national health authority

सत्यमेव जयते

Working Paper No 2

# Utilization of Neo-natal Care Packages under PMJAY- Findings from Preliminary Analysis

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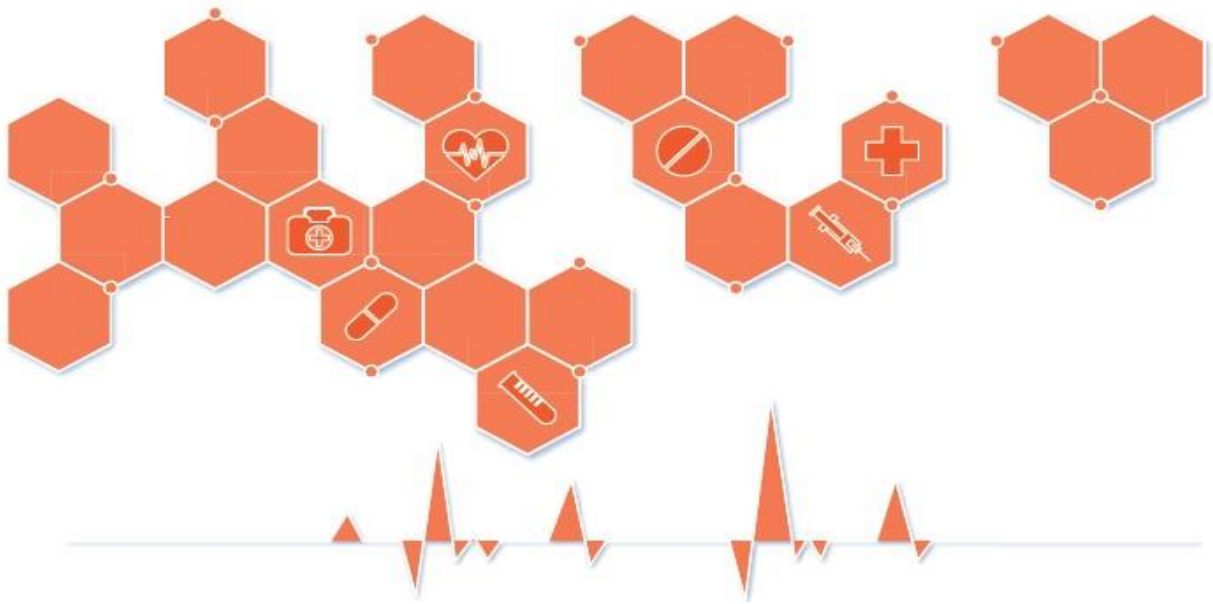

## Disclaimer:

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## Abstract

*Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), the world's largest fully government funded health insurance scheme aims to providing quality secondary and tertiary care to the poor and vulnerable as identified by SECC 2011 data. Given India's commitment towards achieving the SDG target to reduce* neonatal mortality to at least as *low as 12 deaths per 1,000 live births, the scheme has included Neonatal care in its scope. The present paper is an attempt to understand the preliminary trends observed in the utilization of Neonatal packages by the states under the AB–PMJAY across public and private hospitals and a few case studies from Medical Audits conducted in 2 private hospitals of Jharkhand to provide an overview of the on-ground implementation and functioning of the scheme.*



Keywords: *Neonatal Health, Neonatal Care Package, AB – PMJAY.*


## Introduction

The neonatal period or first 28 days of life is the most critical period in determining a child's survival. The daily risk of mortality in the first 4 weeks of life is almost 30-fold higher than the post-neonatal period, that is, from 1 month to 59 months of age.[1]

**According to the UNICEF New-born Mortality Report 2018, 26 lakh babies died worldwide within 28 days of birth annually in 2015, of which around 26% (6.4 lakh) neonatal deaths occurred in India.** In 2017, the neonatal mortality rate in India was 25.4 deaths per 1,000 live births making it the 12th worst nation among the 52 lower-middle-income countries. The importance of Neonatal Mortality is apparent given its inclusion in the UN Sustainable Development Goals. The SDG target for child mortality aims to end, by 2030, preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 deaths per 1,000 live births.[2]

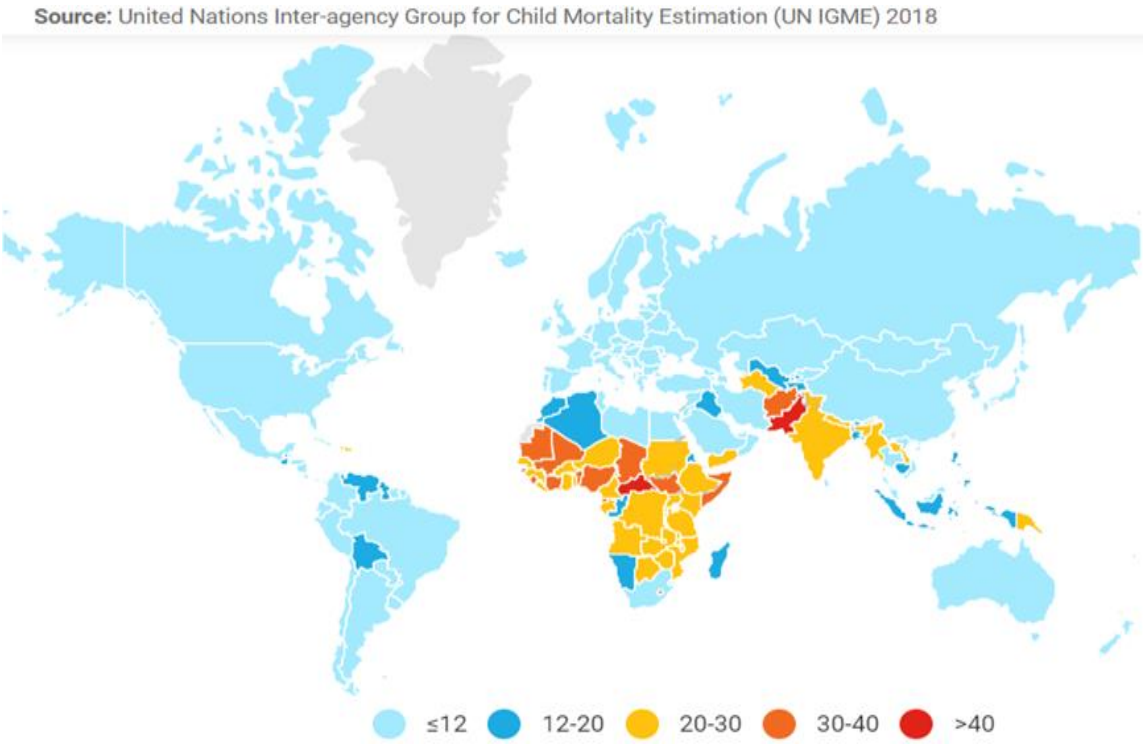
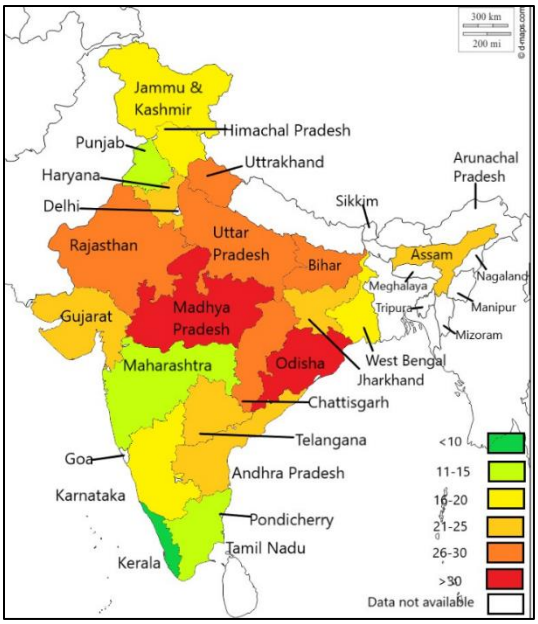



**Figure 1: 2018 Global Neonatal Mortality Rates**

**Figure 2: State wise Neonatal Mortality Rate in India**

*Source: 2019, NITI Health Index Report*

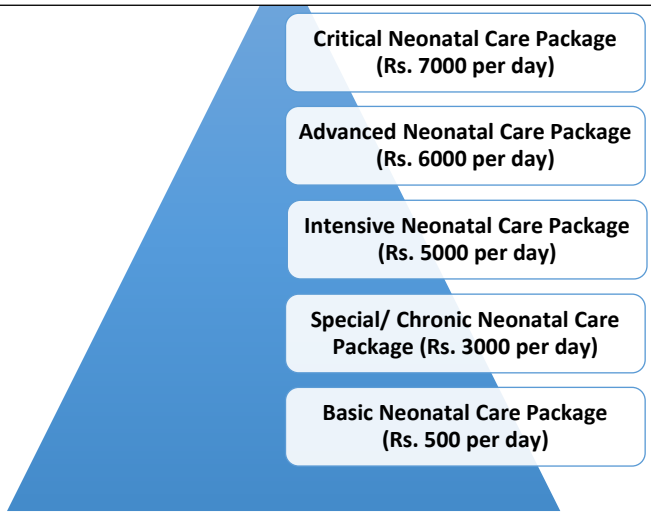



Disparities in NMR are significant between and within states. As per the NITI Health Index Report (2019), Kerala and Tamil Nadu had already reached the 2030 SDG target for NMR (<12 neonatal deaths per 1,000 live births),and Maharashtra and Punjab were close to achieving it, while Madhya Pradesh and Odisha still had very high NMR.

From the period 2015 to 2016, NMR declined or hovered in all larger States except for Uttarakhand, where NMR increased from 28 to 30 neonatal deaths per 1,000 live births. Although Odisha and Madhya Pradesh had the highest NMR, it declined significantly in both States (from 35 to 32 neonatal deaths per 1,000 live births in Odisha, and from 34 to 32 neonatal deaths per 1,000 live births in Madhya Pradesh) during 2015 to 2016.[3]

In the previous years, India has taken several initiatives to improve the health of new-borns, including the introduction of Sick Newborn Care Units (SNCU),primarily in public hospitals at district levels to reduce the case fatality among sick new-borns.[4] However, a limitation has been that patients from remote areas or from areas with poor-quality public facilities could not avail the benefit and had to resort to expensive treatment in private hospitals. It is in this regard, that the importance of Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY) becomes more pronounced as the scheme may contribute in improving neonatal health through ensuring free of cost access to quality neonatal care in both public and private hospitals to the poor and vulnerable population.

**Figure 3: Most Commonly Used Neonatal Packages under PM-JAY**




## Neonatal Packages under AB – PMJAY

Currently, AB – PMJAY provides coverage for 10 Neonatal Care packages out of which 5 packages are most commonly used for inpatient care varying as per the severity of the baby's condition at the time of birth.

The preliminary package being offered is the Basic Neonatal Care Package that entails basic care for new-born babies along with the service of radiant warmers, and can be managed by side of mother in postnatal ward without requiring admission to SNCU/NICU.

This is followed by the Special Neonatal Care Package that is considerably higher priced and includes services such as intensive photo therapy machine and treatment for jaundice and mild sepsis which require admission to SNCU/NICU.

The Intensive Neonatal Care Package is a mid-range package for babies with birthweight between 1500 –1799 grams or those requiring mechanical ventilator support for less than 24 hours, treatment for hyperbilirubinemia, seizures, major congenital malformation, cholestasis, or congestive heart failure.

The next level package is the Advanced Neonatal Care Package for babies with birthweight more than 1200 grams but less than 1499 grams. The package also covers babies requiring invasive ventilator support or are diagnosed with hypoxic ischemic encephalopathy, cardiac rhythm disorders, renal failure, inborn metabolic errors, sepsis, or conditions requiring invasive ventilation for more than 24 hours.

The Critical Neonatal Care Package is the most expensive package offered for babies with birthweight less than 1200 grams or born with either severe respiratory failure, multisystem failure, or critical congenital heart disease.

## Methodology and Data

The present paper utilizes pre-authorisation data of the 5 Neonatal Care packages mentioned above for seven months of the scheme, i.e. the time period between September 25, 2018 and April 25, 2019 for the Greenfield states of Chhattisgarh, Jharkhand, Madhya Pradesh, Uttar Pradesh, Uttarakhand, Gujarat, Haryana, Meghalaya, Mizoram, Bihar, Dadra and Nagar Haveli, Jammu And Kashmir, Himachal Pradesh, and Nagaland.

Case studies are drawn from experiences during Medical Audits conducted at 2 private hospitals in the state of Jharkhand.

## Results and Findings

Data analysis revealed certain key trends and information that are crucial for proper implementation of the scheme and preventing instances of misuse.

**Table 1: State-wise Utilization of Neo-natal Packages**

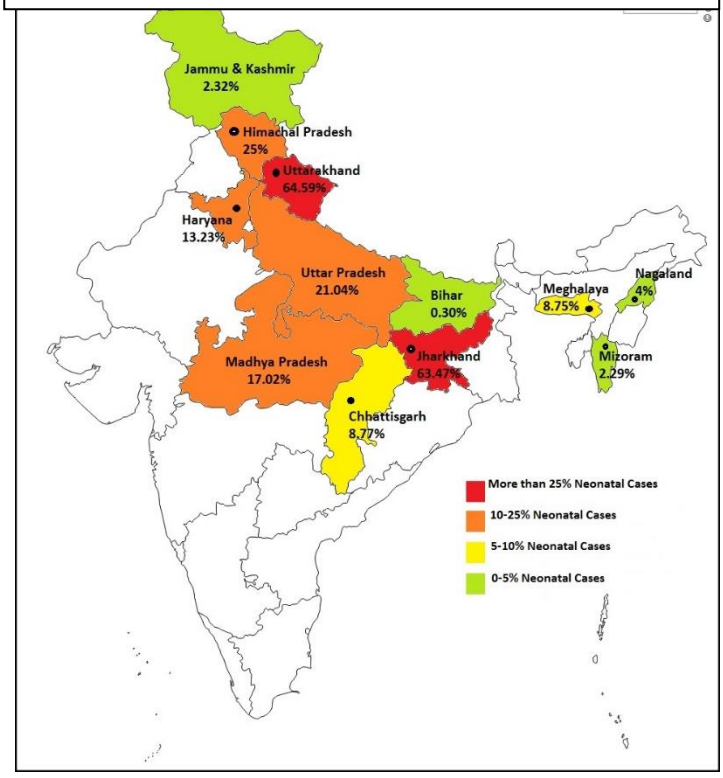
| States | Neonatal Pre-Auths | Total Pre-Auths | Percent of Neonatal Pre-Auths to Total Pre-Auths |
|---|---|---|---|
| **Chhattisgarh** | 3992 | 385592 | 1.03% |
| **Jharkhand** | 2556 | 131990 | 1.93% |
| **Madhya Pradesh** | 1725 | 50742 | 3.39% |
| **Uttar Pradesh** | 396 | 79018 | 0.5% |
| **Uttarakhand** | 259 | 30005 | 0.86% |
| **Haryana** | 52 | 13980 | 0.37% |
| **Meghalaya** | 42 | 3497 | 1.2% |
| **Mizoram** | 33 | 8808 | 0.37% |
| **Bihar** | 26 | 21290 | 0.12% |
| **Dadra & Nagar Haveli** | 15 | 7481 | 0.2% |
| **Jammu And Kashmir** | 7 | 9357 | 0.07% |
| **Himachal Pradesh** | 1 | 8991 | 0.01% |
| **Nagaland** | 1 | 374 | 0.2% |
| **Total** | 9105 | 751125 | 1.2% |

### State-Wise Overview

For the time period being studied, there were 7.5 lakh pre-authorisations raised in the Greenfield states of Chhattisgarh, Jharkhand, Madhya Pradesh, Uttar Pradesh, Uttarakhand, Haryana, Meghalaya, Mizoram, Bihar, Dadra and Nagar Haveli, Jammu And Kashmir, Himachal Pradesh, and Nagaland. Out of these, 9,125 pre-authorisations (1.1%) related to Neonatal Packages. The utilization of Neonatal packages, was not uniform across the states. For instance, in Madhya Pradesh, Neonatal cases accounted for 3.4% of all cases, while in Haryana, Uttar Pradesh and Jammu & Kashmir there were

only less than 0.5%. The higher utilization of neonatal packages in Madhya Pradesh and Jharkhand may be due to poor child health at the time of birth which is reflected in the higher incidence of neonatal deaths in these states (more than 20 neonatal deaths per 1,000 live births).

**Figure 4: Percentage of Neonatal Package Preauths Utilized to Total Deliveries Claimed under PM-JAY**




Another interesting trend was observed in relation to total deliveries performed and neonatal packages utilized in the states under AB – PMJAY. For instance, in Jharkhand, 63% of the 4,027 deliveries claimed under PM-JAY were followed by utilisation of neonatal packages. Similarly, in Uttarakhand, 64% of the 401 deliveries had an associated neonatal package. The greater utilisation of neonatal packages post-delivery in these states is an indicator of increasing access to immediate and quality healthcare for new-borns that will contribute to improving the NMR in these states.

### Type of Hospital Overview

Looking at the utilization of neonatal packages by hospital type, it was observed that private hospitals are performing a significantly higher proportion across several states. A significant majority of claims were raised by private hospitals for both Chhattisgarh (93%) and Jharkhand (86%). The higher share of private hospitals in these states could be indicative of the limited availability of high-quality neonatal care facilities and specialists in public health care facilities.

| | Number of Pre-Authorisations | | Amount of Pre-Authorisations | |
|---|---|---|---|---|
| **State** | **Public** | **Private** | **Public** | **Private** |
| **Chhattisgarh** | 193 **(6%)** | 3267 **(94%)** | 21, 75,600 **(2%)** | 10, 53, 90,100 **(98%)** |
| **Jharkhand** | 336 **(15%)** | 1844 **(85%)** | 65, 63,650 **(6%)** | 10, 99, 99,500 **(94%)** |
| **Uttarakhand** | 48 **(30%)** | 111 **(70%)** | 4, 49,000 **(4%)** | 98, 70,000 **(96%)** |
| **Uttar Pradesh** | 166 **(47%)** | 185 **(53%)** | 22, 12,300 **(18%)** | 1, 04, 06,650 **(82%)** |
| **Haryana** | 3 **(8%)** | 34 **(92%)** | 72,000 **(2%)** | 29, 29,400 **(98%)** |
| **Bihar** | 11 **(52%)** | 10 **(48%)** | 92,700 **(24%)** | 2, 90,400 **(76%)** |
| **Meghalaya** | 5 **(15%)** | 29 **(85%)** | 18,800 **(13%)** | 1, 25,625 **(87%)** |
| **Madhya Pradesh** | 1498 **(100%)** | 0 **(0%)** | 1, 01, 18,600 **(33%)** | 2, 02, 42,200 **(67%)** |
| **Himachal Pradesh** | 0 **(0%)** | 1 **(100%)** | 0 **(0%)** | 3,000 **(100%)** |
| **Mizoram** | 24 **(100%)** | 0 **(0%)** | 3, 92,700 **(33%)** | 7, 85,400 **(67%)** |
| **Dadra And Nagar Haveli** | 5 **(1**00%) | 0 **(0%)** | 3, 34,000 **(33%)** | 6, 68,000 **(67%)** |
| **Jammu And Kashmir** | 5 **(100%)** | 0 **(0%)** | 65,340 **(33%)** | 1, 30,680 **(67%)** |
| **Nagaland** | 1 **(100%)** | 0 **(0%)** | 500 **(33%)** | 1,000 **(67%)** |

However, the trend was reversed in the case of Madhya Pradesh wherein 100% of the cases came from public hospitals, due to the reservation of these packages for public hospitals in the state. Claims from public hospitals also constituted a majority or entirety of the neonatal packages in the states of Mizoram, Bihar, Dadra and Nagar Haveli, Jammu and Kashmir, and Nagaland, indicating a dearth of private facilities in these states/UTs.

**Package-Wise Utilization by Public and Private Hospital**

Another key trend that can be observed from data outlines the higher utilization of the Basic Neonatal Care Package by public hospitals as opposed to private hospitals. However, on further analysis and consultations with practitioners, this was found to be in line with expectations as the package was designed to take care of babies born to only high-risk pregnant women and complicated caesarean deliveries and can be managed by side of mother which are more common in public facilities. These women have often been identified and linked to the closest public health facility by ASHA workers.

It was also observed that private hospitals on the other hand were providing care to more high risk and critical cases as seen in blocking of the higher neo-natal care packages –Intensive Neonatal Care, Advanced Neonatal Care, and Critical Neonatal Care. This could be attributed to better quality of infrastructure, availability of specialists and better quality of care at private hospitals. Another potential reason could also be upcoding done by private hospitals, this was explored further by conducting medical audits and has discussed in subsequent section.

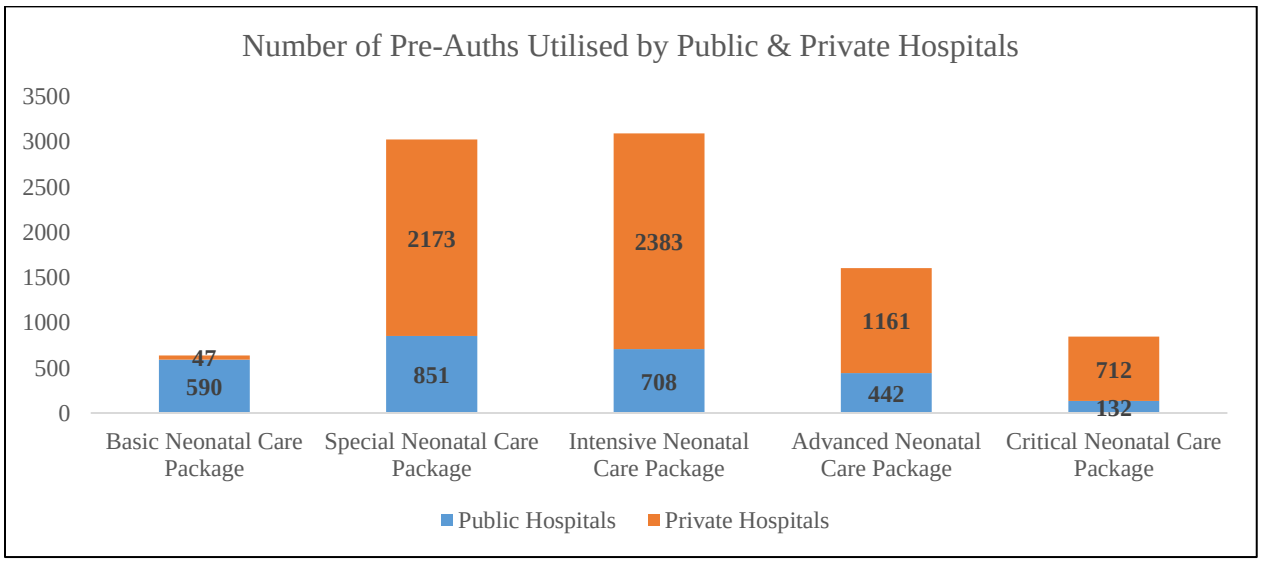



**Figure 5: Public vs Private Utilization of Neo-Natal Packages**

According to data, the proportion of the Special Neonatal Care package was significantly higher in the private hospitals of Chhattisgarh with 48% claims raised, and in Jharkhand 46% of packages were booked under Intensive Neonatal Care. Furthermore, in Haryana, where a majority of neonatal cases were handled by private hospitals, almost 70% of the claims were raised under the Advanced Neonatal Care package. As mentioned earlier, this could be attributed to the poor NMR statistics in these states coupled with the better quality of infrastructure, availability of specialists and better quality of care at private hospitals in these states.

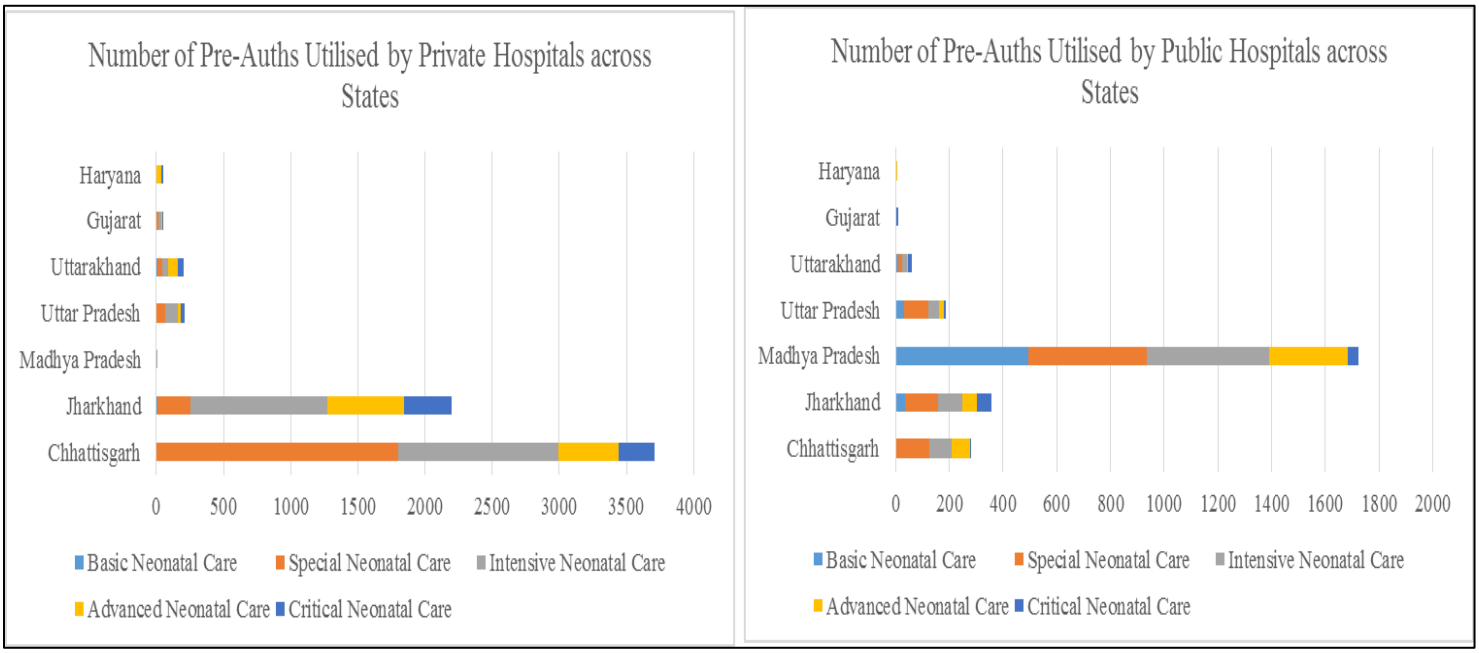



**Figure 6: State Wise Utilization of Neo-natal packages by Public and Private Hospitals**

## Cost of Treatment

Under PM-JAY, treatment packages have fixed daily rates that vary primarily due by the number of days of admission. Data trends indicate the existence of disparities in terms of the pre-authorization amount approved between public and private hospitals as well as between states.

It was observed that the median length of stay was higher in the case of private hospitals as opposed to public especially in case of higher cost packages. For instance, the median length of stay for cases booked under the Advanced Neonatal Care Package was 6 days in the public hospitals as opposed to 9 days in Private hospitals. Similarly, the Median length of stay for the Critical Neonatal Care Package, was 8 days for Public hospital as compared to 12.5 days in case of Private hospitals.

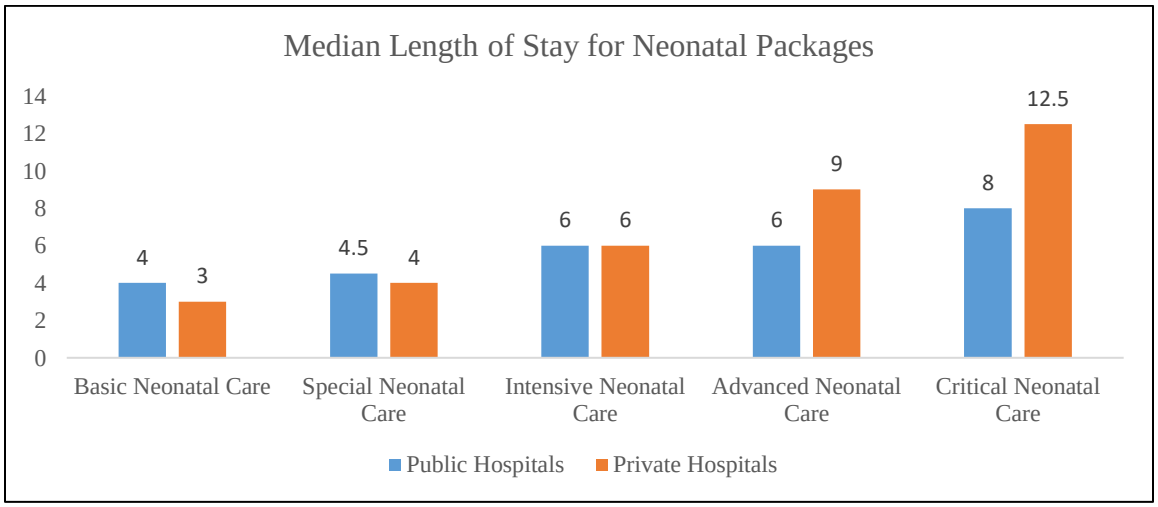



**Figure 7: Median Length of Stay for Neo Natal Packages**

Disparities in the amount approved for the packages was also observed between states. For instance, the average pre-authorization amount approved in the public hospitals of Jharkhand and Meghalaya was almost twice the average amount approved in Chhattisgarh, Madhya Pradesh, and Gujarat. This disparity between states was evident across all packages offered under the scheme.

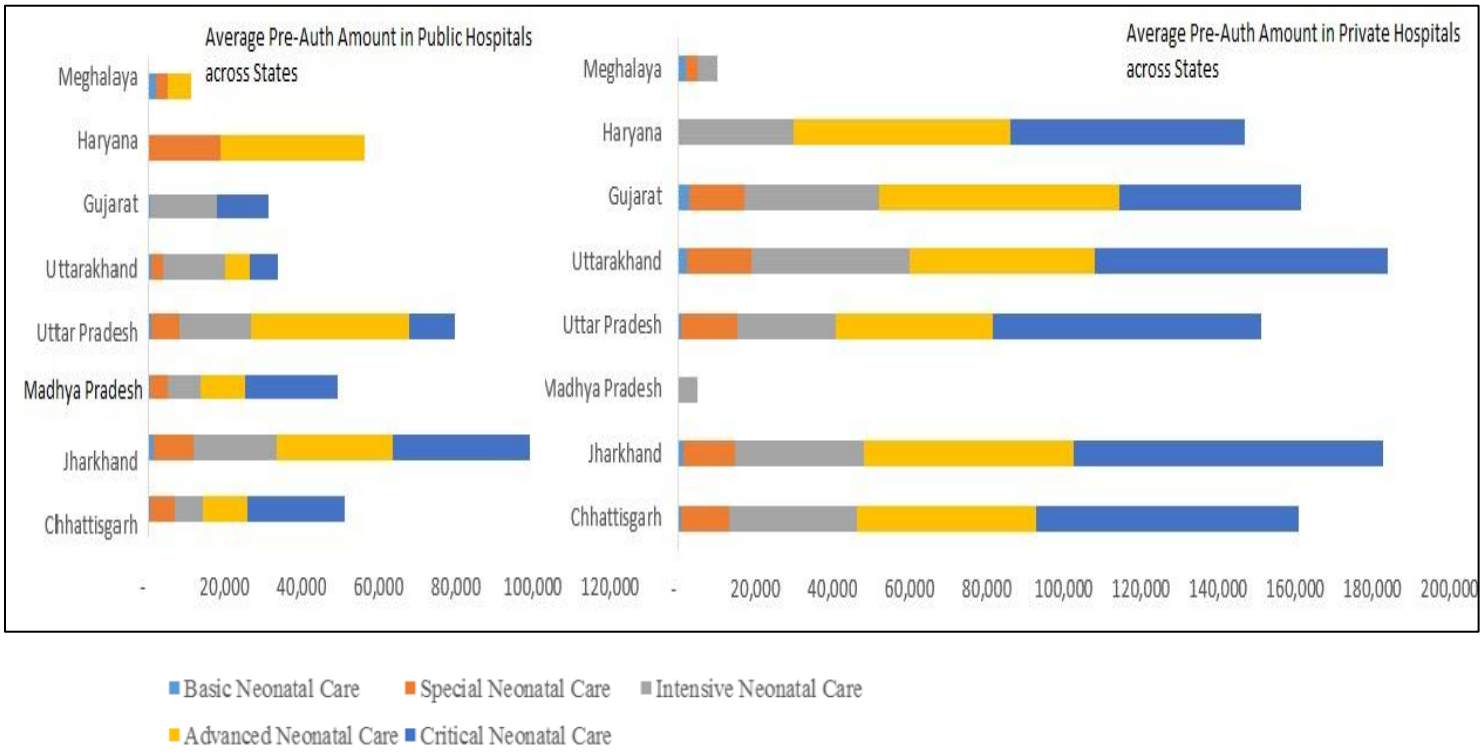



**Figure 8: State wise Differential in Average Preauth Amount across Neo-natal packages**

The public-private spending differential is particularly noticeable in neonatal health care. Even for the preliminary package of Basic Neonatal Care, the total spending in private hospitals across all states was almost double or more of the cost incurred in public hospitals. Likewise, the total spending of the Critical Neonatal Care package was at least three times as expensive in private hospitals than in public hospitals.

In order to validate if this was indicative of any abuse/malpractice that the private sector hospitals might be indulging in, the PM-JAY National Anti-Fraud team conducted medical audits in two of the highest utilization hospitals in Jharkhand.

**Key Observations from Jharkhand Medical Audit**

Claims from Jharkhand constituted the second largest number of neonatal packages with 2,556 claims, and private hospitals constituted 86% of the same. Thus, it became an ideal case study for the present paper, considering the data received from the state. Out of these, the Medical Audits conducted focused on two hospitals in Jharkhand, selected on the basis of the volume of preauthorisations raised under neonatal packages and the corresponding greater utilization of costlier packages in these hospitals.

According to data, both Rani and Balpan Children Hospital constituted nearly 29% of the total pre-authorisations approved. Furthermore, in Rani Hospital, out of the 591 claims for neonatal packages, 91% of the claims were for Advanced Neonatal Care and Critical Neonatal Care. Similarly, in Balpan Children

Hospital, 89% of the 141 neonatal claims were raised for Intensive Neonatal Care and Advanced Neonatal Care.

However, a closer look at the ground reality in the two hospitals revealed some deeper insights into this trend. The medical audits in both Rani and Balpan Children Hospital confirmed the high quality of infrastructure and care. The neo-natologist was very renowned in the area and was available on premise at all times. The NICU ward was well-equipped with round-the-clock availability of paediatric and nursing staff. The high volume of neonatal cases in these hospitals can therefore be attributed to the excellent infrastructural and medical and specialist facilities being provided.

With regards to greater utilization of costlier packages, the medical audit indicated that in both the hospitals there was a lack of Step Down-PICU and General Ward beds in the hospital, leading to greater utilization of the PICU/NICU wards where new-borns could be provided with adequate medical care 24*7 and ensure that they were protected from infections. Perhaps having a step down ICU facility available to prevent unnecessary waste. In general, the high utilization of neonatal care in the hospitals appeared to be a result of superior services being provided to each patient, and no general malpractice was discovered.

## Conclusion and Next Steps:

The preliminary findings of high utilization of neo-natal packages in states with high NMR do seem to indicate that PM-JAY is enabling beneficiaries from remote areas and limited financial resources to access neonatal care at both public and private hospitals especially in states where it is needed most, thereby improving the health of newborns without added burden on their pockets or unnecessary stress about quality care.

Over the past 9 months since the implementation of the scheme, the number of beneficiaries availing neo-natal services has increased across all states and the trend is likely to continue with the steady rise in the number of verified beneficiaries over a period of time. Keeping in mind the growing healthcare needs in India, and the greater utilization of neo-natal packages, it is crucial to analyze the challenges faced during implementation using a systematic and standard approach.

There is also an urgent requirement of on-ground research that could guide future policy and strategy, and exploring the inclusion of community-based ASHA workers in spreading awareness and promoting utilization.

For successful implementation of the PM-JAY, it is crucial to harness the ever-growing potential of the private healthcare sector, as well as significantly enhance the infrastructure and quality of care available at public hospitals to ensure universal coverage for all poor and marginalized people. It is also equally critical to monitor the quality and appropriateness of care and have a clear set of guidelines for private hospitals to prevent waste and abuse.

In summary, PM-JAY has a very critical role to play in achievement of the SDG goal for neo-natal mortality of 12 deaths per 1,000 live births. All efforts must be stepped up to ensure that pregnant women are monitored timely for detection of high-risk cases and adequate ante-natal care is provided both through public and private hospitals empaneled with PM-JAY in convergence with other similar care provided at primary care centers and sub-centers by the National Health Mission.

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## List of Publications so far

1. Working Paper No 1: Early Trends in Utilization of Hysterectomy Packages