

# What Impact Have SARS-CoV-2/Covid-19 Pandemic on the Reproductive and Child Health Programme of *Bihar* in India over the 3 months after nationwide Lock down announcement in March 2020? How SARS-CoV-2 Pandemic era does influence RCH Programme? Immunisation? Maternal Health? Family Planning?

Dr. Piyush Kumar (✉ [drpiyush003@gmail.com](mailto:drpiyush003@gmail.com))

Bihar Health Services <https://orcid.org/0000-0001-9857-478X>

---

## Research Article

**Keywords:** Health, Decrease, Pandemic, Services/service

**Posted Date:** March 30th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-348841/v4>

**License:**  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

**Background:** The delivery of reproductive and child health services is of utmost importance and prime concern in India particularly populous states like Bihar with limited resources, poor infrastructure and huge demand on healthcare system. The SARS-CoV-2 pandemic had presented a challenge even for developed healthcare systems around the world.

**Objectives:** The main aim of this research is to find out Impact of SARS-CoV-2 pandemic on the Reproductive and Child Health Programme of Bihar in India over the 3 months after Lock down imposition countrywide in March 2020.

**Settings & Design:** Different indicators group of RCH programme (immunisation, maternal & child health, family planning) for state of Bihar were collected and compared from previous year.

**Materials & Methodology:** Secondary data from HMIS of Ministry of Health & Family Welfare Government of India for 2019 & 2020 were taken for analysing and understanding of impact of pandemic on RCH programme over 3 months after lock down viz. April/May/June 2020. The data obtained is analysed by using Microsoft Office software.

**Result:** The analysis of secondary data obtained from HMIS of Ministry of Health & Family Welfare website for RCH programme **of the state** of Bihar shows that the lock down period & initial early phase of SARS-CoV-2 pandemic have a negative impact over the delivery of health services as well as the indicators are also affected negatively. Besides the pandemic the state is also having lack of resources, manpower poor infrastructure as well as positive deviance at community level. These are the barriers in fact beside the epidemic. It seems that there is lack of proper plan to deal with such pandemic situation.

**Conclusion:** The State of Bihar has enforced the epidemic disease act but it seems to be insufficient to give the desired results. The barriers of healthcare system and delivery of services should be rectified added with a proper dynamic plan to carry on usual health delivery services even in pandemics. The state of Bihar needs to develop an exclusive plan such as separate RCH cadre to tackle such situations.

## Introduction

The delivery of reproductive and child health services is of utmost importance and prime concern in India particularly populous states like Bihar with limited resources, poor infrastructure and huge demand on healthcare system.

The SARS-CoV-2 pandemic had presented a challenge even for developed healthcare systems around the world. A sense of fear gripped the whole world due to pandemic and the state of Bihar in India is not an exception. The scarce healthcare resources including manpower, infrastructure, transportation (ambulance services) etc. have been largely deployed to tackle the situation of pandemic. This shift has tremendous effect of ongoing various health programmes running previously before the pandemic era.

Pregnant mother & children's are especially more vulnerable groups. The OPD/IPD services also suffered a lot due to pandemic impact as well as field health services are also compromised. The Pandemic situation challenged not only the health system but also community. The people have a sense of fear in meeting others particularly with peoples of healthcare system until unless there is some sort of acute emergency. Moreover most of the beds were reserved for covid-19 patients and as per protocols the community and system both have constrains erupting from the sudden situations of pandemic.

The advocacy for maternal and child health have been done and emphasised by many national and international organisation for several decades considering them especially vulnerable groups in times of disaster such as pandemic. The Covid-19 pandemic has clearly disclosed the weakness of health system to protect above mentioned vulnerable groups. The situation also produced a demand of separate cadre to protect mother and child health in situations of disaster like pandemic. It seems many protective beneficial health services were not delivered in covid-19 era which may produce undesirable and detrimental effects at mass level. To understand the real impact of covid-19 on maternal and child health the data analysis for the month of April to June 2020 is compared with previous year data of same months and the facts are presented as table and charts.

## **OBJECTIVES**

The main aim of this research is to find out impact of SARS-CoV-2 pandemic on the Reproductive and Child Health Programme of Bihar in India over the 3 months after Lockdown imposition countrywide in March 2020. For this purpose important indicator related to child & mother health protection i.e. immunisation, maternal health and family planning were taken into consideration.

## **Materials And Methodology**

### **Materials**

Secondary data from HMIS of Ministry of Health & Family Welfare Government of India for 2019 & 2020 were taken for analysis and understanding of impact of pandemic on RCH programme over 3 months after lockdown viz. April/May/June 2020. The data obtained is analysed by using Microsoft Office software.

Following items are considered to know the impact of Covid-19 Pandemic on delivery of health services to mother and child under RCH programme- **see Table 1-Immunisation & Table 2 – Maternal Health & Family Planning**

### **Table 1-Immunisation - Bihar**

Immunisation
BCG-BACILLUS CALMETTE GUERIN
PENTA 3+DPT 3
DT (2 <sup>ND</sup> DOSE) OR DPT-5
MEASLES + MR
POLIO (OPV 3)
TETANUS TOXOID (TT10)
TETANUS TOXOID (TT16)
VITAMIN A (1 <sup>ST</sup> DOSE)
VITAMIN A (5 <sup>TH</sup> DOSE)
VITAMIN A (9 <sup>TH</sup> DOSE)

**Table 2 - Maternal Health & Family Planning -Bihar**

MATERNAL HEALTH	Family Planning
ANC	Condom user
MATERNAL HEALTH- HOME DELIEVERIES	Oral Pill user
MATERNAL HEALTH - INSTITUTIONAL DELIEVERIES	IUD insertion
	Sterilisation
	Tubectomy
	Vasectomy

### Settings & Design:

Different indicators group of RCH programme (immunisation, maternal & child health, family planning) for state of Bihar were collected and compared from previous year. The percentage increase & decrease is calculated from the available data to know the status of delivery of important & essential health services. The data is also shown in tabulated as well as graphical form for ease of understanding. All the data obtained were analysed using Microsoft office software. The analysis report is presented as graphs and also in letters.

### Methodology

All the data obtained were analysed using Microsoft office software. The analysis report is presented as graphs and also in letters.

## Results

Results of data analysis regarding performance of Bihar during the month of April to June 2020 as compared to previous year same month was compared for RCH services.

The immunisation services had been adversely affected during the months analysed as compared to previous year. It seems that not only newborn children but even the older ones have not been provided proper immunisation services as evident from the data analysis. See Table 3 - Comparison on immunisation coverage for 2019 & 2020 for the month of April to June – Bihar & Figure 1 - Comparison on immunisation coverage for 2019 & 2020 for the month of April to June - Bihar

For BCG immunisation there is a decrease of 21.7% as compared to previous year data. Since BCG is given at birth it seems that either less no. of children's is born during this period or many have not received it.

For Penta3+DPT3 the decrease was 42.9%. For DT or DPT5 the decrease was 38.7%.

For Measles+MR the decrease was 25.7%. For OPV3 the decrease was 43.0 %.

For TT10 the decrease was 42.8%. For TT16 the decrease was 37.5%.

Only vitamin A which is given from 9 months of age has shown positive trends? Vitamin A 2<sup>nd</sup> to 9<sup>th</sup> dose starts from 16 months of age (one dose every 6 month).

Here it is important to mention that vitamins A as well as OPV both are administered orally. The only difference is that OPV3 is given at the age of 14 weeks whereas vitamin A is started from 9 month onwards. This shows that the coverage is more for children of 9 months and older whereas decrease in opv3 administration shows that coverage was less for child around 14 weeks of age.

The full scenario for immunisation is as follow: **see Table 3 & Figure 1**

**Table 3 - Comparison on immunisation coverage for 2019 & 2020 for the month of April to June - Bihar**

Immunisation	ITEM CODE	NUMBERS ACHIEVED DURING APRIL TO JUNE -2020	NUMBERS ACHIEVED DURING APRIL TO JUNE -2019	% INCREASE/DECREASE IN 2020 COMPARED TO 2019
BCG-BACILLUS CALMETTE GUERIN	9.1.2	443332	566386	DECREASE 21.7 %
PENTA 3+DPT 3	9.1.5,9.1.8	421347	737502	DECREASE 42.9 %
DT (2 <sup>ND</sup> DOSE) OR DPT-5	9.5.2	194835	317995	DECREASE 38.7 %
MEASLES + MR	9.2.1,9.2.2	501944	675741	DECREASE 25.7 %
POLIO (OPV 3)	9.1.12	417794	733533	DECREASE 43.0 %
TETANUS TOXOID (TT10)	9.5.3	93340	163212	DECREASE 42.8 %
TETANUS TOXOID (TT16)	9.5.4	159979	255933	DECREASE 37.5 %
VITAMIN A (1 <sup>ST</sup> DOSE)	9.8.1	206952	81868	INCREASE 152.8 %
VITAMIN A (5 <sup>TH</sup> DOSE)	9.8.2	78272	23320	INCREASE 235.6 %
VITAMIN A (9 <sup>TH</sup> DOSE)	9.8.3	16624	4412	INCREASE 276.8 %

The ANC services and institutional deliveries are important to assess the status of maternal care.

Although home deliveries are reduced but at the same time the institutional deliveries also reduced which is a matter of great concern.

The scenario is as below:

See Table 4 - Comparison on maternal health coverage for 2019 & 2020 for the month of April to June – Bihar & Figure 2- Comparison on maternal health coverage for 2019 & 2020 for the month of April to June – Bihar

**Table 4 - Comparison on maternal health coverage for 2019 & 2020 for the month of April to June - Bihar**

MATERNAL HEALTH	ITEM CODE	NUMBERS ACHIEVED DURING APRIL TO JUNE -2020	NUMBERS ACHIEVED DURING APRIL TO JUNE -2019	% INCREASE/DECREASE IN 2020 COMPARED TO 2019
ANC	1.1	736213	904002	Decrease 18.6
MATERNAL HEALTH- HOME DELIVERIES	2.1.1.a,2.1.1.b	56628	81807	Decrease 30.8
MATERNAL HEALTH - INSTITUTIONAL DELIVERIES	2.2	287251	354294	Decrease 18.9

Although there is a general trend of increase in all above indicators every year as the population of India is growing rapidly. The decrease of such important indicators clearly signifies that covid-19 pandemic have a negative impact on delivery of important health services such as maternal and child health

The role of family planning is very important in context of India. All important family planning programmes show a decrease from previous year timeline for the same months indicating that the population control strategy of India also suffered during this period. See Table 5 - Comparison on family planning coverage for 2019 & 2020 for the month of April to June – Bihar & Figure 3 - Comparison on family planning coverage for 2019 & 2020 for the month of April to June - Bihar

**Table 5 - Comparison on family planning coverage for 2019 & 2020 for the month of April to June - Bihar**



Family Planning	ITEM CODE	NUMBERS ACHIEVED DURING APRIL TO JUNE -2020	NUMBERS ACHIEVED DURING APRIL TO JUNE -2019	% INCREASE/DECREASE IN 2020 COMPARED TO 2019
Condom user	8.13	96941	117339	Decrease 17.4
Oral Pill user	8.12, 8.14	64691	75229	Decrease 14.0
IUD insertion	8.3,8.4,8.5	46630	83619	Decrease 44.2
Sterilisation	8.2.1,8.2.2, 8.2.3,8.2.4,8.1.1	3862	37434	Decrease 89.7
Tubectomy	8.2.1,8.2.2, 8.2.3,8.2.4,	3832	37063	Decrease 89.7
Vasectomy	8.1.1	30	371	Decrease 91.9

## Discussion

The analysis of secondary data obtained from HMIS of Ministry of Health & Family Welfare website for RCH programme of the state of Bihar shows that the lockdown period & initial early phase of SARS-CoV-2 pandemic have a negative impact over the delivery of RC health services as well as the indicators are also affected negatively.

Besides the pandemic the state is also having lack of resources, manpower poor infrastructure as well as positive deviance at community level. These are the barriers in fact beside the epidemic. It seems that there is lack of proper plan to deal with such pandemic situation. Providing RCH (reproductive and child health) service is always a big concern for populous state of Bihar with high levels of fertility. During the pandemic era it's more challenging to deliver such essential services due to fear factors at community as well as personal level of healthcare staff. Decreasing rate of immunisation can lead to emergence of diseases which is being controlled by such programmes. At the same time poor ANC services can put maternal as well as foetus life in danger. The decrease in family planning services might add more to ongoing population explosion putting more stress on available resources.

Although the state have imposed epidemic disease act but it seems to be ineffective to get positive results on RCH programme. The need is to develop a separate cadre for RCH services in order to reap the benefits of demographic dividend in coming years. The Government of Bihar should develop a strong strategy to protect maternal and child health in conditions of distress such as covid-19 pandemic. For this the barriers and promoters of RCH programme needs to be dealt in proper way to achieve the maximum output

## Conclusion

The State of Bihar has enforced the epidemic disease act but it seems to be insufficient to give the desired results. The barriers of healthcare system and delivery of services should be rectified added with a proper dynamic plan to carry on usual health delivery services even in pandemics & other situations of distress. The state of Bihar needs to develop an exclusive plan to tackle such situations to ensure delivery of very essential services such as RCH during pandemics or any other natural calamities.

- Establishment of exclusive Reproductive and child health department is required at central level as well as at all the states and union territories of India.
- Covid-19 pandemic has given us a lesson that we must have equity in healthcare & the child and women's who are considered most vulnerable in situations of distress must have adequate supportive healthcare all the times especially during pandemics and other natural calamities. Women of reproductive age group and children's constitutes a large portion of population and the country and state must have a separate department to ensure the delivery of health services to this vulnerable section of the population.
- India being the second most populous country in the world should have a robust population control strategy to operate in any situations.

## Declarations

### Financial Support & sponsorship

Nil

### Conflicts of Interest/ Competing Interest

There are no conflicts / competing of interest

**Contributor ship statement** -The whole work is solely done by the author Dr Piyush Kumar. The document is Microsoft word with English (India) language. 2576 words Total.

**Funding**-Self sponsored. No aid taken from individual or agency etc.

**Acknowledgements**- I am thankful to advocate Anupama my wife for cooperation.

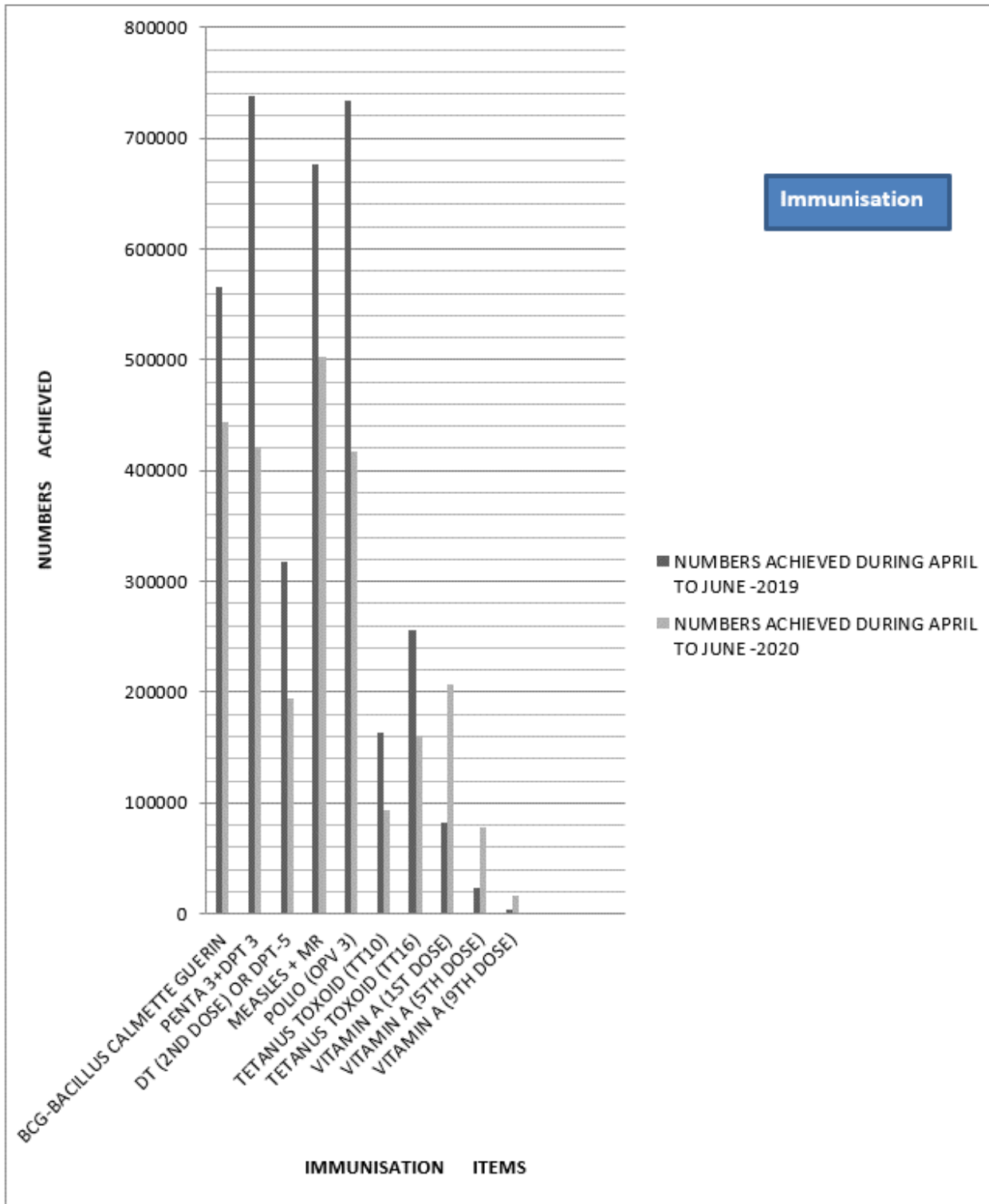
**Ethics-** This study has not involved any humans or animals and the whole data is availed from MOHFW Government of India as mentioned in the reference.

**DECLARATION:** This paper has not been previously published and is not currently under consideration by another journal.

## References

1. Ministry of Health & Family Welfare Web Services-2021.

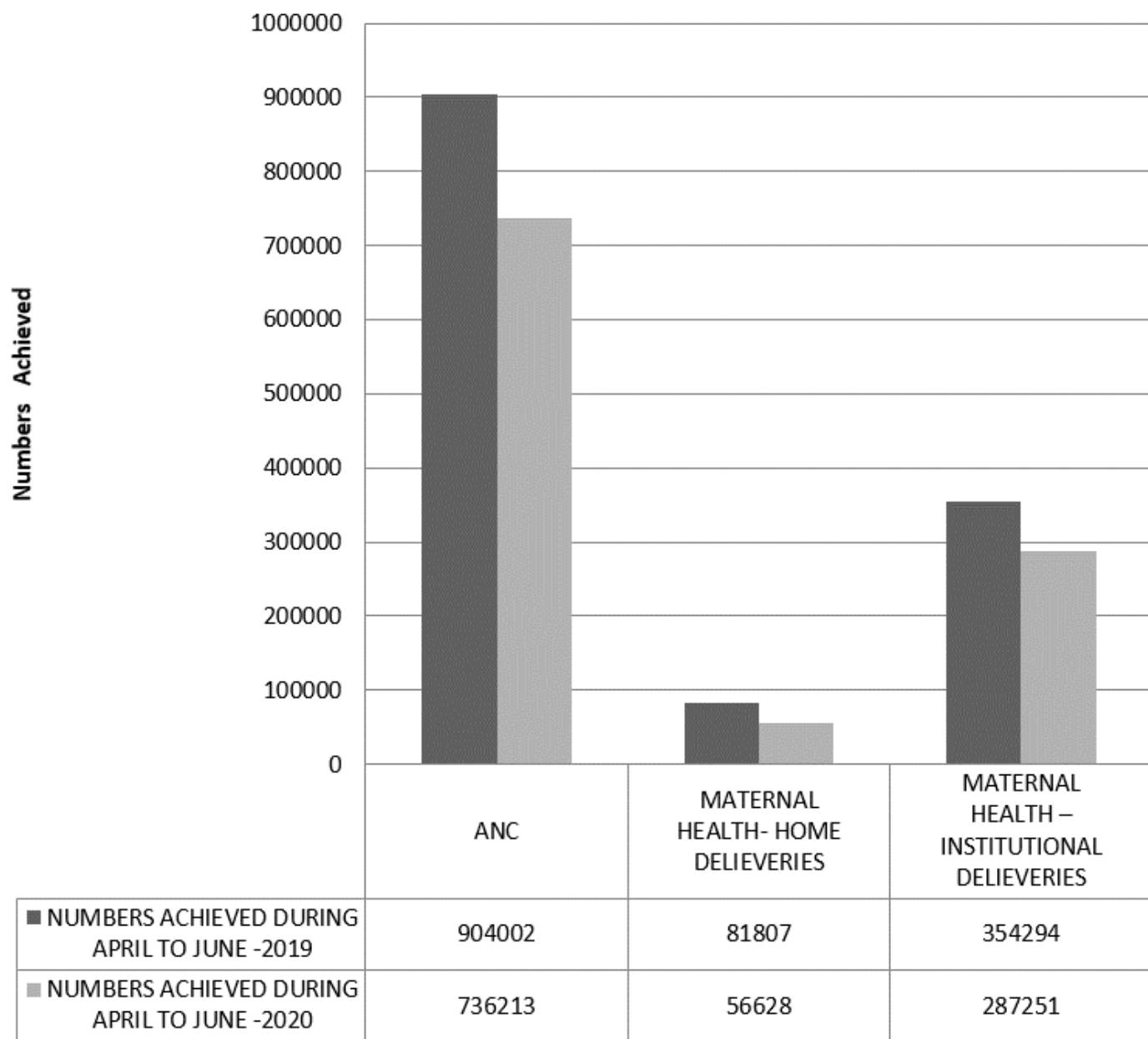
## Figures



**Figure 1**

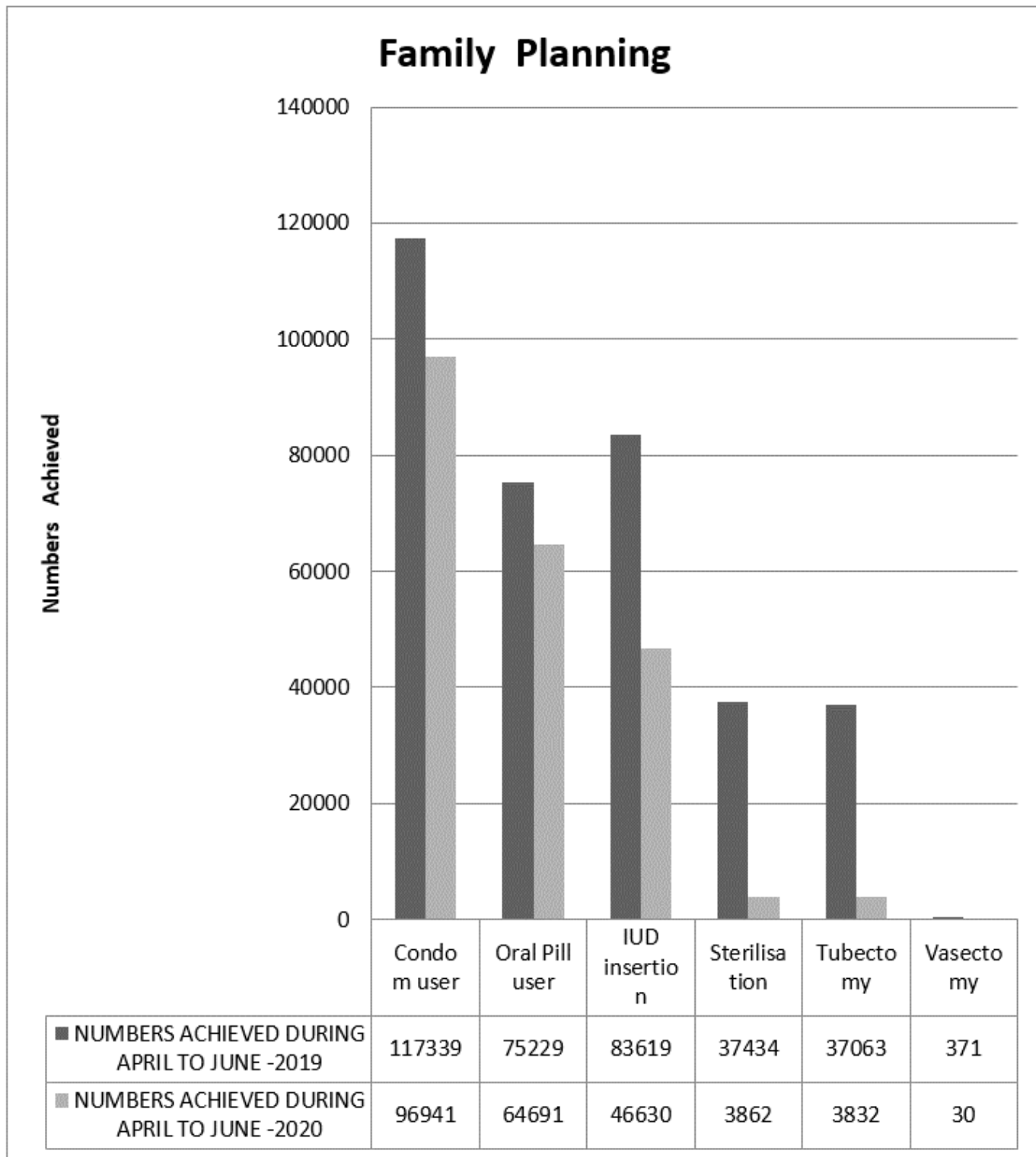
Comparison on immunisation coverage for 2019 & 2020 for the month of April to June - Bihar

## Maternal Health



**Figure 2**

Comparison on maternal health coverage for 2019 & 2020 for the month of April to June - Bihar



**Figure 3**

Comparison on family planning coverage for 2019 & 2020 for the month of April to June - Bihar

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Bihar2019.pdf
- Bihar2020.pdf