). Reduction of child mortality, improvement of maternal health, and combating with sexual diseases were considered as central goals among the prescribed eight MDGs (United Nations, 2013).

Many scientists and epidemiologists have advocated 'Life Course Theory' for years as the course of action for proper health of mother and child. Even as early as in 1930s, German and British scientists have revealed that the condition a child spent in its early years had a great impact later in her adult age (Russ, Larson, Tullis, & Halfon, 2014). But the concept was overshadowed for years by simple biomedical model. Again in 1980s, eminent epidemiologists like Barker, Wadsworth, and others have again proved the importance of life course approach for improvement of maternal and child health (Barker, Osmond, Golding, & Al., 1989). In the year 2000,

Dr. Halfon and his colleagues have proposed Life Course Health Development (LCHD) model (Halfon, Inkelas, & Hochstein, 2000). As per LCHD model, social, psychological, and environmental factors faced by any child at her early age even at fetal age could have a great impact of that on her later adult life.

According to LCHD model, adolescent stage of a female has been regarded as the most critical but best period among whole life span for starting of proper healthcare interventions. Early starting of healthcare can really help to reduce Maternal Mortality Rate (MMR) and Infant Mortality Ratio (IMR) (Shlafer et al., 2014). This is not only the transition phase between childhood and adulthood. Along with astonishing physical changes, a teenager can feel amazing development in their social, emotional, and cognitive understanding too (Resnick, 2005). People within this age group are very prone to acute illness due to environmental conditions as well as their behaviors too. Use of tobacco, lack of physical activity, unprotected sex, exposure to violence leading to unintended pregnancy, early pregnancy and childbirth, Human Immunodeficiency Virus (HIV) and other sexually transmitted diseases, malnutrition, substance abuse, injuries etc. are very common symptoms observed in youth. According to WHO, 50 percent of HIV infected people in this world are below the age of 25 years and among them 60 percent belong to developing countries. They have also revealed that young women are more vulnerable to diseases than young men (WHO & UNAIDS, 2002). Now over a quarter of the world's population are within the age group of 10-24 years and India has the largest (243 million) number of adolescents comprising one-fourth of the country's population.

Designing proper healthcare interventions and spreading them up to the reach of unprivileged, needy group of people is the extreme need of the hour for achieving MDGs and also for making a healthy and better future generation. The following interventions have been determined indispensable for adolescent and reproductive age group (15-24 years) by Ministry of Health and Family Welfare, Government of India. These are reduction of unmet need (total, spacing, and limiting), increase of usage of family planning methods (any methods,

modern methods), and enhancement of awareness about Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS), Reproductive Tract Infections (RTIs), and Sexually Transmitted Infections (STIs) (Ministry of Health and Family Welfare, Government of India, 2013).

“Unmet need” for family planning refers as the proportion of married or fecund women who want to space/limit their pregnancy but not using any contraception (Ashford, 2003). For years, authorities are using “Unmet need” as a benchmark for designing family planning programmes. Major disadvantages of not using any contraceptive are unintended pregnancy with forced abortion, premature baby with low birth weight, maternal and child loss, pregnancy wastage etc. and sometime unsafe abortions lead to reproductive tract infections.

According to UNAIDS, India was the 3rd largest country with 2.1 million HIV effected people till the end of 2013. According to National AIDS Control Organization, majority of the new infections have been seen with youth age less than 25 years and among them young females are more vulnerable than young males.

India is the first country in the world to launch Family Planning Programme in 1952 to exercise control over fertility. During Fifth Five Year Plan (1974-79) maternal, child, and nutrition were added with family planning programme and named it as child survival and safe motherhood programme (CSSM). In 1997, reproductive tract infection and sexually transmitted disease programmes were associated with CSSM and renamed as Reproductive and Child Health (RCH). Finally in 2005, Ministry of Health and Family Welfare has launched National Rural Health Mission (NRHM) to enhance availability, accessibility, and quality of healthcare services especially for the underprivileged section of the society (Bhattacharya & Halder, 2014). A three-tier healthcare delivery framework has been set up for properly spreading of healthcare interventions to every corners of the country. Those are family and community level healthcare delivery, outreach or sub center level healthcare delivery, and clinical level healthcare delivery. At family and community level, trained

health workers visit to houses in their community to dissipate knowledge on health behaviors, to promote usage of health facilities, and to dispense basic health products. They are known as Accredited Social Health Activists (ASHA). Health Sub Centers are the first contact point at grass root level after community reach. As per population norms, there shall be one SC established for every 5000 population in plain areas and for every 3000 population in hilly/tribal/desert areas. As per Rural Health Statistics Bulletin, 2012 there were total 147069 SCs functioning in India (Ministry of Health and Family Welfare, Government of India, 2012). Clinical level healthcare delivery point is divided into first referral units i.e. Primary Health Centers (PHCs) and higher referral units i.e. Community Health Centers (CHCs), Sub-Districts hospitals, District Hospitals, and Medical Colleges. PHCs cover 30000 populations in plain area and 20000 populations in hilly, tribal or difficult areas. Each PHC supervise 6 SCs in its proximity. CHCs cover 80000 populations and 120000 populations in plain and in hilly areas respectively. Four PHCs are included under each CHC.

In this paper we have studied coverage, quality, and inequity of adolescent and reproductive healthcare interventions at districts of West Bengal. West Bengal is one of the major states in eastern India having an area of 88,752 sq. km. There were 9.13 crores population in West Bengal as per Census 2011 and Maternal Mortality Ratio (MMR) and Infant Mortality Rate (IMR) are 117 per 100000 (Register General India, 2012) and 31 per 1000 live births (Register General India, 2013) respectively. There are total 10356 SCs, 909 PHCs, and 348 CHCs functioning in West Bengal (National Rural Health Mission, 2013). Objective of this paper is divided into three parts. In first part, coverage, quality, and inequity of adolescent and reproductive healthcare services have been studied at districts of West Bengal in between 2012-13 and 2007-08. In second, transformation of three-tier healthcare delivery system at districts of West Bengal has been analyzed in between 2007-08 and 2012-13 and at last, performance based ranks were calculated for all districts based on three categories, family planning condition, knowledge on sexually transmitted diseases, and availability of basic

facilities at household and healthcare centers for better understanding of strength and weakness of each district.

DATA AND METHODOLOGY

Data used for analysis in this paper were obtained from two nationally representative surveys, 4th round (2012-13), and 3rd round (2007-08) of District Level Household and Facility Survey (DLHS). 1st round of the survey was started in 1998-99. Then second, third, and fourth round surveys were conducted on 2002-03, 2007-08, and 2012-13 respectively. These surveys were organized by Ministry of Health and Family Welfare, Government of India to gain insights about quality and coverage of maternal and child healthcare services along with condition of healthcare delivery points at districts level in India. In this paper we have analysed adolescent and reproductive services, especially 15-24 years, in West Bengal. Variables analysed in this paper were usage of family planning methods, unmet need (total, spacing, and limiting), awareness regarding RTI/STI and HIV/AIDS, condition of household facilities, presence of healthcare facilities at community level, SCs, PHCs, and CHCs. There are total 19 districts in West Bengal. Since Kolkata is a metro city with many private healthcare providers, we have considered data of 18 districts for this analysis. Bivariate data analysis technique has been used to determine progress in coverage and equity of adolescent and reproductive healthcare services in West Bengal between 2007-08 and 2012-13. Finally ranking of the districts has been calculated.

RESULTS

Unmet Need of Family Planning

The results shown in Table 1 give us an idea about the percentage rate of total unmet need, unmet need for spacing, and unmet need of limiting at districts of West Bengal as on 2007-08, and 2012-13. Total unmet need is the sum of unmet need of spacing and unmet need of limiting. Average rate of total unmet need of West Bengal was 11.30 per cent and 12.31 per cent as on 2007-08 and 2012-13 respectively. Unmet need of family planning has increased with time. Along with average, inequity among districts has also deteriorated in West

Bengal in between 2007-08 and 2012-13. On 2007-08, the difference between maximum unmet need and minimum unmet need was 12.2 percent but on 2012-13 the same has increased to 19per cent. Unmet need for spacing and limiting have also increased by time. At Purba Medinipur, total unmet need was lowest (4.3 percent) and at Jalpaiguri, Koch Bihar, and Paschim Medinipur, total unmet need was around seven percent but the rates were too high at North 24 Parganas (23.3 percent), Hugli (20.1 percent), and Nadia (19.1 percent) district on 2012-13.

Usage of Family Planning Methods

The outcome in Table 2 illustrate data on percentage of usage of any family planning methods, usage of modern family planning methods, percentage of female sterilization, and percentage of male sterilization at districts of West Bengal on 2007-08 and 2012-13. Average rate of usage of any family planning methods in West Bengal increased slightly from 71.66percent on 2007-08 to 71.72percent on 2012-13. Difference among maximum usage and minimum usage has also reduced by time. Both at Purba Medinipur (79.4per cent) and Paschim Medinipur (79.4per cent), the usage rates of any family planning methods were maximum. Average rate of usage of modern family planning method was 57.86percent and 53.57percent as on 2012-13 and on 2007-08 respectively. The usage rate was maximum at Bankura district (68.5 percent) and minimum at Uttar Dinajpur district (42.7percent) as on 2012-13. Puruliya district has seen the maximum change in usage since 2007-08. By this course of time, difference among districts regarding usage of modern methods has reduced and both maximum usage rate and minimum usage rate have improved since 2007-08. Average rate of female sterilization has decreased in West Bengal from 34.98percent on 2007-08 to 32.61percent on 2012-13. Maximum rate of female sterilization has been observed at Bardhaman district (46.3percent) on 2012-13. Female sterilization rates were quite high at Bankura (46.2per cent), Puruliya (42.5per cent), and Birbhum (39.6per cent) districts too. But both maximum rate and minimum rate of female sterilization have reduced on 2012-13 since 2007-08. Average male sterilization rate in West Bengal has also reduced to 0.46per cent as on 2012-13

from 0.63per cent on 2007-08. In many districts like Maldah, Murshidabad, South 24 Parganas, and Purba Medinipur, male sterilization rates were zero per cent on 2012-13.

Current usage of modern family planning methods

Table 3 shows district wise usage of modern family planning techniques such as pills, IUD, and condom in West Bengal on 2012-13 and 2007-08. Average rate of usage of pills in West Bengal was 18.01percent on 2012-13 and the same was 13.79percent on 2007-08. Not only average value, the maximum value and minimum value of usage of pills at districts have also increased by time. Usage of pills was maximum at South 24 Parganas (33.3per cent) on 2012-13. Maldah district has seen the maximum change in usage since 2007-08. The lowest usage of pill was observed at Puruliya district (10per cent). Usage of IUD has reduced in 10 districts among 18 in West Bengal in between 2007-08 and 2012-13. Average rate of insertion of IUD in West Bengal was 0.68per cent on 2007-08 and the rate was reduced to 0.49per cent on 2012-13. As per IUD insertion rate, maximum and minimum insertions have been seen at Darjeeling and Maldah districts respectively. Average rate of usage of condom has increased in West Bengal. On 2007-08 it was 3.13per cent only and the same became 6.13per cent on 2012-13. As on 2012-13, the maximum rate of usage of condom was observed at Haora (9.9per cent) district and the lowest was noticed at Birbhum (2.8per cent) district. Both maximum value and minimum value have increased in 2012-13 with respect to 2007-08 but inequity among districts has increased too.

Quality of Family Planning Services

Results of Table 4 reveal the quality of family planning services at districts of West Bengal on 2007-08 and on 2012-13. Quality of family planning services have been measured considering following factors: percentage of non-users advised by health personnel about family planning methods, users who received follow up services for sterilization and IUD within 48 hours, and post-partum adoption of family planning for sterilization. Average percentage of non-users advised by health personnel about family planning methods has reduced from 22.16per cent on 2007-

08 to 20.24per cent on 2012-13 in West Bengal. Even in due course of time, range has increased from 17.90per cent to 22.30per cent. At Purba Medinipur district, the percentage was as low as 8.70 percent on 2012-13. Average percentage of users who received follow up services for sterilization and IUD within 48 hours has also declined from 55.65per cent on 2007-08 to 46.46per cent on 2012-13. Inequity among districts has also increased significantly because range value was 33.00per cent on 2007-08 but it has increased to 49.40per cent on 2012-13. Haora, Bankura, and South 24 Parganas have seen maximum decline in services in between 2007-08 and 2012-13. Least follow up service has been observed at South 24 Parganas (22.5 percent) as on 2012-13. Average percentage of post-partum adoption of family planning for sterilization has increased in West Bengal. On 2007-08, the percentage rate was 46.42per cent and the same has become 68.05per cent on 2012-13. Inequity among the districts has also decreased since 2007-08. The percentage of post-partum adoption of family planning for sterilization at Hugli and Maldah were 82.3per cent and 80.9per cent respectively. There were seven districts Darjeeling, Jalpaiguri, Birbhum, Nadia, North 24 Parganas, Haora, and Purba Medinipur where post-partum adoption of family planning rates were more than 70per cent. Percentage of post-partum adoption has improved most at South 24 Parganas since 2007-08.

Awareness of RTI/STI and HIV/AIDS

Table 5 illustrates the awareness of RTI/STI and HIV/AIDS at districts of West Bengal on 2007-08 and 2012-13. Average percentage rate of awareness regarding RTI/STI in West Bengal was 34.1per cent in 2007-08 and it has increased to 39.14per cent in 2012-13. But within this period, inequity regarding awareness of RTI/STI has also increased from 34.1per cent to 70.9per cent. At Koch Bihar 83.3per cent women were aware of RTI/STI whereas only 12.4per cent women of Bankura have heard of RTI/STI as on 2012-13. Average percentages of women in West Bengal who have heard of HIV/AIDS was 63.08per cent on 2012-13. The same was 49.93per cent on 2007-08. At Koch Bihar (90.9 percent), the awareness rate was maximum as on 2012-13. Even at districts like Haora (89.1per cent), Darjeeling (86.5per cent),

Murshidabad (84.1per cent), Uttar Dinajpur (83per cent), and Jalpaiguri (80.1per cent), the percentage rates were quite satisfactory too. Average rate of women who have any symptoms of RTI/STI in West Bengal has also reduced from 26.63per cent on 2007-08 to 14.67per cent on 2012-13. Average percentage of women underwent test for detecting HIV/AIDS in West Bengal has increased from 2.01per cent on 2007-08 to 9.26per cent on 2012-13. Maximum percentage of women of Darjeeling (17.9 percent) has undergone for test on 2012-13. Districts like Puruliya (14.4per cent), Purba Medinipur (14.3per cent), North 24 Parganas (12.6per cent), Koch Bihar (10.2per cent), and Murshidabad (10per cent) have observed more than 10per cent of women who underwent test for detecting HIV/AIDS on 2012-13. Since 2007-08, all 18 districts in West Bengal have seen improvement in percentage of women who underwent test for HIV/AIDS.

Household Facilities

The data showed in Table 6 illustrates the availability of household facilities like electricity, drinking water, toilet, and clean cooking fuel at districts of West Bengal on 2007-08 and 2012-13. In West Bengal, average 88.60per cent households were having electricity as on 2012-13 and the ratio was 51.01per cent on 2007-08. Simultaneously, inequity among districts has also reduced notably. There was electric facility in more than 80per cent of households of all districts of West Bengal as on 2012-13. Average percentage of improved source of drinking water was 90.41per cent as on 2007-08 and by 2012-13 it has also increased to 95.59per cent. At Hugli and Haora district, 100per cent households had improved source of drinking water as on 2012-13. Average percentage of households who had access to improved toilet facility has increased to 71.31 percent on 2012-13 from 53.98 percent on 2007-08. Even inequity among districts had also reduced from 82.80per cent to 52.70per cent by this period. Usage rate of clean cooking fuel is still very low in West Bengal. On 2007-08, only average 11.42per cent households were using clean fuel for their cooking and on 2012-13, the rate has improved to 31.73per cent only.

Facilities at village level

Table 7 shows the availability of facilities at villages of West Bengal. Availability of ASHA workers at villages and number of Village Health Nutrition and Sanitation Committee (VHNSC) both have increased on 2012-13 than on 2007-08. Average percentage of villages having ASHA worker was 12.91 percent on 2007-08 and increased to 87.08 percent on 2012-13. Number of villages with SC within 3km. and PHC within 10 km. has also improved since 2007-08.

Service Facility at Healthcare Centers

Data of availability of service facilities at health centers at districts of West Bengal is shown in Table 8. Availability of Auxiliary Nurse Midwives (ANM) has improved notably at districts of West Bengal. Previously on 2007-08, around 90% SCs were having ANM and on 2012-13 the average has increased to around 99%. Inequity among districts has also reduced significantly from 26.80per cent on 2007-08 to 3.50per cent on 2012-13. Average percentage of additional ANM in SCs has also improved at districts of West Bengal. Availability of male health workers in SCs have reduced by time. On 2007-08, average percentage of male worker at SCs was 41per cent but on 2012-13 it became 20.96percent. Presence of lady officers at PHCs was very unsatisfactory. Only at Hugli district, 73.4 percent PHCs were having lady officers as on 2012-13 and on the opposite side many districts were not having any lady officers at their PHCs. The scenario was same with the number of obstreician/gynecologists at CHCs. As on 2012-13, the average rate was only 15.02per cent and difference between maximum and minimum value was 42.11per cent. Availability is still manageable at Nadia (42.1per cent), North 24 Parganas (37.9per cent), Haora (33.3per cent), South 24pargana (32.4per cent) districts butat districts like Koch Bihar, Uttar Dinajpur, Dakshin Dinajpur, and Bardhaman, there were no any obstreician/gynecologists in whole district.

Ranking of districts

The Results in Table 9 show ranks of districts in West Bengal based on the performance on unmet need and family planning, awareness on RTI/STI

and HIV/AIDS, and availability of facilities at households and health centers as on 2012-13. Unweighted value of factors related to unmet need, usage of family planning techniques, and quality of family planning services of each district were added and then districts were ranked sequentiallybased on calculated results. The same procedure was followed for other two categories too. Dakshin Dinajpur, Jalpaiguri, Paschim Medinipur, Bankura, and Purba Medinipur were top five districts based on the performance on unmet need and usage of family planning techniques and least performing districts were Uttar Dinajpur, North 24 Parganas, Nadia, Murshidabad, and South 24 Parganas. Based on awareness regarding RTI/STI and HIV/AIDS, top performing districts were Koch Bihar, Murshidabad, Jalpaiguri, Darjeeling, and Purba Medinipur and least performing districts were Puruliya, Dakshin Dinajpur, Birbhum, Nadia, and Bankura. Scarcity of both basic household facilities and adolescent and reproductive healthcare facilities have been noticed at Uttar Dinajpur, Bankura, Puruliya, Bardhaman, Dakshin Dinajpur, and Murshidabad districts.

DISCUSSION

In this paper we have studied coverage, quality, and inequity of adolescent and reproductive healthcare interventions at districts of West Bengal on 2007-08 and on 2012-13. Percentage of unmet need of family planning has deteriorated in West Bengal. Significant improvement has been observed on usage of modern family planning techniques. Still numbers of users are very less. Proportion of adoption of family planning post-partum has improved in West Bengal but advisory service on family planning methods and after sterilization follow service quality has deteriorated in between 2007-08 and 2012-13. Awareness regarding RTI/STI and HIV/AIDS has increased notably in West Bengal. Even number of people underwent for HIV test has also improved significantly. On the basis of performance table, Uttar Dinajpur, Bankura, and Puruliya district should get extra care from authority. Infrastructural facility at these districts was really very poor. Availability of facilities at household as well as at health centers was quite satisfactory at North 24

Parganas, Nadia, Hugli, and Haora districts but coverage and quality of adolescent and reproductive interventions at these states were very disappointing.

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APPENDIX

Table 1. Percentage of Unmet need for family planning at different districts of West Bengal as on 2007-08 and 2012-13

Districts	Unmet Need for Family Planning (%)					
	Total unmet need		Unmet Need for spacing		Unmet Need for limiting	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	16	12	4.5	2	11.5	10
Jalpaiguri	6.4	11.8	3.7	3.7	2.7	8.1
Koch Bihar	7	9.3	2.1	3.8	4.9	5.5
Uttar Dinajpur	11.9	19.6	4.8	8.1	7.1	11.5
Dakshin Dinajpur	14.3	9.9	5.4	3.4	7.9	6.5
Maldah	15.7	18.3	5.9	6.3	9.8	12
Murshidabad	10.3	10.6	5	3.8	5.3	6.8
Birbhum	15.9	8.1	5.2	3.1	10.7	5
Barddhaman	7.7	8.8	3.1	2.5	4.6	5.3
Nadia	19.1	7.4	6.8	1.9	12.3	5.5
North 24 Parganas	23.3	11.1	7.6	2.6	15.7	8.5
Hugli	20.1	9.3	7.1	3.2	13	6.1
Bankura	8.8	12.1	4.6	4.3	4.2	7.8
Puruliya	10.4	17.2	4.4	6.8	6	10.4
Paschim Medinipur	7.5	9.2	4	3.2	3.5	6
Haora	10.8	8.4	4.8	2.7	6	5.7
South 24 Parganas	12.1	9.1	5.2	3.8	6.9	5.3
Purba Mednipur	4.3	11.2	1.7	3.5	2.6	7.7
Average	12.31	11.30	4.77	3.82	7.48	7.43
Max	23.3	19.6	7.6	8.1	15.7	12
Min.	4.3	7.4	1.7	1.9	2.6	5
Range (Max.-Min. Value)	19	12.2	5.9	6.2	13.1	7

Source: Calculation based on DLHS data.

Table 2. Percentage rate of use of any family planning method, modern family planning method, female sterilization, and male sterilization at districts of West Bengal as on 2007-08 and 2012-13 (Source: Calculation based on DLHS data)

Districts	Current use of Family Planning Methods (%)							
	Any method		Any modern method		Female sterilization		Male sterilization	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	68.5	72.4	55.5	57.8	28.6	37.4	0.2	1.2
Jalpaiguri	78	72.7	65.9	53.1	35.1	31.5	4.2	2.5
Koch Bihar	76.4	76.5	58.6	56.8	33.6	37.6	0.5	1.6
Uttar Dinajpur	62.9	54.9	42.7	34.7	22.2	22.1	0.1	0.2
Dakshin Dinajpur	72.9	73.1	57.5	54	32	33.1	0.2	0.7
Maldah	68.4	62	53	42.6	20.8	28.3	0	0.5
Murshidabad	67.9	72.7	51.1	54	32.3	42.3	0	0.3
Birbhum	69.1	74.8	63.2	62.6	39.6	43.7	0.3	0.6
Bardhaman	76.9	73.4	65.6	62.2	46.3	43	0.1	0.3
Nadia	64.7	75.2	49.6	47.2	28	33.2	0.1	0.1
North 24 Parganas	62.2	70.3	46.1	45.7	20.2	23	0.5	0.1
Hugli	68.2	77.9	57.3	58.1	39.3	42.3	0.6	0.8
Bankura	76.3	72.5	68.5	63.8	46.2	51.2	0.3	0.5
Puruliya	72.8	58.1	60.1	44.9	42.5	35.7	0.2	0.4
Paschim Medinipur	79.4	78.3	68.4	66.4	39.1	49	0.6	0.6
Haora	73.1	75.4	58.1	52.1	31.8	27.7	0.3	0.1
South 24 Parganas	73.8	75.5	59.8	51.3	20.1	21.7	0	0.5
Purba Medinipur	79.4	74.1	60.5	56.9	29.2	26.9	0	0.4
Average	71.72	71.66	57.86	53.57	32.61	34.98	0.46	0.63
Max	79.4	78.3	68.5	66.4	46.3	51.2	4.2	2.5
Min.	62.2	54.9	42.7	34.7	20.1	21.7	0	0.1
Range (Max.-Min Value)	17.2	23.4	25.8	31.7	26.2	29.5	4.2	2.4

Table 3. Percentage rate of use of modern family planning techniques (Pill, IUD, and Condom) at districts of West Bengal as on 2007-08 and 2012-13

Districts	Usage of modern family planning techniques (%)					
	Pill		IUD		Condom	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	18.4	12.5	1	1.7	6.8	4.8
Jalpaiguri	17.2	14.9	0.3	0.6	9.1	3.2
Koch Bihar	17.5	14.7	0.2	0.5	6.8	2.1
Uttar Dinajpur	15.1	8.9	0.2	0.2	4.7	2.9
Dakshin Dinajpur	19.8	16.1	0.4	0.7	4.9	3.4
Maldah	23.4	10.1	0.1	0.7	8.3	2.7
Murshidabad	13.6	7.9	0.3	0.3	4.7	2.9
Birbhum	19.8	15	0.6	0.4	2.8	2.4
Bardhaman	14.1	14.4	0.3	0.8	4.3	3.7
Nadia	14.9	10.5	0.8	0.5	5.7	2.5
North 24 Parganas	18.8	17.3	0.5	1.2	6.1	3.7
Hugli	11.3	10.5	0.7	0.3	5.5	3.6
Bankura	16.1	9.4	0.5	0.9	5.4	1.5
Puruliya	10	6.2	0.8	0.6	6.5	1.9
Paschim Medinipur	20.1	13.9	0.3	0.6	8.3	1.7
Haora	15.3	16.5	0.6	0.8	9.9	6.8
South 24 Parganas	33.3	23.6	0.7	0.5	5.5	4.1
Purba Mednipur	25.5	25.8	0.5	1	5.1	2.4
Average	18.01	13.79	0.49	0.68	6.13	3.13
Max	33.3	25.8	1	1.7	9.9	6.8
Min.	10	6.2	0.1	0.2	2.8	1.5
Range (Max.-Min. Value)	23.3	19.6	0.9	1.5	7.1	5.3

Source: Calculation based on DLHS data.

Table 4. Quality of family planning services at districts of West Bengal as on 2007-08 and 2012-13

Districts	Quality of Family Planning Services (%)					
	Non-users ever advised by health personnel to adopt any family planning method		Users who received follow-up services for sterilization and IUD within 48 hours		Post-partum adoption of Family Planning for sterilization	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	22.5	19.9	57.6	51.8	73.8	44.3
Jalpaiguri	14.5	20.8	44.4	52.4	72.2	32.5
Koch Bihar	16	31.4	38	48.7	66.6	48.1
Uttar Dinajpur	18.7	25.5	49.3	42	47.5	56.7
Dakshin Dinajpur	31	19.4	71	50	68.1	28.1
Maldah	14.9	25.8	71.2	44.6	80.9	62.9
Murshidabad	25.1	21.4	43.1	48	62.9	37.2
Birbhum	21.4	16.7	46	69.4	72.3	48.6
Bardhaman	19.7	13.6	37.9	55.6	57.4	49.4
Nadia	25	27.3	36.9	60.6	76.4	48.5
North 24 Parganas	22.7	15.4	56.5	63	72.9	65.7
Hugli	28.3	24.4	31.6	50.2	82.3	42.8
Bankura	14.3	31.5	42.4	75	69.8	66.1
Puruliya	29.5	20.6	51.1	72	54.8	56.3
Paschim Medinipur	16.6	25.5	39.1	53	67.7	33.1
Haora	18.7	21.9	25.8	71.2	78.7	62.6
South 24 Parganas	16.7	17.9	22.5	48.5	74.2	18.8
Purba Medinipur	8.7	19.8	71.9	45.7	46.4	33.8
Average	20.24	22.16	46.46	55.65	68.05	46.42
Max	31.00	31.50	71.90	75.00	82.30	66.10
Min.	8.70	13.60	22.50	42.00	46.40	18.80
Range (Max.-Min. Value)	22.30	17.90	49.40	33.00	35.90	47.30

Source: Calculation based on DLHS data.

Table 5. Percentage rate of awareness of RTI/STI and HIV/AIDS at districts of West Bengal as on 2007-08 and 2012-13 (Source: Calculation based on DLHS data)

Districts	Women who have heard of RTI/STI		Women who have heard of HIV/AIDS		Women who have any symptoms of RTI/STI		Women who know the place to go for testing of HIV/AIDS		Women underwent test for detecting HIV/AIDS	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	57.1	31.8	86.5	81.5	12.8	25.5	44	47.8	17.9	5.1
Jalpaiguri	63.1	37.2	80.1	56.4	19.7	25.5	56.9	46.4	9.5	1.6
Koch Bihar	83.3	24.2	90.9	37.4	12.7	32.1	62.3	45.7	10.2	1.3
Uttar Dinajpur	53.5	21.8	83	25.2	10	23.9	36.4	31.8	8.7	2
Dakshin Dinajpur	27.1	38.6	42.3	46	9.6	25.2	23.9	59.8	4	2.4
Maldah	58.3	24.3	79.5	20.8	34.5	30.8	19.5	32.8	5.3	1.1
Murshidabad	77.1	33.4	84.1	40.2	12.8	31.2	47.9	39	10	1.2
Birbhum	17.2	44.4	31.7	60.7	22.1	25.9	18.4	47.3	8.2	3.1
Barddhaman	22.9	38.2	47.3	49.5	15.5	22.5	36.4	32.6	9.2	1.5
Nadia	14.5	55.9	34.8	60.7	19.8	27.5	18.4	45.2	5.1	0.9
North 24 Parganas	19.7	54.8	43.4	67	24.7	23.5	41.1	35.2	12.6	7.4
Hugli	18.2	35.2	65.7	72.9	9.6	26.4	28.9	29.4	9.4	1
Bankura	12.4	29.7	41.5	28.1	6.1	18.8	23.6	28	2.9	1.6
Puruliya	13	22.8	32.7	18	7.5	21.2	46.2	23.7	14.4	2.3
Paschim Medinipur	55.1	27.4	70.6	48.7	13.1	40.7	57.6	26.2	7.8	0.9
Haora	36.1	42.2	89.1	70.3	3.5	25.2	14.7	38	8.4	1.7
South 24 Parganas	21	26.5	53.7	53.2	12.1	27.9	47.7	47.2	8.7	0.7
Purba Mednipur	55	38	78.5	62.2	18	25.5	39.4	18.4	14.3	0.4
Average	39.14	34.80	63.08	49.93	14.67	26.63	36.85	37.47	9.26	2.01
Max	83.3	55.9	90.9	81.5	34.5	40.7	62.3	59.8	17.9	7.4
Min.	12.4	21.8	31.7	18	3.5	18.8	14.7	18.4	2.9	0.4
Range (Max.-Min. Value)	70.9	34.1	59.2	63.5	31	21.9	47.6	41.4	15	7

Table 6. Percentage rate of availability of household facilities at districts of West Bengal as on 2007-08 and 2012-13 (Source: Calculation based on DLHS data)

Districts	Household Facilities							
	Having electricity		Improved source of drinking water		Having access to improved toilet facility		Use clean fuel for cooking	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	95.8	82.4	79.6	73.4	76.4	69.6	48.2	35.5
Jalpaiguri	82.9	51.6	87.4	69.9	76.8	56.9	33.1	16.6
Koch Bihar	86.4	28.2	98.6	94.1	87.9	66.1	40.8	8
Uttar Dinajpur	84.3	36.6	95.8	99.3	56.5	29.2	28.9	6.1
Dakshin Dinajpur	85.5	39	99.6	98.9	69.6	34.5	29	6.8
Maldah	88.7	35.8	91.4	74.9	74.8	29.8	35.8	6.6
Murshidabad	86.5	46.7	99.5	99.9	62.2	46.6	20.6	5.5
Birbhum	93.3	43.3	96.9	91.5	54.6	24.3	28.4	5.8
Barddhaman	89.2	65.1	97.5	94.7	64.4	55.2	21.7	11.2
Nadia	88.3	49	99.5	99.8	82.9	80.7	20.5	9.6
North 24 Parganas	92.4	73.8	99.7	99.8	89.4	92	40.2	25.9
Hugli	91.8	81.6	100	99.3	79.4	79.8	37.9	21.6
Bankura	84.8	39.4	95.1	89.8	47.7	16	27.4	4.1
Puruliya	81.6	27.5	85.9	60	36.7	10	25.2	4.6
Paschim Medinipur	89.6	44.8	94.7	82.5	69.3	44.7	34.2	3.6
Haora	96.9	75.7	100	99.7	84.4	78.8	41.3	22.7
South 24 Parganas	84.2	53.4	99.9	100	82.1	64.6	30.5	8.6
Purba Mednipur	92.6	44.3	99.6	99.9	88.6	92.8	27.4	2.8
Average	88.60	51.01	95.59	90.41	71.32	53.98	31.73	11.42
Max	96.90	82.40	100.00	100.00	89.40	92.80	48.20	35.50
Min.	81.60	27.50	79.60	60.00	36.70	10.00	20.50	2.80
Range (Max.-Min. Value)	15.30	54.90	20.40	40.00	52.70	82.80	27.70	32.70

Table 7. Percentage rate of availability of healthcare facilities at villages in districts of West Bengal as on 2007-08 and 2012-13 (Source: Calculation based on DLHS data)

Districts	Health programmes at village level				Accessibility of health facility (%)			
	Percentage of villages having ASHA		Percentage of Villages having Village Health Nutrition and Sanitation Committee		Villages with Sub-Health Centre within 3 km		Villages with PHC within 10 km	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	64.7	33.3	29.4	6.1	82.4	84.9	73.5	72.7
Jalpaiguri	80	24.4	60	12.2	0	90.2	68	90.2
Koch Bihar	92	15.63	20	31.1	96	88.9	88	91.1
Uttar Dinajpur	88	15.9	12	6.8	96	90.9	84	77.3
Dakshin Dinajpur	80	27.9	0	2.3	92	83.7	92	79.1
Maldah	88	13	28	2.2	88	89.1	92	93.5
Murshidabad	84	13.6	20	11.4	100	79.6	88	86.4
Birbhum	76	26.1	44	23.9	100	84.8	92	89.1
Bardhaman	94.1	18.8	35.3	62.5	79.4	93.8	85.3	81.3
Nadia	88.6	5.1	34.1	28.2	90.9	84.6	93.2	89.7
North 24 Parganas	92	13	48	39.1	96	91.3	84	87
Hugli	100	0	52.9	21.2	91.2	93.9	97.1	84.8
Bankura	96	8.7	36	21.7	91.2	69.6	96	89.1
Puruliya	84	0	20	2.2	80	77.8	76	77.8
Paschim Medinipur	92	12.2	28	16.3	84	73.5	88	85.7
Haora	96	0	20	28	96	92	100	92
South 24 Parganas	76	4.8	4	4.8	96	95.2	88	92.9
Purba Mednipur	96	0	24	22.5	96	87.8	100	91.8
Average	87.08	12.91	28.65	19.03	86.39	86.20	88.06	86.19
Max	100	33.3	60	62.5	100	95.2	100	93.5
Min.	64.7	0	0	2.2	0	69.6	68	72.7
Range (Max.-Min. Value)	35.3	33.3	60	60.3	100	25.6	32	20.8

Table 8. Percentage rate of availability of healthcare facilities at healthcare centers in districts of West Bengal as on 2007-08 and 2012-13

Districts	SCs with ANM		SCs with male health worker		SCs with additional ANM		PHCs having Lady Medical Officer		CHCs having Obstetrician/Gynaecologist	
	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)	DLHS-4 (2012-13)	DLHS-3 (2007-08)
Darjeeling	96.9	100	45.4	71.4	46.9	6.1	16.7	16.7	16.7	27.3
Jalpaiguri	100	73.2	53.3	56.1	43.3	19	7.1	6.7	7.1	7.7
Koch Bihar	100	97.7	33.3	25.6	63	1	7.1	5.7	0.0	8.3
Uttar Dinajpur	100	92.9	8	23.8	44	0	0	0	0.0	22.2
Dakshin Dinajpur	100	90.5	8	45.2	88	1	12.5	7.1	0.0	0.0
Maldah	100	93	15.4	41.9	84.6	0	0	7.7	12.5	12.5
Murshidabad	96.5	95	20.7	35	71.4	0	0	20	11.1	7.4
Birbhum	100	91.1	12	44.4	88	1	0	5.6	10.5	21.1
Bardhaman	96.9	81.8	21.2	51.5	59.4	0	0	15.8	0.0	17.2
Nadia	100	83.8	30.2	62.2	79.1	1	11.8	0	42.1	28.6
North 24 Parganas	100	95.7	15.6	30.4	59.4	0	50	6.3	37.9	13.6
Hugli	100	91.2	6.3	29.4	40.6	1	73.4	4.5	15.8	11.8
Bankura	100	93.3	6.3	37.8	40.6	0	9.1	4.4	4.5	4.5
Puruliya	100	83.7	39.1	51.2	78.3	0	20	5.6	9.5	5.3
Paschim Medinipur	100	89.6	8	43.8	92	0	12.5	14.8	13.8	17.2
Haora	100	88	28	20	52	0	9.1	27.3	33.3	26.7
South 24 Parganas	100	94.7	11.1	39.4	70.4	0	0	16.7	32.4	3.3
Purba Mednipur	100	84.4	15.4	28.9	80.8	0	11.1	20	23.1	8.3
Average	99.46	89.98	20.96	41.00	65.66	1.67	13.36	10.27	15.02	13.50
Max	100.00	100.00	53.30	71.40	92.00	19.00	73.40	27.30	42.11	28.57
Min.	96.50	73.20	6.30	20.00	40.60	0.00	0.00	0.00	0.00	0.00
Range (Max.-Min. Value)	3.50	26.80	47.00	51.40	51.40	19.00	73.40	27.30	42.11	28.57

Source: Calculation based on DLHS data.

Table 9. Ranks of Districts in West Bengal based on the performance on unmet need and family planning, awareness on RTI/STI and HIV/AIDS, and availability of facilities at households and health centers as on 2012-13

Rank	Unmet need and Family Planning	Awareness on RTI/STI and HIV/AIDS	Availability of Facilities at Households and Health Centers
1	Dakshin Dinajpur	Koch Bihar	North 24 Parganas
2	Jalpaiguri	Murshidabad	Hugli
3	Paschim Medinipur	Jalpaiguri	Nadia
4	Bankura	Darjeeling	Haora
5	Purba Mednipur	Purba Mednipur	Purba Mednipur
6	Maldah	Paschim Medinipur	Koch Bihar
7	Puruliya	Maldah	Paschim Medinipur
8	Barddhaman	Uttar Dinajpur	Maldah
9	Birbhum	Haora	Birbhum
10	Darjeeling	South 24 Parganas	Jalpaiguri
11	Koch Bihar	North 24 Parganas	South 24 Parganas
12	Haora	Hugli	Darjeeling
13	Hugli	Barddhaman	Murshidabad
14	South 24 Parganas	Puruliya	Dakshin Dinajpur
15	Murshidabad	Dakshin Dinajpur	Barddhaman
16	Nadia	Birbhum	Puruliya
17	North 24 Parganas	Nadia	Bankura
18	Uttar Dinajpur	Bankura	Uttar Dinajpur

Source: Calculation based on DLHS data.