Mapping Adequacy of Staffing to Ensure Service Guarantees

A Study of Ganjam District in Orissa

6 CHAPTER

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INTRODUCTION

The burden of increasing demand for health services and increasing cost in healthcare provision is being experienced by both developing as well as developed world due to the changing disease pattern and economic scenarios across the globe. India with a population of more than 1,140 million and limited funding on public health services is always in search of more efficient approaches to meet the demand for health and healthcare services through an equitable distribution of the healthcare provisions, particularly the healthcare providers.

A report of Government of India depicts the overall shortfall in the posts of Health Worker (Female)/ANM at 12.6 percent and for Health Worker (Male) at 55.4 percent of the total requirement. In case of Health Assistant (Female)/LHV, the shortfall was 32.8 percent and that of Health Assistants (Male) was 28.8 percent. For Doctors at PHCs, there was a shortfall of 7.8 percent of the total requirement. At the Community Health Centres (CHC) level, there was a shortfall of 64.8 percent specialists as compared to the requirement for existing infrastructure on the basis of existing norms as on March 2007. Even out of

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the sanctioned posts, a significant percentage of posts are vacant at all the levels.[1]

It is a fact that in India staffing requirements vary widely between health facilities of the same type, according to their workloads because of the wide variation in demands for health services. However, staffing norms in the country is based on population ratios or standard staffing schedules. The non-availability of doctors, paramedics, shortage of Auxiliary Nurse Midwives (ANMs) and large jurisdiction under the health personnel, especially in hilly, tribal and inaccessible areas, has been one of the major constraints of health system in India. In many cases, the not-so-good functional facilities with inadequate service providers is a major contributing factor to decreased access and utilization of health services by the poor, especially in rural areas. The Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR) are also unacceptably high except in a few states of the country.[2]

The National Rural Health Mission (NRHM) launched in April 2005 by the Government of India recognizes unsafe motherhood as a serious development concern. It aims at reducing maternal and infant mortality through various approaches and promotion of institutional deliveries and quality of services at functional health facilities. The framework for implementation of NRHM has also provided certain service guarantees for healthcare under the mission at each facility level.

Improvement in the health outcomes in the rural areas is many times directly related to the availability of the trained human resources there. NRHM aims to address the issue of trained manpower at all levels. It aims to increase the availability of manpower through provision of more than 4 lakh trained women as ASHAs/Community Health Workers (resident of the same village/hamlet for which they are appointed as ASHAs). The Mission also seeks to provide minimum two Auxiliary Nurse Mid-wives (ANMs) (against one at present)

at each Sub-Health Centre (SHC). Similarly, against the availability of one staff nurse at the PHC, there is provision of providing three Staff Nurses to ensure round-the-clock services in every PHC. In order to strengthen the out-patient care, NRHM gives posting/appointment on contract of AYUSH doctors over and above the Medical Officers posted at the PHCs. The Mission seeks to bring the CHCs on par with the Indian Public Health Standards (IPHS) to provide round-the–clock, hospital-like services. As far as manpower is concerned, it would be achieved through provision of seven specialists as against four at present and nine Staff Nurses in every CHC (against seven at present).

The provisions under IPHS for SHC were made on the basis of expected number of beneficiaries for maternal and child healthcare, immunization, family planning and other services. For PHC, it was made on the basis of 40 patients per doctor per day, the expected number of beneficiaries for maternal and child healthcare and family planning, and about 60 percent utilization of the available indoor/observation beds (six beds). Similarly, for CHC, the provisions under IPHS were made on the basis of average bed occupancy of 60 percent.

NRHM has not only raised the expectation of the community for universal access for institutional delivery but also for other healthcare aspects. However, it is very much essential to make a situational analysis whether, the government health facilities have adequate staffing to meet the service guarantees under NRHM by the already overstretched health system in India.

For example, due to various reasons the doctors and other health personnel live in district headquarters or cities. But more than 70 percent of population stays in rural areas in the country. The total number of health personnel in a district does not reveal the functional gaps at different health facilities outside the district headquarters or cities. More specifically, institutionalizing staffing norms based solely on

population or institutional size does not adequately take into consideration the wide variation in the country and results in inefficiency and inequity in the health system. In order to achieve staff adequacy, it is required to identify the staffing gaps for achieving goals of NRHM based on the workload analysis and staffing need of a particular area, e.g., district or state, to provide specific services.

Workload Indicators of Staffing Need (WISN) is a method of setting the correct staffing levels in health facilities. This method has been developed by Shipp J. Peter and popularized by the World Health Organization (WHO).[3] It was developed to respond to the internationally felt need to ensure optimal deployment of staff, particularly in rural areas; the equitable deployment of staff in accordance with the demands actually experienced; and the optimal determination of staff categories.

LITERATURE REVIEW

The need for a rational method for ascertaining staffing need and workload estimation is an international need prior to 1980s, much before the globalization came into force. In fact, many terms were used to measure the workload capacity such as staffing requirements, workload, workload capacity, standard workload, staff intensity, activity, activity standard, caseload assignment and caseload management by different scholars.

Cavouras[4] and O'Brien-Pallas and others,[5] have attempted to classify the staffing methodologies adopted by various earlier researchers, particularly for nurses. Ridoutt Lee et al.[6] broadly classified the available methodologies for measuring workload of health staff into four broad categories as: i) ratio-based methodologies, ii) procedure-based methodologies, iii) categories of care-based methodology, and iv) diagnostic- or case mix-based methodologies.

WISN is a ratio-based methodology and it determines staffing requirements for each category based on the workload of the facility. The calculated staffing requirements for each category are compared with the actual level. WISN is estimated dividing the actual staffing level by the required number of staff. It shows the workload pressure of a particular category of workforce in different health facilities. In fact, the conceptual approach behind WISN was described as early as 1980 in the Guidelines for Health Manpower Planning published by the WHO, Geneva.[7] Consequently it was developed as an operational tool by Shipp J. Peter in 1984 for projecting staff requirements in Human Resource (HR) strategic planning. A few countries like, Tanzania, Papua New Guinea, Kenya, Hong Kong, Oman, Sri Lanka, etc., have set activity standards for various staff categories and subcategories. Besides, the development of WISN method continued with pilot application in countries like Bangladesh[8] and Papua New Guinea.[9] The development of WISN method culminated with its adoption, publication and promotion by the World Health Organization in 1999.[10]

However, to the best of our knowledge no study has been conducted in India to demonstrate how the WISN method could be used in Indian context. Hence, an attempt has been made to map the adequacy of staffing in a state having high Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR) like Orissa in India with an IMR of 71 per 1,000 live births[11] and MMR of 358 per 1,00,000 live births through a rapid assessment study.

The Context

The state of Orissa has 4.74 percent of India's landmass and 36.81 million people (2001 census) with 3.58 percent of the population of the country. The NSSO 61st round, 2004–05 reveals that Orissa is the poorest state in the country with

about 40 percent of people living below poverty line which can exceed well over 50 percent if the international cut off point of people living with less than $1 is used for defining poverty. Orissa is the poorest state not only in terms of "income poverty" but also in terms of "human poverty" as well.[12]

Under the healthcare provisioning of the state, there are 6,688 sub-centres, 1162 PHC (New), 314 block PHCs, 231 CHCs (mostly in Block PHCs), 120 area hospitals, 22 sub-divisional hospitals, 32 district headquarter hospitals (including one as capital hospital and the other as Rourkela Government hospitals) and three medical college hospitals. Besides, at the corporate and private levels, there are six tertiary hospitals in the state to support the system.[13]

Ganjam is one of the backward districts of Orissa with a population 34,85,100 as per Census 2001 and has the second highest number of blocks (22) in the state. The poverty is so acute that many of the people temporarily migrate to other states of India in search of jobs. It has been reported that the district has highest number of HIV/AIDS cases in the state.

The Objective

The study aims to assess whether there is adequate staffing for Maternal and Child Health (MCH) Services in government healthcare facilities to meet the service guarantees under NRHM in Ganjam district of Orissa.

METHODOLOGY

The study adopted WISN as a method of inquiry for setting the activity standard as well as calculating the adequacy of staffing in the Ganjam district of Orissa. The fieldwork was undertaken in the month of November 2008.

Sample Selection

Six out of 22 blocks in the Ganjam district were covered under the study. The blocks were namely Patrapur, Sorada (Badagada), Polasara, Buguda, Beguniapada (Kodala) and Jagannath Prasad. A total of 18 facilities were covered under the study including six CHC/Block PHCs, six PHC New and six SHCs. The details of government health facilities covered under these six blocks are presented in Table 1.

Data Collection

Information from both secondary and primary sources were collected and compiled for the purpose of study. The data from more than two sources were collected and analyzed in order to ascertain the reliability of the findings. The study adopted WISN method and wherever possible adopted the process outlined in the implementation manual of WISN of WHO, 1998. Records were reviewed at the facility level and secondary data were collected from following sources.

- Census of India 2001.
- HMIS data of Ganjam and respective blocks.

Table 1: Block-wise Facilities Covered under the Study

Type of facility visited	Name of the Blocks						Total facility
	Patrapur	Sorada (Badagada)	Polasara	Buguda	Beguniapada (Kodala)	Jagannath Prasad	
CHC/ Block PHC	Patrapur	Badagada	Polasara	Buguda	Kodala	Jagannath Prasad	6
PHC New	Baranga	Goudagotha	-	Karchuli	Beguniapada Rahada	Baragaon	6
SHC		Goudagotha	Konkorada	Biranchipur Buguda-II	Kodala-II	Khamarpalli	6
Total	3	3	2	3	4	3	18

Table 2: Method-wise Coverage of Primary and Secondary Data

Methods	Sources of data/Respondents	Total Numbers
Key Informant Interview (KII)	MO (In-charge), doctor, staff-nurses, LHV, laboratory technicians	24
WISN-Workforce Indices of Staffing Need (WISN)	Secondary sources/Record review	18
Focused Group Discussion (FGD)	ANMs at CHC and PHC level	6
Indepth Interview (II)	ANMs participating in the FGD	30
Interview	Women who have delivered in the last 3 months	10

- CSSM register of Health Workers at subcentres.
- Programme Implementation Plan (PIP), Ganjam.
- Year Book, 2006–07, Special Information on Health Infrastructure of Orissa, Government of Orissa.

The primary data were collected from health providers involved in the Maternal & Child Health (MCH) activities at different levels. Besides, information from women who have delivered in the last 3 months was also collected from the community to ascertain the quality of care aspect. The method-wise breakup for the primary data is presented in Table 2.

Data Collection Instruments

The following instruments were administered to elicit information.

- Key Informant Interview — Semi-structured questionnaire
- WISN-Guidelines for Activity Standards
- Checklist for record review
- FGD-Guidelines
- Interview with women-Interview schedule
- Interview with ANM-Interview schedule.

Analysis Approach

Although WISN method is based on the work which is actually undertaken by the health staff, the present study is based on the actual demand as per the service requirement as per the service guarantees under NRHM for MCH Services. However, the summary of the service guarantees for MCH under NRHM at SHCs, PHC (New) and CHCs is given below:

For Mother

- Full ANC care by ANM/SHC level with medical care for high risk cases.
- Full institutional delivery at PHC — Cases requiring EmOC going to CHC.
- Comprehensive EmOC facilities available at CHC.
- Postnatal care at home by ANM/SHC.
- Postnatal complications at PHC with referrals to CHC.

For Neonates and Children

- Immunization of all children at SHC upto 1 year of age.
- Care of common childhood upto five years of age.

Total Need and Supply of Service Guarantees

- ANC related services — SHC.
- Highrisk cases — SHC. PHC, CHC.
- ID — PHC, CHC.
- Comprehensive EmOC — CHC.
- Post natal care — SHC, PHC, CHC.
- Immunization — SHC.
- Care of childhood illnesses — PHC, CHC.

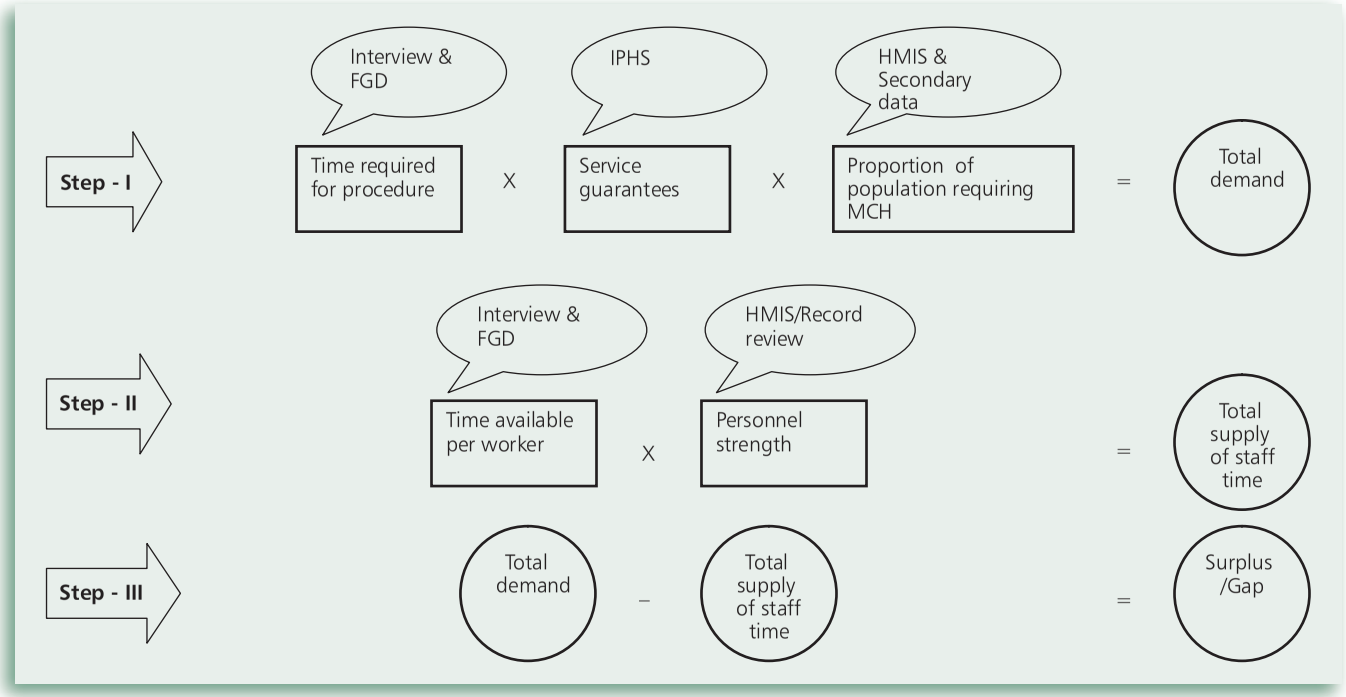
In order to find out the various services elements, Indian Public Health Standard (IPHS) documents were referred and discussions with senior staff under various categories at the CHC/Block PHC were made to ascertain their specific roles and responsibilities under MCH. Many health and non-health workers were involved to cover the entire range of services under MCH at different levels. However, for the purpose of the study, the researcher limits his investigation to Medical Officer, Staff Nurses, Laboratory Assistant, LHV, Health Worker (Male) and ANM/Health Worker (Female) category. The study findings reveal that major activities/roles need to be performed by different health workers under MCH are as indicated in Annexure-I.

However, on the basis of field observations and discussion with the key health staff during the fieldwork, certain assumptions were made in order to calculate the overall demand and analyse the staffing need. These include:

- Deliveries do not happen at SHC level; all deliveries should happen in health facility.
- Delivery do not happen at PHC (New) level as almost all the facilities visited do not have staff nurses, bed and other required facility and equipment for institutional delivery.
- About 15 percent women are referred to any facility.
- 30 percent children in (0–1) age group require treatment for ARI & Diarrohea from any facility.
- 20 percent Children in (2–5) age group require treatment for ARI & Diarrohea from any facility.
- Service Guarantee at CHC guarantees for additional specialized services besides the services available at PHC (New).
- People have a choice and may bypass the PHC (New) to utilize CHC services/facilities even if for minor ailments.

With these assumptions staffing needs were analyzed using WISN (see chart below) at sub-centre, block CHC/PHC and district levels for ensuring service guarantees for MCH under NRHM.

Figure 1: WISN Steps Chart



FINDINGS

Supply Factor: Available Working Time per Year

It was found that except Laboratory Technician every health worker studied were eligible for 101 holidays including 22 public holidays, 52 Sundays, 12 second Saturdays, 15 days sickness leave in addition to 30 days earned leave during the year 2007–08. Hence, a health worker is expected to work for 234 days in a year. In case of laboratory Technician, it is 298 days in a year as she/he is expected to work for 7 days in a week. It is estimated that the number of hours a health worker should be available for work is 1872 hours in a year. For Laboratory Technician, it is 2384 hours in a year. The number of working hours available in a year for each category of health worker is shown in Table 3.

Setting up Activity Standards

In order to set the activity standard, group discussions were held at the CHC/Block PHC level along with the ANMs/Health Workers (Female) in each block. Besides, interviews with key informants and senior staff at facilities were held. The activity standards were set as per the unit time/rate usually taken by an experienced and well-motivated staff. It was found that although it is expected to perform urine and haemoglobin test of pregnant mothers, the Health Workers (female) do not perform these tests as the equipments and supplies for the same are not available with them. The identification of high-risk pregnancy and JSY beneficiaries is usually done during routine ANC check-up and hence does not take any extra time for the same. Among the other work, on 15th of each month, the ANM referred the malnutrition cases to the CHC/Block PHCs and usually accompanied the patients to the health facility on the particular day. The ANMs also do not perform deliveries.

It is also revealed that the Infant and Child Care clinics were not being held at the community level by the Medical Offic-

Table 3: Supply Factor — Number of Available Working Hours in a Year for Health Workers

Norms/Eligibility for leave	ANM/ Health Worker (Female)	Health Worker (Male)	LHV	Staff Nurse	Laboratory Technician	Medical Officer
Fixed number of working days in a week	6	6	6	6	7	6
Number of hours of duty in a day	8	8	8	8	8	8
Public holidays	22	22	22	22	22	22
Other holidays like second Saturday	12	12	12	12	0	12
Off-the-job training	-	-	-	-	-	-
Sickness and other leave	15	15	15	15	15	15
Earned Leave	30	30	30	30	30	30
Number of working days	264	264	264	264	328	264
Number of available working hours	1872	1872	1872	1872	2384	1872

ers. The MOs also do not undertake recording and reporting of diarrohea cases. The treatment of all ARI cases referred to PHCs and CHCs was undertaken by the MO themselves. Hence, they were not required to supervise the treatment made by ANMs/ LHVs. The component of workload and activity standards for different health workers are mentioned in Annexure-II.

Available Workforce and Infrastructures in Ganjam District

An attempt has been made to find out the workforce for MCH activity at the district level. It was found that the total number of Health Workers (females) available were 480 and 319 Health Workers (males) were available to cater 460 sub

centres, 82 PHC (New) and 26 CHC/Block PHCs in Ganjam district. The allopathic, homeopathic and ayurvedic workforce for the district and the available health infrastructure is presented in Table 4.

Table 4: Available Workforce and Health Infrastructure in Ganjam District

Type of System/ Health Infrastructure	ANM/ Health Worker (Female)	Health Worker (Male)	LHV	Staff Nurse	Laboratory Technician	Medical Officer
Allopathic*	480	319	70	94	66	234
Homeopathic	12	-	-	19	2	37
Ayurvedic	-	-	-	-	-	50
Total Sub Centres	460					
Total PHC (New)	82					
Total Block PHC	7					
Total Block CHC	19					
Medical College Hospital	1					
District Headquarters Hospital	1					
Sub-divisional hospital	2					
Other hospital	9					
Total Medical Institutions	121					
Total Available beds	1541					

Note: * Includes only staff of SC, PHC (New) and CHCs in Ganjam district

Proportion of Time Spent in MCH, Non-MCH and Other Administrative and Other Responsibility by Different Health Workers

In order to ascertain the proportion of time one health worker should spend, discussions were held with key informants

like Medical Officer (In-charge), Staff Nurse, LHV and Health Worker (Male & Female) and group discussions were held with ANMs/Health Workers (Female) at the CHC/Block PHC level in each of the six blocks covered under the study.

It is found that out of the available working time, ideally ANMs and LHV should spend about 70 percent time in MCH and 20 percent time in non-MCH activities and other 10 percent in discharging administration and other responsibilities. The proportion of time spent in MCH activities by Health Worker (male), Staff Nurse, Laboratory Technicians and Medical Officer is about 40 percent, 40 percent, 10 percent and 30 percent respectively. The proportion of time spent by different health workers for MCH, Non-MCH and other responsibilities are presented in Table 5.

Table 5: Proportion of Time Spent in Different Activities by the Health Workers

Activities	ANM/Health Worker (Female)	Health Worker (Male)	LHV	Staff Nurse	Laboratory Technician	Medical Officer
	%	%	%	%	%	%
Total time spent in MCH activity	70	40	70	40	10	30
Non-MCH Activities	20	20	20	55	85	60
Administration and Other responsibilities	10	40	10	5	5	10
Total	100	100	100	100	100	100

District-level Vital Information of Ganjam

The district-level information was collected from HMIS sources. The mid-year population of Ganjam is about 34.85 lakhs and out of this the 0–1 year population is

79.46 thousand (CBR 22.8). The total number of pregnancies registered during the period was 43.38 thousand out of which the number of deliveries registered were about 96 percent. The vital information about Ganjam is presented in Table 6.

Table 6: Vital Information about Ganjam District

Vital Information	Figure
Total population as per census 2001#	3160635
Mid-year population in the year 2007–08*	3485100
Crude Birth Rate (CBR, 2001) #	24.0
CBR, 2007–2008*	22.8
Total population of children in the age group of 0–5 years*	157649
Total population of children in the age group of 2–5 years*	78189
Total population of children in the age group of 0–1 year*	79460
Total number of pregnancy registered during the year 2007–08*	43386
Total number of women who received 3 ANCs*	36504
Total number of deliveries conducted during the year 2007–08 *	41682
Total number of institutional deliveries during the year 2007–08*	21994
Total number of home deliveries in the year 2007–08*	8637
Number of JSY cases identified during the year 2007–08*	12396
Number of Women received the JSY benefits during the year 07–08*	12304
Percentage of children received full immunization during the year 07–08*	95.98%
IMR*	32
Total Infant deaths in 2007–08*	1362
Maternal Death*	4

Note: # Census of India, 2001.
* HMIS sources

Population and Available Health Staff for MCH at the Facility Visited at Different Levels in Ganjam District

The population and the available health staff for MCH at Block PHC/CHC, PHC New and Sub-Centre levels were collected from the health facilities visited during the study.

The Block PHCs/CHCs under the study covered a population between 119,807 at Kodala CHC to 153,770 at Badagada. At the PHC New Level, it varied from 13,535 at Goudagotha PHC New to 29,690 at Beguniapada. At the SHC level, the population varied from 5583 at Konkorada to 8125 at Goudagotha. The Health Worker (female) at the block PHC/CLC level varied between 20 at Badagada to 26 in Jagannath Prasd Block PHC. The number of Health Worker (male) varies from eight at Kodala CHC to 15 at Badagada. The staff strength of LHV varied between one in Badagada to four in Patrapur Block PHCs. The number of Staff nurses varies from three to four at Block PHC level. The doctors' position varied from five at Kodala CHC to seven at most of the Block PHCs. At the PHC New level nowhere staff nurse was present. LHVs were present only in two PHCs and the staff position for Health Worker (female) varied between three at Goudagotha PHC New to seven at Begunapada PHC New. All PHC New were single doctored. At the SHC level, Health Workers (female) were present in all the SHCs and Health Workers (male) were not present in three SHCs out of six SHCs covered under the study. The population and staff position at various facilities is presented in Table 7.

Demand Calculation, Estimation of Standard Workload and Allowance Standards

The staffing requirement for each type of activity standard was converted into total demand for each of the sub-activity which was estimated based on the reported number of children in the 0–1 year population at each level of Ganjam district. Besides, a population factor of 1.1 is multiplied to number of population in 0–1 year age-group to arrive at the population of mothers with an assumption of 10 percent miscarriage. The standard workload for each category of staff was calculated based on the population estimates at each level. The standards common to each

Table 7: Population & Staff Position at the Health Facility Visited at Different LevelS in Ganjam District

Name of the Health Facility	Total Population 2007–08	Base Population (0–1 years)	ANM/Health Worker (Female)	Health Worker (Male)	LHV	Staff Nurse	Lab Tech	MO
District Level								
Ganjam District	3485100	79460	480	319	70	94	66	234
Block PHC/CHC Level								
Patrapur Block PHC	130361	2868	24	14	4	3	1	7
Badagada Block UGPHC	153770	3518	20	15	1	4	1	7
Polasara Block UGPHC	152665	4105	21	14	2	3	2	7
Buguda Block PHC	138494	3445	21	13	3	3	2	7
Kodala CHC	119807	3276	23	8	2	4	1	5
Jagannathprasad Block PHC	138191	3151	26	9	2	4	1	6
PHC New Level								
Baranga PHC New	24818	546	6	2	0	0	1	1
Goudagotha PHC New	13535	395	3	1	0	0	1	1
Karchuli PHC New	19895	461	5	4	1	0	0	1
Beguniapada PHC New	29690	719	7	3	1	0	0	1
Rahada PHC New	18328	418	5	2	0	0	1	1
Baragaon PHC New	35663	813	6	3	0	0	0	1

contd...

Name of the Health Facility	Total Population 2007–08	Base Population (0–1 years)	ANM/Health Worker (Female)	Health Work-er (Male)	LHV	Staff Nurse	Lab Tech	MO
Sub-Centre Level								
Goudagotha SC	8125	185	1	1				
Konkorada SC	5583	118	1	0				
Biranchipur SC	7248	181	1	1				
Buguda-II SC	6666	175	1	0				
Kodala-II	5723	123	1	1				
Khamarpali SC	6829	145	1	0				

category of staff and not based on population or not available under the service statistics were regarded as allowance standards for the staff category at each facility level. The demand for MCH activity for each staff category at each level is calculated through summing up standard workloads and allowance standards.

Appendix-III depicts the total demand including standard workload and allowance standards for each of the health workers category in Ganjam district in the year 2007–08. It was found that the total demand for MCH services as per the service guarantees under NRHM vary considerably among the staff categories. The total demand of time for MCH services is highest for female Health Worker (1,100,496.2 hours) followed by male Health worker (466,736.5 hours), Doctors (453,522.9 hours), Staff Nurse (194,677.7 hours), Laboratory Technician (85,075.47 hours) and LHV (71,886.3 hours) to cater to a population of 34,85,100.

Gap or Surplus of Health Workers in Ganjam for Providing MCH Services

The gap or surplus of staff required at district and other facility level is calculated by subtracting the total demand and total supply of time by each category based on the proportion of time spent on MCH activities by the staff category at different levels. Based on the time gap, the additional requirement or surplus of staff is calculated by dividing it with the supply factors (number of hours available in a year by the staff categories, i.e., 1872 for all category except laboratory technician and for laboratory technician it is 2384 hours).

Table 8 depicts the staffing requirement of ANM/Health Worker (female), Health Worker (Male), LHV, Staff Nurse, Laboratory Technician and Medical Officer at different levels of Ganjam district (The facility-wise distribution is given in Annexure III). The column (g) in each of these tables

indicates the work pressure of a category of health staff in a facility. The ratio closer to one implies a better situation and a ratio greater than one implies surplus. On the other hand, a wide difference between ratios also implies inequitable distribution of the workforce, and there is scope for improvement.

The findings indicate that at the district level, 251.87 number of additional ANM (female Health Worker) is needed to provide the service guarantees within MCH under NRHM. The overall staffing need ratio for female Health Workers is 0.57 at the district level. However, the ratio is higher than the district level in Badagada (0.52) and Polasara (0.53) UGPHC and Goudagotha (0.54) and Biranchipur (0.55) SHCs. However, even though there is a shortage of female Health Workers at each level the difference varies at district, Block and PHC New and SHC levels. The female Health Workers linked to PHC New level show a better presence than the SHC and Block PHC/CHC level in comparison to district.

With regard to male Health Workers, there is additional need of 121.73 male Health Workers at the district level to provide the service guarantees within MCH under NRHM. The overall staffing need ratio for male Health Workers is 0.51 at the district level. However, the ratio is lower than the district level in most of the PHC/CHCs at Block and PHC New level. The position is better at the SHC level. However, this calculation does not include the SHCs where the male Health Worker post was vacant at the time of survey.

The data indicates that there is a surplus of LHV, particularly for MCH activities, at all levels starting from PHC New to District. It varies from 0.99 at Badagada block PHC to 1.39 at Karachuli PHC New. At the district level, it is 1.28.

Ganjam district needs 66.39 number of additional staff nurses to provide the service guarantees under MCH under NRHM. The overall staffing need ratio for staff nurses is 0.36 at the district level. However, the ratio is lower than the district level in Polasara (0.25) and Buguda (0.30) block PHCs.

Table 8: Staffing Requirement of Health Providers at District Level

Type of health provider	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff required	Ratio of Staff Supply/ Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
ANM	480	1100496.23	628992	-471504.23	-251.87	0.57
Male Health Worker	319	466736.5	238867.2	-227869	-121.73	0.51
LHV	70	71886.32	91728	19841.68	10.60	1.28
Staff nurse	94	194677.7	70387.2	-124290	-66.39	0.36
Lab Technician	66	85075.47	15734.4	-69341.1	-29.09	0.18
Medical Officers	234	453522.9	131414.4	-322109	-172.07	0.29

Note: a) Type of Health provider
b) Number of heath staff as on March 2008
c) Total demand is sum of all the activities being undertaken for MCH by the staff category
d) Total supply the proportion of time spent on MCH
e) Gap/Surplus (c) – (d) in hours
f) (e)/1872 hours
g) WISN ratio is (d)/(c)

The number of additional laboratory technicians required at the district level is found to be 29.09 in order to provide the service guarantees under MCH under NRHM. The overall staffing need ratio for laboratory technicians is 0.18 at the district level. The ratio for Block PHCs is lower than the district for all blocks.

The number of additional doctors required at the district level is found to be 172.07 in order to provide the service guarantees under MCH under NRHM. The overall staffing need ratio for doctors is 0.29 at the district level. However, the ratio for Block PHCs is lower than the district for all blocks covered under the study.

CONCLUSIONS

The present study differs from other studies in a way that it adopted slightly modified method of WISN. The earlier studies undertaken by Belayet Hossain et al. in 1999[14] and Serpil Ozcan et al. 1999 were based on the actual service statistics. The present study utilizes population estimates from HMIS source and calculated the guaranteed services based on certain assumptions for service utilization after group discussion with different category of staff under each facility. Population estimates like 0–1 year population was used and a population factor was derived based on the assumption that the guarantees for each of the services is expressed into units. In an attempt to simplify the calculation for demand, the study made a departure from earlier authors in calculating the standard workload and allowance. Instead of calculating the standard workload in a year for each of the sub activities it has converted into total demand (time required) for the sub activities for the assumed service guarantees. Each of the components of work and the category allowance is converted into the demand for that activity in hours.

Our study shows WISN is a relatively simple method, allowing reasonably precise estimation for predicting the

workload and staffing requirement at national, state and district level to make managerial decision. The present study with conversion of demand into hours for each activity of a population or facility further simplifies the method, particularly when we are interested in a particular activity like MCH or disease programme etc. While the earlier methods allow calculating the staffing need taking into consideration the total work, either at staff or facility level, the present modification allows calculating the work load for a particular activity within different staff categories based on the proportion of time spent in that particular activity in comparison to other work assignments.

The study further indicates that at the district level the overall health staffing for ensuring service guarantees for MCH as per NRHM framework is inadequate among female Health Workers (252), Doctors (172), male Health Workers (122), staff nurses (66) and laboratory technicians (29). It is found that LHVs were in surplus (11) based on the assigned duties under the MCH activities.

The gap or surplus of Health Workers shows that the additional staff required to ensure MCH is more for female Heath Worker followed by doctors. The WISN ratio shows there is an immediate need to fill up laboratory technician posts followed by doctors and staff nurses posts due to the increased level of institutional deliveries at CHCs. The estimated results clearly indicate that the WISN method helps in determining the level of staffing need and requirement for additional staffing not only within the facility but also within the categories at each levels.

RECOMMENDATIONS

It is recommended that the WISN method should be used as a methodology to calculate the expected demand such a package of services should generate and ascertain the gap that exists between promises and delivery capacity.

Government health planners should use WISN methodology to consider the magnitude of staffing increases that would be needed to meet service guarantees, with specific staffing information by cadre of practitioner. Using salary data, planners can easily generate budgets required to fill the gaps.

The study generated time standards in minutes for each MCH activity promised by the NRHM. These standards could now be applied to other districts in India. Further, WISN can provide a useful tool for civil society advocates holding governments accountable for their health service guarantees.

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Annexure-I: Component of Workload and Activity Standards for Health Workers

Staff Category	Component of Workload	Activity Standard
ANM/Health Worker (Female)		
	Registration of pregnancy	20 minutes
	Antenatal check-ups 1st	45 minutes
	Antenatal check-ups Subsequent	30 minutes
	Immunization-mother	7 minutes
	Immunization-Polio	3 minutes
	Immunization-BCG	5 minutes
	Immunization-DPT	5 minutes
	Immunization-Measles	7 minutes
	Immunization-Vitamin-A	2 minutes
	Conducting urine test	15 minutes
	Conducting Hb test	5 minutes
	Identification of high risk pregnancy and referral	0
	Conducting deliveries	4 and half hours
	Supervision of delivery by TBA	1 hour
	Referring cases with difficult labour and newborn abnormality	45 minutes
	Follow-up of referred cases	30 minutes
	Identification of JSY cases	0
	Documentation of JSY	15 minutes
	Seeking approval for JSY	2 days/month
	Disbursing the money to beneficiary	30 minutes
	Making postnatal visits & counselling	30 minutes
	Assessing growth & development of infant	15 minutes
	Health Education to mothers individually	20 minutes
	Health Education to mothers in groups	4 hours
	Assisting MO/LHV in ANC/PNC clinics	0
	Referring cases with malnutrition	4 hours/month
	Preparation of Reports	17 hours/month

contd…

Annexure-I: Contd...

Staff Category	Component of Workload	Activity Standard
	Total time spent in MCH activity	70 %
	Non-MCH Activities	20%
	Administration and Other responsibilities	10%
Health Worker (Male)		
	Assisting ANM in administering vaccines to children	15 minutes
	Assisting ANM in administering immunization to pregnant Woman	20 minutes
	Total time spent in MCH activity	40 %
	Non-MCH Activities	20%
	Administration and Other responsibilities	40%
LHV		
	Conducting weekly MCH clinic	2 hours for 4 days/ month
	Conducting deliveries	5 hours
	Supervising & guiding the work of HW	30 minutes
	Scrutinizing the reports	2 hours for 3 days/week
	Reviewing the reports	15 minutes/day
	Compilation of reports	4 hours/week
	Diagnosis of pneumonia cases	15 minutes
	Providing treatment to mild and moderate ARI	5 minutes
	Referring doubtful and severe cases of ARI	5 minutes
	Total time spent in MCH activity	70 %
	Non-MCH Activities	20%
	Administration and Other responsibilities	10%
Staff Nurse		
	Admission	10 minutes
	PV Examination	10 minutes
	Conducting delivery	30 minutes
	Assisting in delivery	1 hour
	New born care	
	Resuscitation	5 minutes
	Cleaning	15 minutes
	Pumping	5 minutes

Staff Category	Component of Workload	Activity Standard
	Cord clamping	2 minutes
	Record maintenance & documentation	10 minutes
	PNC examination	15 minutes
	Minor ailment treatment	15 minutes
	Counselling for breastfeeding	10 minutes
	Helping mother to breastfeed their infants	5 minutes
	Oxygen support to infants	2 minutes
	Injecting Injection	10 minutes
	Total time spent in MCH activity	40 %
	Non-MCH Activities	55%
	Administration and Other responsibilities	5%
Laboratory Assistant		
	Conducting urine tests for pregnant women	10 minutes
	Conducting stool tests for pregnant women	10 minutes
	Conducting blood tests for pregnant women-Hb test	15 minutes
	Conducting blood tests for pregnant women	1 hour
	Sputum test for pregnant women	1 hour
	HIV test for pregnant women	1 hour
	Total time spent in MCH activity	10 %
	Non-MCH Activities	85%
	Administration and Other responsibilities	5%
Medical Officer		
	Attending the referral cases	10 minutes
	Conducting OPD	7 minutes
	In-patient care of critical cases	1 hour/day
	Attending the ANC/PNC clinic	10 minutes
	Supervision of delivery	15 minutes
	Supervision of MCH activity in community	30 minutes
	Correction of moderate and severe dehydration	1 hour

contd…

ANNEXURE-I: Contd...

Staff Category	Component of Workload	Activity Standard
	Detection and treatment of pneumonia cases	2 hours
	Supervising the treatment of ANM/LHV for ARI	
	Infant and child care clinic	0
	Monitoring all diarohea cases for children (0-5) years	5 minutes
	Ensuring supplies and equip-ments	4 day/month
	Recording & reporting all diaro-hea cases	0
	Training of Health Workers	2 hours for 3 days/ month
	MCH-related General adminis-tration	3 hours/week
	Correction of malnutrition cases	1 hour/month
	Total time spent in MCH activity	30 %
	Non-MCH Activities	60%
	Administration and Other responsibilities	10%
MO (In charge)		
	Administration and Other responsibilities	6 hours/day

Annexure-II: Demand Estimation and Standard Workload and Allowance Standards for Health Workers for Ganjam District

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
ANM/Health Worker (Female)						
Registration of pregnancy	20 minutes	0.33	79460	1.1	1	29135.44
Antenatal check-ups 1st	45 minutes	0.75	79460	1.1	1	65554.73
Antenatal check-ups Subsequent	30 minutes	0.50	79460	1.1	3	131109.46
Immunization-mother	7 minutes	0.12	79460	1.1	2	20394.81
Conducting urine test	15 minutes	0.25	79460	1	1	19865.07
Conducting Hb test	5 minutes	0.08	79460	1	1	6621.69
Identification of high risk pregnancy and referral	0	0.00	79460	1	1	0.00
Health Education to mothers individually	20 minutes	0.33	79460	1	1	26486.76
Make postnatal visits & counselling	30 minutes	0.50	79460	1	1	39730.14
Immunization-Polio	3 minutes	0.05	79460	1	4	15892.06
Immunization-BCG	5 minutes	0.08	79460	1	1	6621.69
Immunization-DPT	5 minutes	0.08	79460	1	3	19865.07
Immunization-Measles	7 minutes	0.12	79460	1	1	9270.37
Immunization-Vitamin-A	2 minutes	0.03	79460	1	1	2648.68
Assess growth & development of infant	15 minutes	0.25	79460	1	1	19865.07

contd...

ANNEXURE-II: Contd...

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Identification of JSY cases	0	0.00	79460	1	1	0.00
Documentation of JSY	15 minutes	0.25	79460	1	1	19865.07
Disbursing the money to beneficiary	30 minutes	0.50	79460	1	1	39730.14
Health Education to mothers in groups	4 hours/4 days/month				480	92160.00
Assisting MO/LHV in ANC/PNC clinics	0					0.00
Seeking approval for JSY	2 days/month				480	92160.00
Referring cases with malnutrition	4 hours/month				480	23040.00
Preparation of Reports	17 hours/ month				480	97920.00
Travel	4 hours/day for 14 days in a month				480	322560.00
Total time spent in MCH activity	70%					
Non-MCH Activities	20%					
Administration and Other responsibilities	10%					
Health Worker (Male)						
Assisting ANM in administering vaccines to children	15 minutes	0.25	79460	1	9	178785.63

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Assisting ANM in administering immunization to pregnant Woman	20 minutes	0.33	79460	1.1	2	58270.87
Travel	2 hours/day				319	229680
Total time spent in MCH activity	40%					
Non-MCH Activities	20%					
Administration and Other responsibilities	40%					
LHV						
Diagnosis of pneumonia cases (0-1)	15 minutes	0.25	79460	1	0.2	3973.01
Diagnosis of pneumonia cases (2-5)	15 minutes	0.25	79460	4	0.05	3973.01
Providing treatment to mild and moderate ARI (0–1)	5 minutes	0.08	79460	1	0.05	331.08
Providing treatment to mild and moderate ARI (2–5)	5 minutes	0.08	79460	4	0.04	1059.47
Referring doubtful and severe cases of ARI (0–1)	5 minutes	0.08	79460	1	0.04	264.87
Referring doubtful and severe cases of ARI (2–5)	5 minutes	0.08	79460	4	0.01	264.87
Conducting deliveries	5 hours	5.00	79460	1	0	0.00

contd...

ANNEXURE-II: Contd...

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Conducting weekly MCH clinic	2 hours for 4 days/month				70	6720
Supervizing & guiding the work of HW	30 minutes / day				70	12600
Scrutinizing the reports	2 hours for 3 days/week				70	21840
Reviewing the reports	15 minutes/ day				70	6300
Compilation of reports	4 hours/week				70	14560
Total time spent in MCH activity	70%					
Non-MCH Activities	20%					
Administration and Other responsibilities	10%					
Staff Nurse						
Admission	10 minutes	0.17	79460	1	1	13243.38
PV Examination	10 minutes	0.17	79460	1	1	13243.38
Conducting delivery	30 minutes	0.50	79460	1	0.9	35757.13
Assisting in delivery	1 hour	1.00	79460	1	0.1	7946.03
New born care		0.00	79460	1	0	0.00
Resuscitation	5 minutes	0.08	79460	1	1	6621.69

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Cleaning	15 minutes	0.25	79460	1	1	19865.07
Pumping	5 minutes	0.08	79460	1	1	6621.69
Cord clamping	2 minutes	0.03	79460	1	1	2648.68
Record maintenance & documentation	10 minutes	0.17	79460	1	1	13243.38
PNC examination	15 minutes	0.25	79460	1	0.15	2979.76
Minor ailment treatment (0-1)	15 minutes	0.25	79460	1	0.25	4966.27
Minor ailment treatment (2-5)	15 minutes	0.25	317841	4	0.1	31784.11
Counselling for breastfeeding	10 minutes	0.17	79460	1	1	13243.38
Helping mother to breastfeed their infants	5 minutes	0.08	79460	1	1	6621.69
Oxygen support to infants	2 minutes	0.03	79460	1	1	2648.68
Inject Injection	10 minutes	0.17	79460	1	1	13243.38
Total time spent in MCH activity	40%				94	
Non-MCH Activities	55%					
Administration and Other responsibilities	5%					
Laboratory Assistant						
Conducting urine tests for pregnant women	10 minutes	0.17	79460	1.1	1	14567.72

contd...

ANNEXURE-II: Contd...

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Conducting stool tests for pregnant women	10 minutes	0.17	79460	1.1	0.1	1456.77
Conducting blood tests for pregnant women-Hb test	15 minutes	0.25	79460	1.1	1	21851.58
Conducting blood tests for pregnant women	1 hour	1.00	79460	1.1	0.5	43703.15
Sputum test for pregnant women	1 hour	1.00	79460	1.1	0.02	1748.13
HIV test for pregnant women	1 hour	1.00	79460	1.1	0.02	1748.13
Total time spent in MCH activity	10%				66	
Non-MCH Activities	85%					
Administration and Other responsibilities	5%					
Medical Officer						
Attending the referral cases	10 minutes	0.17	79460	1	0.15	1986.51
Conducting OPD	7 minutes	0.12	79460	1	0.15	1390.55
Attend the ANC/PNC clinic	10 minutes	0.17	79460	1.1	1	14567.72
Supervision of delivery	15 minutes	0.25	79460	1	0.9	17878.56
Supervision of MCH activity in community	30 minutes	0.50	79460	1	0	0.00
Correction of moderate and severe dehydration (0–1)	1 hour	1.00	79460	1	0.5	39730.14

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Correction of moderate and severe dehydration (2–5)	1 hour	1.00	317841	1	0.3	95352.34
Detection and treatment of pneumonia cases (0–1)	2 hours	2.00	79460	1	0.2	31784.11
Detection and treatment of pneumonia cases (2–5)	2 hours	2.00	79460	4	0.05	31784.11
Supervising the treatment of ANM/LHV for ARI	0	0.00	79460	1	0	0.00
Infant and child care clinic	0	0.00	79460	1	0	0.00
Recording & reporting all diarohea cases	0	0.00	79460	1	0	0.00
Monitoring all diarohea cases for children (0–1) years	5 minutes	0.08	79460	1	0.5	3310.85
Monitoring all diarohea cases for children (2–5) years	5 minutes	0.08	79460	4	0.3	7946.03
Ensuring supplies and equipments	4 day/month				234	11232
Inpatient care of critical cases	1 hour/day				234	84240
Training of Health Workers	2 hours for 3 days/month				234	16848
MCH-related General administration	3 hours/week				234	36504

contd...

ANNEXURE-II: Contd...

Component of Workload	Activity Standard	Time units in hours	Number of population in the 0–1 years	Population Factor	Unit	Calculation of Demand in hours
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Correction of malnutrition cases	1 hour/month				234	2808
Total time spent in MCH activity	30%					
Non-MCH Activities	60%					
Administration and Other responsibilities	10%					
MO (In charge)						
Administration and Other responsibilities	6 hours/day				26	56160

Notes:
a) Component of workload listed from the review of IPHS guidelines and in-depth discussion with key health staff.
b) Activity Standards generated through focus group discussions and interview with healthcare providers in Orissa state in November 2008.
c) Unit of time converted into hours dividing the figures of column b/60.
d) Number of individuals in the (0–1 years age) estimated to need the stated services based on the Census of India 2001 data and HMIS.
e) Population factors were fixed based on the assumptions made on the basis of discussions and interview with the healthcare providers.
f) Units of multiplication factors were given based on the service guarantees under NRHM implementation framework 2005.
g) Demand is calculated multiplying figures of columns b x c x d/60 in each row.

Annexure III: Staffing Requirement of Health Providers at Different Levels

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
ANM						
Patrapur Block PHC	24	48451.82	31449.6	-17002.22	-9.08	0.65
Badagada Block UGPHC	20	50017.9	26208	-23809.90	-12.72	0.52
Polasara Block UGPHC	21	51885.91	27518.4	-24367.51	-13.02	0.53
Buguda Block PHC	21	47960.01	27518.4	-20441.61	-10.92	0.57
Kodala CHC	23	49570.74	30139.2	-19431.54	-10.38	0.61
Jagannathprasad Block PHC	26	52749.74	34070.4	-18679.34	-9.98	0.65
Baranga PHC New	6	11095.77	7862.4	-3233.37	-1.73	0.71
Goudagotha PHC New	3	6273.59	3931.2	-2342.39	-1.25	0.63
Karchuli PHC New	5	9282.18	6552	-2730.18	-1.46	0.71
Beguniapada PHC New	7	13432.85	9172.8	-4260.05	-2.28	0.68
Rahada PHC New	5	9025.68	6552	-2473.68	-1.32	0.73
Baragaon PHC New	6	12684.69	7862.4	-4822.29	-2.58	0.62
Goudagotha SC	1	2408.44	1310.4	-1098.04	-0.59	0.54
Konkorada SC	1	2009.9	1310.4	-699.5	-0.37	0.65

contd...

Annexure-III: Contd...

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Biranchipur SC	1	2384.65	1310.4	-1074.25	-0.57	0.55
Buguda-II SC	1	2348.96	1310.4	-1038.56	-0.55	0.56
Kodala-II	1	2039.65	1310.4	-729.25	-0.39	0.64
Khamarpali SC	1	2170.51	1310.4	-860.11	-0.46	0.60
Male Health Worker						
Patrapur Block PHC	14	18636.2	10483.2	-8153.00	-4.36	0.56
Badagada Block UGPHC	15	21295.37	11232	-10063.37	-5.38	0.53
Polasara Block UGPHC	14	22326.58	10483.2	-11843.38	-6.33	0.47
Buguda Block PHC	13	19637.58	9734.4	-9903.18	-5.29	0.50
Kodala CHC	8	15533.4	5990.4	-9543.00	-5.10	0.39
Jagannathprasad Block PHC	9	15880.48	6739.2	-9141.28	-4.88	0.42
Baranga PHC New	2	3068.89	1497.6	-1571.29	-0.84	0.49
Goudagotha PHC New	1	1898.42	748.8	-1149.62	-0.61	0.39
Karchuli PHC New	4	4255.32	2995.2	-1260.12	-0.67	0.70
Beguniapada PHC New	3	4305.02	2246.4	-2058.62	-1.10	0.52
Rahada PHC New	2	2686.67	1497.6	-1189.07	-0.64	0.56

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Baragaon PHC New	3	4585.8	2246.4	-2339.40	-1.25	0.49
Goudagotha SC	1	1271.92	748.8	-523.12	-0.28	0.59
Konkorada SC	0					
Biranchipur SC	1	1259.98	748.8	-511.18	-0.27	0.59
Buguda-II SC	0					
Kodala-II	1	1086.95	748.8	-338.15	-0.18	0.69
Khamarpali SC	0					
LHV						
Patrapur Block PHC	4	3900.11	5241.6	1341.49	0.72	1.34
Badagada Block UGPHC	1	1322.82	1310.4	-12.42	-0.01	0.99
Polasara Block UGPHC	2	2281.7	2620.8	339.1	0.18	1.15
Buguda Block PHC	3	3517.75	3931.2	413.45	0.22	1.12
Kodala CHC	2	3950.77	5241.6	1290.83	0.69	1.33
Jagannathprasad Block PHC	2	2163.25	2620.8	457.55	0.24	1.21

contd...

ANNEXURE-III: Contd...

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Baranga PHC New	0					
Goudagotha PHC New	0					
Karchuli PHC New	1	943.24	1310.4	367.16	0.20	1.39
Beguniapada PHC New	1	975.28	1310.4	335.12	0.18	1.34
Rahada PHC New	0					
Baragaon PHC New	0					
Staff Nurse						
Patrapur Block PHC	3	6166.2	2246.4	-3919.8	-2.09	0.36
Badagada Block UGPHC	4	7563.7	2995.2	-4568.5	-2.44	0.40
Polasara Block UGPHC	3	8825.75	2246.4	-6579.35	-3.51	0.25
Buguda Block PHC	3	7406.75	2246.4	-5160.35	-2.76	0.30
Kodala CHC	4	6797.7	2995.2	-3802.5	-2.03	0.44
Jagannathprasad Block PHC	4	6774.65	2995.2	-3779.45	-2.02	0.44

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Baranga PHC New	0					
Goudagotha PHC New	0					
Karchuli PHC New	0					
Beguniapada PHC New	0					
Rahada PHC New	0					
Baragaon PHC New	0					
Lab Technician						
Patrapur Block PHC	1	3070.67	238.4	-2832.27	-1.19	0.08
Badagada Block UGPHC	1	3766.61	238.4	-3528.21	-1.48	0.06
Polasara Block UGPHC	2	4395.09	476.8	-3918.29	-1.64	0.11
Buguda Block PHC	2	3688.45	476.8	-3211.65	-1.35	0.13
Kodala CHC	1	3507.5	238.4	-3269.1	-1.37	0.07
Jagannathprasad Block PHC	1	3373.67	238.4	-3135.27	-1.32	0.07

contd...

ANNEXURE-III: Contd...

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Baranga PHC New	1	584.58	238.4	-346.18	-0.18	0.41
Goudagotha PHC New	1	422.91	238.4	-184.51	-0.10	0.56
Karchuli PHC New	0					
Beguniapada PHC New	0					
Rahada PHC New	1	447.41	238.4	-209.01	-0.11	0.53
Baragaon PHC New	0					
Medical Officers						
Patrapur Block PHC	7	15565.29	3931.2	-11634.1	-6.21	0.25
Badagada Block UGPHC	7	17575.42	3931.2	-13644.2	-7.29	0.22
Polasara Block UGPHC	7	19390.71	3931.2	-15459.5	-8.26	0.20
Buguda Block PHC	7	17349.66	3931.2	-13418.5	-7.17	0.23
Kodala CHC	5	12582.63	2808	-9774.63	-5.22	0.22
Jagannathprasad Block PHC	6	15792.47	3369.6	-12422.9	-6.64	0.21
Baranga PHC New	1	1262.15	561.6	-700.55	-0.37	0.44

Name of the Health Facility	No. of Health Staff	Total Demand in Hours	Total Supply	Gap/Surplus	Number of Additional Staff Required	Ratio of Staff Supply/Required (WISN)
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Goudagotha PHC New	1	422.91	561.6	138.69	0.07	1.33
Karchuli PHC New	1	1110.5	561.6	-548.9	-0.29	0.51
Beguniapada PHC New	1	1570.82	561.6	-1009.22	-0.54	0.36
Rahada PHC New	1	497.41	561.6	64.19	0.03	1.13
Baragaon PHC New	1	1738.74	561.6	-1177.14	-0.63	0.32

Notes: a) Name of the facility visited.
b) Number of heath staff as on March 2008.
c) Total demand is sum of all the activities being undertaken for MCH by the staff category.
d) Total supply is the proportion of time spent on MCH.
e) Gap/Surplus (c) – (d) in hours.
f) (e)/1872 hours.
g) WISN ratio is (d)/(c).