Dissertation at IIHMR, DELHI

A Report By:

SIVANAND PATNAIK (PG/19/085)

Under the Guidance of
DR. MANISH PRIYADARSHI
(Associate Professor)

Post-graduate Diploma in Hospital and Health Management
2019-2021

Internship Training

at

National Health Systems Resource Centre (NHSRC)

Maternal Healthcare Services in the Empowered Action Group (EAG) States- A Review (2011-2020)

by

Sivanand Patnaik

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Technical Support Institution with National Health Mission
Ministry of Health & Family Welfare, Government of India

F. No. NHSRC/Admn./Pers./N-0748-SP
Dated: 15th June 2021

To

Mr. Sivanand Patnaik
Intern- Quality Improvement
NHSRC, New Delhi

Dear Mr. Sivanand Patnaik,

This refers to your Internship Contract from 22nd February 2021 till 21st May 2021 in National Health Systems Resource Centre (NHSRC).

You are relieved from the post of Intern w.e.f 21st May 2021 (A/N), on completion of your internship. We would like to thank you and wish all success in your future endeavours.

Brig. Sanjay Baweja (Retd.)
Principal Administrative Officer

Copy to:

- FM, NHSRC

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Sivanand Patnaik student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at NHSRC from 22.02.2021 to 21.05.2021.

The Candidate has successfully carried out the study designated to him during internship training and his/her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his/her future endeavors.

Ms. Divya Aggarwal
Associate Dean, Academic and Student Affairs
IIHMR, New Delhi

Mentor

IIHMR, New Delhi

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "**Maternal Healthcare Services in the Empowered Action Group (EAG) States- A Review (2011-2020)"** and submitted by Sivanand Patnaik Enrollment No.PG/19/085 under the supervision of Dr. Manish Priyadarshi, Associate Professor, IIHMR, Delhi for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from 22.02.2021 to 21.05.2021 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Sivanand Patnaik
Signature

FEEDBACK FORM

Name of the Student: Sivanand Patnaik

Dissertation Organisation: National Health Systems Resource Centre

Area of Dissertation: Maternal Health

Attendance:

Objectives achieved:

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Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date:
Place:

ABSTRACT

Introduction

As indicated by the Sustainable Development Goals (SDGs), the worldwide objective is to diminish the maternal mortality proportion (MMR) to under 70 by 2030 and to give all access universally to reproductive medical care. India's MMR has been consistently declining since the 1990s. As per the Sample Registration System, a household survey led by the Indian government, the MMR dropped from more than 400 for each 100000 in the mid-1990s, to 230 in 2008 and to 113 for every 100000 between 2016 and 2018. But there is a variation in states' MMR. For instance, in the southern state of Kerala, in India, the MMR was accounted for to be pretty much as low as 42 in 2017 though in the northern territory of Bihar it was 165. The government of India dispatched the National Rural Health Mission (NRHM) in 2005, overarching into National Health Mission (NHM) to improve access to great quality medical care administrations for financially distraught populace focusing its endeavors on eight Empowered Action Group (EAG) States- Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh and Uttarakhand. Under NHM, multiple maternal health programmes have been implemented.

Objective: To analyse the evolution in the improvement of maternal health services in the empowered action group states with respect to selected interventions under NHM over the last decade.

Methodology: The present research is based on secondary data available from various government agencies. Among the important sources of data are publication of National Family Health Survey (NFHS) 3 and 4, Health Management and Information System (HMIS), data published by Ministry of Health and Family Welfare (MoHFW), New Delhi etc. Apart from these various nonpublished

literatures is also available on the subject matter and has been used in collecting and analyzing the data.

Result: India's MMR has seen a reduction from 122inn 2015-2017 to 113 in 2016-2018. The figure has reduced from 130 in 2014-2016 to 122 in 2015-2017 and to 113 in 2016-18. This has been made possible due to improvements in institutional deliveries, to meet the most marginalised and vulnerable mothers. Focus on quality and coverage of health services through public health initiatives under the National Health Mission have contributed to this decline. The reduction or increase in these indicators is due to the periodic interventions and programmes by the Government of India which has ultimately led to reduction in the maternal mortality ratio. But there are some states which has shown an increase in the maternal mortality ratio. This depends on the performance of the interventions in a respective healthcare facility such as Janani Shishu Suraksha Karyakram, RMNCH+A, PMSMA and LaQshya. The maternity healthcare facilities have shown a tremendous improvement from where we just focussed on out-of-pocket expenditure. Now, the utilization of healthcare services is focussing not only on the infrastructure but the care of the mother and the child throughout the pregnancy period. The improvement has been exceptionally well in the empowered action group states and more and more facilities should be LaQshya certified.

Conclusion: In the EAG states, urgent solutions such as health system strengthening, strong political will, and community mobilisation are essential. Though there are major interventions that were launched in the last decade and there has also been an exceptional improvement in the indicators, but still requires intensified national efforts to recognise the significance of women's lives.

ACKNOWLEDGEMENT

It brings me great pleasure to work and submit my dissertation report on "**Maternal Healthcare Services in the Empowered Action Group (EAG) States- A Review (2011-2020)"** in NHSRC, New Delhi. For this I deeply am thankful to Advisor Dr. J.N Srivastava for his help and invaluable guidance throughout the duration of the project.

Also, I am thankful to my mentor, Dr. Manish Priyadarshi, Associate Professor, IIHMR, Delhi for her advice which was a constant source of inspiration.

I am also thankful to the colleagues and friends for guiding me to achieve the project.

Finally, I am deeply thankful to my parents who helped and inspired me in completing this project

Sivanand Patnaik

Sivanand Patnaik

PG/19/085

ABBREVIATION

MMR	Maternal Mortality Rate
EAG	Empowered Action Group
NRHM	National Rural Health Mission
NHM	National Health Mission
SDG	Sustainable Development Goal
NFHS	National Family Health Survey (HMIS), data published by (MoHFW)
HMIS	Health Management and Information System
MoHFW	Ministry of Health and Family Welfare
NHSRC	National Health Systems Resource Centre
ANC	Antenatal Care
IFA	Iron and Folic Acid
JSY	Janani Suraksha Yojana
JSSK	Janani Shishu Suraksha Karyakram
RMNCH+A	Reproductive, Maternal, Newborn, Child and Adolescent Health
CTA	Call to Action
SBA	Skilled Birth Attendant
NQAS	National Quality Assurance Standards
PHC	Primary Health Centre
CHC	Community Health Centre
HDU	High Dependency Unit
LR	Labor Room
MOT	Maternity Operation Theatre

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MATERNAL HEALTHCARE SERVICES IN THE EMPOWERED ACTION GROUP (EAG) STATES- A REVIEW (2011-2020)

Introduction

The subject of safe motherhood is not just one of the concerns yet has been broadly perceived as an issue of social unfairness. As indicated by the Sustainable Development Goals (SDGs), the worldwide objective is to diminish the maternal mortality proportion (MMR) to under 70 by 2030 and to give all access universally to reproductive medical care. India is responsible for the second-highest number of maternal deaths worldwide. India is liable for the second-most elevated number of maternal deaths around the world. India's MMR has been consistently declining since the 1990s. As per the Sample Registration System, a household survey led by the Indian government, the MMR dropped from more than 400 for each 100000 in the mid-1990s, to 230 in 2008 and to 113 for every 100000 between 2016 and 2018. In comparison, the global MMR in 2017 was estimated at 211. But there is a variation in states' MMR. For instance, in the southern state of Kerala, in India, the MMR was accounted for to be pretty much as low as 42 in 2017 though in the northern territory of Bihar it was 165. The government of India dispatched the National Rural Health Mission (NRHM) in 2005, overarching into National Health Mission (NHM) to improve access to great quality medical care administrations for financially distraught populace focusing its endeavors on eight Empowered Action Group (EAG) States- Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh and Uttarakhand. Under NHM, multiple maternal health programmes have been implemented. The objective of this study is to address some of these programmes and interventions particularly in the EAG states in the last ten years to identify the key improvements in providing quality maternity services.

Objective

To analyse the evolution in the improvement of maternal health services in the empowered action group states with respect to selected interventions under NHM over the last decade.

Specific Objective

i. To conduct a detailed study on the maternal health status in the EAG states.
ii. To review the performance of the NHM flagship programs and initiatives such as Janani Shishu Suraksha Karyakram (JSSK), Reproductive, Maternal, Newborn, Child, Adolescent Health Plus Nutrition (RMNCAH+N), Dakshata, Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), Labour Room Quality Improvement Initiative (LaQshya) and Surakshit Matritva Aashwasan (SUMAN).
iii. Analyze the trends in the indicators against the maternal health programs.

Review of Literature

The country's health and demographic policies continue to face significant challenges in terms of population stabilisation and fertility decline. While population stabilisation is an overarching policy goal, it plays a supporting role in achieving key policy goals related to maternal and child health. In this regard, the rate of fertility decline across high-focus areas is of particular interest. Population stabilisation remains a major policy issue, across the Empowered Action Group states, and is obviously an unfinished policy agenda. Although economic growth may

help to kickstart improvements in maternal health, long-term investments in health system strengthening, women's education and empowerment, and the availability of qualified workers are all important for accelerating MMR reductions (*William Joe et al, 2016*)

In India, the government launched the National Health Mission with the aim of reducing deaths related to pregnancy and childbirth (NHM). The primary goal of this initiative is to strengthen health systems, manage diseases, and promote RMNCH in urban and rural areas. One of the major components of NHM is RMNCH and Adolescent Health (RMNCH+A), which aims to reduce MMR to 100 by 2017. (*National Health Mission*)

Although the country has made significant progress, MMR state output varies significantly. Maternal mortality in the EAG states is higher than the national average, and there is still a long way to go to meet the SDGs' goal. (*Horwood et al, 2020*)

Rapid institutional births with a skilled practitioner can not only handle most "low risk" routine deliveries, but also refer for major obstetrical complications easily. The mortality rate for obstetrical complications occurring during such institutional births is a fraction of what it is for home births or births in facilities without qualified personnel. Institutional births have been steadily increasing in various regions, but less so in the EAG states. (*Subba Rao et al, 2018*)

Both demand side and contextual/ supply side factors (like essential health care services and trained human resources) play an important role in the utilization of three aspects of maternal health care among women of EAG states in India: antenatal care, skilled birth attendants and post-natal care. (*Das et al, 2018*)

Although motherhood is always an optimistic and fulfilling experience, it is often synonymous with pain, ill health, and even death for far too many women. Haemorrhage, infection, high blood pressure, illegal abortion, obstructed labour, and birth injuries are the leading causes of maternal morbidity and mortality. Undernutrition, multiple births, anaemia, malaria, hepatitis, and diabetes are all indirect triggers in several environments. The maternal well-being (or lack thereof) of a society is influenced by a variety of underlying determinants, including social, cultural, health-care, and economic influences. These factors have a significant impact on maternal health and, as a result, maternal mortality. (*Maternal Health Policy in India*)

Janani Shishu Suraksha Karyakaram was founded in 2011 to promote healthy motherhood and childhood. Its main goal is to provide free diagnostics, transportation, medication, and nutrition during and after distribution for up to 30 days. Beneficiaries are still dissatisfied with the facilities, owing to out-of-pocket expenses, especially for diagnostics. In most health centres, appropriate medications are not affordable, and there are also vacant health specialist positions. The doctor-to-patient ratio and the patient-to-bed ratio are also unsatisfactory. (*Dash A, 2016*)

In India, maternal mortality is not a random occurrence. It has its roots in a number of interconnected factors, beginning with women's social status and role, which is heavily influenced by the country's economic resources and infrastructure, and is directly dependent on access to and availability of expertise, materials, and facilities for family planning and maternity care. (*Toppo et al, 2014*)

It is well established that the use of maternal health care services, especially antenatal care (ANC) during pregnancy and skilled delivery attendance, helps to reduce maternal mortality. The primary goal of ANC is to avoid and detect pregnancy complications early. It also acts as

a counselling forum to help women and their families better understand pregnancy, childbirth, and new-born care. (*Bauseman et al, 2015*)

Methodology

Key Research Questions

1. How was the trend in the maternal mortality rate in the last decade?
2. Does Government interventions and national programmes play a major role in the declining rate of maternal mortality?
3. Does the training performance affect the utilization of maternal health services?

Research Design

The present research is based on secondary data available from various government agencies. Among the important sources of data are publication of National Family Health Survey (NFHS) 3 and 4, Health Management and Information System (HMIS), data published by Ministry of Health and Family Welfare (MoHFW), New Delhi etc. Apart from these various nonpublished literatures is also available on the subject matter and has been used in collecting and analyzing the data.

Results

Maternal Health Profile in India and EAG States

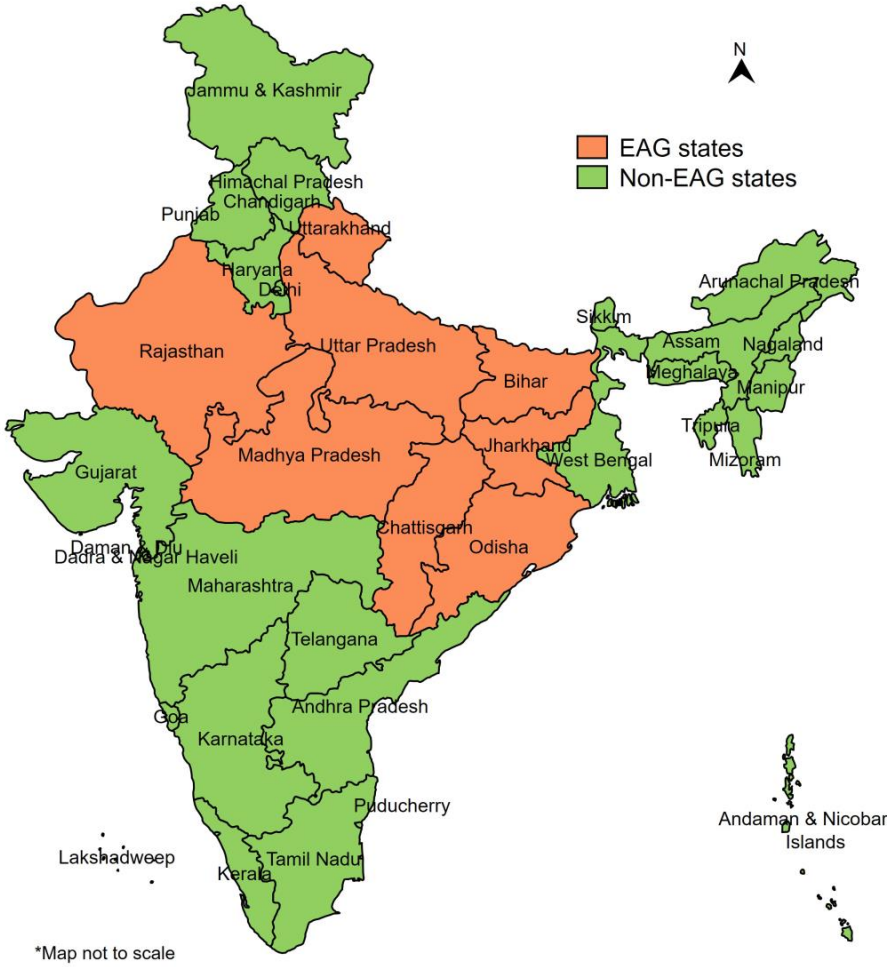


Fig 1: Map of India showing Empowered Action Group (EAG) states

Maternal Mortality Ratio

Maternal mortality ration is the women who lost their lives because of complications of pregnancy and childbearing during a year per 100,000 live births in the same year. Though the country experiences a significant reduction in the maternal mortality ratio but still the ratio is very high. During NFHS-3 (2005-06), MMR in India was 254 per 100,000 live births it gradually declined to 130 during the fourth round of NFHS (2015-16). Similarly, during NFHS-3 (2005-06), maternal mortality ratio in the EAG states was 375 per 1,00,000 live births which reduced to 175 during NFHS-4. Since then, maternal mortality ratio in India has declining continuously.

Table 1: Comparison of NFHS and MMR in India

National Family Health Survey Round (NFHS)	Maternal Mortality Ratio (MMR)
NFHS 3	254
NFHS 4	130

Table 2: Comparison of NFHS and MMR in EAG states

National Family Health Survey Round (NFHS)	Maternal Mortality Ratio
NFHS 3	375
NFHS 4	175

India's MMR has seen a reduction from 122inn 2015-2017 to 113 in 2016-2018. The figure has reduced from 130 in 2014-2016 to 122 in 2015-2017 and to 113 in 2016-18.

There was also a remarkable reduction in the MMR of Bihar which was 149 in the corresponding year from 165 in the year 2014-16. There was a slight decline in the state of Jharkhand by 5 points. Meanwhile, the maternal mortality ratio (MMR) in Chhattisgarh increased by 18 points in two years, making it the highest among all states in the world, indicating worsening childbirth safety and poor maternal health in the state. An increase in the MMR was also seen in the state of Uttarakhand from 89 in 2015-17 to 99 in 2016-18.

This has been made possible due to improvements in institutional deliveries, to meet the most marginalised and vulnerable mothers. Focus on quality and coverage of health services through public health initiatives under the National Health Mission have contributed to this decline.

Comparison of indicators of maternal health (NFHS 3 and NFHS 4)

The maternal health indicators give an understanding regarding the utilization of health services and the key improvements. This comes with effect from implementation of various programmes and interventions by the Government of India under National Health Mission. To address this, the data from National Family Health Survey for the empowered action group states was considered to know some of the indicators.

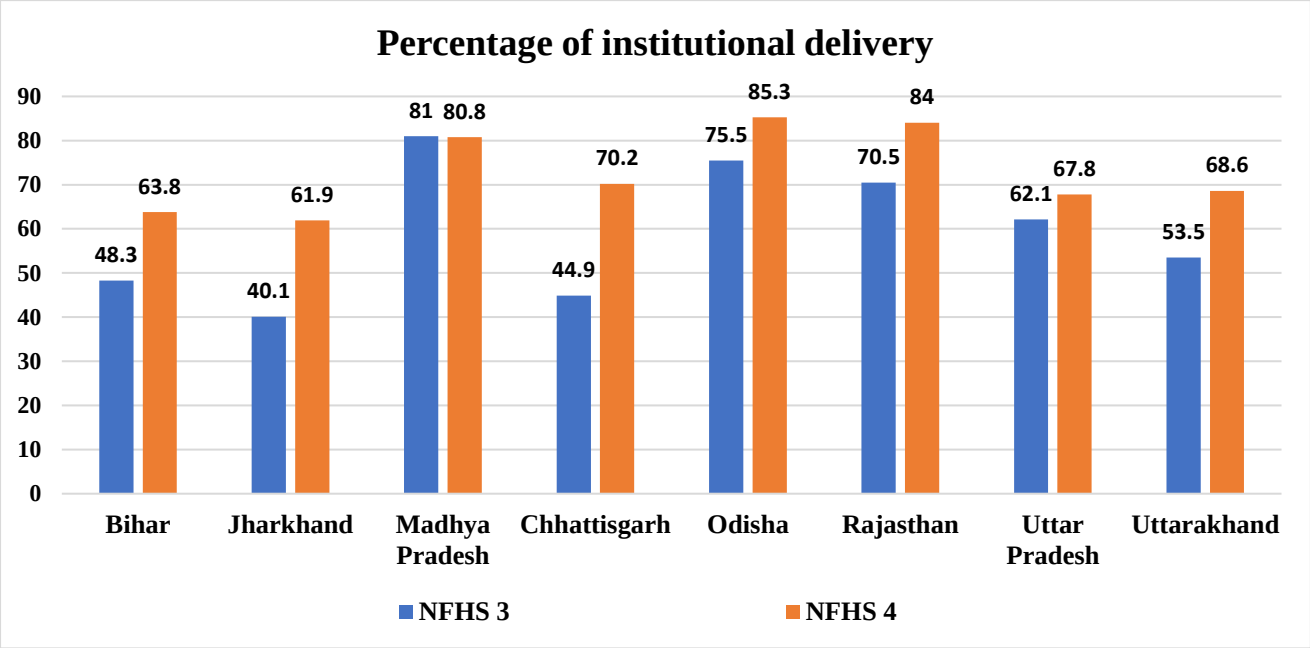


Fig 2: Percentage of institutional delivery

A delivery that takes place in a medical facility with qualified delivery assistance is known as institutional delivery. It is projected that using institutional delivery will reduce maternal deaths by 16 to 33 percent.

India has made progress in increasing number of institutional deliveries over the last two decades. Institutional deliveries have risen from 38.7% in 2005-06 to 78.9% in 2015-16, according to the NFHS-4. In addition, institutional births in public institutions have risen from 18% to 52% during the same time span. For the EAG states, during NFHS 3, the highest percentage of institutional delivery was for Madhya Pradesh at 81% followed by Odisha and Rajasthan at 75.5% and 70.5% respectively. The lowest percentage was shown by Jharkhand followed by Bihar at 40.1% and 48.3% respectively. Similarly for NFHS 4, the top three EAG states which showed improvement in institutional births are Odisha (85.3%), Rajasthan (84%) and Madhya Pradesh (80.8%) respectively. Chattisgarh has been the largest growth by 25.3 points, followed by Jharkhand (21.8 points) and Bihar (15.5 points). However, for Madhya Pradesh, there was slight dip of 0.2 points from 81% during NFHS 3 and 80.8% during NFHS 4.

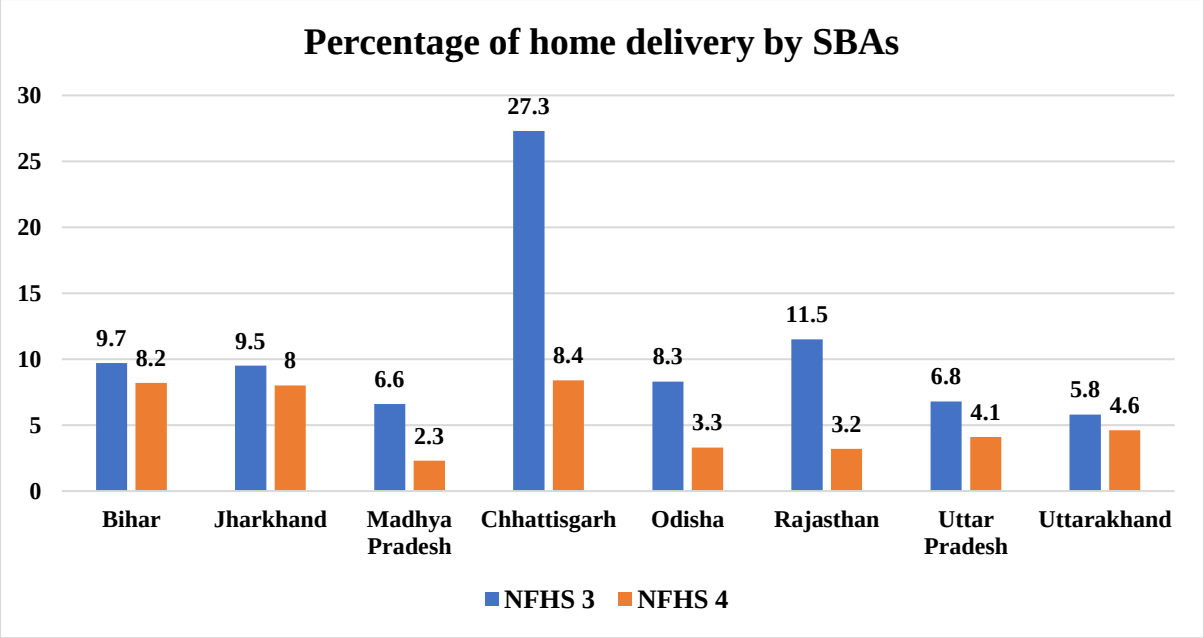


Fig 3: Percentage of home delivery by skilled birth attendants (SBAs)

The percentage of home deliveries by skilled birth attendants has been decreasing and importance is being given to institutional births. But at the same time, the home deliveries by skilled birth attendants is also decreasing. During NFHS 3, Chhattisgarh was the leading state in the home deliveries by SBAs at 27.3%. Rajasthan and Bihar too also contributed the home deliveries by skilled birth personnel at 11.5% and 9.7% respectively. The home deliveries by SBAs improved during NFHS 4 due to several initiatives through National Health Mission. Chhattisgarh showed a drastic decrease in home deliveries (8.4%) with a dip in 18.9 points since it was the leading state during NFHS 3. Similarly, Rajasthan also showed a drop in 8.3 points followed by Odisha at 5 points.

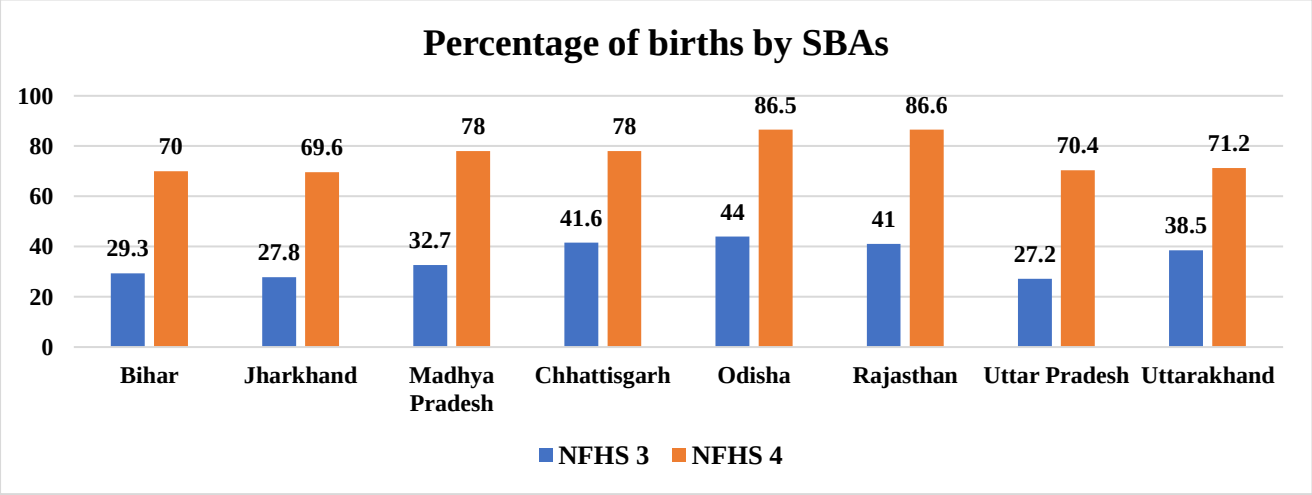


Fig 4: Percentage of births conducted by SBAs

In India, skilled assistance during deliveries has increased significantly, with the proportion of births supported by a skilled provider increasing from 47% in 2005-06 to 80% in 2015-16.

During NFHS 3, among the EAG states, Odisha had a highest percentage of births by skilled attendants with 44%. Chhattisgarh and Rajasthan were behind Odisha with 41.6% and 41% respectively. Uttar Pradesh was the poor performing state with 27.2% followed by Bihar at 29.3%. In 2015-16, Rajasthan was at the top of the list in the percentage of births (86.6%) by SBAs surpassing Odisha (86.5%) with a mere decrease in 0.1 points. Uttar Pradesh made a drastic improvement with an increase of 38% compared to other EAG states

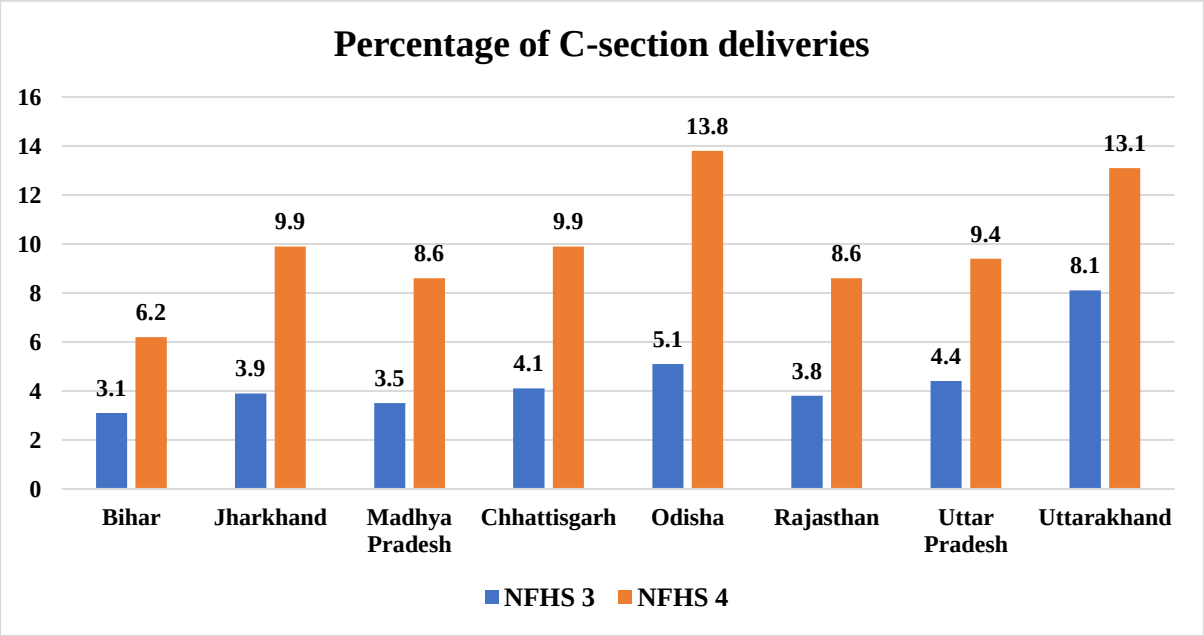


Fig 5: Percentage of C-section deliveries

The ability to have a caesarean section (C-section) will help to minimise maternal and neonatal mortality as well as complications including obstetric fistula. A caesarean section performed without a medical reason, on the other hand, may put a woman's health in jeopardy in the short and long term. The World Health Organization recommends that caesarean sections be performed only when medically appropriate, and does not prescribe a population-level target rate. C-section deliveries have doubled since 2005-06, increasing from 9% in 2005-06 to 17% in 2015-16.

Considering the rise in C-section deliveries for top three EAG states in the year 2015-16, Odisha has been the leargest increase by 8.7 points, followed by Jharkhand (6 points) and Chhattisgarh (5.8 points). There was also an increase in the percentage of C-section deliveries of Rajasthan from 3.8 in 2005-06 to 8.6 in 2015-16. Bihar however had a slight increase in 3.1 points.

The increase in CS deliveries is not a good indicator for the states as this affects the health of the pregnant mother and the also disturbs the socio-economic condition of the family.

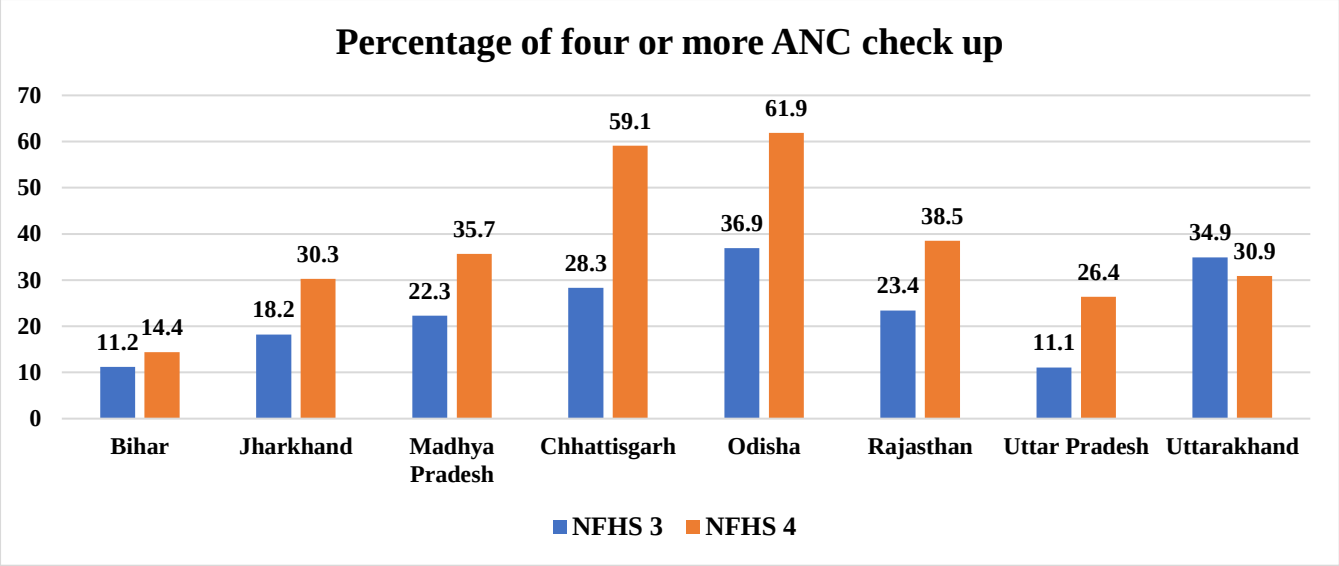


Fig 6: Percentage of four or more ANC checkup

The proportion of women who received the recommended four or more ANC visits rose from 37% in 2005-06 to 51% in 2015-16. The percentage of ANC in the first trimester rose from 44% to 59% over the same time span.

During NFHS 3, the percentage of women who received four or more ANC checkups was highest in Odisha with 36.9% followed by Uttarakhand (34.9%) and Chhattisgarh (28.3) respectively. Bihar however was at the bottom of the list with 11.2% women receiving four or more ANC checkups. However, during NFHS 4, Odisha maintained its position with 61.9% but Chhattisgarh surpassed Uttarakhand with 59.1% and 30.9%. Here there was a fall in the percentage for Uttarakhand by 4.9 percent as compared from NFHS 3.

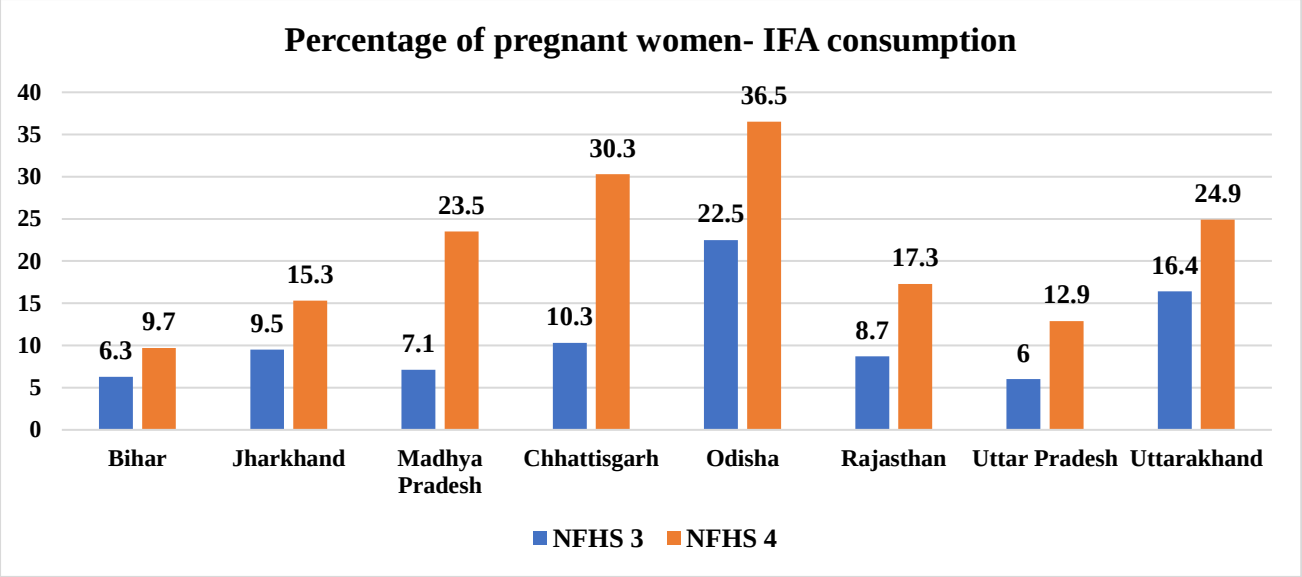


Fig 7: Percentage of pregnant women with IFA consumption

Interventions for anaemia are most commonly performed during pregnancy in India. TT and IFA tablets are provided on a daily basis to help with pregnancy maintenance and well-being.

In Uttar Pradesh, Iron and Folic Acid (IFA) consumption is lower (6%) than other EAG states. The highest percentage in IFA consumption was seen in the state of Odisha at 22.5% followed by Uttarakhand at 16.4%. However, Chhattisgarh and Madhya Pradesh had shown much improvement with an increase of 20 points and 16.4 points respectively from NFHS 3 and NFHS 4 survey.

NHM Flagship programmes and their performance

The reduction or increase in these indicators is due to the periodic interventions and programmes by the Government of India which has ultimately led to reduction in the maternal mortality ratio. But there are some states which has shown an increase in the maternal mortality ratio. This depends on the performance of the interventions in a respective healthcare facility.

Janani Sishu Suraksha Karyakram- 2011

The introduction of the Janani Suraksha Yojana (JSY) resulted in a significant rise in institutional deliveries in India. It is an initiative to provide fully free and cashless services to pregnant women in both rural and urban areas, including regular deliveries and caesarean operations, as well as sick new borns (up to 30 days after birth) in government health facilities. Within 48 hours, the mother and her newborn receive critical care. This postnatal period is crucial for detecting and treating post-delivery complications. Accessing this care is a little smoother in the case of institutional delivery.

Pregnant women, sick newborns (till 30 days after birth) and sick infants are entitled to the following free benefits:

- Delivery is free and cashless
- C-Section for free

- Drugs and consumables are provided at no cost
- Diagnostics are done at no cost
- During the stay in a health facility, free meal provision
- Free blood supply
- Transportation from home to health care facilities is provided at no cost
- In the event of a referral, free transportation between facilities is given
- After a 48-hour stay, institutions provide free transportation back to home

Upon the implementation, the beneficiaries covered under this scheme has put some effect in encouragement to institutional deliveries. The out-of-pocket expenditures seemed to be nil just after the extension to the Janani Suraksha Yojana (JSY) to JSSK. For the EAG states the number of beneficiaries enrolled in this programme from 2013-14 to 2018-19 has shown a change which has put the effect on the percentage of institutional deliveries. The change is due to the several other programmes launched in the subsequent years.

Table 3: Number of beneficiaries enrolled under JSSK for 2013-14

State	Free Drugs	Free Diet	Free Diagnostics	Free Transport	Free Drop back
Bihar	1223343	473108	893243	302138	274264
Jharkhand	298917	267606	21765	196765	146044
Madhya Pradesh	982969	972472	956775	893857	716667
Chhattisgarh	224382	218922	175940	123201	120767
Odisha	483587	477244	359459	311758	247067
Rajasthan	1075074	894102	955860	916103	915804
Uttar Pradesh	2157708	1550275	2157708	993663	902861
Uttarakhand	89691	85993	89691	61854	51707

Table 4: Number of beneficiaries enrolled under JSSK for 2019-20

State	Free Drugs	Free Diet	Free Diagnostics	Free Transport	Free Drop back	Free Drugs-Sick infants	Free Diagnostics-Sick Infants	Free transport-Sick infants	Free transport back-Sick infants
Bihar	446808	386036	336606	157429	720863	28762	18041	5840	11474
Jharkhand	352393	312967	331636	165885	116724	76584	59358	13352	8129
Madhya Pradesh	668010	566010	638401	338468	274343	142591	124367	61909	42824
Chhattisgarh	202880	149592	199106	110024	110729	44637	33065	16611	17857
Odisha	333750	324701	327711	181488	127683	81840	59688	20364	10192
Rajasthan	560860	260954	370448	170870	1856781	159446	69909	9687	16486

Uttar Pradesh	2382698	1164890	2339131	1208498	1069909	260063	216584	68838	130927
Uttarakhand	66823	70255	118821	14572	3099	9986	6409	414	586

From 2017-18, the data for the number of sick infants was also available with the number of pregnant women registered. The number of pregnant women beneficiaries in the entitlements has shown a decrease in every state except an increase in the state of Jharkhand

Table 5: Number of beneficiaries enrolled under JSSK from 2013-14 to 2020-21

State	Free Drugs	Free Diet	Free Diagnostics	Free Transport	Free Drop back	Free Drugs -Sick infants	Free Diagnostics- Sick Infants	Free transport-Sick infants	Free transport back-Sick infants
Bihar	7102259	3332433	3970416	1145618	1245403	117968	59160	14714	34968
Jharkhand	2634571	2292096	2036161	1328180	918324	331765	242083	67374	47900
Madhya Pradesh	6998472	6369094	6747990	5241086	3458755	714481	694274	227411	148451
Chhattisgarh	1761179	1362299	1619012	978072	974747	171085	124500	55514	61774
Odisha	3215443	3241817	2835064	1853342	1387371	420545	271392	111213	59843
Rajasthan	8480524	5241742	6162357	3568076	4499718	922715	320536	58528	1059296
Uttar Pradesh	20852147	10177427	20703945	15532905	12449249	840609	789775	229574	499391
Uttarakhand	731656	597507	1141558	314987	253535	43592	28547	1718	3935

The inclusion of the number of beneficiaries has shown a drastic increase since the implementation of the programme. This shows an increased trend of institutional births both in public and private healthcare settings which has shown a decline in the maternal mortality rate. More efforts need to be carried out in other indicators which may show a decline in MMR further.

Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A)-2013

The Ministry of Health & Family Welfare launched Reproductive, Maternal, Newborn Child plus Adolescent Health (RMNCH+A) in February 2013 in response to the Government of India's "Call to Action (CAT) Summit" to influence key strategies for reducing maternal and child morbidity and mortality.

The performance of RMNCH+A programme is evaluated by a composite score obtained from 16 maternal and child health indicators. Using a composite index, the scorecard depicts the relative location of a State, District, Sub-District, or Block. The composite index is calculated using a total of 16 indicators. These 16 indicators are divided into four stages of the lifecycle, as described below:

- Pregnancy care
- Birth of a child / the delivery of a child
- Maternal, newborn, and post-natal care
- Reproductive age/pre-pregnancy

Table 6: Composite Indicators and Sub- Indicators in performance evaluation of RMNCH+A

Composite Indicators	Indicators				
Pregnancy care	Registration during 1st trimester	PW receiving 3rd ANC	PW receiving 100 IFA tablets	Complicated cases attended for delivery	PWs receiving TT2 and booster
Child birth	SBA delivery	Institutional delivery against registration	% C Section out of total Inst Delivery		
Maternal, newborn and post-natal care	% Women stayed for 48 Hr	% of New born < 2.5 kg	% of New breast feed in 1st hour	% of New born visited 24 hr (Home Delivery)	% Full Immunisation against BCG
Reproductive age group	% of Male sterilisation	% PPS (post Partum Sterilisation)	% IUCD (Intra Uterine Contraceptive Device)		
Overall Index	**Comprises of all 16 indicators**				

The performance of these above indicators has been given for the empowered action group states and the lowest ranking states are coded as

Red - low performance,

Pink – low performing,

Yellow- promising and

Green – good performance.

Table 7: Performance in RMNCH+A indicators (Composite score- 2012-13)

State	Overall Index	Pregnancy Care	Child birth	Post-natal care	Reproductive age group
Bihar	0.3916	0.3633	0.2542	0.6507	0.1445
Jharkhand	0.3632	0.2672	0.2813	0.5773	0.2484
Madhya Pradesh	0.4499	0.4936	0.3355	0.5924	0.2539
Chhattisgarh	0.4221	0.3941	0.2716	0.6877	0.1765
Odisha	0.4449	0.5162	0.3286	0.5916	0.198
Rajasthan	0.3911	0.4683	0.4278	0.3592	0.2787
Uttar Pradesh	0.4015	0.4701	0.2845	0.4115	0.3874
Uttarakhand	0.4623	0.3995	0.3996	0.5881	0.42

For the year 2012-13, the overall index of all the EAG states showed an average of low performance with Madhya Pradesh and Uttarakhand the only two states which showed a promising development. For pregnancy care, Odisha, Madhya Pradesh and Uttar Pradesh were

in the promising rank while Jharkhand had a poor performance in delivering quality pregnancy care in the health facilities across the districts. The most important indicator which is the child birth, has shown an overall low performance in the four states (Bihar, Jharkhand, Chhattisgarh and Uttar Pradesh) which indicates that there is still encouragement to home deliveries and unavailability of skilled birth attendants. Rajasthan was the only stat which had a promising performance in all the three indicators. The post-natal care services for Rajasthan and Uttar Pradesh were very low performing while Bihar and Chhattisgarh had shown a drastic improvement. Uttarakhand has shown a good performance in the reproductive age group indicators.

Table 8: Performance in RMNCH+A indicators (Composite score- 2013-14)

State	Overall Index	Pregnancy Care	Child birth	Post-natal care	Reproductive age group
Bihar	0.3849	0.3713	0.198	0.5828	0.2649
Jharkhand	0.4364	0.309	0.2867	0.529	0.644
Madhya Pradesh	0.4794	0.5388	0.3214	0.5564	0.41
Chhattisgarh	0.4311	0.4324	0.2443	0.5951	0.3423
Odisha	0.4418	0.5311	0.3371	0.5077	0.2878
Rajasthan	0.3926	0.4821	0.4062	0.33	0.3342
Uttar Pradesh	0.4533	0.5293	0.2587	0.4637	0.5038
Uttarakhand	0.5012	0.4959	0.3682	0.5652	0.5365

In 2013-14, the overall index of the state of Bihar was very low performing in the maternal health indicators while Madhya Pradesh and Uttarakhand maintained their spot from the previous year with a promising development in providing the services. The pregnancy care was ignored in five states (Bihar, Jharkhand, Chhattisgarh, Rajasthan and Uttarakhand) with a very low performance particularly in the ANC services. The child birth indicators has shown an overall low performance in the four states (Bihar, Jharkhand, Chhattisgarh and Uttar Pradesh) where there is home deliveries and unavailability of skilled birth attendants that showed no improvement from the previous year. The post-natal care services for Rajasthan and Uttar Pradesh were very low performing while Bihar, Madhya Pradesh and Uttarakhand had shown a drastic improvement. Chhattisgarh had shown a good performance from previous year in maternal, new born and post-natal care. The states of Jharkhand, Uttar Pradesh and Uttarakhand had been the best performing states in providing services to the reproductive age group.

Table 9: Performance in RMNCH+A indicators (Composite score- 2014-15)

State	Overall Index	Pregnancy Care	Child birth	Post-natal care	Reproductive age group
Bihar	0.343	0.3069	0.2218	0.5067	0.2575
Jharkhand	0.3705	0.2471	0.3461	0.4693	0.4356
Madhya Pradesh	0.4484	0.4025	0.3604	0.6093	0.3446
Chhattisgarh	0.4069	0.347	0.3228	0.5693	0.3203
Odisha	0.4144	0.4604	0.3968	0.4409	0.3111
Rajasthan	0.4225	0.3694	0.5335	0.4754	0.312

Uttar Pradesh	0.406	0.3472	0.2932	0.4972	0.4649
Uttarakhand	0.4639	0.3796	0.4082	0.561	0.4986

For the year 2014-15, the overall index for all the EAG states was in the constant position showing the same performance from the previous year. Moreover, Jharkhand showed a decline in performing very low in providing pregnancy care and Uttar Pradesh too in performing low though there was improvement in the previous year. The child birth indicators' composite score remained at same position as from the previous year for all the states. The post natal care services had a major improvement in almost all the states except Bihar performing low than previous year from promising state. Madhya Pradesh shown a good performance from previous year while Chhattisgarh retained its performance. Rajasthan and Uttar Pradesh had a slight improvement in the composite score from very low performing to low performing. Jharkhand had a decline from good performance to promising performance in providing the services for reproductive age and pre-pregnancy. Odisha improved with some points of the composite score but still remained in performing low.

With the performance of the maternity health indicators showing a mixed combination of improvements and achievements, still there needs a proper human resource infrastructure to be in place for the attendants and the healthcare workers.

Dakshata- 2015

Dakshata is an initiative launched in 2015 under National Health Mission that aims to enhance the quality of maternal and newborn care during the intrapartum and immediate postpartum periods through competent and confident providers. The initiative focuses on capacity-building for supply side frontline workers, routine follow-up of pregnant women to ensure safe delivery, analytical exercises to assess causes and bottlenecks in order to provide efficient health services and effective decision-making decentralisation that allows for contextual planing at block and district level.

Key Activities under Dakshata

- Workshop on the Dakshata programme for officials from the district and facility levels
- Identifying and mapping target facilities in relation to resource availability
- Recruiting a mentor for quality improvement
- Rapid evaluation of resource availability and current practices
- Ensure that critical supplies and other services are available
- 5 days training of trainers and quality improvement mentors
- Creating a micro-plan for each facility's training
- 3 days of on-the-job training for labour staff at district hospitals
- Follow-up and assistance for district hospitals after training
- Workers from subdistrict level facilities to attend three days of training at district hospital.

- Trainers and mentors to provide post-training follow-up and assistance to SDL facilities.
- Data collection tools and dashboard indicators to be implemented.

Pradhan Mantri Suraksha Matritva Abhiyaan (PMSMA) - 2016

The Government of India's Ministry of Health and Family Welfare (MoHFW) has introduced the Pradhan Mantri Surakshit Matritva Abhiyan. On the 9th of every month, the service aims to provide guaranteed, inclusive, and high-quality antenatal care to all pregnant women, free of charge.

Objectives of the Program

- All pregnant women in their second or third trimester should have at least one antenatal checkup with a physician or specialist.
- Enhance the standard of treatment provided during prenatal visits. This involves ensuring that the following programmes are available:

✓ All diagnostic facilities that are applicable
✓ Screening for the health conditions

- Particular attention should be paid to teenage and early pregnancy pregnancies, as these pregnancies need extra and advanced care.

Key Features of the Program

- OBGY consultants, radiologist/physicians, and private-sector doctors will provide antenatal checkup services to complement the efforts of the government sector.
- In addition to regular ANC at the health facility/ outreach, beneficiaries will receive a minimum package of antenatal care services (including investigations and drugs) on the 9th day of every month at designated public health facilities (PHCs/ CHCs, DHs/ urban health facilities, etc) in both urban and rural areas.
- Mother and Child Protection Cards, as well as safe motherhood booklets, will be issued to pregnant mothers.

The provision of antenatal check ups is being provided by the volunteers such as OBGY consultants, radiologist/physicians, and private-sector doctors. Since the programme has been launched, there are total 6679 volunteers who have registered themselves for providing ANC services, out of which 2864 volunteers have provided services till date. The total number of facilities providing PMSMA services are 18447. And, there are 2,78,57,168 number of pregnant women who received antenatal care under PMSMA. The total number of high-risk pregnancies identified at the PMSMA health facility is 22,20,892.

Table 6: PMSMA Statistics Report (2016-2021)

State	Total Number of Volunteer Registered	Total volunteers provided services	Total number of pregnant women Received Antenatal care under PMSMA	Total Number of HighRisk Pregnancy Identified at the PMSMA Health Facility
Bihar	366	44	3220697	115122
Jharkhand	134	14	682642	50778
Madhya Pradesh	782	492	2708781	251791
Chhattisgarh	295	163	954139	44635
Odisha	199	73	738161	51711
Rajasthan	812	431	2306803	153961
Uttar Pradesh	750	391	3355639	325485
Uttarakhand	39	13	78844	5809

From the above table it is observed that Rajasthan (53%), Madhya Pradesh (63%) and Uttar Pradesh (52%) has reported the largest number of check-ups among the Empowered Action Group States. However, Bihar (12%) and Odisha (37%) has been the least contributors in providing the PMSMA facilities based on the size of the population.

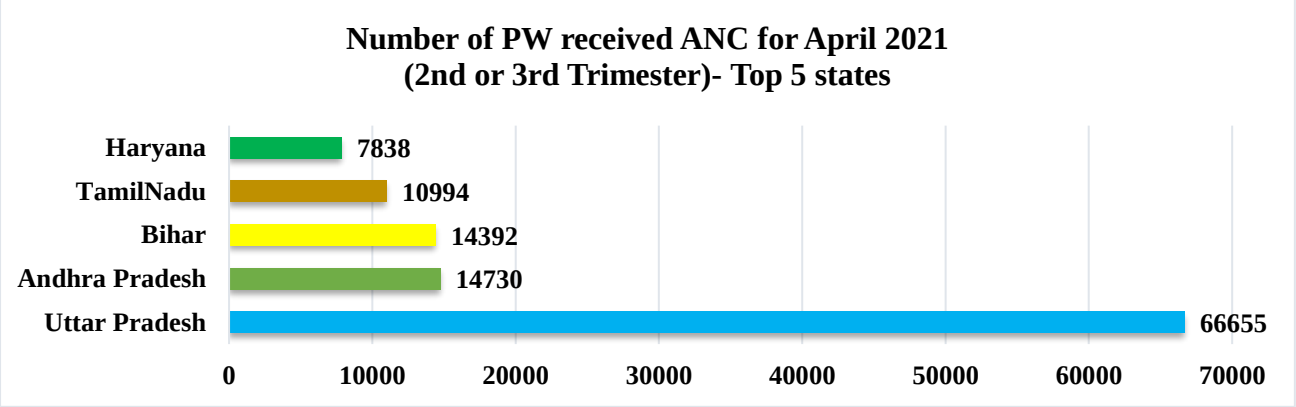


Fig 8: Number of pregnant women received antenatal care in April 2021

The total number of pregnant women who received antenatal care was highest in Uttar Pradesh. And following to Andhra Pradesh, Bihar was in the third spot in providing ANC services to the pregnant women. With this programme, the focus is on care during pregnancy and to cover the pregnant women who needs ANC care or who have missed the check-up.

But not only the maternal care service will reduce the maternal mortality, but respectful maternity care is also a considerable factor. So, to achieve this, LaQshya – Labour Room Quality Improvement Initiative was launched that focussed on care during delivery and directly afterwards.

LaQshya- 2017

The MoHFW started the LaQshya initiative in November 2017 with the aim of reducing preventable maternal and new-born deaths and stillbirths; improving quality of care in the Labor Room and Maternity Operation Theatre (MOT); and increasing beneficiary satisfaction and providing respectful maternity care. A multi-pronged approach has been implemented as part of the programme, which includes upgrading facilities, ensuring the availability of necessary equipment, providing sufficient human resources, building the capacity of health care staff, and improving the processes of Labor Rooms (LR) and Maternity Operation Theatres (MOT).

Key Features

- The LaQshya programme aims to raise the standard of treatment in labour rooms and maternity wards.
- A multi-pronged approach has been implemented as part of the programme, including infrastructure upgrades, ensuring the availability of necessary equipment, providing sufficient Human Resources, building the capacity of health care personnel, and enhancing labour room efficiency processes.
- Interventions that are implemented on a ‘rapid-fire' basis (NQAS assessment, Trainings, Mentoring, Reviews etc.)
- Building the capacity of healthcare staff through skill-based training such as Dakshta and enhancing labour room quality processes.
- Under the LaQshya scheme, dedicated Obstetric ICUs at Medical College Hospital level and Obstetric HDUs at District Hospital are operationalized to improve critical care in Obstetrics.

LaQshya Certified Labor Room (LR) Facilities- All India

Table 7: Distribution of LaQshya certified Labour Rooms (2018-19 to December 2020)

Zone	2018-2019	2019-2020	2020-2021	Total
West	8	78	5	91
South	5	46	9	60
Central	3	28	7	36
North	4	26	6	37
East	1	21	6	27
North-East	1	10	1	12
Total	22	209	34	265

In 2019-20, there was an increase in the number of LaQshya Certified Labor Rooms. However, due to the COVID-19 pandemic, the number of certifications has decreased in 2020-21, with just 26 Certified Labor Rooms remaining as of December 31, 2020.

Table 8: Category-wise distribution of LaQshya certified Labour Rooms (till 31st December' 2020)

Zone	MC	DH	SDH	CHC	Total
West	9	39	36	7	91
South	6	45	8	1	60
Central	0	30	3	3	36
North	1	30	3	4	38
East	3	20	3	2	28
North-East	0	11	1	0	12
Total	19	175	54	17	265

A total of 265 labour rooms are LaQshya certified until December 31, 2020. It comprises 19 Medical College Hospitals' labour rooms, 175 District Hospitals', 54 Sub Divisional Hospitals', and 17 Community Health Centers'.

LaQshya Certified Labor Room (LR) Facilities- EAG states

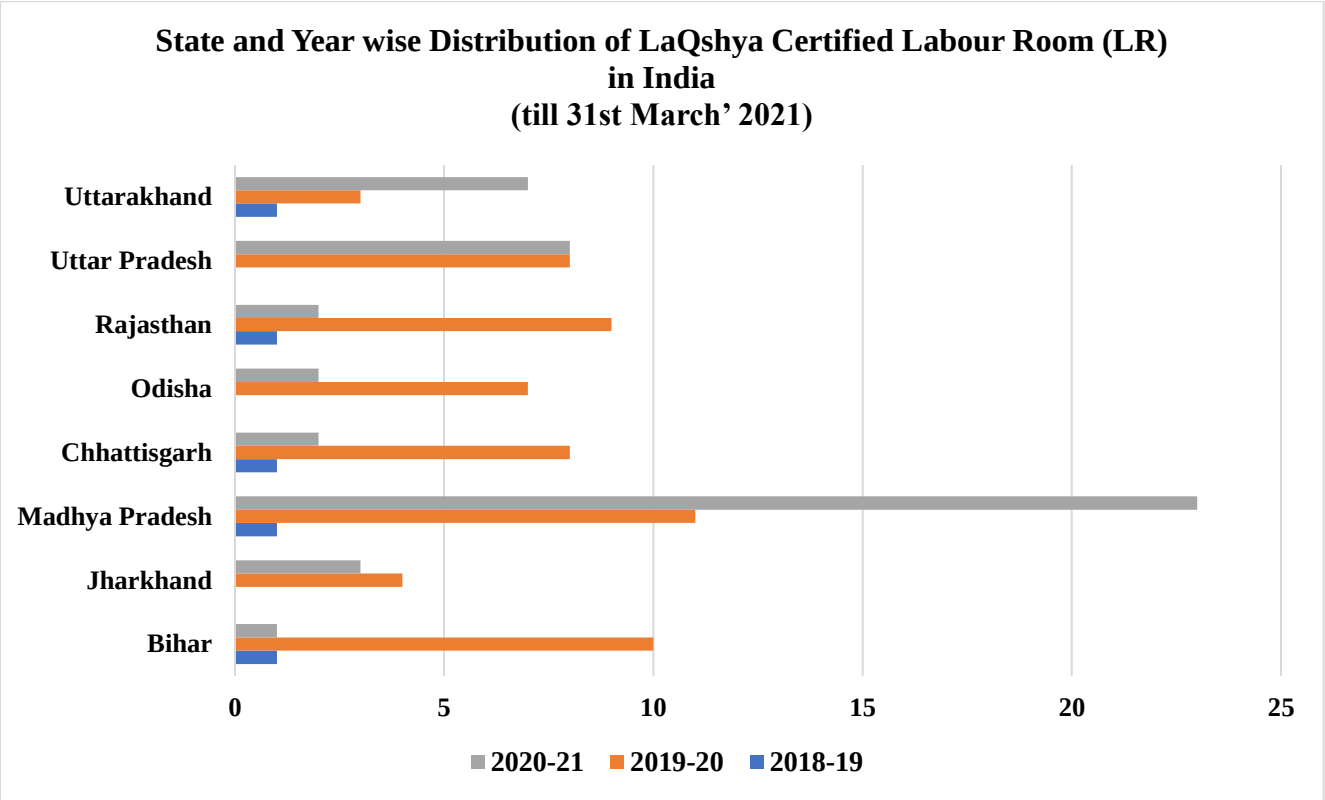


Fig 9: Distribution of LaQshya Certified LRs in EAG states

The total number of LaQshya certified labor rooms in EAG states is 113 out of 265 across the country. We can see there is increase in the certification of the healthcare facilities in the current year with all the operational guidelines maintained by the states and assessed by the assessors. States like Madhya Pradesh, Uttar Pradesh and Uttarakhand have done exceptionally well in maintaining the healthcare facilities and providing respectful maternity care despite of the pandemic which saw a declining number of the certified facilities in rest of the five states.

LaQshya Certified Maternity Operation Theatres (MOT) Facilities- All India

Table 9: Distribution of LaQshya certified MOTs (2018-19 to December 2020)

Zone	2018-2019	2019-2020	2020-2021	Total
West	6	74	4	84
South	4	45	7	56
Central	3	26	10	39
North	1	15	6	22
East	0	16	6	22
North-East	2	8	0	10
Total	16	184	33	233

Table 10: Category-wise distribution of LaQshya certified MOTs (till 31st December' 2020)

Zone	MC	DH	SDH	CHC	Total
West	9	39	31	5	84
South	7	45	6	1	59
Central	1	30	3	2	36
North	0	16	2	4	22
East	3	15	2	2	22
North-East	0	9	1	0	10
Total	20	154	45	14	233

LaQshya Certified MOT Facilities- EAG States

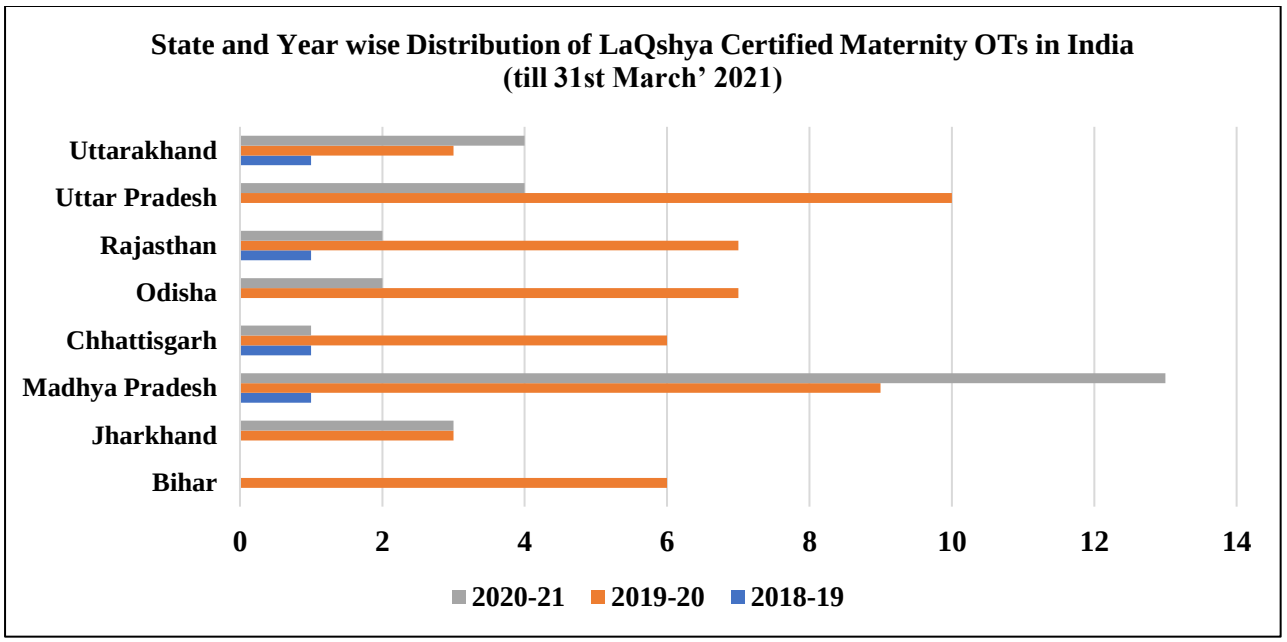


Fig 10: Distribution of LaQshya Certified MOTs in EAG states

The total number of LaQshya certified maternity operation theatres in EAG states is 84. Madhya Pradesh and Uttarakhand contributed half of the total certified facilities in the current year while rest of the states

The maternity healthcare facilities have shown a tremendous improvement from where we just focussed on out-of-pocket expenditure. Now, the utilization of healthcare services is focussing not only on the infrastructure but the care of the mother and the child throughout the pregnancy period. The improvement has been exceptionally well in the empowered action group states and more and more facilities should be LaQshya certified.

But with reference to interventions and respectful maternity care, Ministry of Health and Family Welfare started a new initiative as Surakshit Matritva Aashwasan (SUMAN) in 2019.

Surakshit Matritva Aashwasan (SUMAN)- 2019

Following programmes such as JSSK, PMSMA, and LaQshya have resulted in significant savings in out-of-pocket expenses, an increase in institutional deliveries, and high-quality care during the ante-partum, intra-partum, and post-partum periods. SUMAN's goal is for every woman who visits a public health institution during her pregnancy and postpartum period to receive assured, respectful, cashless, and high-quality health care, with zero tolerance for any negligence or refusal of services. The effort ensures that the entitlement is delivered with care and in a pleasant environment. This project can provide every woman with high-quality maternity care while also treating her with dignity and respect and end all preventable, maternal early new born deaths.

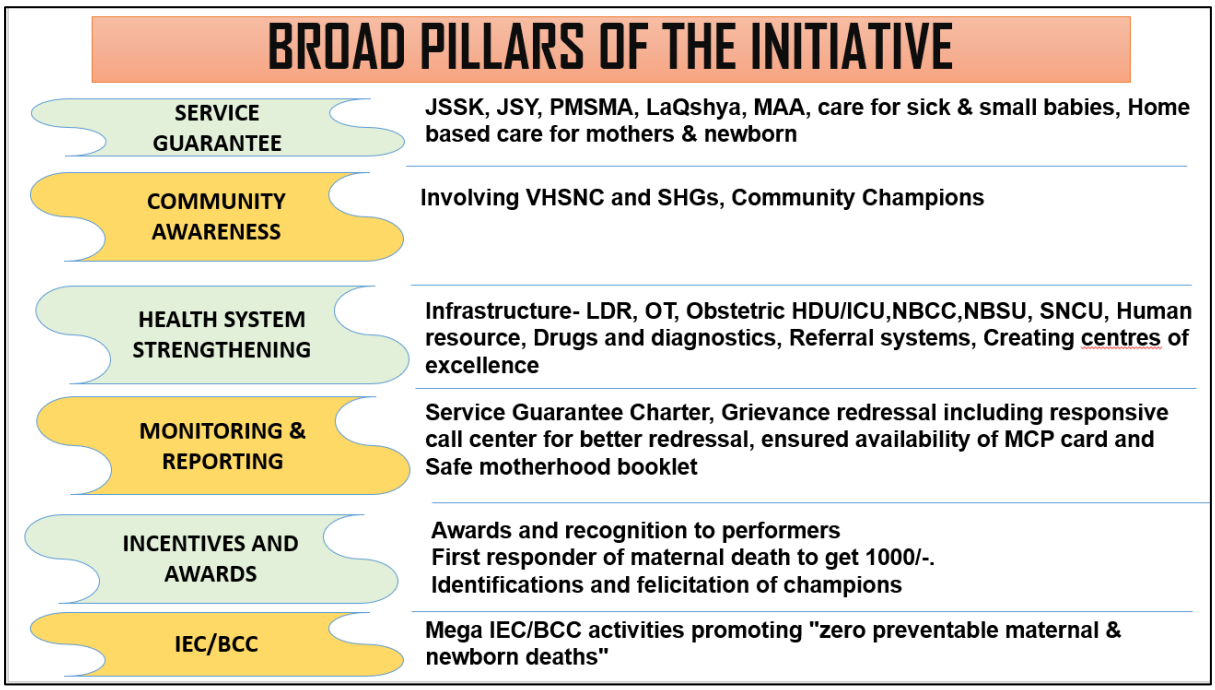


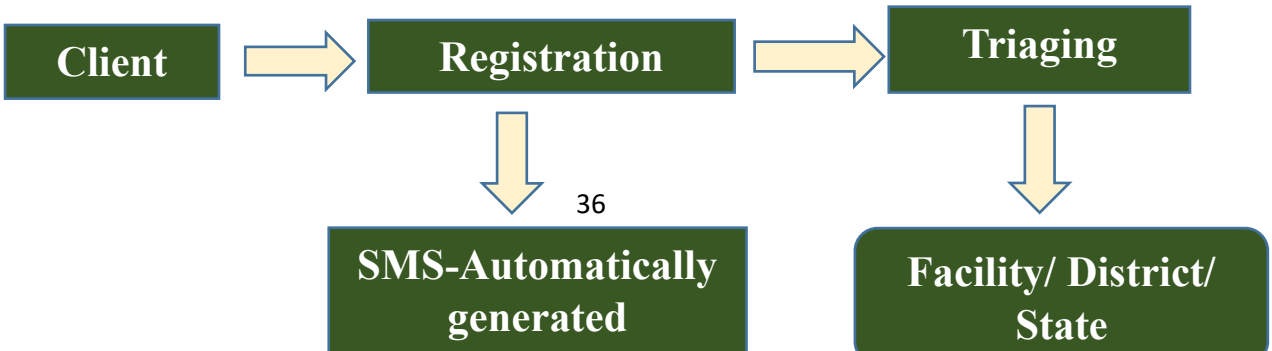
Fig 11: Pillars of the SUMAN Initiative

Grievance Redressal Mechanism under SUMAN

All real-time and urgent complaints must be resolved swiftly, preferably within 24 hours.

If a facility is unable to resolve a dispute, it is escalated to the District and State levels.

A summary of grievances will be provided to the SUMAN committees.



Discussion

The research revealed two significant modifiable health system factors of maternal mortality in the eight empowered action group states: accessibility to health care and quality care. Besides from encouraging institutional birth, delivery by Skilled Birth Attendants must be enhanced in difficult-to-reach areas, particularly tribal communities, in order to reduce maternal mortality and morbidity. Workers on the ground must visit pregnant mothers in both the prenatal and postnatal stages and provide the necessary medical care. SUMAN being the recent intervention and since all the maternal health interventions have come under one roof, the performance of the volunteers and the grievance redressals must be attended to provide a respectful maternity care.

Conclusion

The country made the majority of its development, although MMR state performance varies greatly. Therefore, improvement is necessary in all aspects of maternal health, pregnancy, child birth and post- partum care. In the EAG states, urgent solutions such as health system strengthening, strong political will, and community mobilisation are essential. Though there are major interventions that were launched in the last decade and there has also been an exceptional improvement in the indicators, but still requires intensified national efforts to recognise the significance of women's lives.

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