



# Second Quarterly Technical Report

## Operational Status of Special Newborn Care Units (SNCUs) in India

**April-June, 2011**

*Prepared by*

**Child Health Division  
Ministry of Health and Family Welfare  
And  
National Child Health Resource Centre  
National Institute of Health & Family Welfare  
Baba Gang Nath Marg, Munirka  
New Delhi - 110067**

# CONTENTS

<b>Executive Summary .....</b>	<b>1-2</b>
<b>Introduction .....</b>	<b>3-4</b>
<b>Methodology.....</b>	<b>5-6</b>
<b>Results .....</b>	<b>7-26</b>
<b>State statistics at a glance.....</b>	<b>27-37</b>
<b>Conclusions .....</b>	<b>38-41</b>
<b>References.....</b>	<b>42</b>

## List of Tables

Table 1	Number of operational SNCUs reported during April-June 2011 quarter .....	8
Table 2	Distribution of SNCUs according to Bed strength .....	13
Table 3	Adequacy of Bed Strength according to Delivery Load .....	16
Table 4	Availability, Adequacy and Training Status of Doctors & Nurses .....	20
Table 5	Service Utilization Indicators .....	22
Table 6	Distribution of SNCUs According to Admission Load .....	26

## List of Figures

Figure 1	Status of Operational SNCUs Reported During April – June 2011.....	9
Figure 2	Comparison of two Quarterly Reports .....	10
Figure 3	Average Mortality Rate in India & States/UTs .....	24
Figure 4	Adequacy of bed strength acc. to delivery load in SNCUs with 4-6 beds .....	35
Figure 5	Adequacy of bed strength acc. to delivery load in SNCUs with 7-11 beds .....	36
Figure 6	Adequacy of Human Resources .....	37

# List of Acronyms

CHC	Community Health Center
FBNC	Facility Based New Born Care
HBNC	Home Based New born Care
HR	Human Resources
IMNCI	Integrated management of Neonatal and Childhood Illnesses
IMR	Infant Mortality rate
LBW	Low Birth weight
NCHRC	National Child Health Resource Center
NE	North Eastern
NICU	Neonatal Intensive Care Unit
NIHFW	National Institute of Health and Family Welfare
NMR	Neonatal Mortality Rate
NNF	National Neonatology Forum
NRHM	National Rural Health Mission
MCH	Maternal Child Health
MDG	Millennium Development Goals
MoHFW	Ministry of Health and Family Welfare
PHC	Primary Health Center
SNCUs	Special New born Care Units
SRS	Sample Registration System

## EXECUTIVE SUMMARY

**Facility Based Newborn Care (FBNC)** programme is one of the key initiatives launched by the Ministry of Health & Family Welfare, Government of India (MoHFW, GoI) under NRHM and RCH II to improve the status of newborn health in the country. Under this programme, Special Newborn Care Units (SNCUs) are being established at district hospitals and some sub-district hospitals to provide special care for sick newborns, that is, to provide all type of neonatal care except for assisted ventilation and major surgeries.

This Technical report presents the results of the quarterly data collected from the States/UTs for the period **April to June 2011**. For the report, submission of written records was considered an essential pre-requisite for SNCU to be considered as an operational unit. After checking data for completeness and accuracy, a set of pre-defined indicators were calculated. Some of its key findings are:

- Written information received from **29 states/UTs** compared to 16 states during the previous quarter
- Though a cumulative total of 319 SNCUs had been reported till June 2011 (including previous quarters), **253 units (40.1%) were confirmed operational** during this quarter out of the 631 proposed by the States/UTs in their PIPs.
- **66 units were not included for data analysis** as they had either not sent written confirmation of their status or were confirmed non-operational. These SNCUs are predominantly situated in the Non High Focus States of Karnataka (18 units), Gujarat (16 units), Kerala (13 units), Maharashtra (8 units) and Delhi (4 units).
- **Nine States/UTs have not reported even a single operational SNCU** till date and these include Uttarakhand, Punjab, and seven High Focus NE States of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- **Six states reported more than 50% operational SNCUs** and these include three from the High Focus States (Madhya Pradesh, Odisha, Rajasthan) and three from the Non High Focus States (Gujarat, Karnataka, Tamil Nadu). Maharashtra reported nearly half (47%) of its units operational.
- The proportion of SNCUs reported operational was **highest in the High Focus Non-NE States** (44.8%) followed by the Non High Focus States/UTs (39.8%), while only 18% were reported from NE States.
- There were on an average **13.5 number of beds per SNCU** across the 15 states with data available.
- Of the 206 units with bed strength available, **more than 60% SNCUs had 12 or more beds** while 19% had 7-11 beds and 16% had 4-6 beds.

- **Nearly 90% SNCUs in the High Focus States had 12 or more beds** but the proportion of such units among the Non High Focus Large States was only 45%.
- States with large proportion of **SNCUs with 4-6 beds** include Maharashtra (50%), Gujarat (36%) and Karnataka (25%).
- There were **30 SNCUs with bed strength less than 12** which had **annual delivery load less than 3000**. These units are predominantly located in the Non High Focus States of Gujarat (11 units), Karnataka (6 units), Maharashtra (6 units) and Haryana (3 units). There is a need to re-examine the functioning of these units, especially those with 4-6 beds since they would be **more appropriately designated as NBSUs** according to the GOI defined norms.
- The **number of beds in 53 SNCUs is less than** that required to meet the **delivery load** of the health facility. It is important to review the functioning of these units and prioritize on **increasing the bed strength and associated resources**, especially in those 18 units which have 7-11 beds. These 7-11 bedded units are predominantly located in the Non High Focus States of Tamil Nadu (7 units), West Bengal (4 units) and Maharashtra (4 units).
- The **average number of doctors per SNCU was 4.2** while the **average number of nurses was 8.8**.
- **Half of the units had adequate number of doctors while only 28% had adequate number of nurses.** The proportion of SNCUs with adequate number of doctors and nurses was lower in the High Focus states compared to the Non High Focus States.
- The proportion of doctors and nurses **trained in FBNC** was **56%** and **54%** respectively, and the proportion was higher in the High Focus States compared to the Non High Focus States.
- The **total number of admissions** during the three month period was **77,336** out of which **8809 deaths** were reported. **The average Mortality Rate was 11.4%.**
- **Mortality rate** ranged between **5% and 15%** in 11 of the 18 states. Eight states had mortality rate less than the national average of 11.4%, while nine states recorded a higher mortality rate.
- The proportion of **High admission load SNCUs were 16%** while more than one-third (35%) were Low admission load and 28% Intermediate load SNCUs. Data was not available for the rest of the units.

## INTRODUCTION

**Facility Based Newborn Care (FBNC)** programme is one of the key initiatives launched by the Ministry of Health & Family Welfare, Government of India (MoHFW, GoI) under NRHM and RCH II to improve the status of newborn health in the country. Under this programme, Newborn Care Corners (NBCCs), Newborn Stabilization Units (NBSUs), and Special Newborn Care Units (SNCUs) are being established at different levels of health care facilities. In this regard, the MoHFW has recently developed a **Facility Based Newborn Care Operational Guideline** to facilitate the states in planning, establishment, operationalisation and monitoring of newborn care (1).

**Special Newborn Care Units (SNCUs)** are being established at any health facility where the delivery load is more than 3000 per year, and this criterion would cover most district hospitals and some of the sub-district hospitals. These units are being developed in the vicinity of the labour room to provide special care for sick newborns, that is, provide all type of neonatal care except for assisted ventilation and major surgeries. A formal system of regular monitoring of SNCUs (and other components of FBNC) in the country has recently been established and relevant information is being collected from the states using an in-house reporting format.

The National Child Health Resource Centre (NCHRC) at the National Institute of Health & Family Welfare (NIHFW) has been supporting the MoHFW in reviewing the status of SNCUs in the country by utilizing the data collected by the CH division. A technical report prepared by the centre based on data received from 16 states for the quarter January-March 2011 reported 42.6% units operational in the country out of the 631 proposed, more than half of the operational SNCUs without adequate number of doctors, and nearly 60% without adequate number of nurses. The document also compared service utilization indicators among different states with special focus on those with more than 50% operational SNCUs and where the number of such units was more than 10 (2).

In an effort to continuously monitor and review the status of SNCUs in the country, this report analyzes the data collected from the states for the quarter, **April to June 2011**. Apart from reviewing progress and comparing indicators with the previous report, efforts were made to review the bed strength in the operational SNCUs, and assess the adequacy of bed strength in these units depending upon delivery load in the health facility.

The specific objectives of this report include:

- to review the progress of operational SNCUs in the country by comparing data with the previous report
- to enlist the number of beds in SNCUs, examine the distribution of units according to bed strength, and review adequacy of bed strength according to delivery load in the health facility
- to assess the availability and adequacy of HR (doctors, nurses), and their training status
- to evaluate utilization of services in these units using standard indicators
- to compare the data quality and standard indicators between the states with nearly 50% operational SNCUs and where the number of such units is more than 10



## METHODOLOGY

The process of data collection and validation has been described in detail in the previous report (2). To describe the process briefly, the data received from the states was checked for completeness and accuracy followed by entry into Excel sheets and double checking for accuracy of data entry. Simple statistical tools were used to calculate pre-defined indicators and results presented as proportions. Since the data was collected on quarterly basis, the results are presented taking the average of three months.

While collating data, it was observed that there was variation in the number and names of operational SNCUs reported by the states as compared to the previous quarter. For example, some of the SNCUs reported as operational during the previous quarter were reported as non-operational during this quarter and vice versa. Since it was not possible to physically verify all these variations, **certain criteria were developed** for this report to improve the data quality and transparency in the data management process. These included:

- 1) **Submission of written report as primary requisite/proof of an SNCU to be considered an operational unit:** Written reports submitted either in the MoHFW prescribed format or the newer FBNC reporting format were both accepted for inclusion. On the other hand, those states/units which had verbally provided the information or had not sent written reports were considered non-operational.
- 2) **Data labeled missing or incomplete in case of failure of states/individual units to respond to reminders within 6 weeks:** States and individual units were reminded via emails and telephone calls to send corrected and completed data; however when there was no response from them within a period of 6 weeks, their data was labeled as missing or incomplete.
- 3) **SNCU with bed strength less than 4 not considered for detailed analysis:** After tabulating the number of SNCUs reported operational, these units were classified according to the number of beds. Those SNCUs with confirmed bed strength of less than 4 were not considered for detailed analysis. In case of variation in the number of beds between the two quarterly reports, the units were contacted directly to get the correct and updated figure.

Information collected in the prescribed format was not sufficient to calculate all the standard indicators as given in the FBNC guideline. This report describes the following indicators:

- a) Proportion of SNCUs reported operational at the end of June 2011 against the total proposed by the States/UTs in their PIPs 2011-2012
- b) Bed Position
  - Average number of beds per SNCU
  - Distribution of SNCUs according to bed strength
  - Adequacy of bed strength depending upon delivery load in the health facility
- c) Human resources
  - Availability of Doctors and nurses
  - Adequacy of HR depending upon bed strength
  - Training status
- d) Service Utilization Indicators
  - Inborn Admission Rate
  - Proportion of admissions which are inborn
  - Referral rate
  - Mortality rate
  - Admission load per bed

It was not possible to calculate all the indicators for each state and each SNCU since the required data was either missing or inadequate despite contacting the States. Wherever this problem arose, it has been highlighted under the relevant section.

While presenting the results/key findings below, effort has been made to

- highlight the differences between the High Focus States and the Non-High Focus States and between the different states wherever it was possible
- document the differences observed in this quarter compared to the previous report
- summarize some of the key indicators from those states which have operationalized nearly 50% of the proposed SNCUs and the number of such operational units is more than 10.

## RESULTS

There was a marked improvement in the number of states/UTs reporting for the April-June 2011 quarter when compared to the previous quarter (Jan-March 2011). Written information was received from **253 units across 29 states** compared to 164 units from 16 states during the previous quarter. These included 17 High Focus States and 12 Non-High Focus States. The **6 states/UTs which had not reported** during this quarter included Chhattisgarh, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry. Out of these, Chhattisgarh had sent reports earlier once while the other five have not reported even once till date.

**Table 1** shows the distribution of operational SNCUs reported during the previous quarters (cumulative total till date) and during this quarter. Though a cumulative total of 319 SNCUs had been reported operational by the states/UTs till June 2011 (including previous quarters), **66 units were either confirmed non-operational or had not sent written reports** for the April-June 2011 quarter as required, and hence were not considered operational for this report as per pre-defined criteria. These SNCUs were predominantly situated in the Non High Focus States/UTs of Karnataka (18 units), Gujarat (16 units), Kerala (13 units), Maharashtra (8 units) and Delhi (4 units).

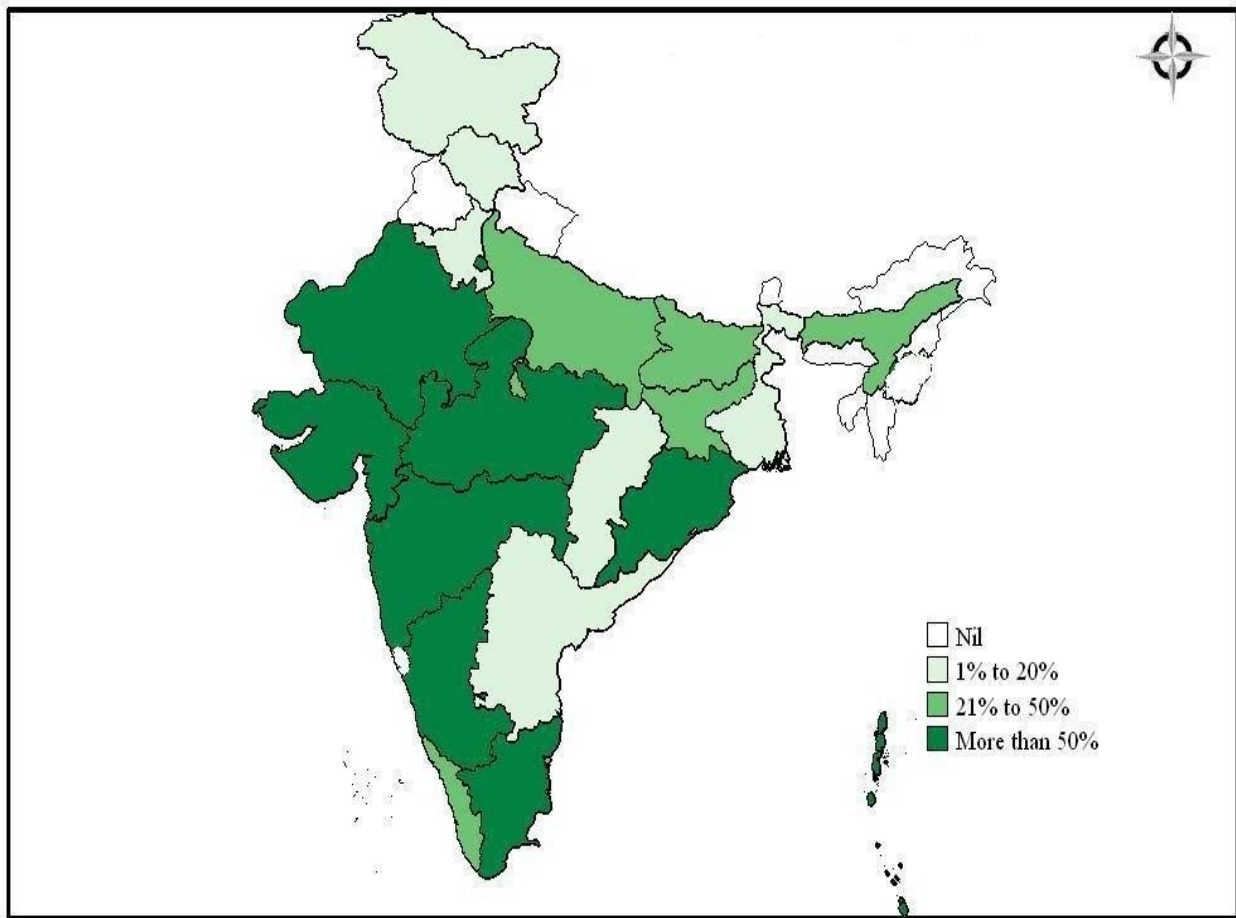
As on June 2011, **253 SNCUs (40.1%)** were reported to be operational out of the **631 units** proposed by the states/UTs (Source: ROP 2011-2012 of State PIPs, NRHM). The proportion of SNCUs reported operational was **highest in the High Focus Non-NE States (44.8%)** followed by the Non High Focus States/UTs (39.8%), while the proportion was much less for the High Focus NE States (18%).

**Table 1 Number of Operational SNCUs reported during April-June 2011 quarter**

States	No. of SNCUs proposed to be Operational by 2011-12	Total number of SNCUs reported till date (including previous quarters)	Number of SNCUs reported for the quarter April-June 2011	% of SNCUs reported for the quarter April-June 2011
<b>High Focus Non NE states</b>				
Jharkhand	7	2	2	28.6
Madhya Pradesh	38	25	25	65.8
Himachal Pradesh	22	2	2	9.1
Jammu & Kashmir	14	4	4	28.6
Odisha	24	13	13	54.2
Rajasthan	36	36	35	97.2
Uttar Pradesh	30	7	7	23.3
Bihar	26	8	6	23.1
Chhattisgarh	9	2	0	22.2
Uttarakhand	4	0	0	0
<b>Total</b>	<b>210</b>	<b>99</b>	<b>94</b>	<b>44.8</b>
<b>High Focus NE states</b>				
Assam	21	7	7	33.3
Arunachal Pradesh	2	0	0	0
Sikkim	2	0	0	0
Meghalaya	4	0	0	0
Nagaland	1	0	0	0
Mizoram	3	0	0	0
Tripura	5	0	0	0
Manipur	1	1	0	0
<b>Total</b>	<b>39</b>	<b>8</b>	<b>7</b>	<b>17.9</b>
<b>Non High Focus States</b>				
Gujarat	49	43	27	62.7
Goa	1	1	1	100
Karnataka	33	42	24	72.7
Haryana	21	6	6	28.6
Tamil Nadu	43	37	36	83.7
West Bengal	40	6	6	15
Maharashtra	57	35	27	47.4
Andhra Pradesh	44	14	14	31.8
Kerala	53	11	3	5.7
Punjab	12	0	0	0
<b>Total</b>	<b>353</b>	<b>195</b>	<b>144</b>	<b>40.8</b>
<b>Union Territories and Small states</b>				
Chandigarh	5	2	2	40
Delhi	14	10	6	42.9
A & N Islands	1	1	0	0
D & N Haveli	1	1	0	0
Lakshadweep	0	0	0	0
Puducherry	7	2	0	0
Daman & Diu	1	1	0	0
<b>Total</b>	<b>29</b>	<b>17</b>	<b>8</b>	<b>27.6</b>
<b>Total (ALL INDIA)</b>	<b>631</b>	<b>319</b>	<b>253</b>	<b>40.1</b>

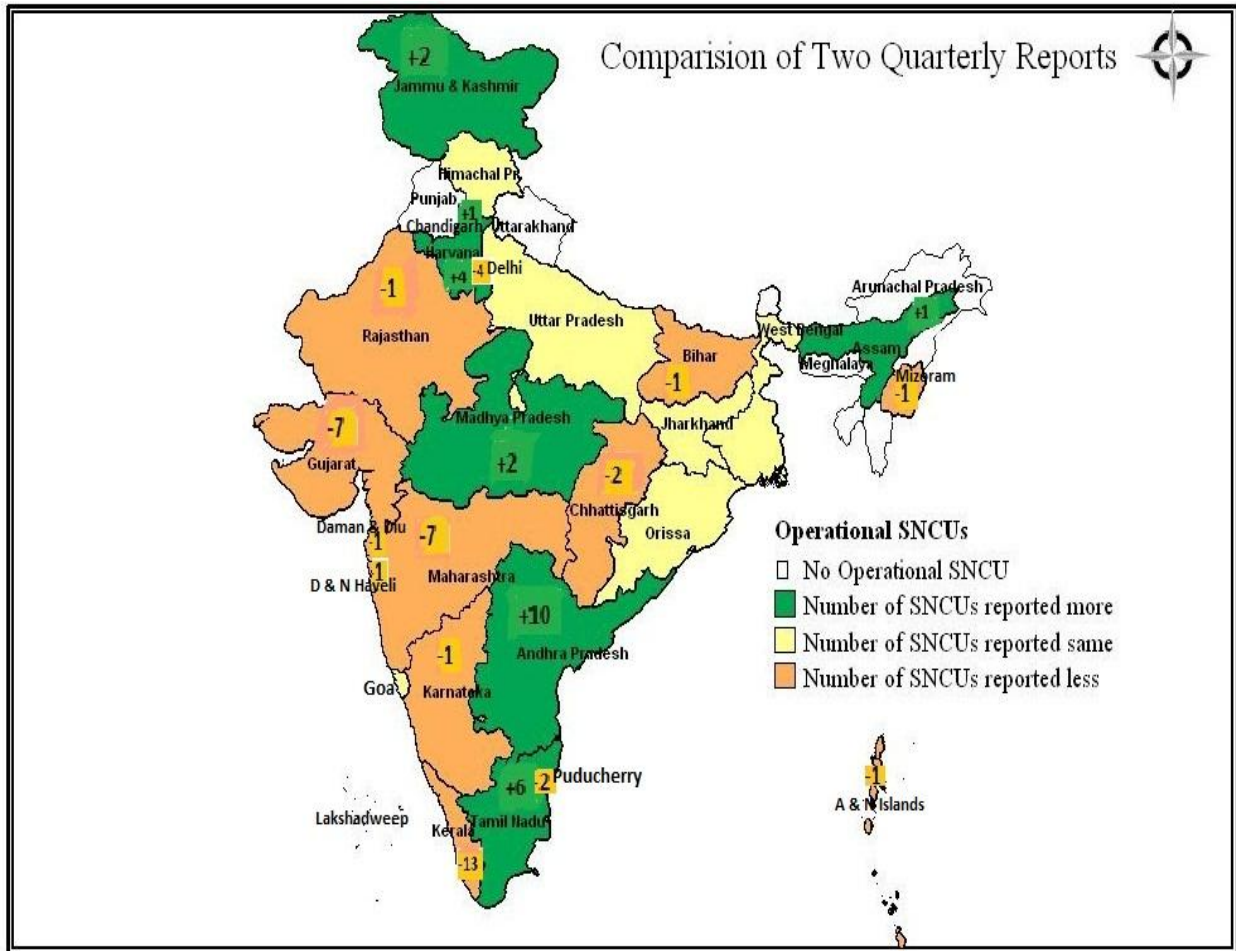
The distribution of States according to the proportion of operational SNCUs reported during this quarter is shown in *Figure 1*. **Six states reported more than 50% operational SNCUs** and these include three from the High Focus States (Madhya Pradesh, Odisha, Rajasthan) and three from the Non High Focus States (Gujarat, Karnataka, Tamil Nadu). Maharashtra reported nearly half (47%) of its units operational. There are **nine states/UTs which do not have a single operational SNCU** and these include one state each from the High Focus Non-NE States (Uttarakhand) and Non High Focus States (Punjab). The other seven states are from the High Focus NE States – Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

**Figure 1: Status of Operational SNCUs reported during April – June 2011**



As **variations** were observed in the reported number and proportion of operational SNCUs from each region and individual states, the two quarterly reports (Jan-March 2011 and April-June 2011) were compared to identify these differences (*Figure 2*).

Figure 2: Comparison of two Quarterly Reports



For the **High Focus States (both Non-NE and NE states)**, minor variations were observed in reporting between the two quarterly reports but the number and proportion of operational SNCUs remained the same. While both Madhya Pradesh and Jammu Kashmir reported 2 units more, Chhattisgarh failed to report 2 SNCUs and Rajasthan and Bihar 1 unit each. Among the NE States, Assam reported 1 unit more while 1 SNCU in Manipur was confirmed non-operational.

On the other hand, **major differences were observed in the reporting from the Non-High Focus States** with both the Large and Small Non-High Focus States/UTs reporting 8 units less compared to the previous quarter. Among the Non-High Focus Large States, **Gujarat and Maharashtra each reported 7 SNCUs less** while **Kerala reported only 3 units** out of its functional 16 units. States which reported more

number of operational SNCUs during this quarter included Andhra Pradesh (10 units), Tamil Nadu (6 units) and Haryana (4 units). Among the Small States/UTs, Chandigarh reported 1 additional SNCU while 4 units in Delhi were confirmed non-operational. **No report was received from Puducherry (2 units), Andaman & Nicobar Islands (1 unit), Dadra & Nagar Haveli (1 unit), and Daman & Diu (1 unit).**

## **BED STRENGTH AND DELIVERY LOAD**

According to the FBNC guideline, any facility with delivery load more than 3000 per year should have an SNCU with a minimum number of 12 beds, while those facilities with less delivery load should have a NBSU with 4-6 beds. However if the delivery load is more than 3000 per year in a facility housing an SNCU, then 4 beds should be added for every 1000 additional deliveries. It has also been suggested that if the number of beds is below 12, then the SNCU intervention does not remain cost-effective (3).

### **Number of beds**

Data on the number of beds was available for **81% of SNCUs (206/253)** from the 15 states (*Table 2*). Apart from nine states which did not report a single operational SNCU, three states from the High Focus region (Himachal Pradesh, Odisha, Uttar Pradesh) and two from the Non High Focus region (Andhra Pradesh, Chandigarh) did not provide the relevant information. The **average number of beds per SNCU** across the 15 states was **13.4** which were less compared to the previous quarter (14.9 beds per SNCU). This decrease was contributed mainly by new data from Maharashtra (7.2 beds per SNCU) and revised figures from Karnataka (from 16.1 to 14.4) and Bihar (from 9.3 to 6.5). The average number of beds per SNCU was **similar in the Non-NE and the NE High Focus States** (14.7 and 15.3 beds per SNCU respectively), but it was 12.8 in the Non High Focus States.

### **Bed strength of SNCUs**

SNCUs were further classified depending upon their bed strength to examine how many of these units had the appropriate number of beds, that is, 12 or more beds per unit. It was observed that **more than 60% units** with relevant data available had **12 or more beds** while **19% of units had 7-11 beds** and **16 % had 4-6 beds** (*Table 2*). Out of the 129 SNCUs with bed strength 12 or more, **15.5 % units had reported 20 or more beds per unit**. There were **7 SNCUs (3.4%) with number of beds less than 4 and these were excluded** from further analysis as per the eligibility criteria specified under Methodology. All of them

were from the Non High Focus States (4 from Maharashtra, 2 from Karnataka and the only unit from Goa). Thus, further analysis was carried out utilizing data from 19 States and after excluding data from Goa.

Great variation was observed in the bed strength of SNCUs between the High Focus and the Non High Focus States. **Majority of SNCUs (88%) from the High Focus States had bed strength of 12 or more**, while 5.6% units had 7-11 beds and 6% had 4-6 beds. While all the SNCUs reported from Assam, Jharkhand, Madhya Pradesh and Rajasthan had 12 or more beds, the 4 units reported from Jammu & Kashmir had 7-11 beds and **5 out of the 6 units reported from Bihar had bed strength of 4-6**.

On the other hand, **only 45% of SNCUs in the Non High Focus States** were found to have **bed strength of 12 or more**, while 27% had 7-11 beds and **23% had 4-6 beds**. Among the Non High Focus States, 80% units in Tamil Nadu, two-third units in Delhi and more than half units in Karnataka reported bed strength of 12 or more, while two-third of SNCUs from Haryana and West Bengal had 7-11 beds. **States with higher proportion of 4-6 bedded SNCUs include Maharashtra (50%), Gujarat (36%) and Karnataka (25%)**.



**Table 2: Distribution of SNCUs according to Bed Strength**

States with Number of Reported SNCUs	Average number of beds per SNCU	Number (%) of SNCUs with Bed Strength			
		12 and Above	7-11	4 to 6	Less than 4
<b>High Focus Non NE states</b>					
Jharkhand (2)	14 (28/2)	2 (100)	0	0	0
MP (25)	20 (500/25)	25 (100)	0	0	0
Himachal Pradesh (2)*	NA	NA	NA	NA	NA
J&K (4)	8.5 (34/4)	0	4 (100)	0	0
Orissa (13)*	NA	NA	0	NA	NA
RJ (35)	13.1 (459/35)	35 (100)	0	0	0
UP (7)	NA	NA	NA	NA	NA
Bihar (6)	6.5 (39/6)	1(16.7)	0	5(83.3)	0
Total (94)	<b>14.7 (1060/72)</b>	<b>63 (87.5)</b>	<b>4 (5.6)</b>	<b>5 (6.9)</b>	<b>0</b>
<b>High Focus NE states</b>					
Assam (7)	15.3 (107/7)	7 (100)	0	0	0
Total (7)	<b>15.3 (107/7)</b>	<b>7 (100)</b>	0	0	0
<b>Non High Focus States</b>					
Gujarat (27)	11.9 (279/25)	10 (40)	4 (16)	9 (36)	2 (8)
Goa (1)	3 (3/1)	0		0	1(100)
Karnataka (24)*	14.4 (288/20)*	11 (55)	4 (20)	5 (25)	0
Haryana (6)	10.3 (62/6)	2 (33.3)	4 (66.7)	0	0
Tamil Nadu (36)	16.6 (598/36)	29 (80.6)	7 (19.4)	0	0
West Bengal (6)	11.5 (69/6)	2 (33.3)	4 (66.7)	0	0
Maharashtra (27)*	7.2 (188/26)	1 (3.8)	8 (30.8)	13 (50)	4 (15.4)
Andhra Pradesh (14)*	NA	NA		NA	NA
Kerala (3)	8.3 (25/3)	0	2 (66.7)	1 (33.3)	NA
Total (144)	<b>12.3 (1512/123)</b>	<b>55 (44.7)</b>	<b>33 (26.8)</b>	<b>28 (22.8)</b>	<b>7 (5.7)</b>
<b>Union Territories and Small states</b>					
Chandigarh (2)*	NA	NA		NA	NA
Delhi (6)	19.2 (115/6)	4 (66.7)	2 (33.3)	0	0
Total (8)	<b>19.2 (115/6)</b>	<b>4 (66.7)</b>	<b>2 (33.3)</b>	<b>0</b>	<b>0</b>
<b>ALL INDIA TOTAL (253)</b>	<b>13.4 (2789/208)</b>	<b>129 (62)</b>	<b>39 (18.7)</b>	<b>33 (15.9)</b>	<b>7 (3.4)</b>

\* Data not available on number of beds from Himachal Pradesh (2 units), Odisha (all 13 units), Uttar Pradesh (all 7 units), Maharashtra (1 unit), Gujarat (2 units), Karnataka (4 units), Andhra Pradesh (all 14 units), Chandigarh (all 2 units).

### **Adequacy of bed strength according to delivery load**

The number of beds in an SNCU depends upon the number of deliveries taking place in the facility. However data analysis revealed varying number of beds being reported by the different states. It was therefore decided to review the bed strength in these units depending upon the facility's delivery load, and examine if these units have adequate bed strength as per the GOI recommended norms.

A 12 bedded SNCU is recommended for any health facility with delivery load more than 3000 per year or 1 bed for more than 62.5 deliveries per quarter. Assuming a seasonal variation of  $\pm 10\%$ , **a range of 55-69 deliveries per quarter was considered an adequate delivery load for 1 bed in an SNCU**. Since figures for the number of deliveries were unavailable, the number of live births was taken as proxy indicator for this report and each SNCU was classified as having:

- ***Less than adequate bed strength:*** number of live births more than 69 per quarter per bed (that is, bed strength in SNCU less than that required to meet delivery load in the facility)
- ***Adequate bed strength:*** number of live births in facility between 55-69 per quarter per bed (that is, bed strength in SNCU adequate to meet delivery load in the facility)
- ***More than adequate bed strength:*** number of live births less than 55 per quarter per bed (that is, bed strength in SNCU more than that required to meet delivery load in the facility)

For example, a 10-bedded SNCU was categorized as having less than adequate bed strength if the total number of deliveries (or live births for this report) taking place in the facility was more than 690 in the reporting quarter. Similarly if the number of deliveries taking place in the facility was less than 550 per quarter, this 10-bedded SNCU would have been classified as having more than adequate bed strength.

Relevant information to calculate the delivery load was available for **66%** (162/246) of the reported SNCUs. These include 31 units with 4-6 beds, 37 units with 7-11 beds, and 94 units with 12 or more number of beds. States which did not report the relevant information include 4 High Focus States (Himachal Pradesh, Odisha, Rajasthan and Uttar Pradesh) and 3 Non High Focus States (Andhra Pradesh, Kerala and Chandigarh).

*Table 3* gives the distribution of SNCUs based on the delivery load separately for those with bed strength 4-6, 7-11 and 12 or more. Of the total SNCUs with relevant data available, **60%** (98/162) units had either **adequate or less than adequate number of beds** according to the delivery load, while in the remaining

**40% the delivery load was less** compared to the bed strength. There was **not much difference** between the High Focus and the Non High Focus States with almost similar proportion of SNCUs having adequate or less than adequate bed strength (64% in High Focus States vs. 60% in Non High Focus States).

There were 31 SNCUs with 4-6 beds and relevant delivery data available and 11 of these (35%) had either adequate or more than adequate number of beds according to the delivery load. Similarly of the 37 SNCUs with 7-11 beds, 14 units (38%) had more than adequate bed strength and 5 units (13.5%) had adequate bed strength. This suggests that the **annual delivery load** in health facilities housing these **30 SNCUs with bed strength less than 12** (11 with 4-6 beds and 19 with 7-11 beds) is **less than 3000**. Hence the states need to re-examine the functioning of these newborn health units, **especially those with 4-6 beds since they would be more appropriately designated as NBSUs** according to the GOI defined norms. These 30 units are predominantly located in the **Non High Focus States** of Gujarat (11 units), Karnataka (6 units), Maharashtra (6 units) and Haryana (3 units).

On the other hand, nearly half of the 7-11 bedded SNCUs and 37% of 12 or more bedded SNCUs had less number of beds according to the delivery load. It indicates that the **number of beds in these 53 SNCUs** (18 with 7-11 beds and 35 with 12 or more beds) is **less than that required** to meet the delivery load of the health facility. It is important for the States to review the functioning of these units and **prioritize on increasing the bed strength** and associated resources, **especially in those 18 units which have 7-11 beds**. The 7-11 bedded units are predominantly located in the **Non High Focus States** of Tamil Nadu (7 units), West Bengal (4 units) and Maharashtra (4 units).

**Table 3: Adequacy of Bed Strength according to Delivery Load**

Number of Reported SNCUs	Bed Strength	Number (%) of SNCUs	Number (%) of SNCUs with		
			Bed strength more than adequate	Bed strength adequate	Bed strength less than adequate
<b>High Focus Non NE states</b>					
Jharkhand (2)	4-6	0	0	0	0
	7-11	0	0	0	0
	12 or More	2 (100)	2 (100)	0	0
Madhya Pradesh (25)	4-6	0	0	0	0
	7-11	0	0	0	0
	12 or More	25 (100)	10 (40)	6 (24)	9 (36)
Himachal Pradesh (2) <sup>β</sup>	NA	NA	NA	NA	NA
Jammu & Kashmir (4)	4-6	0	0	0	0
	7-11	4 (100)	3 (75)	0	1 (25)
	12 or More	0	0	0	0
Odisha (13)**	NA	NA	NA	NA	NA
Rajasthan (35)*	NA	NA	NA	NA	NA
Uttar Pradesh (7)**	NA	NA	NA	NA	NA
Bihar (6)	4-6	5 (83.3)	0	0	5 (100)
	7-11	0	0	0	0
	12 or More	1 (16.7)	0	0	1 (100)
Total	4-6	5 (13.5)	0	0	5 (100)
	7-11	4 (10.8)	3 (75)	0	1 (25)
	12 or More	28 (75.7)	12 (42.8)	6 (21.4)	10 (35.7)
<b>High Focus NE states</b>					
Assam (7)	4-6	0	0	0	0
	7-11	0	0	0	0
	12 or More	7 (100)	1(14.3)	2 (28.6)	4 (57.1)
Total	4-6	0	0	0	0
	7-11	0	0	0	0
	12 or More	7 (100)	1(14.3)	2 (28.6)	4 (57.1)
<b>Non High Focus States</b>					
Gujarat (25)	4-6	9 (39.1)	6 (66.7)	1 (11.1)	2 (22.2)
	7-11	4 (17.4)	3 (75)	1 (25)	0
	12 or More	10 (43.5)	6 (60)	1 (10)	3 (30)
Karnataka (24)	4-6	5 (25)	0	2 (40)	3 (60)
	7-11	4 (20)	3 (75)	1(25)	0
	12 or More	11 (55)	5 (45.5)	0	6 (54.5)
Haryana (6)	4-6	0	0	0	0
	7-11	4 (66.7)	2 (50)	1 (25)	1 (25)
	12 or More	2 (33.3)	1 (50)	0	1 (50)
Tamil Nadu (36)	4-6	0	0	0	0
	7-11	7 (19.4)	0	0	7 (100)
	12 or More	29 (80.6)	16 (55.2)	6 (20.7)	7 (24.1)
West Bengal (6)	4-6	0	0	0	0
	7-11	4 (66.7)	0	0	4 (100)
	12 or More	2 (33.3)	0	0	2 (100)
Maharashtra (23) <sup>*β</sup>	4-6	12 (57.1)	0	2 (16.7)	10 (83.3)
	7-11	8 (38.1)	2	2	4 ( )
	12 or More	1 (4.8)	0	0	1 (100)

Andhra Pradesh (14) <sup>β</sup>	NA	NA	NA	NA	NA
Kerala (3) <sup>*</sup>	NA	NA	NA	NA	NA
Total	4-6	26 (31.7)	6 (23.1)	5 (19.2)	15 (57.7)
	7-11	31 (37.8)	10 (32.5)	5 (16.1)	16 (51.6)
	12 or More	55 (67.1)	28 (51)	7 (12.7)	20 (36.3)
<b>Union Territories and Small states</b>					
Chandigarh (2) <sup>β</sup>	NA	NA	NA	NA	NA
Delhi (6)	4-6	0	0	0	0
	7-11	2 (33.3)	1 (50)	0	1(50)
	12 or More	4(66.7)	3 (75)	0	1(25)
Total	4-6	0	0	0	0
	7-11	2 (33.3)	1 (50)	0	1(50)
	12 or More	4(66.7)	3 (75)	0	1(25)
<b>Total (All India) 246</b>	4-6	<b>31 (19.1)</b>	<b>6 (19.4)</b>	<b>5 (16.1)</b>	<b>20 (64.5)</b>
	7-11	<b>37 (22.8)</b>	<b>14 (37.8)</b>	<b>5 (13.5)</b>	<b>18 (48.7)</b>
	12 or More	<b>94 (58.1)</b>	<b>44 (46.8)</b>	<b>15 (16)</b>	<b>35 (37.2)</b>

\* Missing data on Live Births    \*\* Missing data on Live Births & Number of Beds    β Missing data on Number of beds

## HUMAN RESOURCES

### Number of Doctors and Nurses

Data on the number of Doctors was available from 78% of SNCUs (193/246) while that on the number of nurses was available from 80% of the units (197/246). This data was received from 15 states with the exception of Himachal Pradesh, Maharashtra, Andhra Pradesh and Chandigarh. Across these states, the **average number of doctors per SNCU was 4.2** while the **average number of nurses per SNCU was 8.8** (Table 4). It was observed that the **average number of doctors** per SNCU in the High Focus States (3.3 for both NE and Non NE States combined) was **lower** than that of the Non High Focus States (5.1 for both Large and Small States combined), while the average number of nurses per SNCU in the two groups of states was **similar** (8.8 and 8.8 respectively). The results were similar to those seen in the previous quarter with some improvement in the availability of doctors reported from few states.

### Adequacy of HR

As in the previous report, adequacy of HR in each SNCU was calculated using **the ratio 0.25 doctors per bed and 0.66 nurses per bed** (considering 3 doctors and 8 nurses as the minimum HR required for operating a 12 bedded SNCU). Information to calculate adequacy of doctors was available from 69% units (170/246) while 71% units provided data for adequacy of nurses. Six states failed to provide relevant data for this indicator – 3 from the High Focus States (Himachal Pradesh, Odisha, Uttar Pradesh) and 3 from the Non High Focus States (Andhra Pradesh, Chandigarh, Maharashtra).

Analysis showed **50%** of the operational units with **adequate number of doctors** while the proportion of SNCUs with **adequate number of nurses was only 27.6%** (Table 4). The proportion of SNCUs with adequate number of doctors and nurses **was lower in the High Focus States** compared to the Non High Focus States, a trend similar to that reported in the previous quarter. While the proportion of units with adequate number of doctors was **2.5 times lower** in the High Focus States compared to the Non High Focus States (27% vs. 69%), it was more than **3 times lower** for the adequate number of nurses (13% vs. 40%).

### Training status

Results for the training status was available for 76% of doctors (614/810) and 70% of nurses (1206/1733). Ten states had not provided relevant data and these included 5 High Focus States

(Himachal Pradesh, Jammu Kashmir, Madhya Pradesh, Odisha, Uttar Pradesh) and 5 Non High Focus States (Andhra Pradesh, Chandigarh, Delhi, Kerala, Maharashtra).

The proportion of doctors and nurses working in the SNCUs who had undergone FBNC training was reported to be **56.5% and 54.4%** respectively (*Table 4*). Compared to the previous quarter, proportion of trained personnel was **observed to have decreased** and this was contributed chiefly by the non-availability of data from Madhya Pradesh (more than 90% doctors and nurses trained reported in previous quarter) and revised figures from Karnataka (doctors trained 6% compared to 40% in previous quarter, nurses trained 13% compared to 66% in previous quarter). **The proportions of trained personnel were higher for the High Focus States** compared to the Non High Focus States – 60% vs. 55% for the doctors training, and 75% vs. 42% for the nurses. This trend was similar to that observed in the previous quarter although the percentage difference between the two regions for doctors training had decreased (19% in previous quarter vs. 15% in this quarter) while that for nurses training had increased (20% in previous quarter vs. 33% in this quarter).

**Table 4: Availability, Adequacy and Training Status of Doctors & Nurses**

Number of SNCUs with relevant data available	HR Status		% of SNCUs with		Training Status	
	Avg. number of Doctors per SNCU	Avg. number of Nurses per SNCU	Adequate number of Doctors	Adequate number of Nurses	% of Doctors FBNC Trained	% of Nurses FBNC Trained
<b>High Focus Non NE states</b>						
Jharkhand (2)	3 (6/2)	14.5 (29/2)	50 (1/2)	50 (1/2)	100 (6/6)	100 (29/29)
MP (25)	3.7 (93/25)	9.9 (247/25)	0 (0/25)	0 (0/25)	NA	NA
Himachal Pradesh (2)	NA	NA	NA	NA	NA	NA
*J&K (4)	1.7 (5/3)*	7.8 (31/4)	25 (1/4)	25 (1/4)	NA	NA
Odisha (13)	2.8 (36/13)	9.2 (119/13)	NA	NA	NA	NA
*RJ (35)	2.5 (83/33)*	7.2 (252/35)	36.4 (12/33) <sup>β</sup>	0 (0/35)	72.3 (60/83)	92.5 (233/252)
UP (7)	2.4 (17/7)	4.9 (34/7)	NA	NA	NA	NA
Bihar (6)	8.2 (49/6)	14.5 (87/6)	66.7 (4/6)	66.7 (4/6)	10.2 (5/49)	20.7 (18/87)
<b>Total ( 94)</b>	<b>3.2 (289/89)</b>	<b>8.7 (799/92)</b>	<b>25.7 (18/70)</b>	<b>8.3 (6/72)</b>	<b>51.4 (71/138)</b>	<b>76.1 (280 /368)</b>
<b>High Focus NE states</b>						
Assam (7)	4.1 (29/7)	10.7 (75/7)	42.9 (3/7)	57.1 (4/7)	100 (29/29)	70.7 (53/75)
<b>Total (7)</b>	<b>4.1 (29/7)</b>	<b>10.7 (75/7)</b>	<b>42.9 (3/7)</b>	<b>57.1 (4/7)</b>	<b>100 (29/29)</b>	<b>70.7 (53/75)</b>
<b>Non High Focus States</b>						
*Gujarat (25)	6.6 (131/20)*	11.2 (235/21) *	77.8 (14/18) <sup>β</sup>	55 (11/20) <sup>β</sup>	2.3 (3/131)	5.5 (13/235)
*Karnataka (24)	2.5 (56/22)*	9.9 (207/21) *	50 (10/20) <sup>β</sup>	60 (12/20) <sup>β</sup>	5.9 (3/51) <sup>π</sup>	12.8 (24/188) <sup>π</sup>
Haryana (6)	3.8 (23/6)	7.7 (46/6)	83.3(5/6)	66.7 (4/6)	4.3 (1/23)	0 (0/46)
Tamil Nadu (36)	6.1 (218/36)	6.0 (217/36)	71.4 (25/35)	2.9 (1/35)	100 (218/218)	100 (217/217)
West Bengal (6)	4 (24/6)	12.8 (77/6)	100 (6/6)	100 (6/6)	91.7 (22/24)	89.6 (69/77)
*Maharashtra (23)	NA	NA	NA	NA	NA	NA
<sup>β</sup> Andhra Pradesh (14)	NA	NA	NA	NA	NA	NA
Kerala (3)	3.7 (11/3)	9.3 (28/3)	66.7 (2/3) <sup>β</sup>	66.7 (2/3) <sup>β</sup>	NA	NA
<b>Total (137)</b>	<b>5 (463/93)</b>	<b>8.7 (810/93)</b>	<b>70.5 (62/88)</b>	<b>40 (36/90)</b>	<b>55.3 (247/447)</b>	<b>42.3 (323/763)</b>
<b>Union Territories and Small states</b>						
Chandigarh (2)	Na	NA	NA	NA	NA	NA
*Delhi (6)	7.3 (29/4)*	12.3 (49/4) *	40 (2/5) <sup>β</sup>	40 (2/5) <sup>β</sup>	NA	NA
<b>Total</b>	<b>7.3 (29/4)</b>	<b>12.3 (49/4)</b>	<b>40 (2/5)</b>	<b>40 (2/5)</b>		
<b>Total (All India) 246</b>	<b>4.2 (810/193)</b>	<b>8.8(1733/196)</b>	<b>50 (85/170)</b>	<b>27.6 (48/174)</b>	<b>56.5 (347/614)</b>	<b>54.4 (656/1206)</b>

\* Incomplete Information on the number of Doctors/ Nurses

<sup>β</sup> Incomplete information on the number of Beds and / or Doctors/ Nurse

<sup>π</sup> Incomplete information on the training status of the available Doctors/ Nurses in FBNC



## SERVICE UTILIZATION INDICATORS

Relevant information was available to calculate selected indicators only. **Kerala** was the only state which had **not sent the required information** to calculate the service utilization indicators. From the remaining 18 states, data was received from 241 SNCUs (95%) but it was inadequate and incomplete to calculate all the indicators for all the units. While Rajasthan, Uttar Pradesh and Odisha did not provide data on Live Births, Jammu & Kashmir, Rajasthan, Assam, Gujarat and Uttar Pradesh failed to send complete information on Admissions. Incomplete data on Referrals was sent from Rajasthan and Karnataka, while incomplete data on Mortality was received from Rajasthan & Maharashtra.

Data on number of admissions and death was available for 216 SNCUs. **There were a total of 77,336 admissions in these units during the three month period out of which 8809 deaths were reported. The average Mortality Rate was 11.4%.**

### Inborn Admission rate

The required data was received from 15 States, and in 9 of these the rate **ranged from 10% to 30%** (*Table 5*). The average inborn admission rate was generally **lower in the High Focus States** compared to the Non High focus States with 6 High Focus States (out of 7 with data available) and 3 Non High Focus States (out of 8 with data available) reporting rate between 10 and 30%. The remaining High Focus State of Himachal Pradesh reported inborn admission rate of less than 10%. Among the Non High Focus States, 3 states reported rate more than 30% (Karnataka, Tamil Nadu, Delhi) while 2 states reported rate less than 10% (West Bengal, Chandigarh). Within each state, **great variation** was observed for the results of individual SNCUs. The average inborn admission rate ranged from 0.4-100% in Karnataka, 6.6 to 100% in Gujarat, 11.3 to 100 % in Tamil Nadu and 11.2-100% in Delhi. These results and variations were similar to that observed during the previous quarter.

### Proportion of Admissions which are Inborn

It is the proportion of inborn admissions out of the total admissions in the unit and the relevant data was received from 17 states with the exception of Uttar Pradesh and Kerala. There was **not much variation** for this indicator between the High Focus and Non High Focus states with **fifteen (15) states reporting values between 60-80%** (*Table 5*). The highest value observed for this indicator was 86% in Delhi and Jammu Kashmir, while the lowest was 14% in Chandigarh. The range observed in this report is quite similar to that observed in the previous quarter.

**Table 5: Service Utilization Indicators**

Number of reported SNCUs	Average Inborn Admission Rate (Range)	% of admissions which are Inborn (Range)	% of Referrals	Mortality Rate (%)
<b>High Focus Non NE States</b>				
Jharkhand (2)	28 (6.5 -49.3)	79.3 (58.5 -100)	0	13.9
MP (25)	19.0 (4.5-27.0)	61.2 (40.1-85.5)	6.9	11.9
Himachal Pradesh (2)	8.5 (5.2-11.8)	70.1 (52.5-87.7)	3.2	14.5
Jammu & Kashmir (4)	18.9 (1.6-39.0)*	85.6 (60.0-100) <sup>£</sup>	4.3 <sup>π</sup>	3.3**
Odisha(13)	NA	62.8 (36.3 – 97.8)	10.2	12.4
Rajasthan (35)	NA	62.6 (24.9-100)	7.0	9.1
Uttar Pradesh (7)	NA	NA	7.5	11.2
Bihar (6)	19.4 (4.6-62.0)	80.6 (45.6-98.3)	5.8	11.8
<b>High Focus NE States</b>				
Assam (7)	18.4 (11.2-29.8)	79.4 (70.6 – 99.8)	5.4	11.3
<b>Non High Focus States</b>				
Gujarat (25)	20.2 (6.5-100)	64.7 (16.1-100)	25.0	17.9
Karnataka (23)	34.0 (0.4-100)	77.3 (14.5-100)	8.3 <sup>π</sup>	10.6**
Haryana (6)	15.8 (6.5-34.7)	60.8 (22.8-83.0)	10.4	5.5
Tamil Nadu (36)	30.5 (11.3-100)	69.3 (51.0-94.3)	30.7	10.5
West Bengal (6)	3.1 (1.2-6.1)*	45.1(28.0-54.4) <sup>£</sup>	6.8	15.8
Maharashtra (23)	16.6 (5.2-41.5)*	80.2 (56.1-100) <sup>£</sup>	14.9 <sup>π</sup>	17.2**
Andhra Pradesh (14)	16.4(10.2-27.5)*	60.3 (3.8-92.7) <sup>£</sup>	NA	17.9**
Kerala (3)	NA	NA	NA	NA
<b>Union Territories and Small States</b>				
Chandigarh (2)	5.8 (0.1-11.5)	13.7(0.5-26.9)	34.0	2
Delhi (6)	37.2 (11.2-100)	86.2(74.7-94.1)	1.0	4.6

\* Missing data from J&K (1unit), Karnataka (4 units), West Bengal (1unit), Maharashtra (4units) and Andhra Pradesh (5 units).

£ Missing data from J&K (1 unit), West Bengal (1 unit), Maharashtra (3 units) and Andhra Pradesh (5 units).

π Missing data from J&K (3 units), West Bengal (1 unit) and Maharashtra (4 units).

\*\*Missing data from J&K (3 units), Karnataka (3 units), West Bengal (1unit), Maharashtra (2units) and Andhra Pradesh (3 units)

## Referral Rate

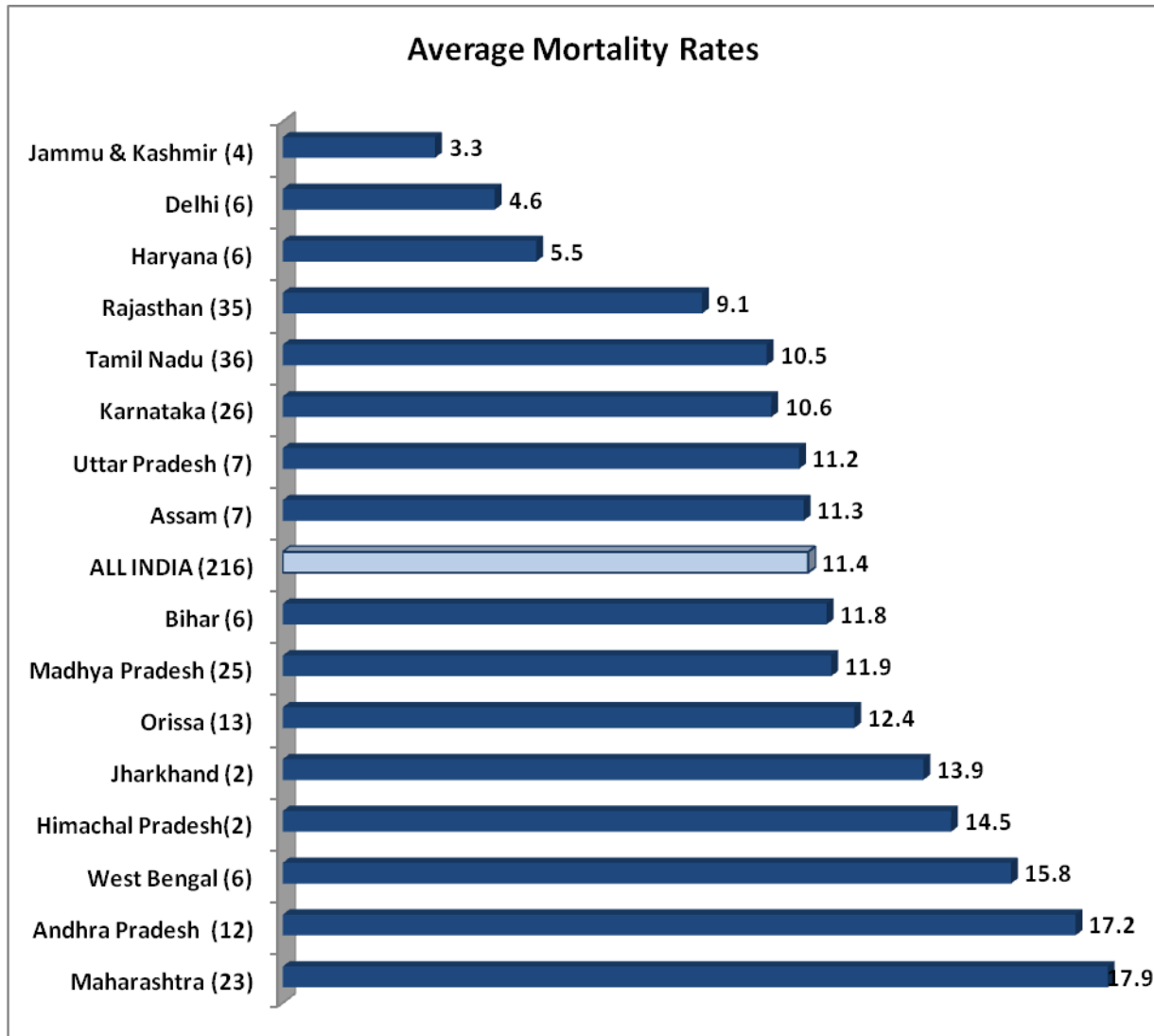
It is the proportion of babies referred out from the SNCU to a tertiary newborn care facility out of the total admissions. Information for this indicator was received from 17 states except Andhra Pradesh and Kerala, and the **referral rates were less than 10%** in 12 of these (*Table 5*). These included all the 9 High Focus States and 3 Non High Focus States. Jharkhand did not report any referral while Delhi reported referral rate of just 1%. Three states (Odisha, Haryana, Maharashtra) had rates between 10-15% while higher referral rates were observed for Gujarat (25%), Tamil Nadu (31%) and Chandigarh (34%). The referral rate in the High Focus States was found to be lower than that observed in the Non High Focus States.

## Mortality Rate

Except for Kerala, all the remaining 18 states had sent data for this indicator and **11** of them reported **mortality rates between 5% and 15%** (*Table 5*). These included 8 High Focus States (out of the 9 with data available) and 3 Non High Focus States (out of 9 with data available). **Four Non High Focus States reported mortality rate more than 15%** and these included Andhra Pradesh and Gujarat (both 18%), Maharashtra (17%) and West Bengal (16%). Rate of less than 5% was observed in Delhi (4.6%), Jammu Kashmir (3.3%) and Chandigarh (2%). Among the High Focus States, Himachal Pradesh (14.5%) had the highest mortality rate while Jammu & Kashmir reported the lowest rate of 3.3%.

*Figure 3* illustrates the distribution of the average mortality rates in the country and the different states. **Eight states had mortality rate less than the national average of 11.4%, while nine states had recorded a higher mortality rate.** The clustering of mortality rates between 5% and 15% is similar to that seen in the previous quarter.

Figure 3: Average Mortality Rate in India & States/UTs



### Admission load

This indicator is based on the average monthly admission load (admissions/bed/month) in an SNCU and has been described in detail in the previous report. It helps to a certain extent in evaluating the degree of service utilization in the existing unit, and it would have been more useful if the morbidity profile of admitted babies was available.

Relevant data for calculating the Admission load was available for 78.5% (193/246) of the reported SNCUs. The proportion of High admission load units were 16% while more than one-third (35%) were Low admission load and 28% Intermediate load SNCUs (*Table 6*). There was not much difference in the proportion of High Admission load SNCUs seen in the High Focus States (both Non NE & NE) and the Non High Focus States (16.8% vs. 15.2%) (*Table 6*). The results and the trend were similar to that observed in the previous quarterly report.

**Table: 6 Distribution of SNCUs according to Admission Load**

States with Number of Reported SNCUs	High Admissions Load (%)	Intermediate Admission Load (%)	Low Admission Load (%)	Data not available (%)
<b>High Focus Non- NE States</b>				
Jharkhand (2)	0	0	2 (100)	
Madhya Pradesh (25)	3 (12)	13 (52)	9 (36)	
Himachal Pradesh(2)				2 (100)
Jammu & Kashmir (4)	0	1 (25)	3 (75)	
Orissa (13)				13 (100)
Rajasthan (35)	11 (31.4)	11 (31.4)	11 (31.4)	2 (5.8)
Uttar Pradesh (7)				7 (100)
Bihar (6)	3 (50)	2 (33.3)	1 (16.7)	
<b>Total (94)</b>	<b>17 (18.1)</b>	<b>27 (28.7)</b>	<b>26 (27.7)</b>	<b>24 (25.5)</b>
<b>High Focus NE States</b>				
Assam (7)	0	2 (28.6)	5 (71.4)	
<b>Total (7)</b>	<b>0</b>	<b>2 (28.6)</b>	<b>5 (71.4)</b>	
<b>Non- High Focus States</b>				
Gujarat (25)	0	5 (20)	18 (72)	2 (8)
Karnataka (24)	3 (12.5)	6 (25)	11 (45.8)	4 (16.7)
Haryana (6)	1 (16.7)	2 (33.3)	3 (50)	
TN (36)	11 (30.5)	19 (52.8)	6 (16.7)	
WB (6)	0	0	5 (83.3)	1(16.7)
AP (14)				14(100)
Kerala ( 3)				3 (100)
Maharashtra (23)	6 (26.1)	6 (26.1)	8 (34.8)	3 (13)
<b>Total (137)</b>	<b>21 (15.3)</b>	<b>38 (27.7)</b>	<b>51 (37.2)</b>	<b>27 (19.7)</b>
<b>Union Territories and Small States</b>				
Chandigarh (2)				2 (50)
Delhi (6)	1 (16.7)	2 (33.3)	3 (50)	
<b>Total (8)</b>	<b>1(12.5)</b>	<b>2 (25)</b>	<b>3(37.5)</b>	<b>2 (25)</b>
<b>All India Total (246)</b>	<b>39 (15.9)</b>	<b>69 (28)</b>	<b>85 (34.6)</b>	<b>53 (21.5)</b>

# STATISTICS AT A GLANCE

**States with nearly 50% operational SNCUs and number of such units more than 10**

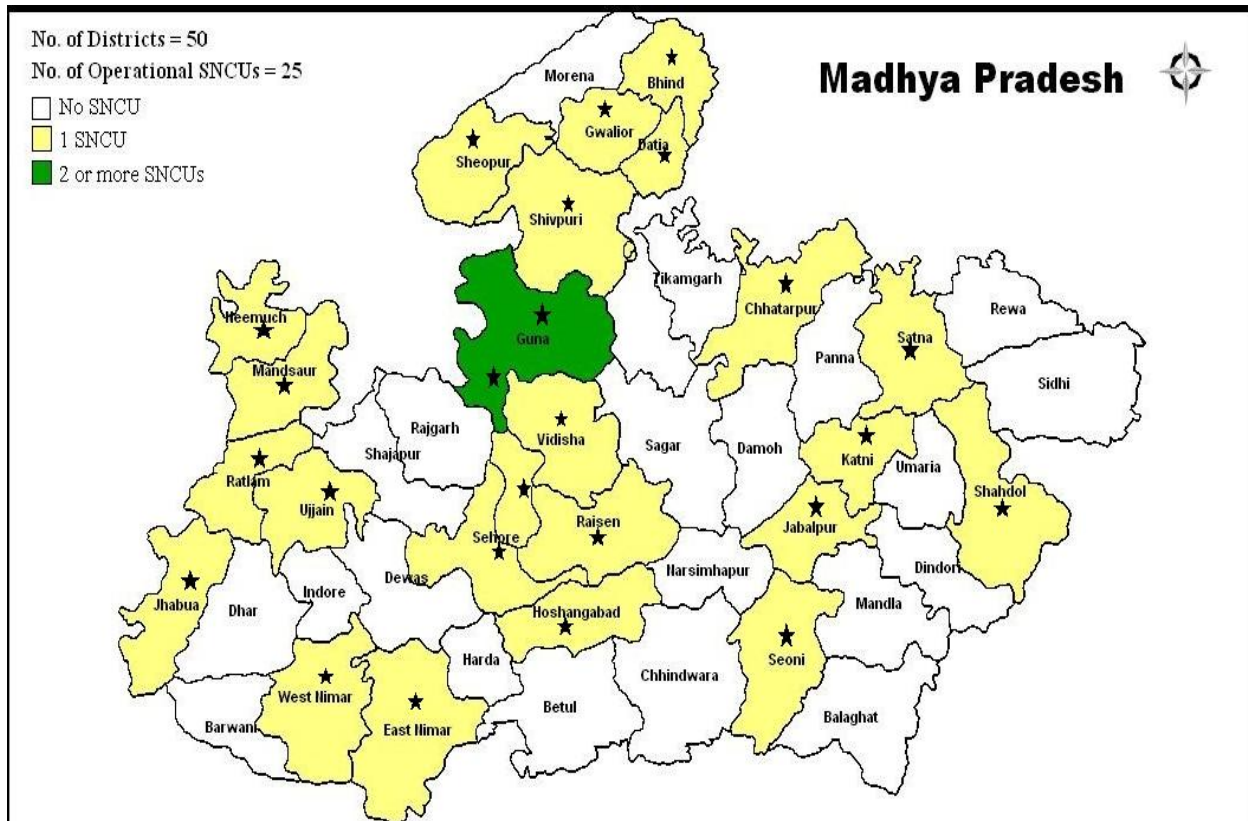
## **High Focus States**

- *Madhya Pradesh*
- *Odisha*
- *Rajasthan*

## **Non High Focus States**

- *Gujarat*
- *Karnataka*
- *Maharashtra*
- *Tamil Nadu*

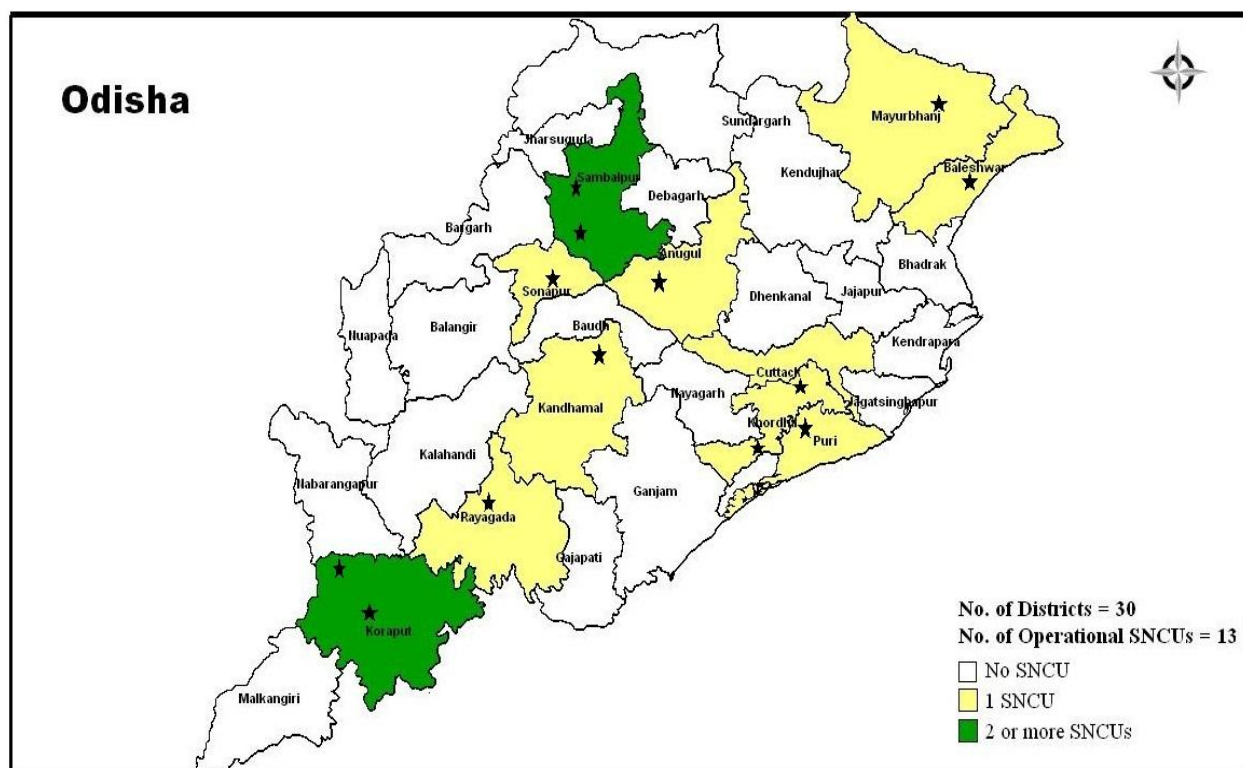
## Madhya Pradesh



- Relevant information not available or missing: **Training status**
- SNCUs Reported Operational out of total proposed in State PIP: **65.8 %**
- SNCUs with bed strength 12 or more: **100%**
- SNCUs with bed strength 4-6: **Nil**
- SNCUs with adequate number of Doctors: **Nil**
- SNCUs with adequate number of Nurses: **Nil**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **Nil**
- Doctors trained in FBNC: **Data not available**
- Nurses trained in FBNC: **Data not available**
- Service Utilization Indicators:
  - Total admissions (three months): **9570**
  - Inborn Admission Rate: **19.0%**
  - % of Admissions which are Inborn: **61.2%**
  - Mortality Rate: **11.9%**
  - High admission load SNCUs: **12%**

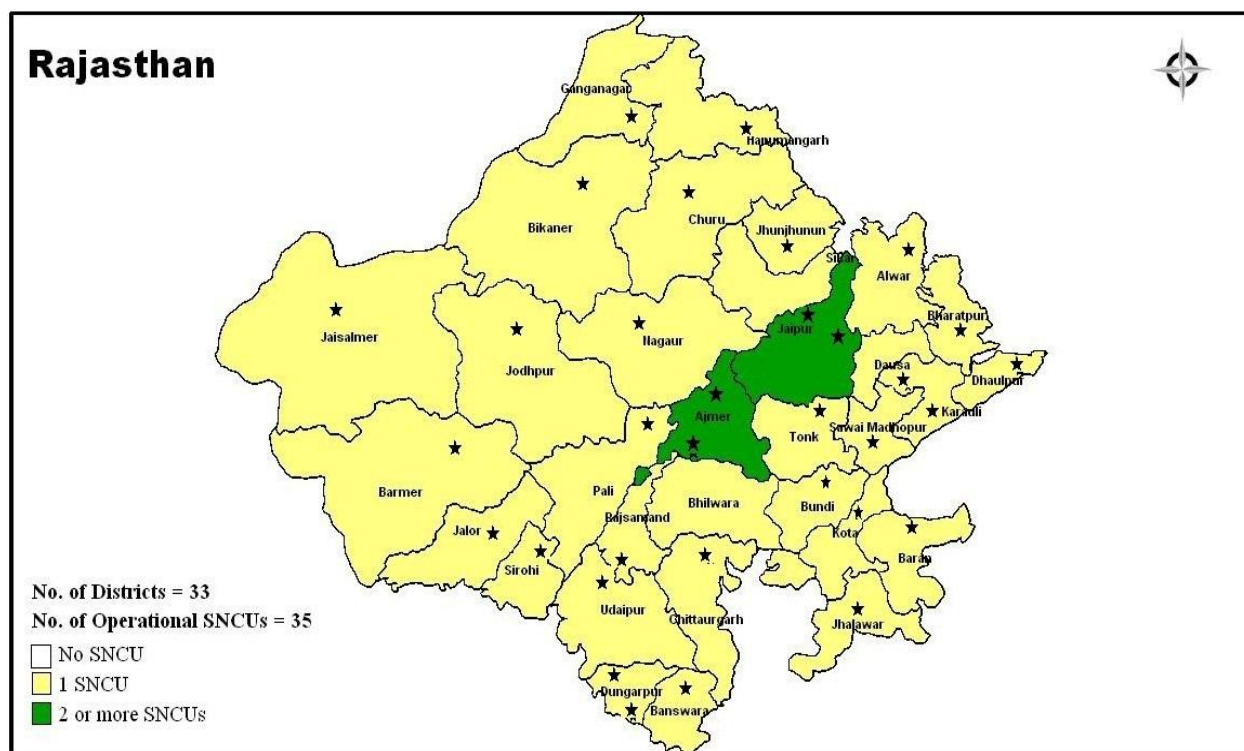


## Odisha



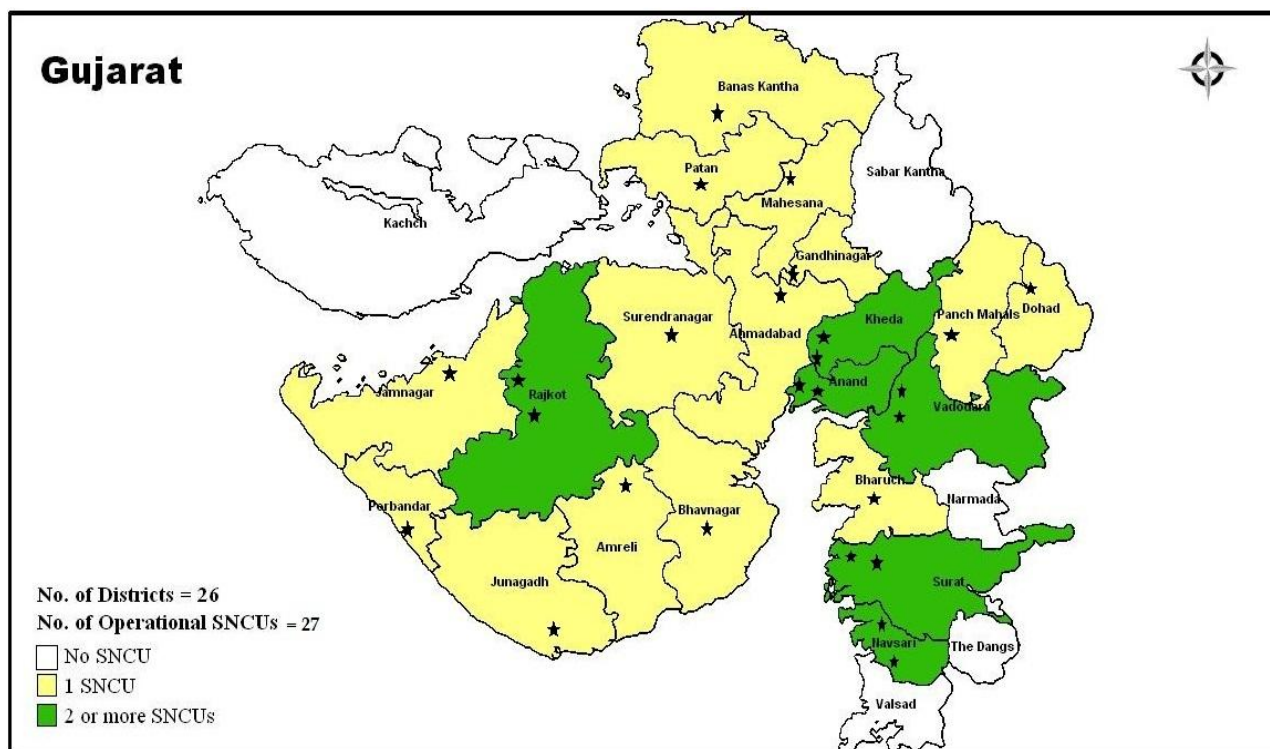
- Relevant information not available or missing: ***No. of beds, Training status, Live Births, Preterm Births for all the SNCUs***
- SNCUs Reported Operational out of total proposed in State PIP: **54.2 %**
- SNCUs with bed strength 12 or more: **Data not available**
- SNCUs with bed strength 4-6: **Data not available**
- SNCUs with adequate number of Doctors: **Data not available**
- SNCUs with adequate number of Nurses: **Data not available**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **Data not available**
- Doctors trained in FBNC: **Data not available**
- Nurses trained in FBNC: **Data not available**
- Service Utilization Indicators:
  - Total admissions (three months): **3905**
  - Inborn Admission Rate: **Data not available**
  - % of Admissions which are Inborn: **62.8%**
  - Mortality Rate: **12.4%**
  - High admission load SNCUs: **Data not available**

# Rajasthan



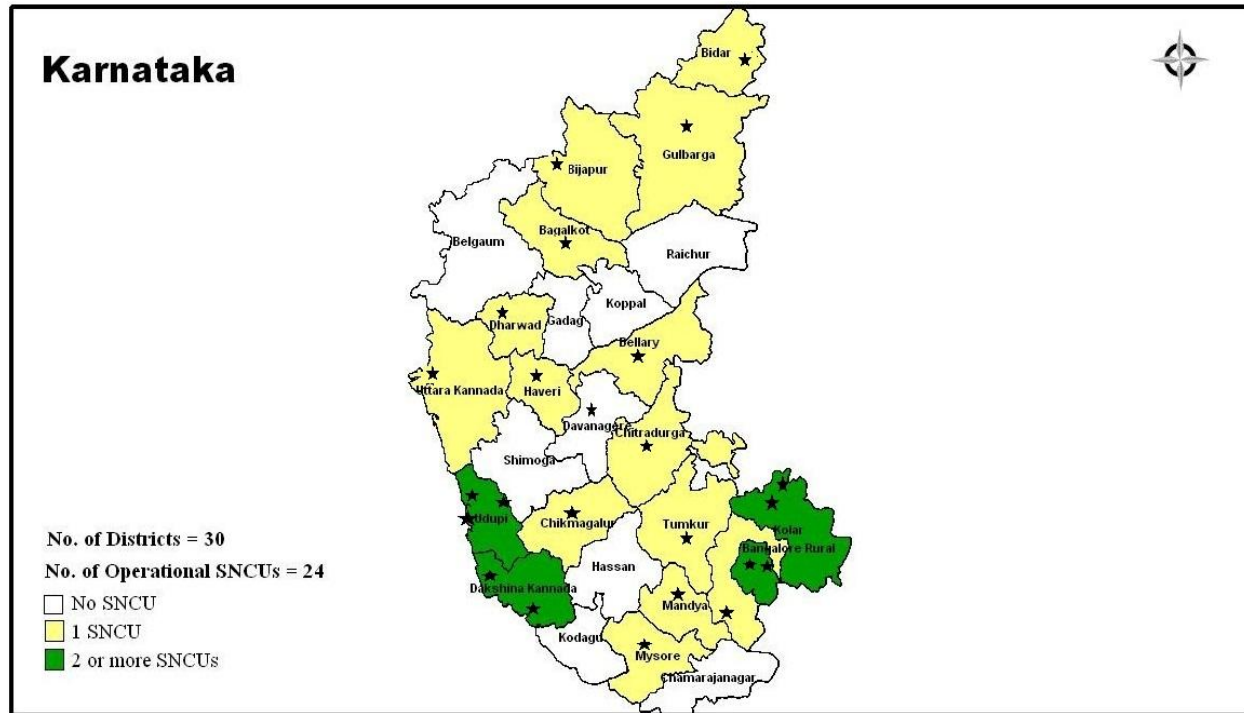
- Relevant information not available or missing: **Live Births for all SNCUs, and data on LBWs, Admissions, Referrals or Mortality for 11 SNCUs**
- SNCUs Reported Operational out of total proposed in State PIP: **97.2 %**
- SNCUs with bed strength 12 or more: **100%**
- SNCUs with bed strength 4-6: **Nil**
- SNCUs with adequate number of Doctors: **36.4%**
- SNCUs with adequate number of Nurses: **Nil**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **Nil**
- Doctors trained in FBNC: **72.3%**
- Nurses trained in FBNC: **92.5%**
- Service Utilization Indicators:
  - Total admissions (three months): **12846**
  - Inborn Admission Rate: **Data not available**
  - % of Admissions which are Inborn: **62.6%**
  - Mortality Rate: **9.1%**
  - High admission load SNCUs: **31.4%**

## Gujarat



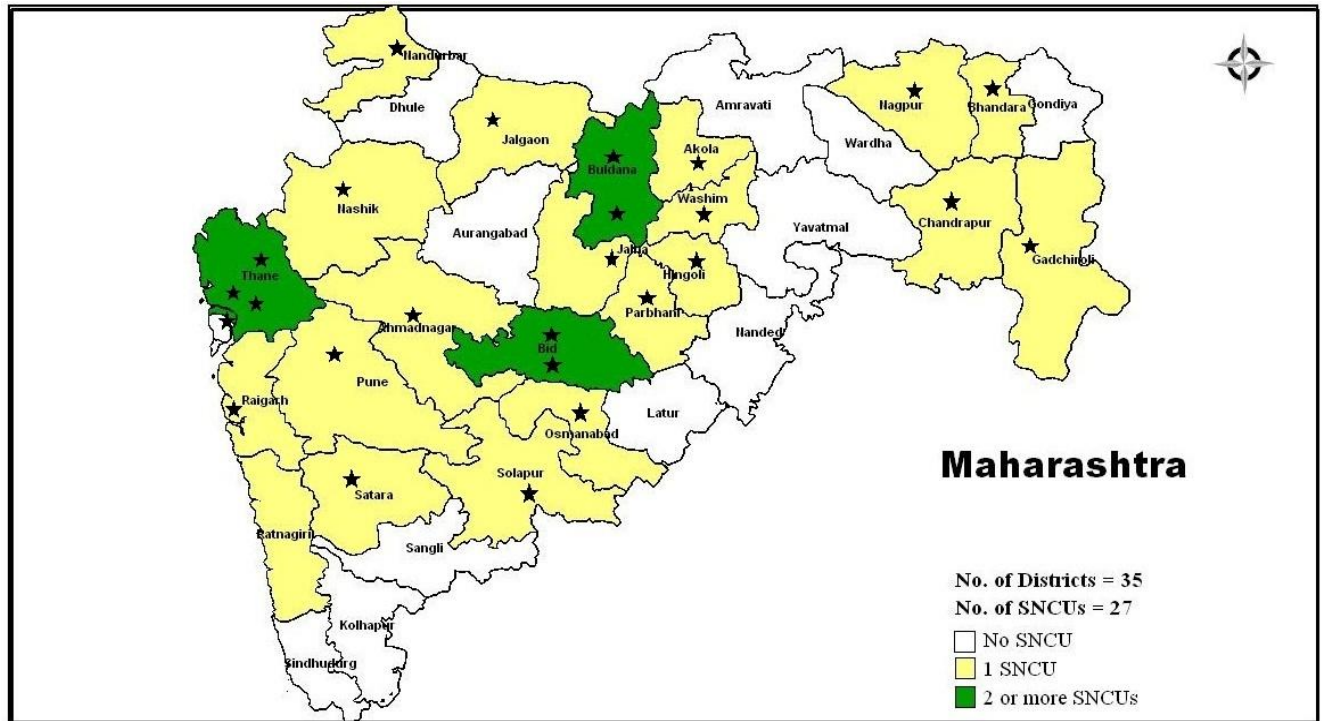
- Relevant information not available or missing: **None**
- SNCUs Reported Operational out of total proposed in State PIP: **62.7 %**
- SNCUs with bed strength 12 or more: **40%**
- SNCUs with bed strength 4-6: **36%**
- SNCUs with adequate number of Doctors: **77.8%**
- SNCUs with adequate number of Nurses: **55.0%**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **13%**
- Doctors trained in FBNC: **2.3%**
- Nurses trained in FBNC: **5.5%**
- Service Utilization Indicators:
  - Total admissions (three months): **3958**
  - Inborn Admission Rate: **20.2%**
  - % of Admissions which are Inborn: **64.7%**
  - Mortality Rate: **17.9%**
  - High admission load SNCUs: **Nil**

# Karnataka



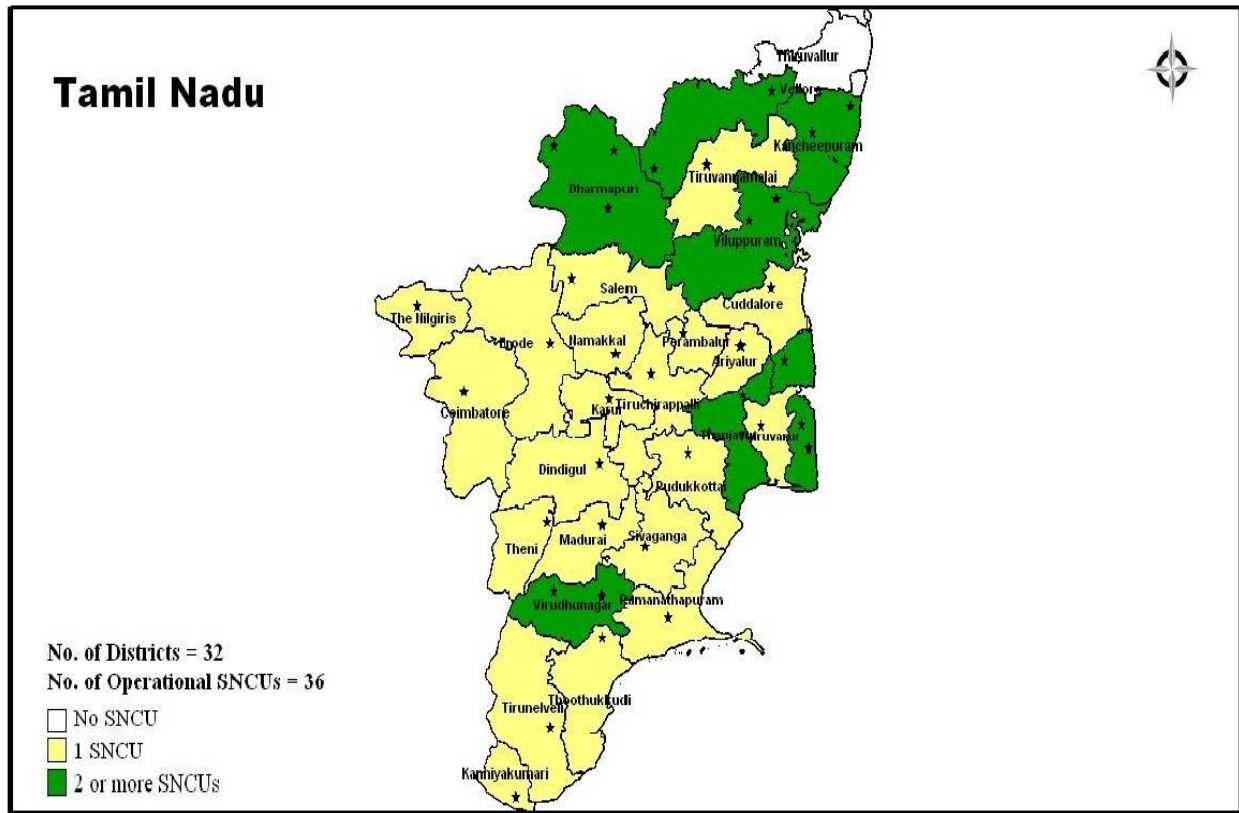
- Relevant information not available or missing: **Preterm births & Referrals from 11 SNCUs**
- SNCUs Reported Operational out of total proposed in State PIP: **72.7 %**
- SNCUs with bed strength 12 or more: **55%**
- SNCUs with bed strength 4-6: **25%**
- SNCUs with adequate number of Doctors: **50%**
- SNCUs with adequate number of Nurses: **60%**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **20%**
- Doctors trained in FBNC: **5.9%**
- Nurses trained in FBNC: **12.8%**
- Service Utilization Indicators:
  - Total admissions (three months): **6985**
  - Inborn Admission Rate: **34.0%**
  - % of Admissions which are Inborn: **77.3%**
  - Mortality Rate: **10.6%**
  - High admission load SNCUs: **12.5%**

# Maharashtra



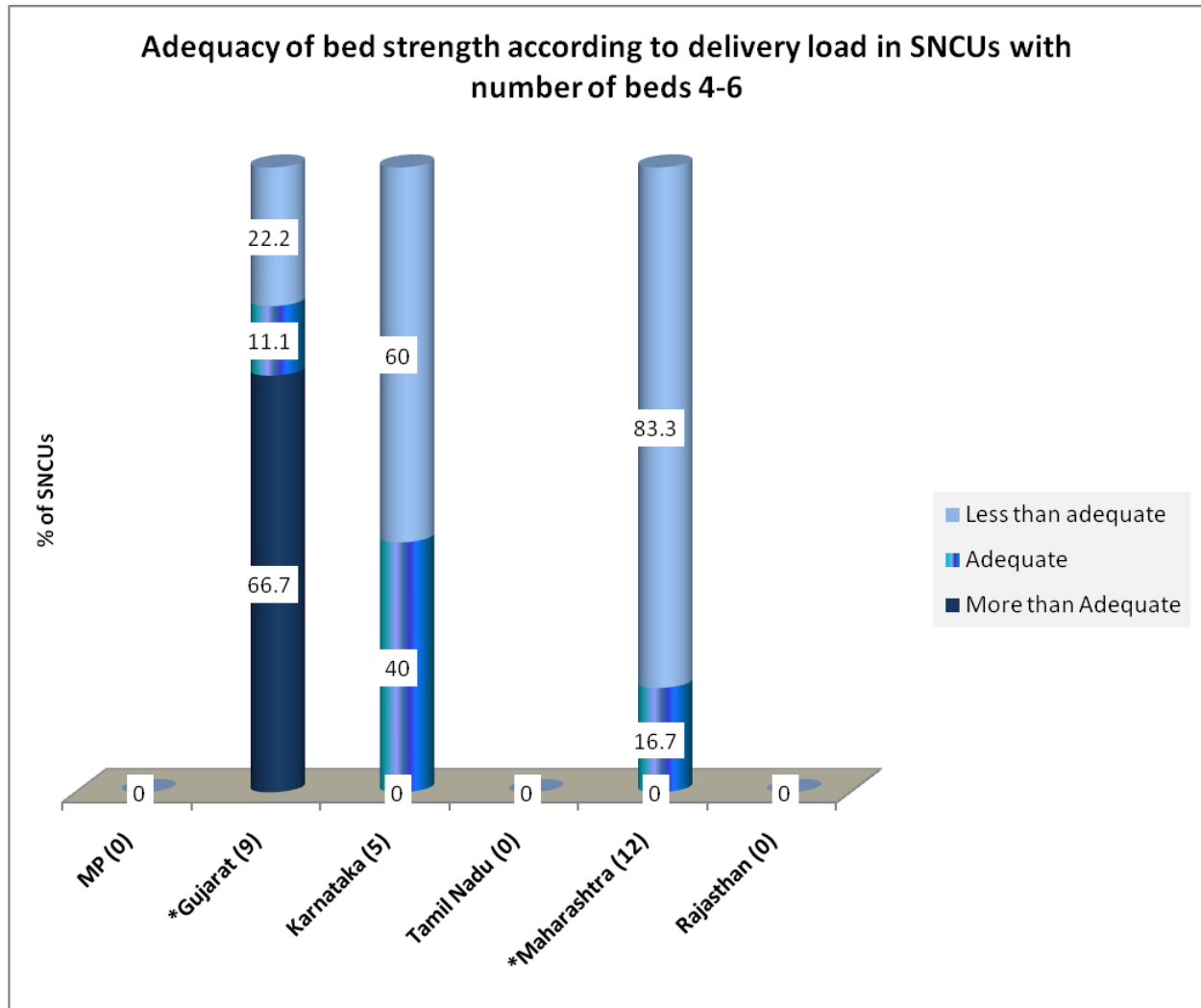
- Relevant information not available or missing: **Availability & Training Status of doctors, nurses**
- SNCUs Reported Operational out of total proposed in State PIP: **47.4 %**
- SNCUs with bed strength 12 or more: **3.8%**
- SNCUs with bed strength 4-6: **50%**
- SNCUs with adequate number of Doctors: **Data not available**
- SNCUs with adequate number of Nurses: **Data not available**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **Nil**
- Doctors trained in FBNC: **Data not available**
- Nurses trained in FBNC: **Data not available**
- Service Utilization Indicators:
  - Total admissions (three months): **5099**
  - Inborn Admission Rate: **16.6%**
  - % of Admissions which are Inborn: **80.2%**
  - Mortality Rate: **17.2%**
  - High admission load SNCUs: **26.1%**

## Tamil Nadu



- Relevant information not available or missing: **None**
- SNCUs Reported Operational out of total proposed in State PIP: **83.7 %**
- SNCUs with bed strength 12 or more: **80.6 %**
- SNCUs with bed strength 4-6: **Nil**
- SNCUs with adequate number of Doctors: **71.4%**
- SNCUs with adequate number of Nurses: **2.9%**
- SNCUs with bed strength 12 or more and having adequate number of both Doctors and Nurses (as per GOI norm): **Nil**
- Doctors trained in FBNC: **100%**
- Nurses trained in FBNC: **100%**
- Service Utilization Indicators:
  - Total admissions (three months): **15405**
  - Inborn Admission Rate: **30.5%**
  - % of Admissions which are Inborn: **69.3%**
  - Mortality Rate: **10.5%**
  - High admission load SNCUs: **30.5%**

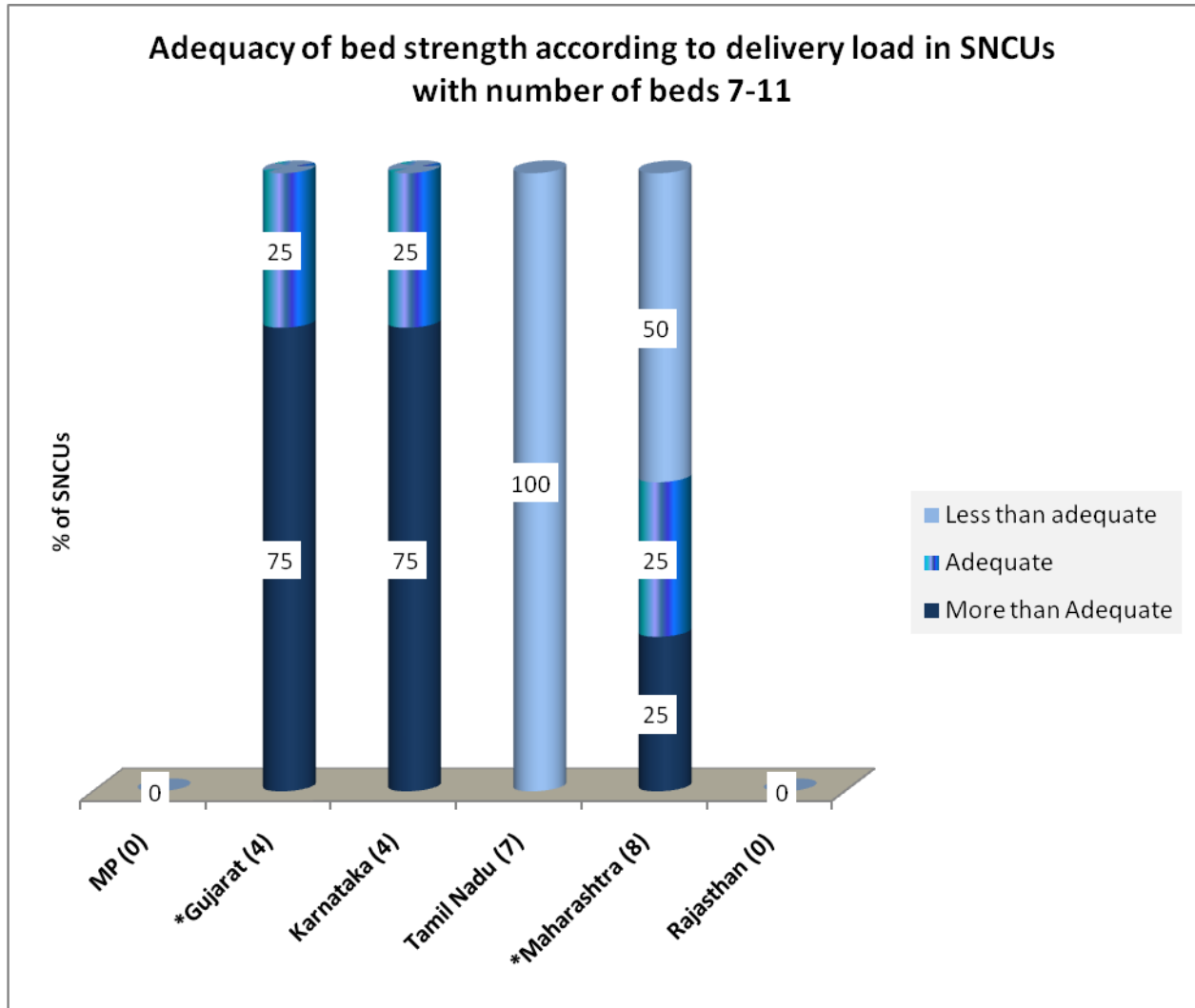
**Figure 4: Adequacy of bed strength acc. to delivery load in SNCUs with 4-6 beds**



7 out of the 9 SNCUs (78%) in Gujarat with 4-6 beds have either adequate or more than adequate number of beds according to the delivery load. The proportion of such units is 40% in Karnataka (2/5) and 17% in Maharashtra (2/12). Since the annual delivery load in these units is less than 3000, there is a need to review the functioning of these units as they would be more appropriately designated as NBSUs according to the GOI defined norms.

None of the SNCU in Madhya Pradesh, Tamil Nadu and Rajasthan had 4-6 beds.

**Figure 5: Adequacy of bed strength acc. to delivery load in SNCUs with 7-11 beds**



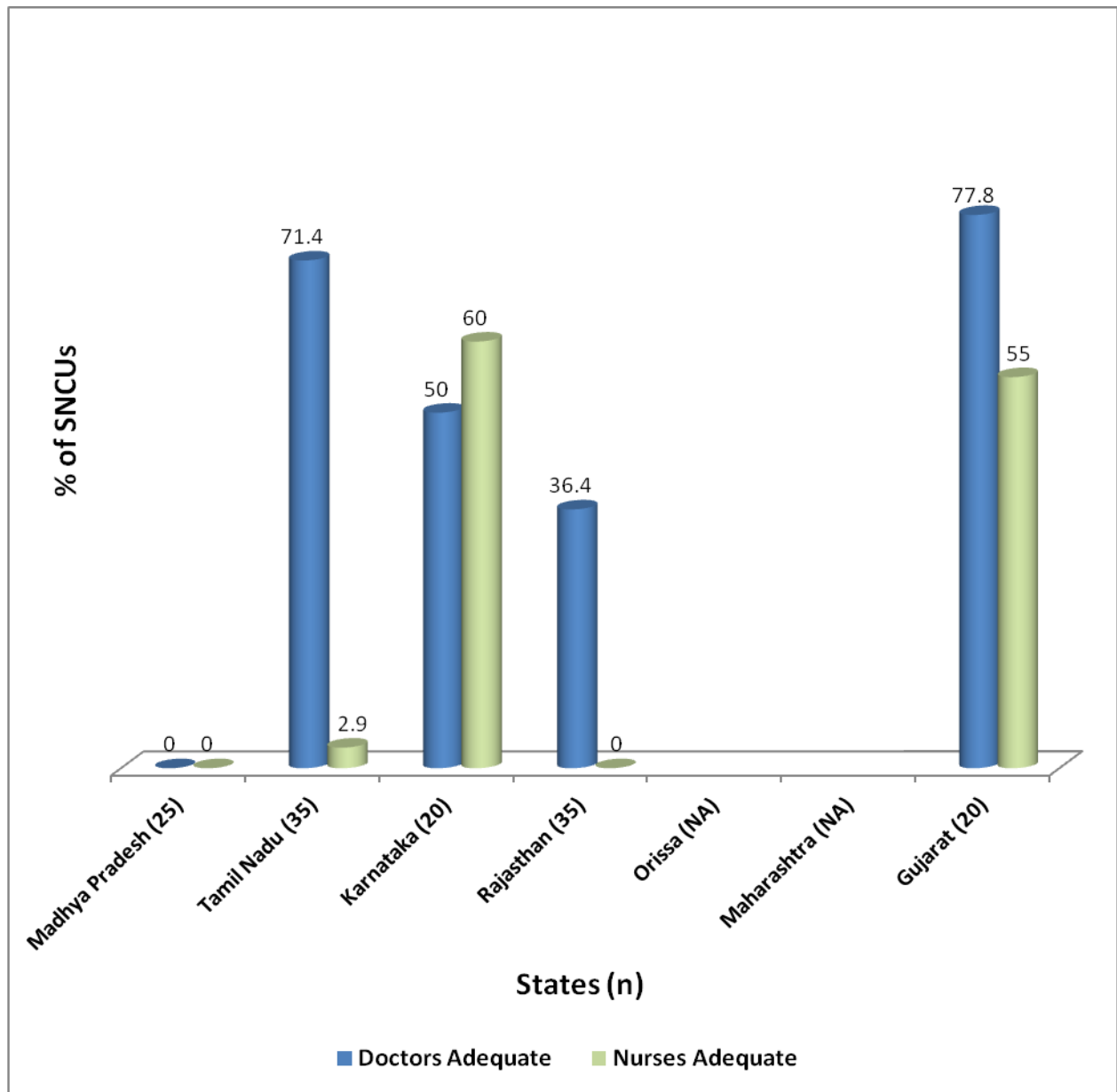
The bed strength of all the 7 SNCUs in Tamil Nadu with 7-11 beds and 4 such units in Maharashtra is less than that required to meet the delivery load of the health facility. There is a need to increase the bed strength and associated resources in these units.

On the other hand 3 units each in Gujarat and Karnataka, and 4 units in Maharashtra had either adequate or more than adequate bed strength suggesting that the annual delivery load in these units is less than 3000. There is a need to review the functioning of these units as they would be more appropriately designated as NBSUs according to the GOI defined norms.

None of the SNCU in Madhya Pradesh and Rajasthan had 7-11 beds



Figure 6: Adequacy of Human Resources



The highest proportion of SNCUs with adequate doctors is seen in Gujarat (78%) followed by Tamil Nadu (71%) and Karnataka (50%), while the highest proportion of nurses adequacy is seen in Karnataka (60%) and Gujarat (55%). None of the SNCU in Madhya Pradesh had adequate doctors or nurses, while Rajasthan reported no unit with adequate nurses.

HR data was not available for Odisha and Maharashtra

## CONCLUSIONS

### Operational Status

- Written information on the operational status of SNCUs was received from **29 states/UTs** for the April-June 2011 quarter compared to 16 states during the previous quarter.
- Though a cumulative total of 319 SNCUs had been reported till June 2011 (including previous quarters), **253 units (40.1%) were confirmed operational** during this quarter out of the 631 proposed by the States/UTs in their PIPs.
- The proportion of operational SNCUs had decreased compared to the previous quarter since **66 units were not included for data analysis** as they had either not sent written confirmation of their status or were confirmed non-operational. These units were predominantly situated in the Non High Focus States/UTs of Karnataka (18 units), Gujarat (16 units), Kerala (13 units), Maharashtra (8 units) and Delhi (4 units).
- The proportion of SNCUs reported operational was **highest in the High Focus Non-NE States (44.8%)** followed by the Non High Focus States/UTs (39.8%), while the proportion was much less for the High Focus NE States (18%).
- **Six states reported more than 50% operational SNCUs** and these include three from the High Focus States (Madhya Pradesh, Odisha, Rajasthan) and three from the Non High Focus States (Gujarat, Karnataka, Tamil Nadu). Maharashtra reported nearly half (47%) of its units operational.
- **Nine States/UTs have not reported even a single operational SNCU** and these include one High Focus Non-NE State (Uttarakhand), one Non High Focus State (Punjab), and seven High Focus NE States (Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura).
- Comparison of the two quarterly reports revealed **major difference in the number of operational SNCUs reported by the Non High Focus States** with both the Large and the Small States reporting 8 units less during this quarter. For the High Focus States, minor variations were observed but there was no difference in the total number of operational units.

### Bed strength and delivery load

- There were on an average **13.5 number of beds per SNCU** across the 15 states with relevant data available. The average number of beds was similar in the Non-NE and the NE High Focus States (14.7 and 15.3 beds per SNCU respectively), and it was 12.8 in the Non High Focus States.

- Of the 206 units with bed strength available, **more than 60% SNCUs had 12 or more beds** while **19% had 7-11 beds** and **16 % had 4-6 beds**. Seven units from the Non High Focus States reported bed strength of less than 4 and they were excluded from further analysis as per pre-defined criteria.
- Out of the 129 SNCUs with 12 or more beds, **15.5 % units had 20 or more beds per unit**.
- **Nearly 90% SNCUs in the High Focus States had 12 or more beds** but the proportion of such units among the Non High Focus Large States was only 45% while 27% had 7-11 beds & 23% had 4-6 beds. States with large proportion of **4-6 bedded units** include Maharashtra (50%), Gujarat (36%) and Karnataka (25%).
- The **annual delivery load** in health facilities housing **30 SNCUs with bed strength less than 12** (11 with 4-6 beds and 19 with 7-11 beds) is **less than 3000** and there is a need to re-examine the functioning of these newborn health units, **especially those with 4-6 beds since they would be more appropriately designated as NBSUs** according to the GOI defined norms. These 30 units are predominantly located in the Non High Focus States of Gujarat (11 units), Karnataka (6 units), Maharashtra (6 units) and Haryana (3 units).
- The **number of beds in 53 SNCUs** (18 with 7-11 beds and 35 with 12 or more beds) is **less than** that required to meet the delivery load of the health facility. It is important to review the functioning of these units and prioritize on **increasing the bed strength and associated resources, especially in those 18 units which have 7-11 beds**. These 7-11 bedded units are predominantly located in the Non High Focus States of Tamil Nadu (7 units), West Bengal (4 units) and Maharashtra (4 units).

### Human resources

- The **average number of doctors per SNCU was 4.2** while the **average number of nurses was 8.8**. While the average number of number of doctors was lower in the High Focus States compared to the Non High Focus States (3.3 vs. 5.1), the average number of nurses was similar (8.8 vs. 8.8).
- **Half of the units had adequate number of doctors while only 28% had adequate number of nurses**. The proportion of SNCUs with adequate number of doctors and nurses was lower in the High Focus states compared to the Non High Focus States, a result similar to the previous quarter).
- The proportion of doctors and nurses **trained in FBNC** was **56%** and **54%** respectively, and the proportion was higher in the High Focus States compared to the Non High Focus States.

### Service Utilization Indicators

- The **total number of admissions** during the three month period was **77,336 out of which 8809 deaths** were reported. **The average Mortality Rate was 11.4%**.

- The average inborn admission rate ranged between 10% and 30% in 9 out of the 15 states and some variation was observed between the states and within the states. However there was **less variation for the % of inborn admissions** with 15 out of the 17 states showing value **between 60% and 80%**.
- Referral rates to a tertiary newborn care facility were reported to be less than 10% in 12 of the 17 states.
- Mortality rate ranged between **5% and 15%** in 11 of the 18 states. It was more than 15% in four Non High Focus States (Andhra Pradesh, Gujarat, Maharashtra, West Bengal), and less than 5% in Delhi, Jammu & Kashmir and Chandigarh.
- Eight states had mortality rate less than the national average of 11.4%, while nine states recorded a higher mortality rate.
- The proportion of **High admission load SNCUs were 16%** while more than one-third (35%) were Low admission load and 28% Intermediate load SNCUs. Data was not available for the rest of the units.

#### **Comparison of seven (7) states with nearly 50% operational SNCUs and the number of such units more than 10**

- Both Gujarat and Maharashtra reported **7 SNCUs less** during this quarter compared to the previous one, while Tamil Nadu reported 6 units more. There were minor variations in reporting by the other 4 states.
- All the operational SNCUs in Madhya Pradesh and Rajasthan had **12 or more beds** while 80% units in Tamil Nadu and more than half in Karnataka were 12 or more bedded. On the other hand, 50% units in Maharashtra, 36% in Gujarat and 25% in Karnataka had **bed strength of 4-6**.
- **78% of SNCUs (7/9) in Gujarat, 40% in Karnataka (2/5) and 17% in Maharashtra (2/12)** with bed strength 4-6 have either adequate or more than adequate number of beds according to the delivery load. As the annual delivery load in these units is less than 3000, there is a need to review the functioning of these units as they would be **more appropriately designated as NBSUs** according to the GOI defined norms.
- The bed strength in all the 7 SNCUs in Tamil Nadu with 7-11 beds and 4 such units in Maharashtra is less than that required to meet the delivery load of the health facility, and there is a need to increase the bed strength and associated resources in these units.
- HR data was not available for Odisha and Maharashtra. Of the remaining 5 states, Gujarat had the highest proportion of SNCUs with **adequate doctors (78%)** followed by Tamil Nadu (71%) and

Gujarat (50%), while the **highest proportion of nurses adequacy** was seen in Karnataka (60%) and Gujarat (55%). None of the SNCU in Madhya Pradesh had adequate doctors or nurses, while Rajasthan reported no unit with adequate nurses.

- The three High Focus States (Madhya Pradesh, Odisha, Rajasthan) had **similar proportion of inborn admissions** (61% to 63%). Among the other 4 Non High Focus States, the highest proportion was seen for Maharashtra (80%) followed by Karnataka (77%), Tamil Nadu (69%) and Gujarat (65%).
- **Mortality rate** was highest in Gujarat (18%) and Maharashtra (17%) while it was observed to be lowest in Rajasthan (9%).

## REFERENCES

1. Facility Based Newborn Care Operational Guide. Ministry of Health and Family Welfare, Government of India; 2011.
2. Operational Status of Special Newborn Care Units (SNCUs) in India, January-March. 2011, Technical Report. MoHFW, GOI & NCHRC, NIHFW, New Delhi; 2011.
3. Toolkit for Setting of Special Care Newborn Units, Stabilization Units and Newborn Care Corners. NNF and Unicef.