

Status of Inequality of Health facility at PHC level:
A comparative study between Andhra Pradesh and India

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ABSTRACT

The establishment of Primary Health Centre's in India started as early as in 1952, and over the last six decades it has undergone several changes to meet the increasing demand for health care services. The National Health Policy stressed on the provision of preventive, promotive and rehabilitative health services to the people thereby making a shift from medical care to health care. The delivery of Primary Health Care is the foundation of the rural health care system and is an integral part of the national health care system. Individuals who are poor are most sensitive to the cost of health care; they are less likely than are those who are rich to seek care when they are ill, and this difference is more evident in rural than in urban areas (NSSO. The sub-centre is the most peripheral institution and the first contact point between the primary healthcare system and the community. Primary Health Centre's (PHCs) comprise the second tier in rural healthcare structure envisaged to provide integrated curative and preventive healthcare to the rural population with emphasis on preventive and promotive aspects. (Promotive activities include promotion of better health and hygiene practices, tetanus inoculation of pregnant women, intake of IFA tablets and institutional deliveries.) Compared to District Hospitals or sub-divisional Hospitals, PHCs are accessible to a larger population, as one PHC is expected to serve 30,000 populations (NFS-RCH II 2003) in plain area and 20,000 in hilly and tribal area. However, just the availability of PHCS is not sufficient for the effective delivery of these services. They should also have essential infrastructure, staff, equipment and supplies. The PHCs surveyed at national level (9688) and Andhra Pradesh (380) with respect to the availability of selected facilities.

Key Words: Primary Health Centre, healthcare, rural, institution & National Health Policy

Status of Inequality of Health facility at PHC level: **A comparative study between Andhra Pradesh and India**

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The establishment of Primary Health Centres in India started as early as in 1952, and over the last six decades it has undergone several changes to meet the increasing demand for health care services. Until the Eighth Five Year Plan, the emphasis was on the expansion of the health care establishment. However, during the Eighth and subsequent plans the emphasis was mainly on consolidation of existing health infrastructure rather than on expansion. The thrust has been on qualitative improvement in the health services through strengthening of physical facilities like provision of essential equipment, supply of essential drugs and consumables, construction of buildings and staff quarters, filling up of vacant posts of medical and paramedical staff and in-service training of staff.

The National Health Policy stressed on the provision of preventive, promotive and rehabilitative health services to the people thereby making a shift from medical care to health care. The delivery of Primary Health Care is the foundation of the rural health care system and is an integral part of the national health care system. In the rural areas, services are provided through a network of integrated health and family welfare system and the health programmes have been restructured and reoriented from time to time to meet the objectives of the National Health Policy. Health policies and priorities have been outlined in the Five year Plans, developed as part of India's centralized planning and development strategy. The need for universal comprehensive care was reiterated in the first official National Health Policy proposed in 1983 (National Health Policy 1983). Although the second National Health Policy in 2002 continued to support India's vision, it was undertaken on the "basis of realistic considerations of capacity" (National Health Policy 2002).

In line with this, the Ministry of Health and Family Welfare (MOHFW), Government of India (Gol) is implementing a Reproductive and Child Health (RCH) programme in the country. The primary aim of the RCH Programme is to bring all the RCH services within easy reach of the community. The RCH Programme also aims to strengthen health infrastructure in terms of man power/trained staff and material/equipment and supply to provide good quality RCH services. India needs sustainable, high quality human resources

for health with a variety of skills and who are adequately distributed in all states, particularly in rural areas. (Rao M, et.al 2011). India has more than one million rural practitioners, many of whom are not formally trained or licensed. (Rohde J, Viswanathan H. 1994). India is a signatory to the Alma Ata Declaration of 1978 and was committed to attaining the goal of "Health for All by the Year 2000 A.D through the universal provision of primary health care services (Government of India 1983).

Individuals who are poor are most sensitive to the cost of health care; they are less likely than are those who are rich to seek care when they are ill, and this difference is more evident in rural than in urban areas (NSSO) In India, the healthcare in rural areas has been developed as a three tier structure based on predetermined population norms. The sub-centre is the most peripheral institution and the first contact point between the primary healthcare system and the community. Each sub-centre is manned by one Auxiliary Nurse Midwife (ANM) and one male Multi-purpose Worker [MPW (M)]. A Lady Health Worker (LHV) is in charge of six sub-centers each of which are provided with basic drugs for minor ailments and are expected to provide services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhea control, and control of communicable diseases. Sub-centres are also expected to use various mediums of interpersonal communication in order to bring about behavioural change in reproductive and hygiene practices. The sub-centres are needed for taking care of basic health, needs of men, women and children. As per the figures provided by the rural health Statistics MOHFW, in India there were 148,124 sub centres functioning in March 2011.

Primary Health Centres (PHCs) comprise the second tier in rural healthcare structure envisaged to provide integrated curative and preventive healthcare to the rural population with emphasis on preventive and promotive aspects. (Promotive activities include promotion of better health and hygiene practices, tetanus inoculation of pregnant women, intake of IFA tablets and institutional deliveries.) Apart from the regular medical treatments, these centres's have some special focuses at national level. They are Birth control programmes, Infant immunization, Anti epidemic programme, pregnancy & related care and emergencies. PHC includes all areas that play a role in health, such as access to health services, environment and lifestyle. (Marcos, Cueto (2004). "The ORIGINS of Primary Health Care and SELECTIVE Primary Health Care." *Am J Public Health*. 22 94: 1864-1874

PHCs are established and maintained by State Governments under the Minimum Needs Programme (MNP)/Basic Minimum Services Programme (BMS). A medical officer is in charge of the PHC supported by fourteen paramedical and other staff. It acts as a referral unit for six sub-centres. It has four to six beds for inpatients. The activities of PHC involve curative, preventive, and Family Welfare Services. According to MOHFW data there were 23,887 PHCs functioning in March 2011. Of these, 8326 were providing 24 hour medical services. Though the numbers appear to be increasing there is still a shortfall of about 16 per cent when compared to the required norms for PHCs. Government of India's initiative to create and expand the presences of PHCs throughout the country is consistent with the eight elements of primary health care outlined in the Alma-Ata declaration (Park.K (2009) Textbook of Preventive & Social Medicine P -805).

The functions of PHCs are:

- Safe water supply & Basic Sanitation
- Provision of medical care
- Maternal & Child health including Family Planning
- Prevention and control of locally endemic diseases
- Collection and reporting of vital statistics
- Education about health
- National health programmes
- Referral services
- Training of health guides, health workers, local dais and health assistants &
- Basic Laboratory workers.

Community Health Centres (CHC) forming the uppermost tier are established and maintained by the State Government under the MNP/BMS programme. Four medical specialists including Surgeon, Physician, Gynecologist, and Pediatrician supported by twenty-one paramedical and other staff are supposed to staff each CHC. Norms require a typical CHC to have thirty in-door beds with OT, X-ray, Labour Room, and Laboratory facilities. A CHC is a referral centre for four PHCs within its jurisdiction, providing facilities

for obstetric care and specialist expertise. There were 3346 CHCs in the country, almost a 50 per cent shortfall.

Most reports and evaluation studies point to the lack of equipment, poor or absence of repairs, improper functioning, or lack of complementary facilities such as 24-hour running water, electricity back-ups, and so on. But conditions being what they are, unreliable electricity and water supplies also take their toll on the performance of these centres. The following conditions are necessary mandatory for a PHC. In order to define adequacy, we have taken the presence or absence of the item at available facility under any item listed above. Under this backdrop this paper made an attempt to assess the availability of critical inputs at PHC as per the norms under RCH programme in Andhra Pradesh state and compared the data with the national.

PRIMARY HEALTH CENTRE

Compared to District Hospitals or sub-divisional Hospitals, PHCs are accessible to a larger population, as one PHC is expected to serve 30,000 populations (NFS-RCH II 2003) in plain area and 20,000 in hilly and tribal area. However, just the availability of PHCS is not sufficient for the effective delivery of these services. They should also have essential infrastructure, staff, equipment and supplies. The states which have less than 100 PHC's are Arunachal Pradesh (41), Nagaland (37), Manipur (32), Mizoram (27), Tripura (11), Meghalaya (25), Kerala (70) and Punjab (71). Other states consist of more than 100 PHC's.

This section presents the status of the PHCs surveyed at national level (9688) and Andhra Pradesh (380) with respect to the availability of selected infrastructure, staff, equipment and supplies, besides training of medical and Para-medical staff.

Infrastructure

The stock of basic facilities and capital equipment needed for the functioning of a PHCs. Infrastructure facility in PHCs is most important and essential. In order to serve effectively to the public PHCs should have better infrastructures. This includes Own building, continuous water supply of tap water, toilet facility, labor room, electricity, laboratory, functional vehicle, telephone facility and inpatient bed. Poor infrastructure has been shown to significantly affect a patients perception of quality of care (Rao et al 2006 <http://www.hst.org.za/publications/phc-facility-infrastructure-situation-analysis-data-available>) Out of 380 surveyed PHC's in Andhra Pradesh, more than three-fourth of the

PHC's is functioning from their own building (96.6 percent) which is better than national average of (89.2 percent). Jammu Kashmir stood lowest with 65.2 percent and most of the states have less than hundred PHC's found 100.0 percent functioning at their own building. State with more than hundred PHC's, Tamil Nadu with 99.4 percent has better infrastructure. A **toilet** is a sanitation fixture used primarily for the disposal of human excrement and urine (Wikipedia/wiki/toilet). It is essential for PHCs to have a good toilet facilitate to the patients. In PHCs where women are expected to get services like antenatal and postnatal check-ups including internal examination and IUD insertions, and where women are admitted for delivery, sterilization or MTP, it is crucial to have at least one toilet. However, in India about 52.3 percent of the PHCs have at least one flush **toilet** whereas in Andhra Pradesh an overwhelming majority of the PHCs have at least one flush toilet facility (89.5 percent). The highest of hundred percent is found in Meghalaya (100.0 Percent), and the lowest state is Bihar with (14.7 Percent). Health care facilities consume a large volume of water in its daily operation. In any health facility, continuous supply of **water** is a critical input. However, in India, less than one-fourth (23.5 percent) of the surveyed PHCs have tap water supply and AP has less than one-fifth (16.3 percent) of the PHCs have tap water facility. The tap water facility condition is worse in Bihar state with only (2 percent) which is lowest and highest in Tripura (100.0). Himachal Pradesh comparatively shows high (81.7 percent) in > 100 PHC states.

Table 1: Infrastructure Status of Primary Health Centres in Andhra Pradesh and All India

INFRASTRUCTURE STATUS RCH-II (2003)	Andhra Pradesh	All India
INFRASTRUCTURE FACILITIES	Percentage of PHCs having	
Functioning at own building	96.6	89.2
Toilet facility (Flush toilet only)	89.5	52.3
Tap water facility (Water Supply through Tap only)	16.3	23.5
Electricity connection	98.4	66.4
Labour room facility	87.4	48.4
Laboratory facility (At least one basic Laboratory)	89.2	45.6
Telephone facility	36.3	19.8
Vehicle Functional	43.2	22.8
At least one in-patient bed	92.4	71.3
TOTAL	380	9688

Provision of immunization to children and pregnant women is one of the important functions of the PHC. PHCs need electricity for purposes of lighting, operating equipment and for storage of vaccines at specified temperatures in a refrigerator/ freezer. However, in India, thirty-four percent of the PHCs are functioning without electricity and this situation is even worst in Bihar whereas about 68 percent of the PHCs not having electricity facility which is highest of the non-electric facility state in India. However in the study area of Andhra Pradesh state PHCs ranked third in terms of availability of electricity facility (98.4 percent) after Tripura (100.0 Percent) and Tamil Nadu (99.8) stood first and second place respectively.

In the context of the National population policy 2000 goal of eighty percent institutional deliveries, the availability of a **labour room** is a critical facility for a PHC. However, only 48 percent of the PHCs in India have a labour room. In Andhra Pradesh state 87.4 Percent of the PHC's have a labour room which is better than average national level, lowest (21.8 percent) in Jharkhand state and highest in Tripura recorded 100.0 percent. Appreciably, Tamil Nadu (95.6 percent) stood second and also first in > 100 PHC states. In the context of provision of RCH services, the availability of **laboratory** facility in PHC is most important to test blood and urine of the women seeking antenatal care, as well as for the diagnosis of RTI/STI among men and women. Less than half (45.6 Percent) of the PHC's in India and more than four-fifth (89.2 Percent) of the PHC's in Andhra Pradesh have at least one basic Laboratory facility. While West Bengal has the lowest (4.8 percent) and Tripura has the highest (100.0 percent) number of PHC's having this infrastructure facility. The PHCs are supposed to refer the complicated cases to higher health facilities, the **telephone** facility in PHC is very important. Less than two-fifth (36.3 percent) of the PHC's in Andhra Pradesh have the better telephone facility while national level average level of 19.8 percent. Chhattisgarh was found to be the lowest (1.6 percent) state of telephone facility available in PHC's, and Tripura stands high as 100.0 percent towards this facility. Gujarat (85.7 percent) shows high among the more than hundred percent states.

In the context of the out-reach programme of the PHCs and referral of the complicated cases to higher health facilities, the availability of a **vehicle** in running condition becomes a critical input. But only twenty-three percent of the PHCs in India have a functional vehicle. In Andhra Pradesh, it is about 43.2 percent while Orissa state

has lowest (1.0 percent) and the same facility in Gujarat is 86.5 percent leading among the states of India. PHCs are supposed to provide medical services for **in-patients** and hence PHCs are expected to have at least six **beds**. This facility at national level is 71.3 percent where as more than four-fourth (92.4 percent) of the PHC's in Andhra Pradesh has at least one bed facility. In Bihar – only 4 percent of the PHCs have at least one bed for inpatients which is lowest in the country. While states of Mizoram, Tripura, Meghalaya and Arunachal Pradesh recording hundred percent and Haryana with 99.0 percent found to be high in more than 100 PHC states.

Staff Position

The availability of at least one **Medical Officer** (MO) on the roles of PHC is absolutely essential. However, almost two in every ten PHCs in India is functioning without any doctor. However, an overwhelming majority of the PHCs in Bihar (98.1 Percent) is functioning with a male or female doctor. In Andhra Pradesh (74.3 percent) of PHCs have doctors while national level stands at (80.0 percent).

The inclusion of a **lady Medical Officer** on the PHC staff is advantageous in maternal care services, as women can confide with a lady doctor easily. However, only 15.5 percent of the PHCs (with at least one female medical officer) in India have at least one lady Medical Officer. It is more than double in Andhra Pradesh with 37.7 percent PHCs have a lady Medical Officer. Unbelievably in Maharashtra no PHCs has a lady doctor is lowest and Tamil Nadu has highest of 69.1 percent in LMO staff availability which is appreciable. It is necessary to have a Medical Officer within the PHC compound, for attending to emergency cases round the clock. But this is determined by the availability of staff quarters as well as the MOs desire to **stay in the quarters**. Just little less than two-third of the MO is staying at quarters within PHC compound at national level (64 percent) and this proportion for Andhra Pradesh is just 34.1 percent. Highest (96.9 percent) percentages of MO's in Arunachal Pradesh are willing to occupy the quarters, but this desire shows lowest (21.0 percent) in Tamil Nadu. Rajasthan Has 80.5 percent which is highest among more than hundred PHC states.

Table 2: Staff position at Primary Health Centres in Andhra Pradesh and All India

STAFFS POSITION AND TRAINING STATUS RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
Medical personnel	Percentage of PHCs with at least one	
Medical officer (male & female)	74.3	80.0
Female medical officer	37.7	15.5
Quarters occupied by MO	34.1	64.1
Para-Medical personnel		
Health Assistant		
Male	87.6	81.0
Female	88.7	85.3
Female Health Worker	100.0	89.6
Laboratory Technician	70.1	65.0

As far as the implementation of the RCH programme is concerned, **male health workers** have a role in popularizing the male methods of family planning among men and educating as well as counseling men on RTI/STI and HIV (AIDS). They also are expected to help female health workers in immunization sessions. The staffing pattern of PHCs includes male health worker, though about eighty one percent of the PHCs in India have at least one male health worker, while in Andhra Pradesh, 87.6 percent of the PHCs have at least one male health worker. Bihar lowest MHW's with 30.0 percent as against the highest (100.0 percent) states of Mizoram & Tripura. Tamil Nadu with 97.5 percent stood top among the states having more than 100 PHC's.

The health assistant (female) also known as **ANM** has a key role to play in the implementation of the RCH programme at the PHC as well as in the outreach activities of PHCs. At least four-fifths of the PHCs in all the states in south India and some other states have an ANM. Their availability varies from 36 percent in Bihar to 88.7 percent in Andhra Pradesh while the national average is 85.3 percent. But there is not a single PHC in Orissa with a female health assistant. The highest percent (100.0) consists of two states namely Nagaland & Tamil Nadu. Because of the difference in nomenclature of the PHC staff in different states and because of the possibility of some of the ANMs getting classified in some other category of female health workers, a new category called Female Health Worker (FHW) was created taking all the Public Health Nurses, Female Health Assistant and Female Multipurpose Workers. This shows that in India nearly 89.6 percent of the PHCs have FHWs and this percentage is high in Andhra Pradesh (100.0 Percent). The situation is

worst in Orissa (0.0 percent) whereas better in other states namely Manipur, Mizoram, Tripura, Kerala and West Bengal.

Along with the laboratory for pathological tests the availability of a **Laboratory Technician** on the PHC staff is necessary. In India, 46 percent of the PHCs have a laboratory and 65 percent of the PHCs have a Laboratory Technician on their staff. In fact, in Andhra Pradesh 89.2 percent of PHC's have a laboratory and 70.1 percent of the PHC's have a Laboratory Technician. Assam has achieved highest of 82.1 percent lab technician in their staff for their laboratory (29.0 percent) among the states of more than 100 PHC's.

Training Status of PHC Staff

The Training of PHC staff refers to the training received during last three years before the survey. In-service training in various components of RCH enhances the skills and utility of medical and paramedical staff in PHCs. Though PHCs are expected to provide facilities for conducting normal deliveries, MTP, sterilization and treatment of RTI/STI, very few PHCs have doctors trained for this specialization. In India 15, 11, 15 and 47 percent of PHCs have at least one Medical Officer trained in conducting sterilization (tubectomy), NSV, MTP and RTI/STI respectively. In none of the state's PHCs have medical officers with a specialized background.

Table 3: Training status of staffs at Primary Health Centres in Andhra Pradesh and All India

STAFFS POSITION AND TRAINING STATUS RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
Training status of Medical Officers	Percentage of PHC having at least one MO received training during last three years	
Sterilization	39.5	14.6
Vasectomy	13.9	10.8
Medical Termination of Pregnancy (MTP)	16.3	14.6
Reproductive and child health integrated training of 12 days duration	50.0	47.4
Training status of Paramedical Staff	Percentage of PHC having at least one Para-medical staff received training during last three years	
IUD insertion	62.6	56.2

Checking BP	99.5	43.0
CDD/ORT	99.7	52.7
UIP	99.7	56.7
CSSM	99.7	52.8
RCH	99.7	68.5
ARI	99.7	48.0

In Andhra Pradesh PHC's Medical Officers (at least one) are moderately trained (except NSV) in conducting sterilization (39.5 percent) (tubectomy), MTP (16.3 percent) and RCH integrated training (50.0 percent). Comparatively Andhra Pradesh Training status of Medical officer percentage is better than the national level. Appreciably more than three fourth of the PHC's in Tripura having at least one MO trained in conducting sterilization (tubectomy), NSV, MTV and RTI/STI. The states with the lowest percentage, Nagaland (NSV) 0.0 percent, Bihar (Sterilization) 0.9 percent, Chhattisgarh 2.5 percent to 13.4 percent at Orissa (RCH training) respectively. The national average of the paramedical staff (at least one) in each PHC in India trained in IUD insertion (56.2 percent), checking blood pressure (43.0 percent), control of diarrhea CDD/oral Rehydration Therapy (ORT) (52.7 percent), Universal Immunization Programme (UIP) (56.7 percent), Child Survival and Safe Motherhood (CSSM) Programme (52.8 percent), RCH Programme (68.5 percent) and Acute Respiratory Infection (ARI) (48.0 percent). One paramedical staff trained in these areas in Andhra Pradesh & Tamil Nadu states with highest percentage (100.0 percent) except IUD insertion in AP indicates 62.6 percent which is likely better than national level.

Stock of Vaccines, Contraceptives and Prophylactic Drugs

This section discusses the status of PHCs with respect to the availability of necessary contraceptives (Nirodh, oral pills, IUD), vaccines (BCG, DPT, DT, OPV, Measles, TT), drugs (vitamin A, IFA tablets and ORS packets) and kits on the day of survey.

Table 4: Stock of selected items of health care of Primary Health Centres in Andhra Pradesh and All India

STOCK POSITION RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
ITEMS	Percentage of PHCs having some stock on the day of survey	
Contraceptives		
Nirodh	51.3	59.1

Oral pills	48.4	58.4
IUD	47.1	56.3
Prophylactic drugs		
IFA (Large)	20.3	57.4
IFA (Small)	16.0	50.2
Vitamin A	15.5	50.9
ORS Packet	82.0	71.2
Vaccines		
BCG	86.3	45.2
DPT	93.0	48.5
OPV	91.0	49.1
Measles	92.4	48.1
DT	82.0	35.4
TT	92.4	48.8

Of the 9688 PHCs in India, almost half of the PHCs had stock of each of the three **contraceptives** (Nirodh 50.4, oral pills 50.1 and IUD 53.0). Whereas in Andhra Pradesh, around 47.1 percent of the PHCs have the stock of IUD, 51.3 percent had stored with Nirodh and about 48.4 percent of the PHCs have the stock of oral pills. These essential contraceptives stocks were found to be lowest in Orissa state (6.4, 7.4 and 4.4), highest in Tripura (100.0 percent). The state of Uttar Pradesh PHCs show lesser proportion with the stock of ORS packets (46.5 percent) than Andhra Pradesh PHCs (82.0 percent). More than fifty percent of the prophylactic drugs are available in the country. These supply of drugs are scantily available in the study state of Andhra Pradesh when compare to national level. Orissa state receives the lowest supply of these prophylactic drugs such as IFA Large 14.5 percent, IFA Small 12.0 percent and Vitamin A 9.0 percent respectively. The availability of **vaccines** (BCG, DPT, OPV, Measles, DT and TT) at national level PHCs was less than fifty percent; on the other hand in the study state of Andhra Pradesh has more than eighty percent of the PHCs have the stock of each of the six vaccines. The stock and availability of these vaccines (except DPT) is lowest in Orissa state with less than fifty percent. The availability of vaccinations stock is highest in the state of Tripura.

Regular Supply of Kits, Contraceptives, Vaccines

Under the RCH programme, PHCs in India are provided with a few instrumental/medicinal kits. PHCs also received a regular supply of contraceptives, vaccines and medicines. In India fifty percent of the PHC's receive the IUD insertion Kit and Normal delivery kit. Whereas the stock position in PHC's of Andhra Pradesh is more

than 60.0 percent. PHC theses The survey reveals that only 7 percent of the Bihar PHCs are supplied with IUD insertion kit (kit G) which is lowest in the country and in contrast Tamil Nadu recorded 94.0 Percent.

Table 5: Regular supply status of different items at Primary Health Centres in Andhra Pradesh and All India

STOCK POSITION RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
ITEMS	Percentage of PHCs having some stock on the day of survey	
IUD insertion kit	63.0	50.0
Normal delivery kit	62.4	50.0
Essential Obstetric care drug kit	34.5	32.2
Mounted Lamp 200W	7.6	7.1
Oral pills	100.0	94.6
Measles Vaccine	100.0	96.6
IFA Tab (large)	98.7	96.0
IFA Tab (Small)	98.3	95.8
ORS Packets	100.0	96.5

The mounted lamp (200 W) essential for the treatment of hypothermia, a common health problem among neo-natals, is supplied to only less than one percent (0.9 Percent) of the PHCs in Chhattisgarh which is lowest at the national level, while Tripura has achieved as highest of cent percent.

Equipments

Generally PHCs are supplied with certain essential equipment like MTP suction, deep freezer and vaccine and weighing machines autoclave, steam sterilizer drum, labour room table and equipment for the delivery of RCH services. This section discusses the status of PHCs with respect to the availability of these inputs on the day of survey.

Weighing machines is essential for the identification of low birth weight babies as well as for assessing the nutritional status of the infants and monitoring their growth. Only two-third of PHCs in Bihar weigh the new born babies (66.9 percent) at the time of delivery while in Andhra Pradesh only 91.0 percent of the PHC's a baby can weigh babies at the time of birth. At national level this percentage stands as 89.4. The highest percentage (100.0 percent) achieved PHC's are hill states namely Meghalaya, Mizoram and Nagaland. According to the availability of Adult Weighing Machine, Andhra Pradesh

has (98.0 percent) while the average status at national level (90.0 percent). Bihar has the lowest of 66.5 percent and the highest states are Manipur, Mizoram Meghalaya and Arunachal Pradesh (100.0 percent) PHC's have adult weighing machine for checking the weight of pregnant women during ante-natal visits. The availability of weighing machines for adult and infant in India PHCs are at satisfactory level in Andhra Pradesh state's PHC's.

Table 6: Availability of selected equipment at Primary Health Centres in Andhra Pradesh and All India

EQUIPMENTS AVAILABLE RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
ITEMS	Percentage of PHCs having functional equipment on the day of survey	
Infant Weighing machine	91.0	89.4
Adult weighing machine	97.6	89.5
Deep freezer	95.0	53.0
Vaccine carrier	97.6	68.1
BP instrument	84.5	85.3
Autoclave	89.3	82.0
Steam sterilizer Drum	91.0	88.6
MTP suction aspirator	69.6	62.8
Labour room table	96.0	91.2
Labour room equipment	98.8	93.3

A deep freezer is needed in PHCs for the storage of vaccines. There is substantial variation in the availability of a deep freezer among the states. An overwhelming majorities of the PHCs have the deep freezer (95.0 percent) in Andhra Pradesh and the national level is 53.0 percent. Surprisingly no PHC's in Tripura state has Deep Freezer (0.0 percent), however this facility found to be highest in PHC's in the state of Tamil Nadu (96.4 percent). Vaccine carrier is other important equipment while conducting the immunization camp by the PHC staffs. The information collected during the survey stated that 97.6 percent of the PHCs in Andhra Pradesh have the vaccine carrier, on the other hand more than three-fifth of the PHCs have the vaccine carrier (68.1 percent) in India..

Measuring BP is an essential component of antenatal care. Percentage of availability of a BP instrument in India and Andhra Pradesh has more or less same (85.3 in India and 84.5 percent in Andhra Pradesh). In West Bengal 73.4 percent of the PHC's have this facility which is the lowest state in the country and the highest states are Tripura & Mizoram (100.0 percent) Autoclave or steam sterilizer drum is absolutely essential for

sterilizing needles, syringes and other instruments. The all India data show that 82.0 percent PHCs have the facility and Andhra Pradesh surpassing the national average by seven points (around 82 & 89.3 percent). Lowest state is Meghalaya (56.3 percent) and the highest states are Mizoram (100.0 percent) and Maharashtra (99.1 percent) among the states having more than 100 PHC's. Provision of safe abortion services for women having an unwanted pregnancy is one of the functions of the PHCs. MTP suction respirator is the device using for conducting an abortion. About three-fifth of the PHCs in Andhra Pradesh and in India have the MTP suction respirator (69.6 & 62.8 percent) while in Bihar has only (17.5 percent) which is lowest at all India level. This facility in PHC's is highest in the states of Manipur (100.0 percent) and in Meghalaya (90.0 percent). Labor room equipment available in PHC's of Bihar state is lowest as 47.6 percent in the country. Except Bihar, most of the states in India has labor room equipment in their PHC's (>90.0 percent).

Table 7: Performance of Primary Health Centres in Andhra Pradesh and All India

SERVICES PERFORMANCE AT PHC RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
SERVICES	Percentage of PHC giving services (Last 3 months preceding survey)	
Delivery Conducted	93.2	58.1
MTP	11.3	6.1
Neo natal care	12.1	22.0
Children Treated for Pneumonia	8.2	53.0
Children Treated for diarrhoea	55.5	67.9
	Percentage of PHCs conducting (Last 3 months preceding survey)	
STERILIZATION		
Male	44.2	8.7
Female	96.3	37.9
IUD insertion	91.8	65.1

The NPP 2000 set a goal of eighty percent deliveries should undertake at the institution. The availability of a labour room, labour table and labour room equipments are most important to achieve this goal. However, more than half of the PHCs at Bihar are not having labour room equipments (52.4 percent) and only three-fourth of the PHCs have the labour room table (74.3 percent). At the same time, all the 380 PHCs in Andhra

Pradesh and 9688 PHC's In India have labor room equipments (98.8 & 93.3 percent) and labor room table (96.0 & 91.2 percent) respectively.

Provision of various services to children and pregnant women is one of the important functions of the PHC. It is expected to provide services in the area of maternal and child health care, family planning and treatment of RTI/STI. Of the 70 PHCs in Kerala, only 10 percent of the PHCs conducted delivery during the last three months which is lowest at the national level and this percentage stood as 21.6 percent in Himachal Pradesh which comes under the states of more than 100 PHC's, nearly 93.2 percent of the PHCs in the Andhra Pradesh state conducted delivery during the last three months while the national average stands at (58.1 percent). Provision of MTP services is more or less the same and highly unsatisfactory at both national level and at the Andhra Pradesh state (6.1 and 11.3 percent). Provision of MTP services in Uttar Pradesh PHC's are almost nil (0.0 percent). While Tripura has highest (100.0 percent) percentage achieved by PHC's in MTP services.

National data on the availability of services of Neo natal care, children treated for pneumonia and Diarrhea stands at national level as 22.0, 53.0 & 68 percent respectively. Andhra Pradesh is found to be low (12.1, 8.2 & 55.5 percent). Karnataka and Tamil Nadu are the lowest performance states (2.9, 2.0 & 3.2 percent) in India. Tripura is the only state that has achieved 100.0 percent in all the services provided by PHC's. About ninety two percent of the PHCs in Andhra Pradesh have conducted IUD insertion during the last three months while the national level stands (65.1 percent). Orissa has lowest of 8.4 percent at national level and highest by Karnataka with 92.2 percent. Andhra Pradesh has shown good progress in female sterilization (96.3 percent) surpassing the national level (37.9 percent) by miles. Manipur PHC's has not performed any Female sterilization (0.0 percent) during the last three months preceding the survey, While Tripura recorded (100.0 percent). As for as the male sterilization Tamil Nadu and Arunachal Pradesh states were almost nil (0.0 percent) during the last three months preceding the survey. Tripura recorded highest in male sterilization conducted at PHC's (90.9 percent). Male and female sterilization in Andhra Pradesh shows 44.2 and 96.3 percentage respectively. This is higher than the national level (8.7 & 37.9 percent).

Table 8: Primary Health Centres with adequate equipment available in Andhra Pradesh and All India

EQUIPMENT AVAILABLE RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
Adequate of Supplies of		
Needles	49.7	61.9
Syringes	66.8	69.8
Syringes autoclave	83.2	62.4
Disposal item used	95.0	79.9

The needles, syringes, autoclave and disposal items have their own significance at the PHCs. The PHCs need all these items for day-to-day functioning and requirement. But the situation of needles, syringes, & autoclave and disposal items is not adequate in all the PHCs in India, particularly in Bihar where the availability of needles is lowest (0.1 percent) whereas in Tripura the supply of needles is highest as (100.0 percent). Uttaranchal stands next to Tripura with 91.7 percent among more than 100 PHC's in regards to supply of needles. However, about half of the PHC's (49.7 percent) in Andhra Pradesh are adequately supplies of needles whereas is lesser than national level (61.9 percent). Other supplies of equipments such as syringes, syringes auto clave and disposal item used at PHC's in Andhra Pradesh as 66.8, 83.2 & 95.0 percent respectively. This level of supplies is better than national level of 69.8, 62.4 & 79.9 percent respectively. The states that have lowest supplies of these items are Manipur (Syringes - 40.6 percent), Nagaland (Syringe Autoclave - 18.9 percent) and Bihar (Disposal item used - 44.7 percent). The percentage of adequate supply of item available in PHCs, in the states of Tripura (Syringes – 100.0 percent), Tamil Nadu (Syringe Autoclave – 99.4 percent) and Meghalaya (Disposal item used – 100.0 percent) respectively shows highest.

Table 9: Percentage of Primary Health Centres with adequate equipment and critical inputs in the states of Andhra Pradesh and all India

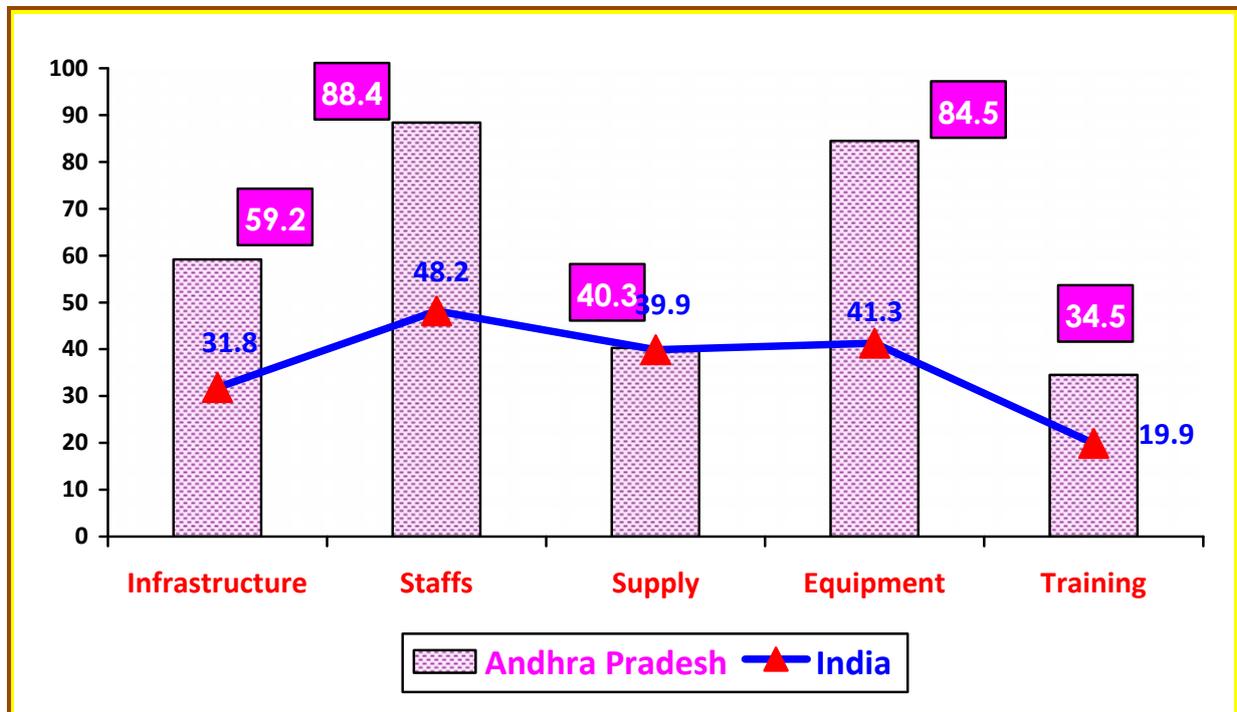
EQUIPMENT AND CRITICAL INPUTS RCH-II (2003)	% of PHCs	
	Andhra Pradesh	All India
	Percentage of PHC having at least 60 percent	
Infrastructure (includes tap water, regular supply of water, electricity telephone, toilet, functional vehicle and Labour room available)	59.2	31.8

Staff (includes Medical officers male, female and paramedical staff)	88.4	48.2
Supply (includes IUD kits, delivery kits, EOsc kit, mounted lamp supply of OP, measles, IFA large and ORS)	40.3	39.9
Equipment (includes deep freezer, B.P. instrument, Labour room equipment, autoclave, MTP aspirators and labour room Table)	84.5	41.3
Training (includes only medical officers on (Sterilization, NSV, IUD insertion, MTP and RCH foundation skills 12 days Duration)	34.5	19.9

This section discusses the status of PHCs with respect to having at least 60 percent of infrastructure (includes tap water, regular supply of water, electricity telephone, toilet, functional vehicle and Labour room available), staffs (includes Medical officers male, female and paramedical staff), supply (includes IUD kits, delivery kits, EOsc kit, mounted lamp supply of OP, measles, IFA large and ORS), equipments(includes deep freezer, B.P. instrument, Labour room equipment, autoclave, MTP aspirators and labour room table) and training (includes only medical officers (Sterilization, NSV, IUD insertion, MTP and RCH foundation skills 12 days duration).

With respect to infrastructure facilities, only around 2.8 percent of the PHCs in Chhattisgarh have at least 60 percent infrastructure which lowest in India, Whereas Tripura (100.0 percent) is the most successful state with highest infrastructure facility available in PHC's. Gujarat stood second with 89.0 percent among the states with more than 100 PHC's. In the study state of Andhra Pradesh this facility in PHC is 59.2 percent which is higher than national level (31.8 percent).

Fig 1: Percentage of Primary Health Centres with adequate equipment and critical inputs (at least 60 percent) in the states of Andhra Pradesh and all India



In Orissa, out of the 595 PHCs, only about 0.2 percent of PHC's have adequate staffs (Medical officer male, female and paramedical staff) which are fell below the national average. On the contrary overwhelming majority of the PHCs (96.8 percent) in Tamil Nadu have sufficient staffs which are highest in India. In India this proportion is 48.2 where as in Andhra Pradesh this percentage is 88.4.

The situation of PHCs in terms of supplies of IUD kits, delivery kits, EOsc kit, mounted lamp supply of OP, measles, IFA large and ORS in Bihar PHCs are far from satisfactory, only eleven percent of PHCs have adequate supplies. Whereas these facilities in Andhra Pradesh is 40.3 percent and this is equal to national level (40.0 percent). Andhra Pradesh have two-fifth of supplies of IUD kits, delivery kits, EOsc kit, mounted lamp, supply of OP, measles, IFA large and ORS packets. In terms of supply of these kits Andhra Pradesh is better than Orissa (3.5 percent) having lowest supplies of kit at the national level. Overall stock of supply at Tripura is highest (100.0 percent) and Karnataka dominates second (88.9) at the national level and first among more than 100 PHC states.

The availability of equipments includes deep freezer, B.P instrument; Labour room equipment, autoclave, MTP aspirators and labour room table are inadequate at the Bihar PHCs (6.2 percent) lowest in India, while Tamil Nadu achieves 92.2 percent highest in India. Only six percent of the PHCs at Bihar have adequate supplies of these six items, on the other hand less than ninety percent of the PHCs in Andhra Pradesh have adequate supplies of these six items. Availability of this equipment at national level is 41.3 percent.

The situation of PHCs in terms of 12 days duration training on Sterilization, NSV, IUD insertion, MTP to the Doctors is far from satisfactory at state level. Chhattisgarh state has received only 3.8 percent training which is lowest; in contrast Tripura has received 100.0 percent highest in the national level respectively. More than 100 PHC states Haryana fairly better with 50.4 percent. Insignificantly the training activity was less (19.9 percent) at national level, whereas in Andhra Pradesh this percentage is 34.5 better than national level.

The situation of PHCs, in terms of adequately equipped critical inputs (infrastructure, staff, supply, equipment and training) is marginal in certain states namely Orissa, Bihar, Chhattisgarh and West Bengal, Whereas the PHCs in Andhra Pradesh have adequate infrastructure, staff, supply and equipments. On the whole, the pattern of adequacy in staff, infrastructure, equipment, training and supplies in Orissa, Bihar, Chhattisgarh and West Bengal PHCs are quite contradictory with Andhra Pradesh PHC's.

Conclusion

Besides two exclusive national health policies, there were nine expert committees, 11 Plan documents, 60 budgets and numerous Govt. orders that pronounced policies pertaining to health in India in the post independence era. But the healthcare experts and the health care providers are still increasingly concerned about the growing incidence of significant health inequalities. India's fight to lower maternal and child mortality rates is failing due to growing social inequalities and shortages in primary healthcare facilities.

According to the availability of parameters, Andhra Pradesh state have better infrastructure, staff, supply, training and supplies than national level. The supply and training have less than fifty percent which is low when compare to other southern states. In overall, the performance of the PHCs at the national level was less than fifty percent.

Demand and supply side constraints are observed which restrain the optimum utilization of existing health services in national level than Andhra Pradesh. If the services are not improved at national level, certainly Primary Health Centers will lose its credibility even among poor people in rural areas who are not in a position to afford private health care facilities.

In the negative side, the study finds few lacuna in PHC's in Andhra Pradesh when compare to national level. The facility of tap water supply through taps at PHC's in Andhra Pradesh is poorer than the national level. This infrastructure is most essential for health centers. Percentage of available of Medical Officer and quarter's occupied by Medical officers is lesser than the national level. In regard to available of stock position of prophylactic drugs (IFA (Large & Small) & Vitamin A is comparatively low than national level. As against all India level, children treated for pneumonia in the last three months preceding to the survey in Andhra Pradesh is low. These can be corrected by adopting appropriate measures in a period of time.

It can be concluded from the above analysis that these parameters of availability of infrastructure, staff, equipment, training and supplies have an impact on utilization levels and health outcomes in these States. In this regard, demand as well as supply side constraints are observed (on staff, infrastructure, equipment, training and supplies) which restrain the optimum utilization of existing health services in India when compare to Andhra Pradesh state.

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