Working Paper

HSTP 2021/HCF1

Changes in utilization trends of services at public hospitals after the launch of Biju Swasthya Kalyan Yojana & other health initiatives in Odisha.

April 2021

Sudha Chandrasekhar[1]
Dhananjay Naidu[2]

[1]Health Systems Transformation Platform
[2]Access Health International

HSTP
Health Systems
Transformation Platform

ACCESS
health international

Contact

Sudha Chandrasekhar | Consultant, HSTP (supported by Tata Trusts) | schandrashekhar@hstp.org.in

This document titled 'Changes in utilization trends of services at public hospitals after the launch of Biju Swasthya Kalyan Yojana & other health initiatives in Odisha' has been developed by Sudha Chandrasekhar from HSTP in collaboration with Access Health International.

Disclaimer

Acknowledgements

The author is grateful to Rajeev Sadanandan, N Devadasan, Rahul Reddy and Vijayshree Yellappa, Himani Sethi and Sireesha P for reviewing the manuscript and providing valuable insights.

Table of Contents

Abstract

Achieving Universal health coverage (UHC) is a defined goal for India and steps are being taken by all states to move towards this goal. India being diverse each state/Union territory has unique implementation process to achieve this objective. Some states have gone ahead with an insurance model, others in an assurance/trust model and few have taken a path of hybrid model. Most of the states have integrated their state schemes and previous Rashtriya Swasthya Bima Yojana with the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY). Four states namely Telangana, Delhi, West Bengal and Odisha have still not joined the national scheme and are implementing and expanding their own state schemes. Odisha allows government and private facilities to empanel as service providers. This would require government facilities to be upgraded to compete with private providers and also provides an additional source of revenue. Odisha has taken significant measures to improve the public facilities improving services to the people as they are the major providers of health care in the state. This paper discusses the changing trends in utilization of services from public facilities after the launch of UHC scheme and other health initiatives

1. Introduction

Odisha state has been implementing a universal health coverage scheme Biju Swasthya Kalyan Yojana (BSKY) since February 2019 for the entire population (estimated to be 4.37 crores), **covering inpatient treatment for specific predefined procedures.** The State health assurance society (SHAS), Department of health and family welfare, is the nodal agency which has converged the existing schemes like Rashtriya Swasthya Bima Yojana (RSBY), Biju Krushak Kalyan Yojana (BKKY- I, II) and Odisha State treatment fund (OSTF). **RSBY was centrally cosponsored scheme covering BPL population and unorganized sector, OSTF[1] were state run schemes which covered population as defined by state and BKKY scheme was implemented for farmers[2].** The scheme is implemented in an assurance mode (without any premium contribution by the beneficiary or insurance intermediary, the state assures to cover the beneficiaries for defined conditions as per the scheme guidelines).

The BSKY scheme has two components: a) Universal Health Care (Free healthcare) to all the people of Odisha in all the Government health institutions, irrespective of their income status or residence without paying any charge. b) Annual Cashless health coverage of 5 Lakh per family (Rs.10 Lakh to women members of family) to 70 lakhs families that belong to the lower socio-economic section of the society of the State. They can avail the services in both the Government (OP and hospitalization cover) and empanelled private health institutions (only hospitalization as per the defined packages) with referral from public facilities.

There are 32 district hospitals, 33 sub-divisional hospitals, 5 medical colleges, 384 Community health centres (CHCs), 77 First referral units (FRUs), 1375 Primary health centres (PHCs), 6688 Sub-centres (SCs) and 1616 functional Health and wellness centres in Odisha. The total footfall for OPD care (2019-20) in above public facilities was 5.46 crore while for IPD care 28.96 lakh people utilized the services. All public facilities till medical college level in Odisha are deemed empanelled in the scheme and provide the required services and referral to private empanelled facilities if they do not have the capacity to provide required treatment to the beneficiaries. Referral system under insurance/assurance schemes is implemented only in few states effectively ex. Karnataka, Uttarakhand which has mandatory referral from public facility. Odisha also has implemented referral system which has helped in increasing public hospital utilization and avoids bypassing of public system.

[1] OSTF provides benefits to in-patient care and critical care benefits to the poor families. Patients belong to the BPL families, having income of 40000 INR in rural and 60000 INR in urban areas or Antyodaya Anna Yojana beneficiaries are mainly benefited by this scheme.

[2] There are two streams under BKKY. In stream 1, all eligible farming households get coverage up to 100,000 INR per family per year. Under stream II, all eligible farming households who are RSBY beneficiary get 30,000 coverage from RSBY and another 70,000 is provided by BKKY for meeting expenses of hospitalization or surgical procedure. Antyodaya Anna Yojana (AAY) is a Government of India sponsored scheme to provide highly subsidised food to poor families.

2. Health Expenditures

Presently average health expenditure as a percentage of total expenditure for all states is about 5.1% (4.1 -9%). All states except Meghalaya (9%) spends less than the recommended 8% while Odisha spends about 5.2 % (2019) and as a share of GSDP (Gross state domestic product) is around 1.2-1.3%. The per capita expenditure for health for all states was Rs. 1218 (616-6937) while the Odisha figures are higher than national average amounting to Rs. 1308.[3] As per the national health accounts statistics total out of pocket expenditure (OOPE) stands at 68.9%.

2.1 Out of Pocket Expenditures

The average out of pocket expenditure for non-hospitalization is about ₹ 547, (₹.534 -in case of Urban and -₹ 550- Rural) while for in-patients it was found to be ₹. 12,295 (₹ 5,283-public to ₹30,947-private) as per the NSSO, 75th round. The NSSO data showed an OOPE for normal delivery in public hospitals as₹ 2700 while private it was ₹15,445. NFHS-4 estimates of OOPE for delivery in public facility was ₹ 4,225 (Rural-4125, Urban-4900) as against the national average of Rs. 3,198.

The main component of this expenditure is medicines and diagnostics as shown in **Table-1**, especially in the public facilities. The launch of the free drugs (Niramaya) and diagnostics (Nidaan) scheme is hoped to address this issue and its impact may be seen in the subsequent rounds of the surveys. The average OOPE for surgery-related hospitalization in another study in Odisha (2016) was ₹ 3081 (1859–4304) and was ₹ 1814 (1625–2003) for nonsurgical conditions. The mean OOPE on surgery was approximately 1.7 times more than the nonsurgical conditions[6].

2.2 Estimates of cost of care

Further a recent costing study to estimate costs of providing secondary care in public facilities ranged from ₹134 (104–160) for an outpatient consultation to ₹3833 (2668–5839) for institutional delivery at Community health centre level. Similarly, at DH level, the unit cost varied from ₹183 (124–248) for an outpatient consultation in an orthopaedics department to ₹4764 (3268–6960) for an operation[7]. Reduction of out-of-pocket expenditure and improving access to care to the people of Odisha is the main objective of launching of BSKY scheme.

Table-1: Break up of OOPE by type of health care provider (%)

Type of facility	Package component*	Doctors/ surgeon fee	Medicines	Diagnostics tests	Bed charges	others	Total
Public-R	2.2	2.3	68.3	18.5	1	7.7	100
Private-R	36.3	16.1	22.3	8.8	12.3	4.2	100
Public-U	26.5	1.3	43.9	17.1	2	9.2	100
Private-U	31.6	22.7	23.4	9	8.9	4.4	100

* Package component includes costs like OT charges, consumables, oxygen, blood, nursing services

[3] Report of the fifteenth finance commission, Oct 2020, https://fincomindia.nic.in

The state has evolved a different method of financing public hospitals in the light of launch of BSKY scheme. The empanelled private providers are paid/ reimbursed for services through package rates whereas government hospitals receive bulk payments indexed on a few parameters. with specified line items and an additional sum to adjust for abolition of user fees after launch of BKSY. The user fee adjustment is calculated using historical figures for user fees collected. Apart from the regular budget provided to the institution, the user fees, collected during the preceding year, is reviewed and based on In-patient (IP) and Out-patient (OP) data of the hospital they are reimbursed In case the hospital treats more patients than the preceding year, additional grants are paid on request.

2.3 Complementary initiatives of the Department of Health, Odisha

The state along with planning for the BSKY scheme launch **strengthened effective implementation of central cosponsored schemes also like the free drugs** (**Niramaya** scheme) and free diagnostics (**Nidaan**) scheme and also initiated free dialysis scheme (**Sahay**) in a public-private partnership (PPP) mode to improve access to drugs, diagnostics and dialysis in public hospitals. Niramaya scheme supports 593 types of quality essential free drugs including high cost drugs to treat conditions like cancer, diabetes, hypertension, psychiatric ailments, medical consumables including for surgeries etc., for all patients attending public facilities.

The state government has launched free dialysis service (**Sahay scheme**) to all patients in the public health facilities from January 1, 2018 to benefit about 50,000 patients annually. Initially dialysis machines are installed in PPP mode at 25 district headquarters hospitals and one community health centre at Narasinghpur in Cuttack district. The state government has made required budgetary provision over five years to provide free diagnostic and free dialysis services in the state. Additional services in urban clinics (**Ama clinics**) including fixed day specialists services in Obstetrics and gynaecology, Paediatrics, Medicine and Geriatrics, Eye-care, Physiotherapy and Psychiatric services have been initiated. Urban population over 45 lakhs in 27 towns will benefit from the scheme. Under Ama Clinic, the packages of services will be rendered in the regular OPD timings at 85 UPHCs in 27 cities in a phased manner. The **Nirmal scheme** to support sanitation, security, laundry and lift services has provided impetus in both maintaining hygiene and attempted to reduce hospital acquired infections along with intent to improve patient satisfaction while accessing health care services in the public sector[1]. These precursor and complementary initiatives of the state government would be an enabler to further increase uptake of services in public sector with the subsequent launch of the BSKY scheme.[2]

3. Health care provision in Odisha

State specific Report of National sample survey organization (NSSO)[3], 75th round and National Health Family Survey (NFHS-IV)[4] have provided key insights.

3.1 Type of provider and specific services

Healthcare provision has been more public sector focussed in Odisha mainly due to the limited presence of private facilities across the state except for few urban pockets. The proportion of people who reported ailing in the last 15 days was 9.2% (R-8.7; U-11.7) for Odisha which is higher compared to all India average of 7.5%. The in-patient hospitalization cases per 1000 persons was 33 (All India-29). As per the NSSO (2017) findings[4], public facilities are the main source of medical care in Odisha. **Public hospitals utilization is to an extent of 56.8% under out-patient care and 72.2% for in-patient care in Odisha (Table-2).** The private clinics are also an important source of out-patient health care contributing 31.7%. Allopathy is the predominant system of medicine in Odisha (95.3%) followed by Ayush system (4.4%).

Table- 2: OPD and In-Patient services utilization in Odisha by type of health care provider

Healthcare service provider	**Out-patient care**			**In-Patient care**		
	Rural	**Urban**	**Total**	**Rural**	**Urban**	**Total**
Government/public hospital	55.2	62.3	56.8	75.1	55.5	72.2
Charitable/trust/NGO-run hospital	0.2	0	0.1	1	0.3	0.9
Private hospital	5	12.6	6.7	23.9	44.2	26.9
Private doctor/ in private clinic	33.6	24.9	31.7	NA	NA	NA
Informal health care provider	6	0.2	4.7	NA	NA	NA
Total	100	100	100	100	100	100

***(NSS0) 75th round**

3.2 Key health indicators as per National Family Health survey (NFHS-4)

The National Family health survey (NFHS-4), 2015-16 provides information on population, Health and nutrition for India and each state/Union territory and this round for the first time provides district-level estimates for many important indicators. Odisha has seen key improvements especially in areas of institutional delivery, utilization of public health facilities for institutional delivery, antenatal and post-natal care, full immunization coverage, reduction in anaemia and reduction in IMR (25-point decline by reducing IMR from 65 (NFHS-3) to 40 (NFHS-4) and U5 Mortality rate **(Annexure-1).** 62% have had at least four antenatal care (ANC) visits during their last

[4] National sample survey organization (NSS0), 75th round covered about 390 villages and 143 urban blocks consisting of 4,264 households with 19,078 persons surveyed.

pregnancy, against national average of 51.2%, which has been substantially increased from 36.9% in NFHS-3. About 64 percent received antenatal care in the first trimester of pregnancy.

Institutional delivery rates have substantially increased from 35.6 to 85.4% in the State of Odisha which is better than national average of 78.9%, of which 75.9% institutional deliveries have been conducted in public health facilities. This is a 47.1%-point increase in Institutional births in public facilities from 28.8% in 2005-06 to 75.9% in 2015-16 much above the all-India average of 52.1 %.

Non-communicable disease especially Diabetes is much higher than the national average while hypertension is almost similar to national figures but regarding cancer screening indicators Odisha has performed below the national values. In terms of the risk factors for the usage of tobacco and alcohol Odisha has fared higher compared to all India figure and a lower percentage of them have tried to modify the risk factor by their attempts to quit its usage.

Hence this paper is an attempt to review the change in utilization of public sector services overtime with the pre-BSKY launch period (April-Sep 2018-Y1Q1 & Y1Q2), launch phase (Oct 2018-Mar 2019-Y1Q3 & Y1Q4) and Post-launch (April 2019-Mar 2020 Y2Q1, Q2, Q3, Q4) of the BSKY scheme in Odisha. The different scenarios of change in utilization of both outpatient and in-patient services (increases/decreases/remains the same) has been presented in **Box-1**. ***Our hypothesis is that both outpatient (OP) and in-patient (IP) services would increase due to the launch of BSKY and other initiatives and would provide key learnings to scaling up increased public facilities participation in providing care to achieve UHC.***

Box 1: Different scenarios of change in utilization trends

Government sector	**OP increased**	**OP decreased**	**OP same**
IP increased	Possible cause could be that the patients are coming to the public facilities and are happy with the services there and so continue in the public services	Possible cause is that the patients enter into the public facility through emergency dept and then continue with the public facility because they are satisfied with the services.	Due to removal of user fees and procedures covered under BSKY IP increased but OP same
IP decreased	Possible cause could be that the patient comes to the OP dept in the govt facility and then gets a referral slip and goes to the private sector for admission	Possible cause is that the patients enter into the public facility through emergency and then take a referral slip to the private sector for admission	Patients are going directly to the private sector – bypassing the government facilities
IP same	This could be due to persistent same constraints of human resources and capacity for in-patient treatment, but OP services improve due to free drugs and diagnostics	Due to low participation of private sector the IP remains the same in public facilities	No effect of BSKY on utilisation of government facilities

4. Methods

This analysis is based on multiple data sources that are publicly available as follows:

- Secondary data of service utilization from public facilities was sourced form Health management information system. The data period for Health management information system (HMIS)[5] data considered is from April 2018 to March 2020 which is split into specific time period in relation to the BSKY scheme launch. HMIS is the main source of data for this analysis, which provides both district level and state level consolidated data of different parameters both OP and IP data, routine monitoring indicators, certain disease specific data that has been considered. A sub-set of data which is related to in-patient hospitalization, diagnostics, maternal and Child health services and mortality data has been considered for more in-depth analysis. The trends, variation district-wise based on the time-periods of interest to our study are presented.
- Claims data district wise during specified data period of the Biju Swasthya Kalyan Yojana has been considered to assess any major shift of care from public to private hospitals.
- Contextual data of complementary initiatives has been sourced from publicly available information in health department websites, National health mission Odisha official sites, press releases/statements and those available in the public domain. Excel and SPSS software has been used for analysis.

In this paper, we tried to analyze the routinely available data which provides useful insights to policy makers but rarely looked into in detail most of the times. We have also attempted to see in what areas the public hospital utilization has shown changes post launch of the Biju Swasthya Kalyan Yojana and other major initiatives of the health department.

4.1 Service uptake trends during BSKY scheme launch and implementation in public facilities

To assess the change in trends of few key services, data from the HMIS was reviewed by splitting the time-period of services into selective quarters. The break-up was done quarter-wise for the financial years April 2018 to March 2020. The results are presented as year 1 (2018-19) quarter1 and 2 before announcement of BSKY and quarter 3 and 4 post announcement of BSKY till actual roll out as year 2 (2019-20). The implementation phase is the 4 quarters of year 2. This would give us an idea as to what services improved in public facilities and which ones did not have any significant change. Further if any services reduced in public facilities that would give us a chance to explore if these were the main treatments that were claimed by private empaneled facilities under BSKY.

4.2 OPD and IPD services

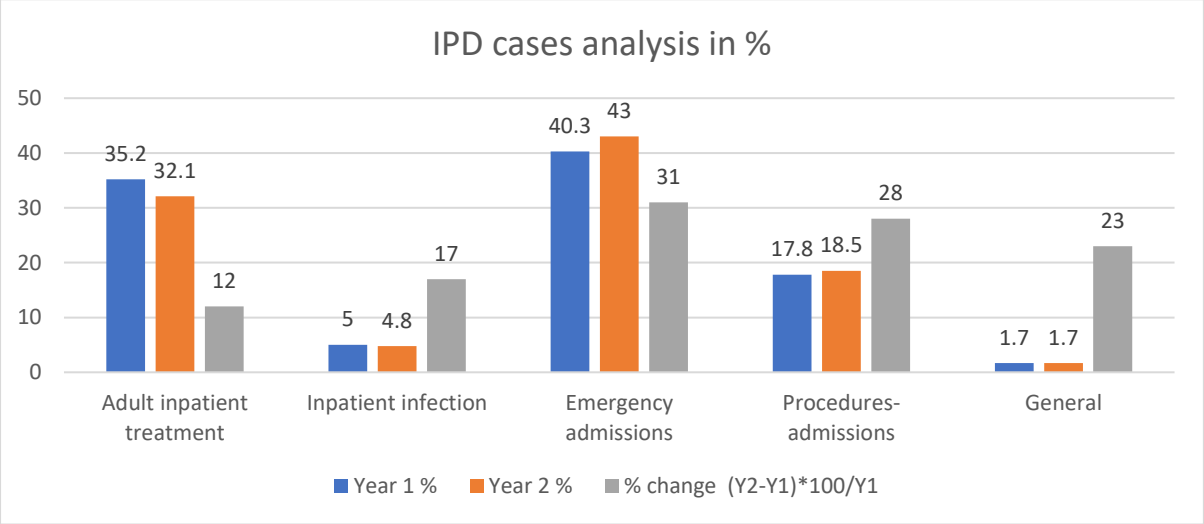
The OPD and IPD services were reviewed division wise and presented in Table- 3 & 4. The districts corresponding to the divisions are presented in **Annexure -2.** The service uptake in the OPD showed a clear increase of 18.5% from Y1Q3 (considered as baseline) in year 2 with reaching a peak performance of 84,52,261 (47.5% people accessing services) in central division in Y2Q2. The increase in northern division was 46,74,609 (7.3%) and southern division was 45,23,491 (7%) from baseline OPD services.

Table – 3: Out-patient services trend in Public hospital

Region	Y1 Q2*	Y1Q3	Y1Q4	Y2Q1	Y2Q2	Y2Q3	Y2Q4
Central Division (HQ-Cuttack)	49,64,354	78,15,176	71,74,884	72,50,293	84,52,261	82,31,311	81,31,919
Northern Division (HQ-Sambalpur)	26,93,776	36,01,817	37,85,575	36,42,461	46,74,609	42,85,625	42,63,703
Southern Division (HQ – Berhampur)	25,80,424	34,94,211	36,61,556	37,83,538	45,23,491	43,87,583	43,96,260
Total	1,02,38,554	1,49,11,204	1,46,22,015	1,46,76,292	1,76,50,361	1,69,04,519	1,67,91,882

***first year Quarter 2 details are only for 2 months.**

Fig 1: In-patient services trend in Public hospitals SERVICES



Analysis of data over the two years for inpatient admissions in public hospitals, 33% of cases are recorded as adult inpatient treatments and 42% are recorded as emergency admissions. There has been a slight increase in overall in-patient admissions from 27.1 lakh (Y1) to 30.3 lakh (Y2) with the change mainly in emergency admissions category in Y2 (31%) from 31.08 lakh to 40.66 lakh as shown in Fig 1. The other categories reported in the HMIS for admissions due to infection, procedures and general have remained almost the same in Y1 and Y2 suggesting there is not much shift of these procedures from public hospitals to private hospitals.

In 2017-18 total OPD recorded in Odisha was 5.22 crores, whereas we can see an increase of around 26% with a recorded OPD of 6.60 crore for the year 2019-20. Similarly, the adult inpatient admissions (IPD) recoded in the year 2017-18 was 28.66 lakhs but 2019-20 has shown a slight increase of 6% with IPD admissions of 30.39 lakhs.

Table- 4: Emergency admissions cases by specific conditions

	Total cases in public hospitals			%
Emergency admissions	**Year 1**	**year 2**	**Total**	**%**
Patients registered at Emergency Department	28,03,245	36,48,826	64,52,071	90
Emergency - Trauma (accident, injury, poisoning etc.,)	2,03,084	3,21,090	5,24,174	7.3
Emergency - CVA (Cerebro-vascular Disease)	40,175	21,460	61,635	0.8
Emergency - Obstetrics complications	26,235	31,150	57,385	0.8
Emergency - Snake Bite	15,563	19,399	34,962	0.5
Emergency - Acute Cardiac Emergencies	9,658	9,484	19,142	0.3
Emergency - Burn	6,809	7,915	14,724	0.2
Total	31,04,769	40,59,324	71,64,093	100

In case of emergency admissions 90% of the cases were not classified by specific conditions while 7.3% of the cases was recorded as trauma including poisoning followed by cerebrovascular disease (0.9%), obstetric complications (0.8%), snake bite (0.5%), acute cardiac emergencies (0.3%) and burn cases (0.2%). The reporting formats could be improved to capture adequate information and make it mandatory to specify the conditions.

When we cross-check the service uptake under BSKY which registered around 41,118 claims during the period and in Public hospitals during the roll-out phase, it is clearly seen that in districts where the private sector presence is limited, the public sector continues to dominate as the main provider even with the launch of BSKY scheme. In districts where there is significant presence of private hospitals there is a small dip in utilization in public hospitals. This mainly suggests that where BSKY has removed the constraints of financing people prefer private hospitals. Especially in districts like Cuttack (29 empaneled hospitals), Khorda (27), Ganjam (14), Bhadrak (12), Puri (9). Table 5A. The admissions per 1000 population is shown in Table 5B which clearly highlights the increased hospitalization per 1000 population across the districts with an overall hospitalization rate of 90.82/1000 population which is significantly higher than 33/1000 as per NSSO 75th round.

Table- 5A: The public sector performance during the roll-out of BSKY scheme													
	Biju Swasthya Kalyan Yojana Performance (BSKY)						Public Sector In-patient performance						
District	**Y2 Q1**	**Y2 Q2**	**Y2 Q3**	**Y2 Q4**	**Total**	**%**	**District**	**Y2 Q1**	**Y2 Q2**	**Y2 Q3**	**Y2 Q4**	**Total**	%
Angul	285	425	367	250	1327	3.2	Angul	24734	25900	23781	21909	96324	2.5
Bolangir	121	303	366	347	1137	2.8	Balangir	39805	41844	38323	31633	151605	3.9
Balasore	672	1105	935	800	3512	8.5	Balasore	52192	56365	61866	48951	219374	5.6
Bargarh	209	355	298	215	1077	2.6	Bargarh	22592	23196	20277	17439	83504	2.1
Boudh	83	161	167	80	491	1.2	Boudh	9311	9135	7440	6984	32870	0.8
Bhadrak	689	1042	982	912	3625	8.8	Bhadrak	41081	43795	34793	34067	153736	4.0
Cuttack	386	610	550	1068	2614	6.4	Cuttack	74682	76954	76758	66285	294679	7.6
Debagarh	42	31	47	13	133	0.3	Debagarh	5140	5604	4814	4291	19849	0.5
Dhenkanal	384	578	627	597	2186	5.3	Dhenkanal	23129	24851	20478	18736	87194	2.2
Gajapati	37	47	34	15	133	0.3	Gajapati	9745	8665	9188	9673	37271	1.0
Ganjam	1163	1439	1367	1385	5354	13.0	Ganjam	59923	61570	63553	53512	238558	6.1
Jagat Singhpur	307	464	438	750	1959	4.8	Jagat singhpur	23249	20869	16840	16363	77321	2.0
Jajpur	361	577	524	774	2236	5.4	Jajpur	38208	37743	30186	28547	134684	3.5
Jharsuguda	12	24	13	15	64	0.2	Jharsuguda	8343	8030	7850	6975	31198	0.8
Kalahandi	11	45	36	22	114	0.3	Kalahandi	29913	33835	29777	26552	120077	3.1
Kandhamal	107	147	270	105	629	1.5	Kandhamal	19460	17976	16209	17809	71454	1.8
Kendrapara	282	437	420	566	1705	4.1	Kendrapara	31130	28047	24427	22131	105735	2.7
Kendujhar	248	312	176	161	897	2.2	Kendujhar	47331	42628	41119	37312	168390	4.3
Koraput	8	31	19	5	63	0.2	Koraput	39570	46424	36831	37153	159978	4.1
Khordha	351	498	586	651	2086	5.1	Khordha	89614	95063	81984	75052	341713	8.8

Table- 5A: The public sector performance during the roll-out of BSKY scheme (continued)													
	Biju Swasthya Kalyan Yojana Performance (BSKY)						Public Sector In-patient performance						
District	**Y2 Q1**	**Y2 Q2**	**Y2 Q3**	**Y2 Q4**	**Total**	**%**	**District**	**Y2 Q1**	**Y2 Q2**	**Y2 Q3**	**Y2 Q4**	**Total**	%
Malkangiri	10	9	8	5	32	0.1	Malkangiri	17999	17400	17181	17125	69705	1.8
Mayurbhanj	149	238	192	132	711	1.7	Mayurbhanj	95927	101999	92439	77449	367814	9.5
Nabarangpur	10	55	28	9	102	0.2	Nabaran gpur	22305	33442	22866	22407	101020	2.6
Nayagarh	344	369	418	249	1380	3.4	Nayagarh	53284	20695	16781	16495	107255	2.8
Nuapada	3	13	39	19	74	0.2	Nuapada	13415	14370	12637	11212	51634	1.3
Puri	476	763	588	541	2368	5.8	Puri	40289	37510	30123	28313	136235	3.5
Rayagada	21	16	27	40	104	0.3	Rayagada	21033	21673	20996	21622	85324	2.2
Sambalpur	131	139	99	133	502	1.2	Sambalpur	36250	43092	41504	37669	158515	4.1
Subaranapur	111	208	242	130	691	1.7	Subarnapur	11763	11207	8967	8717	40654	1.0
Sundargarh	368	263	277	161	1069	2.6	Sundargarh	35195	40170	36191	31566	143122	3.7
Grand Total	**7415**	**11295**	**11700**	**10708**	**41118**	100	**Grand Total**	**1036612**	**1050052**	**946179**	**853949**	**3886792**	**100**

Table- 5B: The public sector performance during the roll-out of BSKY Scheme per 1000 population									
Biju Swasthya Kalyan Yojana Performance (BSKY)					**Public Sector In-patient performance**				
District	**Population**	**Admission/1000**	**Utilization 2019-20**	**%**	**District**	**Population**	**Admission /1000**	**Utilization 2019-20**	**%**
Angul	1273821	1.04	1327	3.2	Angul	1273821	75.61	96324	2.5
Bolangir	1648997	0.69	1137	2.8	Balangir	1648997	91.94	151605	3.9
Balasore	2320529	1.51	3512	8.5	Balasore	2320529	94.54	219374	5.6
Bargarh	1481255	0.73	1077	2.6	Bargarh	1481255	56.37	83504	2.1
Boudh	441162	1.11	491	1.2	Boudh	441162	74.51	32870	0.8
Bhadrak	1506337	2.41	3625	8.8	Bhadrak	1506337	102.06	153736	4
Cuttack	2624470	1.00	2614	6.4	Cuttack	2624470	112.28	294679	7.6
Debagarh	312520	0.43	133	0.3	Debagarh	312520	63.51	19849	0.5
Dhenkanal	1192811	1.83	2186	5.3	Dhenkanal	1192811	73.10	87194	2.2
Gajapati	577817	0.23	133	0.3	Gajapati	577817	64.50	37271	1
Ganjam	3529031	1.52	5354	13	Ganjam	3529031	67.60	238558	6.1
Jagatsinghpur	1136971	1.72	1959	4.8	Jagat singhpur	1136971	68.01	77321	2
Jajpur	1827192	1.22	2236	5.4	Jajpur	1827192	73.71	134684	3.5
Jharsuguda	579505	0.11	64	0.2	Jharsuguda	579505	53.84	31198	0.8
Kalahandi	1576869	0.07	114	0.3	Kalahandi	1576869	76.15	120077	3.1
Kandhamal	733110	0.86	629	1.5	Kandhamal	733110	97.47	71454	1.8
Kendrapara	1440361	1.18	1705	4.1	Kendrapara	1440361	73.41	105735	2.7
Kendujhar	1801733	0.50	897	2.2	Kendujhar	1801733	93.46	168390	4.3
Koraput	2251673	0.03	63	0.2	Koraput	2251673	71.05	159978	4.1
Khordha	1379647	1.51	2086	5.1	Khordha	1379647	247.68	341713	8.8

Table- 5B: The public sector performance during the roll-out of BSKY Scheme per 1000 population (continued)									
Biju Swasthya Kalyan Yojana Performance (BSKY)					**Public Sector In-patient performance**				
District	**Population**	**Admission/1000**	**Utilization 2019-20**	**%**	**District**	**Population**	**Admission /1000**	**Utilization 2019-20**	**%**
Malkangiri	613192	0.05	32	0.1	Malkangiri	613192	113.68	69705	1.8
Mayurbhanj	2519738	0.28	711	1.7	Mayurbhanj	2519738	145.97	367814	9.5
Nabarangpur	1220946	0.08	102	0.2	Nabarangpur	1220946	82.74	101020	2.6
Nayagarh	962789	1.43	1380	3.4	Nayagarh	962789	111.40	107255	2.8
Nuapada	610382	0.12	74	0.2	Nuapada	610382	84.59	51634	1.3
Puri	1698730	1.39	2368	5.8	Puri	1698730	80.20	136235	3.5
Rayagada	967911	0.11	104	0.3	Rayagada	967911	88.15	85324	2.2
Sambalpur	1041099	0.48	502	1.2	Sambalpur	1041099	152.26	158515	4.1
Subaranapur	610183	1.13	691	1.7	Subarnapur	610183	66.63	40654	1
Sundargarh	2093437	0.51	1069	2.6	Sundargarh	2093437	68.37	143122	3.7
Grand Total		0.8	**41118**	100	Grand Total		**90.82**	**3886792**	**100**

4.3 Maternal health services

There has been a significant drop of 43% in home deliveries attended by non-trained birth attendant from Y1 to Y2. The number of institutional deliveries in public hospitals has been consistent with a slight increase of total caesarian sections by 0.5% and an 8% increase in caesarian section performed during night times. The normal deliveries have reduced by about 5% which could indicate a small shift to private hospitals under the BSKY scheme. Abortions (spontaneous) show an increase of about 8% which needs to be looked into further to analyze the causes and take suitable measures

Table 6: Key Maternal Health Indicators

Category	Procedure	Y1Q1	Y1Q2	Y1Q3	Y1Q4	Total year 1	Y2Q1	Y2Q2	Y2Q3	Y2Q4	Total year 2	Variance %
Home deliveries	Number of Home Deliveries attended by Non-Trained Birth Attendant (TBA) /Relatives/etc.)	4943	4648	3924	3282	**16797**	3021	2490	2265	1794	**9570**	**-43**
	Number of Home Deliveries attended by TBA (Doctor/Nurse/ANM)	1867	2017	2174	2200	**8258**	2051	1903	1963	1917	**7834**	**-5**
Institutional deliveries	C-sections, performed at night (8 PM- 8 AM)	3965	4386	4201	4113	**16665**	4713	4468	4752	4012	**17945**	**8**
	Total C -Section deliveries performed	18664	18685	19682	18648	**75679**	19696	19479	19410	17451	**76036**	**0.5**
	Normal deliveries	107461	106682	120105	103502	**437750**	103678	100519	114924	97636	**416757**	**-5**
Abortions	Abortion (spontaneous)	11497	11104	9918	10834	**43353**	12248	11912	10831	11733	**46724**	**8**

4.4 Lab Services

As part of the Nidaan scheme, the state government started providing identified diagnostic services free of cost to all patients in the public health facilities of the state from December 19, 2017. This initiative would benefit about 1.5 crore patients visiting public facilities with diagnostic services. Besides, additional diagnostic services were started free of cost in government facilities in PPP mode from March 2018 with regular monitoring of uptake of services [8]. The diagnostic services under "Nidaan" include general pathology service and 15 types of high-end pathology tests, CT Scan, MRI and teleradiology of x-rays (digitization and reporting) both through own system and PPP mode in identified government facilities. The CT scan services are available at 9 DHHs (Mayurbhanj, Balasore, Koraput, Angul, Keonjhar, Puri, Sundergarh, Kalahandi, Bolangir) and MRI services at 4 DHHs (Angul, Balasore, Mayurbhanj, Puri) in the first phase. Similarly, teleradiology of x-ray (digitization and reporting) services are made available at selected facilities, where x-ray machines are available, and radiologists are not in position.

The increased uptake of lab services of about 38.2% in the year 2 signifies the difference this initiative has brought to the public hospital performance as shown in Table 8. The key tests for typhoid, anemia, HIV and Syphilis have all shown a significant rise in the number of tests and a decrease in the positivity rates for Widal and HIV among males whereas sero-positivity rate for Syphilis and HIV among females has increased. Severe anemia among the population has slightly increased indicating the requirement of more focused interventions.

Since the interventions like Nidaan which were launched on 19/12/2017 as a preparatory phase for the launch of BSKY in August 2018, it improved services in public hospitals and helped to increase uptake of services in public facilities. UHC can be sustained with service delivery strengthening in public hospitals and strategic purchasing from the private sector.

Table-7: Year-wise performance of lab services in public hospitals

Category	**Indicator Name**	**Year 1**	**Year 2**	**% of increase in second year**
Total lab Tests conducted	Number of Lab Tests done	1,43,67,899	1,98,56,610	38.2
	Number of lab tests done per 1000 OP contact	**241**	**301**	
Typhoid	Widal tests - Number Tested	2,81,636	4,73,289	
	Widal tests - Number Positive	53,120	71,898	-3.67
	Widal Test positivity rate	18.9%	15.1%	
	No. of Widal tests done per 1000 OP contact	**4.7**	**7.2**	
Anemia	Number of Hb tests conducted	40,25,221	47,61,419	
	Out of the total number of Hb tests done, Number having Hb < 7 mg	1,05,822	1,29,049	0.081
	No. of Hb tests done per 1000 OP contact	**67.4**	**72.1**	
HIV	Male HIV - Number Tested	3,60,655	4,20,389	-0.12

	No. of male HIV test done per 1000 OP contact	**6**	**6.3**	
	Male HIV - Number Positive	2,190	2,046	
	Female HIV - Number Tested	7,62,303	8,46,142	0.04
	No. of female HIV test done per 1000 OP contact	**12.7**	**12.8**	
	Female HIV - Number Positive	1,302	1,821	
Syphilis	Number of Male STI/RTI attendees tested for syphilis	38,041	65,104	
	Number of Male STI/RTI attendees tested for syphilis per 1000 OP contact	**0.6**	**1**	
	Number of Male STI/RTI attendees found sero-positive for syphilis	269	2075	2.48
	Number of Female (Non-ANC) STI/RTI attendees tested for syphilis	34,764	63,652	
	Number of Female (Non-ANC) STI/RTI attendees tested for syphilis per 1000 OP contact	**0.6**	**1**	
	Number of Female (Non-ANC) STI/RTI attendees found sero Positive for syphilis	72	4,116	6.25

4.5 Mortality Data

Mortality is a powerful indicator of health care outcome. An analysis of mortality trends can provide useful insights to policy makers if captured regularly and completely. An average of 68% of deaths are recorded as adult/Adolescent deaths. The infant deaths, child deaths and maternal deaths have shown a gradual decline over the quarters to a lower rate at the end of Y2Q4 as seen in Table- 10A.

Table 8A: Mortality trends by age group and specific categories

Indicator Code	Y1Q1	Y1Q2	Y1Q3	Y1Q4	Y2Q1	Y2Q2	Y2Q3	Y2Q4
Adolescent and Adult deaths	37,043	42,659	47,959	47,377	38,618	45,132	47,104	48,407
Infant deaths	3,027	3,637	3,523	2,961	2,697	3,276	3,503	3,247
Child death	490	583	517	405	431	538	537	384
Maternal death	173	212	195	130	224	173	191	147
Sterilization death (men and Woman)	0	2	0	0	0	1	0	0
Total	40.735	47,096	52,197	50,879	41,975	49,125	51,340	52,188

Table-8B: Classification of Adolescent/Adult death due to specific causes

Indicator Name	Year 1	Year 1 (%)	Year 2	Year 2 %
Number of Adolescent / Adult deaths due to Diarrheal diseases	331	0.19	209	0.12
Number of Adolescent / Adult deaths due to Tuberculosis	1,261	0.72	1,003	0.56

Number of Adolescent / Adult deaths due to Respiratory diseases including infections (other than TB)	2,043	1.17	1,856	1.04
Number of Adolescent / Adult deaths due to Other Fever Related	2,387	1.36	1,787	1.00
Number of Adolescent / Adult deaths due to HIV/AIDS	138	0.08	111	0.06
Number of Adolescent / Adult deaths due to Heart disease/Hypertension related	12,656	7.23	12,407	6.92
Number of Adolescent / Adult deaths due to Cancer	3,901	2.23	3,556	1.98
Number of Adolescent / Adult deaths due to Neurological disease including strokes	5,419	3.10	5,458	3.04
Number of Adolescent / Adult deaths due to Accidents/Burn cases	2,533	1.45	2,146	1.20
Number of Adolescent / Adult deaths due to Suicide	1,331	0.76	1,224	0.68
Number of Adolescent / Adult deaths due to Animal bites and stings	583	0.33	543	0.30
Number of Adolescent / Adult deaths due to Known Acute Disease	5,921	3.38	5,580	3.11
Number of Adolescent / Adult deaths due to Causes not known	1,16,497	66.56	1,22,495	68.33
Number of Adolescent / Adult deaths due to Known Chronic Disease	20037	11.45	20886	11.65
Total Adolescent / Adult deaths	1,75,038		1,79,261	

The main cause of death recorded under Adolescent/Adult deaths has been due to heart disease/hypertension related (7.23%) followed by stroke/neurological conditions (3.1%) which stresses the focus needed to address Non-communicable diseases. In over 65% of the cases the cause of death is not specified which defeats the purpose of collecting this information. Hence there needs to be stricter guidelines on ensuring complete information to be captured in the HMIS system. There is a clear epidemiological transition, calling for reconfiguring focus to managing NCDs and ensure public facility upgrades capability to cater to complications due to these conditions.

5. Discussion

5.1 Key insights

This analysis has shown positive changes in public sector utilization that may be due to the launch of BSKY scheme and other supportive initiatives. The availability of free drugs and diagnostics might have improved the uptake of both OPD, lab services and IPD services in public hospitals. The medicines and diagnostics which are the key contributor of out-of-pocket expenditure to patients in public hospitals[8] has prompted the strengthening of schemes to make them available and free to the people in public hospitals.

The impact of these intervention may be visible in the next round of NSSO survey. It is well known that OOPE especially catastrophic expenditure (>10% of household income) can push people to poverty[9]. The poverty gap induced by health payments in Odisha was found to be 4.4%[10].

Biju Swasthya Kalyan Yojana that was launched in 2018 provide free in-patient services in empaneled hospitals through referral from public hospitals since Feb 2019. This has not made any major shift in the uptake of services by public hospitals especially the in-patient services except a small reduction in utilization in few districts where there is significant presence of private hospitals. It has mainly broadened the access to services that are not available/long waiting times in public hospitals by providing care to eligible beneficiaries in the private sector.

5.2 Changes in specific services

The HMIS analysis has shown that Non-communicable disease burden and mortality are significant and focused interventions are required especially for chronic diseases, heart conditions, hypertension related ailments, neurological conditions including stroke and others. The emergency admissions which are mainly due to trauma (7.3%) has shown a major increase. The high sera-positivity rate for syphilis underlines the need for population based or opportunistic screening for syphilis and partner notification.

The Maternal and child health services have shown a positive trend with a significant decrease in home deliveries (43%) and sustained numbers of institutional deliveries and family planning services. The state still has a significant challenge especially in reducing the Maternal Mortality rate and Neonatal mortality rate which are quite high compared to the national average. Caesarean section rates (13.8%) are comparatively lower than the national average of 17.2% which needs to be explored whether increasing access to emergency obstetric care could help in reducing maternal mortality as complications doing delivery is the key factor in maternal mortality. Over 80 per cent of maternal deaths in India, as elsewhere in the world, are due to six causes: hemorrhage; Eclampsia (an acute and life-threatening complication of pregnancy) obstructed labor sepsis (blood poisoning) complications arising out of unsafe abortions and pre-existing conditions such as anemia and malaria[5]. Since for all these conditions above mentioned packages are available under BSKY and can

[5] WHO 2012 ICD-10 categorization of cause of death versus unweighted distribution of maternal deaths in an early report was hemorrhage (38%, n = 526), other(including indirect deaths) (34%, n = 471), sepsis (11%, n = 152), abortion (8%, n = 111), obstructed labour (5%, n = 69, and hypertensive disorders (5%,n = 69) *(18) (PDF) Maternal Mortality in India: Causes and Healthcare Service Use Based on Nationally Representative*

be accessed even through empaneled private hospitals it is hoped that obstetric services for beneficiaries will be improved with better health outcomes.

The empanelment of private hospitals under BSKY could contribute to providing this additional access to the poor both in terms of immediate care to the mother and also advanced neonatal care to the baby which can have a significant impact in reducing both MMR and NMR to some extent in the state.

5.3 Reimbursement to Public hospitals

All public hospitals till medical college level are deemed empanelled under the scheme. The beneficiaries availing services in public hospitals and medical colleges are not documented and no claims are paid for those services, but the hospitals are reimbursed in a different way. User fees, collected during the preceding year, is reviewed, and based on In-patients (IP) and Out-patient (OP) data of the hospital they are reimbursed at the rate of 55 Rs. /IP/day (Average admissions per month preceding year) and 7Rs. /OP (Average OP/day preceding year data). This is meant to help the public hospitals to invest in improving infrastructure, buying consumables and for any untied expenses to upgrade the facilities including HR. In case the hospital treats more patients than the preceding year, additional grants are paid on request. The additional upfront funding provided by the health budget based on previous year admission under BSKY scheme for public facilities will help the facilities to plan and purchase the necessary consumables and implants needed. Since this is the first year a detailed study could be done to understand how these additional funds support received for BSKY has been utilized. In a recent study conducted to assess the Rogi Kalyan samiti/Hospital development fund utilization in two districts for the year 2017-18 prior to launch of BSKY it was found that in Balasore funds have been utilized well (89%) whereas in another district Rayagada it was only 8%[6].

5.4 Complementary Governance initiatives

There have been several initiatives to enhance governance of public sector performance by the Government. The Odisha Government has also launched the **'MO SARKAR'**-means My Government, an initiative started in October 2019 to receive feedback regarding Government programs directly from citizens which is an attempt to improve governance, address citizen concerns and bring in professionalism in government offices[10]. The Chief minister and concerned ministers will interact with about 10 beneficiaries like who have taken service in hospitals, received medicines or ambulance services, police stations, and enquire about their experience. In case of any complaints against officials are mentioned these would be investigated in detail and action against concerned officials will be initiated. '5T initiative (Technology, teamwork, transparency, timelines, transformation)' is a program to improve governance in all public sector departments. These efforts complement to support the routine activities of the department and bring in

Survey.https://www.researchgate.net/publication/262046067_Maternal_Mortality_in_India_Causes_and_Healthcare_Service_Use_Based_on_Nationally_Representative_Survey[accessed Mar 28 2021].

[6] Sarit Kumar Rout, Zakhy Khan, Tapsi Mohanty, A study on fiscal transfer mechanism and public health expenditure analysis at district level in Odisha, IIPH Bhubaneshwar, Aug 2020

accountability and connect with the people who are intended beneficiaries of the government programs.

6. Conclusion

This paper has tried to review the public sector utilization in the background of launch of the flagship Universal Health care Scheme of Odisha, the Biju Swasthya Kalyan Yojana and other initiatives like free drugs and diagnostics using routinely available HMIS data and national surveys. The intention was to understand if that has enhanced the uptake of services in public hospitals and any focus areas the policy makers should consider improving the health care services.

Public sector is the dominant source of health care provision in Odisha. It is seen that Odisha has made positive strides in some key indicators compared to National averages but there is still a lot of effort that is needed in certain indicators especially maternal mortality, Neonatal mortality and Non-communicable diseases like Diabetes, Hypertension. The routinely available data should be captured completely and mined adequately to derive policy insights and focused efforts.

The BSKY scheme has mainly complemented the provision of hospitalization services by increasing access to private hospitals in districts with private sector presence and not in all districts uniformly. Efforts need to be made to engage all private hospitals to participate in the scheme to have much wider benefits of this scheme. The trends of service uptake in public hospitals needs to be tracked so that they could be enhanced by providing the necessary infrastructure and human resources to realize the potential of the Universal health care scheme launched as a flagship program by the Government. The next round of NSSO data would provide information on whether there has been a reduction of the out-of-pocket expenditure due to all these efforts.

There is an improvement of government hospital services due to many central and state government schemes (Nidaan, Free dialysis etc.,) that have improved the quality of services and increased offtake. But it appears that where private hospitals are available, financial support provided by BSKY, has led to substituting government hospitals with private hospitals due to preference of private hospitals by the beneficiaries. This clearly points that strengthening public hospitals is very much needed to sustain uptake of services through public facilities and avoid shift to private hospitals. The public hospitals could be made to compete with private hospital for BSKY funds by paying same (Eg; similar to Ayushman Bharath Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) or reduced package rates (followed in Karnataka, where public facilities are paid 50% of the package rate along with their routine facility grants). As per BSKY the public facilities are paid funds based on services provided in the previous years. This would entail worse off public facilities continue to get lesser amount and may not lead to any real change in service provision if the current upfront grant mode of financing is continued.

Hence, we recommend the better and efficient utilization of BSKY funds through RKS for quality improvement and providing package amount to government hospitals is an essential area for government to think through and implement.

References

1. https://updateodisha.com/2017/12/19/odisha-govt-launches-health-care-services-nidaan-sahay-ama-clinic-anmol-55269/ accessed, 15th September 2020
2. Healthcare for all, Each life matters, Vision 2025 document, released by Department of Health and Family Welfare, Government of Odisha, 2018 https://mio.investodisha.gov.in/img/sessions-pdf/HealthVision.pdf,
3. Key indicators of social consumption health- NSS survey, National statistical office, Ministry of statistics and programme implementation, Government of India, 2017-18
4. National Family Health Survey Fact sheet of Odisha, http://rchiips.org/NFHS/factsheet_NFHS-4.shtml
5. Health management Information System, Odisha, https://odisha.data.gov.in/dataset-group-name/hmis
6. Rout SK, Sahu KS, Swain S, Pati S. Out of pocket expenditure on surgical and nonsurgical conditions in Odisha. *J Family Med Prim Care*. 2016;5(2):367-372. doi:10.4103/2249-4863.192377
7. Prinja S, Chauhan AS, Bahuguna P, Selvaraj S, Muraleedharan VR, Sundararaman T. Cost of Delivering Secondary Healthcare Through the Public Sector in India. *Pharmacoecon Open*. 2020;4(2):249-261. doi:10.1007/s41669-019-00176-9
8. Rout, S. K., & Choudhury, S. (2018). Does public health system provide adequate financial risk protection to its clients? Out of pocket expenditure on inpatient care at secondary level public health institutions: Causes and determinants in an eastern Indian state. The International Journal of Health Planning and Management, 33(2), e500–e511. https://doi.org/10.1002/hpm.2490
9. Garg CC, Karan AK. Reducing out-of-pocket expenditures to reduce poverty: a disaggregated analysis at rural-urban and state level in India. Health Policy Plan. 2009 Mar;24(2):116-28. doi: 10.1093/heapol/czn046. Epub 2008 Dec 17. PMID: 19095685
10. Bonu, S., Bhushan, I., & Peters, D. H. (2007). Incidence, intensity, and correlates of catastrophic out-of-pocket health payments in india (ERD Working Paper No. 102). Retrieved from www.adb.org/economics
11. https://www.thehindu.com/news/national/other-states/mo-sarkar-initiative-launched/article29577698.ece

Annexure 1: NFHS-4 fact sheet of key indicators for Odisha

NFHS 4	India	Odisha
Sex ratio at birth for children born in the last five years (females per 1,000 males)	919	933
Households with electricity (%)	88.2	85.5
Households using improved sanitation facility (%)	48.4	29.4
Households using clean fuel for cooking (%)	43.8	19.2
Total fertility rate (children per woman)	2.2	2.1
Total fertility rate (children per woman) (RGI Statistical Report 2015)	2.3	2.0
Women aged 15-19 years who were already mothers or pregnant at the time of the survey	7.9	7.6
MMR (SRS 2011-13)	167.0	222.0
Neo Natal Mortality Rate (RGI Statistical Report 2015)	25.0	35.0
Infant mortality Rate (IMR)	41.0	40.0
Under five mortality Rate (U5MR)	50.0	49.0
Total Unmet Need	12.9	13.6
Mothers who had antenatal check-up in the first trimester (%)	58.6	64.1
Mothers who consumed iron folic acid for 100 days or more when they were pregnant (%)	30.3	36.5
Mothers who received financial assistance under Janani Suraksha Yojana (JSY) for births delivered in an institution (%)	36.4	72.6
Institutional births (%)	78.9	85.4
Institutional births in public facility (%)	52.1	75.9
Home delivery conducted by skilled health personnel (out of total deliveries) (%)	4.3	3.3
Births assisted by a doctor/nurse/LHV/ANM/other health personnel (%)	81.4	86.6
Births delivered by caesarean section (%)	17.2	13.8
Births in a private health facility delivered by caesarean section (%)	40.9	53.7
Births in a public health facility delivered by caesarean section (%)	11.9	11.5

Children aged 12-23 months fully immunized (BCG, measles, and 3 doses each of polio and DPT) (%	62.0	78.6
Children with diarrhoea in the last 2 weeks who received oral rehydration salts (ORS) (%	50.6	68.6
Children with diarrhoea in the last 2 weeks who received zinc (%)	20.3	17.0
Prevalence of symptoms of acute respiratory infection (ARI) in the last 2 weeks preceding the survey (%)	2.7	2.4
Children under age 3 years breastfed within one hour of birth (%)	41.6	68.6
Children under age 6 months exclusively breastfed (%)	54.9	65.6
Children aged 6-8 months receiving solid or semi-solid food and breastmilk (%)	42.7	54.9
Children under 5 years who are underweight (weight-for-age) (%)	35.7	34.4
Women who are overweight or obese (BMI ≥ 25.0 kg/m2) (%)	20.7	16.5
Men who are overweight or obese (BMI ≥ 25.0 kg/m2) (%)	18.6	17.2
Children aged 6 -59 months who are anaemic (<11.0 g/dl) (%)	58.4	44.6
All women aged 15-49 years who are anaemic (%)	53.0	51.0
Blood sugar level - high (>140 mg/dl) (%) - Women	5.8	7.3
Blood sugar level - high (>140 mg/dl) (%) – Men	7.9	10.7
Blood sugar level - very high (>160 mg/dl) (%) - Women	2.8	3.4
Blood sugar level - very high (>160 mg/dl) (%) – Men	3.8	5.8
Slightly above normal (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%) - Women	6.7	6.9
Slightly above normal (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%) – Men	10.3	9.7
Moderately high (Systolic 160-179 mm of Hg and/or Diastolic 100-109 mm of Hg) (%) - Women	1.4	1.4
Moderately high (Systolic 160-179 mm of Hg and/or Diastolic 100-109 mm of Hg) (%) – Men	2.2	2.0
Very high (Systolic ≥180 mm of Hg and/or Diastolic ≥110 mm of Hg) (%) - Women	0.7	0.7
Very high (Systolic ≥180 mm of Hg and/or Diastolic ≥110 mm of Hg) (%) – Men	0.9	0.8

Women Aged 15-49 Years Who Have Ever Undergone Examinations of Cervix (%)	22.3	28.4
Women Aged 15-49 Years Who Have Ever Undergone Examinations of Breast (%)	9.8	6.1
Women Aged 15-49 Years Who Have Ever Undergone Examinations of Oral Cavity (%)	12.4	7.1
Ever-married women who have ever experienced spousal violence (%)	28.8	35.2
Ever-married women who have experienced violence during any pregnancy (%)	3.3	3.2
Women who use any kind of tobacco (%)	6.8	17.3
Men who use any kind of tobacco (%)	44.8	55.9
Women who consume alcohol (%)	1.2	2.4
Men who consume alcohol (%)	29.3	39.3
Women who tried to stop smoking or using tobacco in any other form during the past 12 months (%)	29.3	17.5
Men who tried to stop smoking or using tobacco in any other form (during the past 12 months) (%)	30.5	35.0

Annexure-2 Districts of Odisha listed Division-wise

Central Revenue Division (HQ: Cuttack)	**Northern Revenue Division (HQ: Sambalpur)**	**Southern Revenue Division (HQ: Berhampur)**
Cuttack	Sambalpur	Ganjam
Jagatsinghpur	Bargarh	Gajapati
Kendrapara	Jharsuguda	Kandhamal
Jajpur	Debagarh	Boudh
Puri	Balangir	Kalahandi
Khordha	Subarnapur	Nuapada
Nayagarh	Dhenkanal	Koraput
Balasore	Angul	Rayagada
Bhadrak	Kendujhar	Nabarangpur
Mayurbhanj	Sundargarh	Malkangiri