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**Primary Health Care in Gujarat:  
Evidence on Utilization, Mis-Matches and Wastage**

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## Abstract

In order to provide adequate and quality primary health care, a multi-layered network of public health infrastructure has been created right from the district to the village level. But *Health for All* is still a distant goal. In this context, a comprehensive health facility survey was carried out in two districts of Gujarat. This study examined the functioning of different health facilities to find out mismatches or gaps in the manpower and health infrastructure. The objective was to suggest some health reforms, which could help in promoting efficient and sustainable health care.

The survey was supplemented by collecting qualitative information through discussions held with the programme managers and grassroots health functionaries. This paper presents the key results of the study, which indicates that health care facilities were inadequate and of poor quality both at Primary Health Centre (PHC) and Community Health Centre (CHC) levels. With a very low bed occupancy ratio (ranging between one to twenty) most of the CHCs were functioning sub-optimally. The absence of specialist's services and proper referral system were the important factors responsible for considerable under-utilization of available infrastructure and para-medical staff at CHCs.

In rural areas, the PHC programme had also failed to ensure presence of a doctor and the health workers, resulting in inadequate availability of primary health care and RCH services. About eighty percent of the PHC and SC staff does not stay at headquarters. Since most of the PHC doctors are inadequately trained in PHC management and administration, this paper suggests some restructuring at the PHC level for PHC doctor to fully concentrate on provision of curative care, while health promotion and preventive activities can be shifted at taluka level by putting a senior doctor in its charge. Lack of autonomy and very limited financial powers given to hospital/CHC/ PHC in-charge also caused delay in efficient maintenance of health infrastructure and equipments. This paper, therefore, strongly recommends review of manpower, machinery and equipments at regular interval both at the CHC and PHC levels, and more investment in the expansion of primary health care in rural areas and small and medium towns.

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# **Primary Health Care in Gujarat: Evidence on Utilization, Mis-Matches and Wastage**

**B. L. Kumar**

## **1. Introduction and Background**

The National Health Policy (NHP), 1983 set a goal of universal, comprehensive, primary health care services to all, especially those residing in rural areas and under-privileged. In order to achieve this goal, a multi-layered network of infrastructure for delivery of health and family welfare services has been created over the last two decades to strengthen the health delivery system (GOI, 1983). At the grassroots level one Primary Health Centre (PHC) for 30,000 population and one Sub-Centre (SC) for 5,000 population has been established to provide primary care services. The PHC was also visualized as the first referral point, with full support of secondary and tertiary care at Community Health Centres (CHCs) and District Hospitals, fully equipped with necessary specialty and super specialty services.

In addition to these several centrally funded vertical programmes such as malaria eradication, tuberculosis, leprosy, blindness control, HIV/AIDS etc. were started laterally to provide comprehensive and integrated health care to the society. Following NHP in 1983 public health expenditure also increased substantially in absolute terms as well as in terms of proportion to the GDP. Despite this, have we achieved the goals set in the NHP, 1983? The answer is clearly no. Various studies have already observed the sub optimal functioning of the rural primary health care because of poor facilities, inadequate supplies, inadequate manpower and infrastructure, lack of effective supervision and accountability etc. (NSS, 1987; Ghosh, 1991; ICMR, 1990; NCAER, 1991).

Shariff and Visaria (1991) and Visaria (1996) observed the poor quality of health care at both PHC and CHC levels. In rural areas, the PHC programme has failed to ensure the presence of a doctor, supply of adequate essential drugs and medicines and necessary equipments to impart adequate primary care. At SC level, a lot of time and efforts are spent by the Female Health Worker in identifying family planning cases because of the emphasis on the achievement of

family planning targets. The poor quality of health care delivery at these facilities results in a considerable proportion of untreated morbidity and a huge private health expenditure by the poor and disadvantaged population. Thus, there is a need to strengthen and improve utilization of primary health centres and support referral services for secondary and tertiary care. The Planning Commission has, therefore, taken up an evaluation study to look into the reasons for poor management of infrastructure and workforce in the health sector.

### **1.1 Focus of the Study**

Broad focus of the study is on two critical aspects of health care such as (a) workforce planning and management and (b) rationale use of infrastructure. Within this, the specific focus is on:

#### **(a) Workforce Planning and Management**

1. Assessment of the mis-matches, if any, between the demand for and supply of the quantum, type and quality of RCH services;
2. Future training needs in the context of RCH approach;
3. Improving equity in the distribution of the services; and
4. Promoting public-private partnership in dispensing RCH services.

#### **(b) Rationale Use of Infrastructure**

1. To find out gaps between manpower and infrastructure
2. To develop a framework and action plan for:
  - (i) Functional autonomy of middle and lower level managers;
  - (ii) Strengthening proper referral mechanism;
  - (iii) Improving utilization of existing health infrastructure by way of (a) relocation, (b) contracting out to private practitioners, NGOs and (c) closing down;
  - (iv) Introducing graded system of user charges;
  - (v) Improving community ownerships and participation in operation of health facilities.

Thus, the main objective of this exercise is to get a grassroots view on the functioning of the primary health care system and to comment on the level of its utilization in order to provide an input for health reforms in Tenth Plan. This paper presents major findings pertaining to the Gujarat state.

## **1.2 Methodology**

At the country level, the study was conducted in eight states including Gujarat and was sponsored by the Planning Commission, Government of India and the National Council of Applied Economic Research (NCAER), New Delhi, which also was the chief coordinating agency for the country study. NCAER collaborated with the Gujarat Institute of Development Research (GIDR), Ahmedabad for the Gujarat component. In Gujarat state, two districts namely Rajkot and Banaskantha were selected for this study. Rajkot was covered under Special Investment Plan (SIP) district, while Banaskantha was a relatively moderately performing district with respect to health services. A comprehensive health facility survey was done in these districts.

- As a first step, detailed discussions were held with the state level officials to understand the health set up and its working. It was followed by an in-depth interview with Chief District Health Officers (CDHOs) at district level. During this visit basic information about the programme performance and availability of different health facilities was collected. The latter served as a frame for selection of CHCs, PHCs and Sub-Centres for detailed facility survey.
- In the second stage two CHCs/FRUs (rural hospitals) were selected in each district taking into consideration Bed Utilization Ratio (BUR) of the facility.
- In each of the selected CHC/FRU/Rural Hospital two Primary Health Centres (PHCs) were selected at random. At PHC level, the Medical Officer was interviewed and necessary data were collected.
- Two Sub-Centres (SCs) were then selected randomly from each PHC. The female and male health workers were interviewed.

Thus, 4 CHCs/FRUs/Rural Hospitals, 8 PHCs and 16 SCs were selected for the purpose of facility survey and details were collected on aspects such as availability and adequacy of manpower, equipments referral system, functional autonomy given to the programme managers etc. The objective was to know more about the institutional constraints in serving the rural population. The

results pertaining to Gujarat state are presented in this paper. In Section 2 following this introduction, health profile of the state and selected districts is provided. Section 3, 4 and 5 discuss the functioning of Community Health Centres (CHCs), Primary Health Centres (PHCs) and Sub-Centres (SCs) respectively. The last Section presents the Conclusion and Policy suggestions.

## **2. Health Profile of the State and Selected Districts**

### **2.1 Socio-Economic Features**

Gujarat is located in the western part of India. The state was carved out as a separate state from the erstwhile Bombay, in 1960. According to 2001 census, total population of the state was 50.59 million, accounting for 4.9 per cent of India's total population and ranks 10<sup>th</sup>. It is one of the most urbanized and industrially developed states of India. The state ranks fifth in terms of per capita income. Gujarat's economic performance is well above the all-India average. However, its public health expenditure is only 0.87 per cent of the state GDP, which is lower than the all-India aggregate spending of 1.2 per cent.

Table 1 indicates that Gujarat is favourably placed in terms of indicators like density of population, level of urbanization and literacy rates. Literacy rates of both male and female are higher than the all-India averages. However, the state experienced population growth of 22.5 per cent during 1991-2001, which was higher than the growth of 21.3 per cent for the country as a whole. Similarly, lower sex ratios of both the total population as well as of 0-6 years population for the state are equally disturbing factors in its demographic transition.

So far as selected districts are concerned, more than half of the Rajkot district population was living in towns or cities, whereas, level of urbanization was reported to be very low (only 11.0 per cent) in Banaskantha district. Rajkot also had considerably higher literacy rates of both male and female compared to Banaskantha. The socially backward population, constituting of Scheduled Castes and Scheduled Tribes was higher in Banaskantha. Nevertheless, in terms of decadal population growth, Banaskantha district is better placed compared to Rajkot. In both districts population grew at much faster rate than the state.

## **2.2 Changes in Vital Indicators**

The analysis of Sample Registration System estimates for Gujarat state by Kumar (2001), presented in Table 2 reveals the following trends:

- ☞ A slow but steady decline in both Crude Birth Rate (CBR) and Crude Death Rate (CDR) between 1981 and 1999; but population of the state continues to grow as the decline in CBR has been slower than that of CDR.
- ☞ State showed a significant decline in Infant Mortality Rate (IMR) between 1981 and 1999 but reported stagnancy or some increase since 1996.
- ☞ A considerable decline in Total Fertility Rate (TFR) since 1981 but still it is above replacement level.
- ☞ The rural Gujarat exhibited almost a no change situation in all vital indicators such as CBR, CDR, IMR, TFR etc.
- ☞ Maternal Mortality Rate (MMR) has been reported high at 3.89 women in the state.
- ☞ Life expectancy at birth has shown increase for both male and female overtime but still it is lower than the all India average.

## **2.3 Organizational Structure of Health Care Delivery System**

In order to manage effectively the multi-layer health infrastructure and implementation of different health programmes, a multi-layer administrative and monitoring system has been established in the state, (Chart 1). The Chief District Health Officer (CDHO) under the control of District Panchayat monitors the working of the PHCs and SCs, while hospitals and CHCs are administered by the state.

## **2.4 Health Infrastructure**

Public sector provides health services in the state through a network of Sub-Centres (SCs), Primary Health Centres (PHCs), Community Health Centres (CHCs) and sub-divisional and district hospitals.

**Chart 1: An Organizational Chart for Health and Family Welfare (HFW) Services in Gujarat State**

Level	Type of Administration	Activities
State level	Minister of HFW Principal Secretary & Joint Secretary  Commissionerate of Health Additional Director, Health Additional Director, Family Welfare Additional Director, Medical Services Joint Director, Health Deputy Directors Demographer	Policy formulation and programme planning  Programme implementation and monitoring
Regional level	Regional Deputy Director (each one for 6 regions)	Intermediate administrator between state and district
District level	Chief District Health Officer Chief Medical Officer, hospitals Additional District Health Officer District Officers of Verticle Programmes such as TB, Leprosy, Malaria, Blindness control etc. District PHNO District IEC Officer Administrative Officer & Support Staff	Middle level managers
PHC level	Medical Officer Male & Female Health Supervisors Block Extension Educator Pharmacist & Lab Technician	Lower level management & primary health care
Sub-centre level	Female & Male Health Worker Anganwadi Worker & TBA	Village level programme implementation

As shown in Table 3, there were 7,274 Sub-Centres, 980 PHCs and 216 CHCs in the state at the time of survey. Also, there were 65 hospitals with a total capacity of 23,625 beds. These figures show that the state government has been able to build up a fairly extensive network of SCs and PHCs in rural areas. Though one PHC in Gujarat serves around 19 villages compare to All India figure of 27 villages, in terms of population one PHC in Gujarat serves a rural population of 30,776 against norms of one PHC for 30,000. Similarly, one CHC in Gujarat at present is meant for 1,39,630 persons as against the norm of one CHC for 1,00,000 rural population.

The information provided in Table 4 indicates that, overall, there is a surplus of Sub-Centres in some areas of the state where as moderate to large deficit of

SCs in the tribal areas is evident. There is a large deficit of CHCs (28.9 per cent) in the state reported in almost all districts and the deficit is larger particularly in tribal districts.

Among the selected districts, the position of Rajkot is relatively better in terms of per unit population for all primary health care facilities including SCs, PHCs and CHCs compared to Banaskantha.

In addition to the above, the government of Gujarat also provides grants to a number of non-profit organizations that provide health care to both rural as well as urban population. However, their share is limited in the total health infrastructure. Interestingly, private sector is growing in a big way in the state catering to health care needs, mostly of urban population (Bhat, 1995). But no reliable data are available on the existing facilities in the private sector in the state. Private hospitals function independently, and are largely beyond the preview of legislation and regulation.

## **2.5 Health Personnel**

Over the years, there has been a substantial improvement in the availability of medical personnel in the state. The number of registered allopathic doctors increased from 22703 in 1991 to 28727 in 1997. As a result, population served per doctor declined from 1830 to 1615 during the same period. Population per doctor at the all-India level was 1953 in 1997.

The distribution of doctors by systems of medicines, presented in Table 5 shows that the state has a total of 44,944 doctors (from all systems), of which about 40 per cent are allopathic doctors and 3 per cent are dentists. The rest are qualified personnel from other systems of medicines. It is quite discouraging to note that out of 17,738 registered allopathic doctors only about one-fourth are working in the government health facilities. Majority of them are practicing privately for profit.

The availability of health personnel against their requirement and sanctioned posts is another indicator of health delivery system. Table 6 reveals that at primary level health care, the position is not bad but at the secondary level there is a large shortfall of specialists in the state. The total number of specialists required is estimated at 764 against which only one-third (254) posts have been sanctioned and furthermore about half of the sanctioned posts of specialists are

vacant. Similarly, there is a large gap between the posts sanctioned and filled in of nurse-cum midwives. All these have implications on delivery of hospital services and secondary care.

We could not get district level data on the number of specialists available at the CHC and hospital level. However, the total number of specialists reported in position was 141 for 216 CHCs in the state, for the year 2000 (GOG, 2000). This gives an average of less than one specialist per CHC against the standard requirement of four specialists. The situation was similar at the hospital level as well. According to ORG (1999) facility survey for Rajkot district, in 21 facilities (7 hospitals and 14 CHCs) in all 17 specialists were available. They were as follows: Gynecologists and Obstetrician (4) Pediatricians (5) and anesthetists (5). It could further be seen that out of 17 specialists, 14 were posted in 7 hospitals and 2 CHCs had availability of 3 specialists. Thus, out of 14 CHCs in Rajkot district, 12 were working without any specialist on duty.

### **3. Functioning of Community Health Centres (CHCS)**

#### **3.1 Location and Population Coverage**

Of the four CHCs visited by us, two were new, established in early nineties and the other two were upgraded PHCs. Since some philanthropic groups donated funds for buildings of the new CHCs, these are not centrally located. The other two were located at taluka headquarters, well linked by transport connections with surrounding villages as well as to the district headquarters.

A quick reading of Table 7 show that average population coverage and other health services such as OPD cases and bed occupancy ratio were very low in new CHCs compared to old ones. Population coverage of the new CHCs ranged between 6 to 15 thousand only. One of the reasons was that Superintendents of new CHCs were not aware of the number of PHCs or SCs that these CHCs supposed to serve. They just reported the population of the village where CHC was located. Interestingly, in one of the CHCs located in an interior village, the number of OPD and delivery cases was less than the nearby PHC located at the taluka headquarters.

## **3.2 Infrastructural Facilities**

Details of infrastructure is provided in Table 8. Two of the CHCs had Post-Partum Unit (PPU) attached to them. Cleanliness was observed to be fair to good in the CHC buildings and wards but surroundings were not clean. Water logging was found just at the entrance of one CHC.

### **3.2.1 Staff Quarters**

The staff quarters for Physicians and Gynaecologist were not available in any of the CHCs. The position of staff quarters for others was satisfactory in three of the CHCs, which is also occupied by them. However, the staff quarters of a CHC, which were heavily damaged in earthquake, are yet to be repaired.

### **3.2.2 Vehicle**

CHCs with PPU were also provided with one jeep each but out of two only one was on the road. None of CHC had mobile van. At least one ambulance was available with all the CHCs. Ambulance was mostly used for transfer of patients (44.0 per cent of time use), outreach services such as immunization and pulse polio programme in urban areas (19.3 per cent) and for administrative work and attending meetings etc. (15.8 per cent). School health programmes and certain popular programmes like Jeevan Raksha, blood donation camps etc. also consumed a lot of ambulance time.

The CHC superintendents reported that the amount sanctioned for OPL for an ambulance is quite low. It should be raised from current level of Rs. 15,000 an year to Rs. 40,000.

### **3.2.3 Bed Strength**

Both the new CHCs had strength of 30 beds each and old CHCs had 50 beds each. Six additional beds were provided to one of the old CHCs attached with PPU. Bed Occupancy Ratio (BOR) was found to be quite low at CHCs. It ranged between as low as 1 per cent to maximum of 20 per cent (Table 7). There was no regular use of the beds available at these CHCs. Beds are generally used at the time of family planning and eye operation camps held at these CHCs. Bed use was also reported during deliveries conducted at the CHCs. However, on

average 6.5 deliveries were reported conducted at these CHCs during last one month. The number of deliveries conducted at new CHCs ranged between two to four only.

Although separate wards for general and maternity patients were available in all the CHCs, they were not used frequently. In one of the CHCs, the in-patient wards were unlocked only at the time of our visit to the CHC. All the CHCs had at least one Operation Theatre (OT) and a delivery room, but none of the OT was reported to be used for gynaecological or obstetric purposes during the year due to lack of specialists. OT of CHCs is mainly used during Family Planning and eye operation camps (Table 8).

#### **3.2.4 Availability of Cold Chain, X-ray and Test Laboratory**

Cold chain equipments like ice-lined refrigerators were available at all the four CHCs, and they were found well maintained. Test laboratories were also found in orderly manner. However, vacant posts of laboratory technician at one CHC had made it out of use. Similarly, although all CHCs had x-ray machines but the facility was not used adequately in two due to the vacancy of the post of radiographer at one place and required major repair or replacement in another CHC (Table 8). ECG facility was available at one CHC and it was in working condition. However, none of the baby care units provided in two CHCs under ORET project was in working condition, simply because no specialists were posted to these CHCs.

#### **3.2.5 Supply of Machines, Vaccinations and Contraceptives**

Supply of medicines, vaccination and contraceptive methods were reported to be made to CHCs either on demand or on regular interval. However, superintendents of almost all the CHCs reported non-availability of kits for emergency obstetric care and consumable items for RTI/STI laboratory diagnosis.

#### **3.3 Staff Position and Problem of Vacancies**

As reported in Table 9, the post of CHC superintendent had been sanctioned at all the four CHCs but only three were on duty. At one CHC, senior medical officer was in-charge. However, the person in-charge cannot exercise all powers of a

CHC superintendent because he is only a class II officer. It was encouraging to note that most of the general duty doctors and paramedical staff such as radiographer, technicians, staff nurses, pharmacists etc. were on duty. About 40 per cent of the posts of laboratory technicians and class IV staff were vacant. Two of the CHCs also had ophthalmic assistants in position. However, lady medical officer was not available in any of the CHCs. At one CHC a medical officer trained in indigenous system of medicines headed the PPU unit. A few MOs are trained in sterilization and MTP but still surgeons from district hospitals are called for FP operations. A gynaecologist post was sanctioned in three CHCs but none of them were on duty for quite long time. Even the CHCs attached with Post-Partum Units were found working without gynaecologist and paediatrician and none of the CHCs are in a position to handle complicated delivery or provide emergency obstetric care. For non-availability of specialists at CHCs, not only the OT and other infrastructure remained under-used but also the trained medical and paramedical staff is under-utilized, which is further reflected in a very low bed occupancy ratio and smaller number of OPD cases reported in these CHCs. Almost all CHC Superintendents reported under-utilization of the services of both medical officers as well as paramedical staff for want of specialists. CHCs also felt the need for developing proper referral system between PHCs and CHCs. At present CHCs have no control of or coordination with the PHCs. Both these institutions work independently and are under different administrative control.

### **3.4 Financial Autonomy to the CHC Superintendent**

Though all the CHC Superintendents reported that they are free to take independent decisions in purchase of medicines and disposables up to a limit, they do not have any powers to acquire machinery for the CHCs. Also they have limited freedom in maintenance of vehicles and contracting out some services like sweepers, drivers etc and regretted their dependence on public works department for maintenance of CHC buildings.

### **3.5 Utilization of Health Services in Different Outlets**

Although it is an approximation and based on personal observations of the CHC superintendent, yet, it provides an interesting pattern of access and use of different health care outlets for important RCH services. Approximately about 70-100 per cent of MCH services and 90-100 per cent of FP services are provided by the CHCs. The CHCs are also a major provider of TB treatment. But for

abortion related services and emergency obstetric care, people depend heavily on private sector. Diagnostic facilities for RTI/STI and HIV/AIDS are not available at CHCs, only clinical treatment is provided at CHCs.

An investigation into the reasons for utilization or non-utilization of CHC facilities for important Reproductive and Child Health (RCH) services reveals that availability of free service and good follow-up at CHCs prompts people to avail FP, MCH services and treatment for TB. However, lack of diagnostic facilities for RTI/STI and HIV/AIDS compels them to go either to other public hospitals or to the private sector. The facility for screening of RTI/STI and HIV/AIDS cases is largely available at tertiary level hospitals. A few private hospitals also have this facility. People also prefer to go to private hospitals for privacy. Those who undergo illegal abortions are generally refused such services at CHCs. Similarly, non-availability of experts and specialists to provide abortion related services and emergency obstetric care also force them to depend on other public or private outlets. For more details see Table 10.

Lack of proper referral code between CHC and PHCs under its command area is also one of the reasons for under-utilization of CHC facilities. One of the CHC superintendents said that his CHC is meant for referral services to 6 PHCs in its peripheral area, but because of lack of coordination between CHC and the PHCs, the specialists' services of the former are not adequately utilized. The two have different departments for administrative control. The CHC is under state department while all PHCs are under panchayat. Despite good infrastructure, the CHC is not getting adequate number of patients because there is no proper referral code, patients from nearby PHC areas are coming directly at the last stage when the problem becomes severe.

From the above analysis it emerges that:

- (a) No experts/specialists services are available at any of the CHCs. In the absence of specialist's services, the CHCs are no longer working as referral hospitals but provide only primary health care. The paramedical staff, therefore, also remains quite under-utilized.
- (b) The available CHC infrastructure such as Operation Theater, X Ray machines, Infant Incubation Unit etc. also remains unutilized for lack of expert services.

- (c) In the absence of a CHC superintendent, the person in-charge has very limited financial powers.
- (d) The ophthalmic assistant working at CHCs is under no administrative control of CHC Superintendent but comes under the Project Officer of the blindness control programme. It shows little coordination between the state health and national vertical programmes.
- (e) Currently CHC facilities remains under-utilized due to improper location, inadequate manpower and poor referral system between PHCs and CHC.

Therefore, CHC Services can be improved by:

1. Filling up the specialists' posts
2. In the absence of availability of specialists, one or two general duty medical officer should be trained to provide emergency obstetrics care.
3. Proper referral system should be developed between CHC and PHCs. It needs strengthening of screening facilities at PHC and SC level. The high-risk cases should be referred to CHC at right time and not in the last stage.
4. More grant is required for medicines. Also CHC superintendent should have more financial powers to purchase high power medicines.
5. After every three years of use new ambulance should be given to CHC. The POL amount should also be enhanced from Rs. 15,000 to Rs. 40,000 per year.
6. In view of the delay in carrying out repairing of buildings by PWD, more power be vested with the CHC Superintendent to maintain the infrastructural facilities.
7. Computerization and simplification of the reporting system is suggested for efficient record keeping.
8. Nominal user fees may be introduced for investigation charges, curative services. Token fee should be levied as case card charge.

## **4. Functioning of Primary Health Centres (PHCs)**

### **4.1 Status of the Selected PHCs and Population Coverage**

Out of the 8 PHCs that were randomly selected one of them was mother PHC and seven were either upgraded rural dispensaries or Sub-Centres when a programme of restructuring of health facilities was initiated during 1986-89. A large inter-PHC variation was also observed in the population coverage (Table 11). On the selected PHCs it ranged between 27 to 55 thousands compared to the mandated population of 30,000. Considerable variation was also found in the number of SCs and villages covered by a PHC. This needs some restructuring at the district level. The location of the PHC was also a matter of concern because only 4 (50 per cent) of the selected PHCs were located at a central place while others were situated at a distance from the centre of the village though they were connected by motorable road. However, majority of these PHCs were situated where forward caste communities reside.

### **4.2 Infrastructural Facilities**

All PHCs had their own independent pucca buildings but very few had adequate facilities such as staff quarters, operation theatre and separate labour room. Residential accommodation for MOs and other staff is available in few PHCs only. At one PHC, vacant residential quarter of the MO was reported to be used as labour room. Unutilised beds ranging from 1 to 8 were available in these PHCs. Out of the 8 PHCs, only 4 had some facilities for conducting deliveries, which is reportedly used mostly by poor people and minor operations and stitches also were done at few PHCs. Electricity was available at all PHCs but refrigeration system was reported to be working in only 6 (75.0 per cent) PHCs. However, it was encouraging to note that 7 out of 8 PHCs had telephone facility (Table 12).

At least one vehicle (jeep) was made available to each PHC and all were in working condition. One PHC has been hiring driver on daily wage for long since the post of driver has not been filled. The vehicle use was reported mostly for field visits and carrying medicines from district headquarters as well as attending meetings.

#### **4.2.1 Availability of Laboratory, Equipments and Drugs**

It is evident from PHC Table 13 that none of the PHCs have x-ray machine. Test laboratory was found properly maintained at six (75.0 per cent) PHCs. Microscope was not available at one PHC and at one PHC it was not used because of the prolonged vacancy of the laboratory technician. Tests of blood, urine and sputum were generally done at these laboratories. It was, however, reported by several laboratory technicians that there was no substitute for them at the PHC who could in their absence take responsibility of their jobs. Moreover, the work pressure on PHC laboratory has increased in recent past because they are also asked to do tests for various vertical national programmes like tuberculosis, leprosy, RTI/STI etc. However, diagnostic facilities for RTI/STI were not available at any of the PHCs. Only clinical treatment was provided at PHC for diseases like TB, leprosy, RTI/STI etc. The patients were referred to either CHC or district hospital. In an appreciable move, one CDHO has initiated a move to provide all necessary equipments and consumables to PHC laboratories in a phased manner by earmarking Rs. 20,000 for each laboratory.

Equipments such as examination table, weighing machine, blood pressure instrument, stethoscope, microscope were available at most of the PHCs. However, essential equipments like autoclave, thermometer, gloves, regents to test Hb% etc. were not adequately available at many PHCs (Table 13). Many PHCs also did not have equipment to provide emergency obstetric care and conduct sterilization and MTP. Two of the MOs reported having training of MTP but they did not have adequate facilities at their PHCs to use their skill.

Supply of medicines, vaccines, and contraceptives was made available both routinely and on demand. A few of the PHCs also reported irregular supply of above items. On the whole, supply of medicines was not a serious problem. Medicines worth Rs. 50,000 are supplied in two batches to each PHC every year from the district headquarters. However, several of the MOs suggested linking supply of essential medicines with the PHC requirements and a regular review of medicines used at PHCs and at SCs.

A few PHC doctors also wanted more financial powers to purchase medicines and consumables from the market, because the demand for different drugs varied from PHC to PHC depending upon the OPD cases and the nature and ability of the medical doctor to treat patients.

### 4.3 Staffing Pattern, Vacancies and Related Issues

At least one Medical Officer was reported on duty at almost all PHCs though. But there was no lady Medical Officer at any PHC. However, it was learnt from the discussions with middle level managers that the institutional decision of PHC expansion with one doctor has deteriorated the quality of services. It has severely affected the availability of PHC doctor. Earlier, there were two doctors at each PHC, which was good. Since PHC doctor has lot of functions to perform, at least two doctors are required at each PHC. The availability and sex of doctors are important factors in explaining why women avail or do not avail PHC services for maternal care. Most of the sanctioned posts of pharmacist, female health worker and driver were also found filled-in. However, more vacancies existed among supervisory staff (both male as well as female), male health workers and laboratory technicians. It was also observed that very few posts were sanctioned of BEE and staff nurse (Table 14). At few places FHW was reported working as staff nurse. Thus, most of the crucial PHC staff was in position except staff nurse and male health workers.

In short, the following problems were reported by the CDHOs and the MOs, which affected the performance of PHCs adversely.

1. Adequate residential accommodation for PHC staff was not available at all PHCs. Moreover, very few of the PHC staff including MOs were found staying within the PHC headquarters. Except a few living in the same villages, majority of them were commuting from nearby towns. In almost all cases, social or family problems were reported as major reasons for staff not staying at PHC headquarters like children's education and absence of economic or academic incentives to stay in rural areas.
2. About 20 per cent of PHC doctors do not belong to Gujarat state. They had cultural and language problem. As a result, there was a high turnover of doctors causing considerable absenteeism at PHCs.
3. A PHC doctor though spends majority of his duty time in providing curative services both at the PHC and at Sub-Centres, yet they do spend a lot of their time on administrative jobs.
4. Though in the present set up at PHC, about 5-6 persons are available to evaluate and monitor the performance of grassroots field workers, yet supervision and monitoring was found to be one of the weakest links in the entire primary health care delivery system. As reported by the

CDHOs, not only there existed large vacancies in this cadre, they also lacked necessary skill to evaluate or monitor the work of the field staff. It was reported by the field staff that there was no supervision of supervisors. Further district officials report that about half of the PHC staff have political links and hence the supervisors exercise very little control. There is no penalty for inefficiency and no rewards for hard work reported by one CDHO.

#### **4.4 Suggestions to Improve PHC Performance**

Based on the observations of functioning of PHCs, two types of suggestions are made. First relates to strengthening of the existing PHCs and their working and second relates to the restructuring of the overall existing rural health delivery system.

##### **4.4.1 Measures to Strengthen Working of PHC**

1. Provide adequate residential accommodation with all necessary facilities.
2. Reserve a few seats in colleges and hostels for the children of doctors staying and serving in rural areas.
3. Give more financial powers to MOs.
4. Medicinal supply be linked with the number of OPD cases and Epidemiology of the area.
5. Create leave reserve posts of at least MO and laboratory technicians at district level to provide uninterrupted service.
6. Supervisors should be trained in monitoring and evaluation work, and should also be made responsible for performance of the PHC, which may be linked to a penalty/reward system.

##### **4.4.2 Restructuring Rural Health Delivery System**

In the present system, Medical Officer of a PHC has to perform multiple duties. The administration and monitoring of PHC consumes lot of his time and there is a need to separate clinical and administrative jobs. He should be left free to provide curative services both at PHC as well as in periphery areas.

The following alternatives are suggested:

1. Provide one dispensary for every 20,000 population, fully equipped with one medical officer, one pharmacist, one laboratory technician and one staff nurse. The dispensary will run only clinic and provide ambulatory services.
2. Create at each taluka level one FP and MCH unit to look after and monitor the entire programme, headed by and supported by adequate number of supervisory staff equipped with computer system for record keeping. All SC workers will report to the MO, family welfare programme at taluka level.
3. Such a restructuring is also needed because of the large variation in population coverage by PHCs in different districts. Such a change will also be useful in separating curative and preventive cum administrative jobs of the present system of PHCs. At present, PHCs are mostly providing only ambulatory services. It is also assumed that such a restructuring will not cost much. It is more an administrative change of locating some of the PHC staff at a taluka unit. It will also help in improving evaluation and monitoring of the system.

## **5. Sub-Centre Level Situation**

Sub-centre (SC) is the basis grassroots level health facility where health worker comes in direct contact with the service users. Each SC is meant for 5000 people in normal areas and 3000 people in tribal areas. Each SC is staffed with one Female Health Worker (FHW) and one Male Health Worker (MHW). Both of them are multi-purpose workers and look after family planning, RCH services and disease surveillance. We visited 16 SCs in two districts. The following are the observations about the working of these SCs.

### **5.1 Coverage**

Significant variations exist across SCs in terms of number of villages and population served. Average population served by selected SCs was 4647, which was near to the normal level, but majority of the FHWs suggested reducing it to 3000. They were of the view that with the introduction of CNAA (Community Needs Assessment Approach) they have to devote more time on home visits and community contact, which becomes difficult when population assigned to them is more and scattered in more than two villages (Table 15).

The MHW also complained of more workload because the number of MHW per SC is quite low compared to its mandatory ratio of one in each SC due to many vacant posts. As a result, male workers in many SCs have to cover population of more than one SC. Data suggests that 10 MHWs were serving in 16 SCs.

## **5.2 SC Buildings and Staying of FHWs at HQs**

About 75.0 per cent of SCs have *pucca* building but only 25.0 per cent of FHWs reported staying at HQ (Table 16), and none of the MHW was found staying at HQ village. Location of the SC and lack of essential facilities like drinking water supply, electricity, toilets etc. were reported at about 50.0 per cent of the SCs. However, in most of the SC buildings, the electricity and water connections were found cut off because the health workers were not staying there.

Though all FHWs knew that their services are required after duty hours in case of delivery care and supply of emergency drugs, yet majority of them are not staying at HQs mainly for social and family reasons. It was also found that neither the supervisory officials nor the community was keen to make them stay at HQs. Thus, unless it is made compulsory for them to stay at the HQs, provision of more SC buildings is not going to solve the problem of availability of FHW.

## **5.3 Functioning of the SCs**

The FHWs who are not staying at the HQs were commuting a distance ranging between 3-20 kms and hence, have limited time on house visits and RCH services. Due to this not a single delivery was conducted at the Sub-Centre. Kumar (2001) found that FHWs staying at HQs, provided more regular and intensive services in the villages. They visited the clients more frequently and spent more time with them. The caste composition of the FHWs revealed dominance of Scheduled Castes and Other Backward Castes, (about 60.0 per cent), while 40.0 per cent belonged to upper-middle castes. It was observed that the caste factor works negatively in the functioning of the health workers, since the backward caste FHWs have very limited access to the upper caste households and upper-middle caste FHWs avoid visiting low caste households.

#### **5.4 More Emphasis on Family Planning**

It could be seen from the Table 17 that FHWs give more emphasis on family planning and immunization and less attention on ANC, natal and PNC cases. It was also observed during the fieldwork that majority of the temporary method users reported by the FHWs were not genuine cases. It took lot of our investigator's time in locating genuine users of IUD and those who have undergone MTP. In the Target Free Approach, there is no incentive now for the health worker to report false cases of FP methods, but discussions with the FHWs and MHWs indicated that their performance is still assessed on the basis of the coverage of family planning cases. They are still given the workload of temporary methods and there is always a pressure from higher officials to achieve the targets.

The number of deliveries conducted or assisted by FHW is very small. People prefer to call dais for delivery services because they do not believe in the capabilities of the FHWs to conduct delivery. Majority of the FHWs reported that they refer complicated delivery cases to either at CHC or district hospital because PHCs do not have facilities to provide emergency obstetric care. Almost all FHWs reported running of clinic in the village at least once in a week and treat minor ailments. They also provide most of the FP and MCH services but according to them running one day clinic is not adequate. These services should be provided on a daily basis in each village in order to prevent patients going to private doctors. The MHWs reported frequent meetings with their co-workers such as FHWs and helping them in immunization work and preparing SC records, Action Plan etc. Majority of FHWs were found poor in preparing SC Action Plan and record keeping was their last priority. They further reported that MHWs and field supervisors mostly help them in completing SC records. In spite of this, records were found incomplete at many places, and lack of time, on-job training and lack of skill and interest were reported as major reasons. They need thorough training in Community Needs Assessment Approach and filling up of necessary formats.

#### **5.5 Availability and Use of Equipments**

Inadequate supply of essential equipments such as dai kit, mid-wifery kit, sterilization lotion, thermometer, vaccine carriers, haemoglobinometer, stove etc was reported at many places. The equipments such as weighing machine, IUD

kit, Fetoscope, BP apparatus, uterine sound etc. were also supplied at the most one per Sub-Centre while one SC covers nearly 3.1 villages. The replacement of most of these equipments is also poor (Table 18).

Moreover, it is difficult to carry all the instruments while visiting satellite villages. Hence, it is suggested that the supply of certain equipments be linked to the number of villages covered by one SC, and there should be proper place in each village to keep them and for running the clinic as well.

## **5.6 FHWs Meeting with Community and Co-Workers**

The FHWs reported frequent meetings with ICDS workers, panchayat members and her supervisors. She also reported the meeting at least twice in a month to the school teacher and her colleagues. However, her meetings with Mahila Mandals and village volunteers was less frequent though under the CNA approach they are supposed to meet the community and the village Mahila Mandal more frequently. Some of the FHWs reported that motivating people for accepting family planning methods is difficult with certain socially backward communities like Bharvads, Vagharies and Muslims. They usually go for illegal MTPs and induced abortions.

## **5.7 Training Needs**

About 50-60 percent of the FHWs reported having at least one training in RCH, TB and AIDS and had training in IUD insertion, use of ORS and communicable diseases. But whatever, the training they have received in conducting deliveries and RCH services is not adequately used because most of them do not stay at HQs. They were also found quite poor in record keeping and identifying community needs. They required more training in preparation of records and community counseling.

## **5.8 Suggestions**

1. In order to improve the presence of the health workers in the village, they should be posted in their native places or it should be compulsory for them to stay at HQs. If possible appoint one health worker in each village, and preferably local one.

2. Use of home remedies or access to private doctors was more frequently reported by the rural community because the health worker is either not around or the treatment is not available, in the village. Each village should have one clinic room and make sure it should run at least on every alternate day. It will yield better results.
3. Health workers should be given more training in community counseling.
4. Encourage community involvement in identifying their health needs.

## **6. Conclusion and Policy Suggestions**

In Gujarat state, there has been significant improvement in the health infrastructure during the last two decades but very little changes occurred in important health and population indicators. For example, IMR in the state shows stagnancy. The Maternal Mortality Rate (MMR) is also quite high in the state. The Total Fertility Rate (TFR), no doubt has declined significantly from 4.5 children per woman in 1981 to 3.0 children by 1996 but it is still considered far above the replacement level of two children per woman. What is important to note is that the pace of fertility decline has been much slower for rural areas. Much lower and further declining sex ratio in the state is a cause of concern for both demographers as well as policy makers. Overall, there has been no change in vital indicators such as IMR, TFR, MMR etc. particularly after 1995. Private sector meets most of the health needs of the population, both in rural and urban areas.

The review of the working of the basic health facilities such as CHCs, PHCs and Sub-Centres hold few lessons for the programme. Health care facilities are poor at both PHC as well as CHC levels. Location of various health facilities is a problem at many places. Since relocation is not possible or even feasible, strengthening of infrastructure and facilities at these centres can be taken up immediately. However, location affects access to and utilization of a health facility. Therefore, there is a need to create proper medical hierarchy with well-defined functions. Development of systematic referral code, to a great extent, improves utilization of these facilities. It will also help in establishing better coordination between PHCs and CHCs.

One of the major problems reported at CHC level was lack of the services of experts or specialists. Posts of gynaecologists, paediatrician and anesthetists

were found vacant at all the selected CHCs. No expert was available to provide emergency obstetric care at these centres. Most of the CHCs are no longer function as referral hospitals; they are working largely as primary care centres. The CHCs are at present providing very little RCH referral services too. The high-risk patients, therefore, either go to the district hospital or avail services provided by the private sector, mostly located in urban areas. Lack of specialists' services was the only reason for such a state of affair. It is, now well-recognized fact that there is a shortage of specialists to work in rural areas. In the RCH programme, the scheme to appoint honorary specialists also did not receive good response. Till adequate number of specialists willing to work at CHCs is available, at least one or two senior doctors can be trained to monitor emergency obstetric care and immunization programmes. At almost all CHCs, valuable equipments supplied under ORET project were found un-used for quite long time, simply due to non-availability of experts. Moreover, the state or district authorities had never reviewed the situation. The medical and para-medical staff that was otherwise available adequately at CHCs also remained under-utilized for want of specialists' services. Very low bed occupancy ratio (ranging between 1 to 20) is the reflection of such a gross under-utilization of CHCs. X-ray machines and few other equipments were also found unused and were in need of repair and proper maintenance. There should be regular review of the utilization of important machinery and equipments. The CHC in-charge (irrespective of he/she being of class I or class II) should be given more financial autonomy for maintenance and replacement of equipments and machines. Better health care services are still urban centred and hospital based.

The PHC programme has also failed to provide adequate and quality primary health care to the rural areas for want of doctors to stay at PHC HQs as well as inadequate supply of essential drugs and necessary equipments. MTP services are not available at most PHCs. No trained manpower or equipments are available at PHC for safe abortion services or for emergency obstetric care. Most of the PHCs are at present working as upgraded Sub-Centres providing ambulatory primary care only to the areas where these facilities are located. There is a need for strengthening proper linkages with Sub-Centres to make it a secondary care institution.

About two-third of the PHC and SC staff does not stay at headquarters. Inadequate residential facilities, family problems and lack of facilities for the education of their children were reported as major constraining factors for a

MBBS doctor to stay in rural area. Absence of sufficient monetary incentives also attracts very few of them to work in rural areas. No lady doctor is willing to work at rural PHCs. Neither additional monetary allowance nor any other incentive lures them to stay and work at PHCs. Three suggestions are made to improve the presence of a doctor at PHCs; (i) reserve quota in the colleges and hostels for the children of those doctors staying and serving in rural areas; (ii) allow PHC doctors to do private practice and (iii) post ISM & H doctors at PHCs because a MBBS doctor born and brought up in urban areas do not like to work in rural areas. The ISM&H doctors also have one advantage over MBBS as the former is trained in behavioural psychology during course work while the latter lacks training in community approach. About 20-30 per cent of doctors working at PHCs in the state are non-Gujaratis. Besides long absenteeism, it causes high turn over of such doctors.

There is no system of auditing in health care system. The maintenance of manpower, infrastructure and equipments is seldom reviewed. Neither there is reward nor there is punishment. There is no accountability at any level. The situation is much worse in case of supervision and monitoring of the PHC system. Supervision is the weakest link in the entire PHC working. There is no supervision of supervisors. All supervisory staff at PHC including Medical Officer needs rigorous training in manpower and information management. The concept of employee-ship needs to be inculcated among the health workers.

Administrative work at PHC also consumes lot of time of the medical officer. Moreover, there is no perfect substitute for medical officer and laboratory technician at the PHC; hence, their prolonged absence or leave affects the working of the PHC. There was a suggestion to create a buffer stock at the district office that can be put in-charge whenever and wherever leave vacancies are reported. At Sub-Centre level major problems identified included health workers not staying at headquarters and limited supply of essential drugs and medicines. Neither deliveries are conducted at Sub-Centre nor the health workers assist during deliveries because they are not staying at the headquarters. The training given to them, thus remains unutilized.

The shortage of male health workers has also adversely affected the disease surveillance work. Despite introduction of Target Free Approach, the health workers still spend majority of their time behind family planning. Very little time remains available with FHWs for important components of RCH programmes

such as providing assistance in delivery, post-natal check-up, identification of RTI/STI and AIDS cases. The health workers also need more training in RCH and community counseling.

Frequent transfer of female health worker also adversely affects the Sub-Centre performance. It was suggested to post local male and female health assistants for every 2000 population or at least one in each village. Basically, it was a suggestion towards reviving old Community Health Volunteers (CHV) scheme but with a more specific training to help in disease surveillance and handle primary sickness at the village level and refer complicated cases to the secondary level institutions. It was also suggested that training needs of the grassroots level health workers should be identified at PHC and CHC levels and not at the RDD office or at the district level. The CHC or PHC in-charge should recommend the names of the trainees.

In the present set up, medical officer is the manager of the PHC. But in the absence of adequate training in PHC management and very limited administrative and financial powers given to them, most of the PHC doctors have turned from good doctors to bad managers. The OPD pressure at many PHCs leaves little time with them to pay enough attention to preventive, promotive and administrative responsibilities. In order that the doctor provides more curative care at PHC, for which he is well trained, it is suggested that (1) the preventive, promotive and administrative jobs of the PHC should be separated from the curative care and (2) the PHC doctor should be left totally free for providing only curative care. For the other health and family welfare services, a senior medical officer should be posted at each taluka level, supported by the extension and supervisory staff, at present posted at PHCs to look into all the preventive, promotive and administrative responsibilities.

Finally, more systematic service reporting system has been developed and put into practice with the introduction of the CNA approach, but the wealth of data collected regularly from each SC and PHC are hardly analyzed and utilized at the district level for regular monitoring and mid-course corrections of the programme. There is a need for more systematic evaluation of the programme at district and PHC/CHC level through regular health auditing to make the health services actually reach the needy.

**Table 1: Selected Socio-Economic Indicators of India, Gujarat State and Selected Districts**

Indicators		Banas- kantha District	Rajkot District	Gujarat State	All India
Total population (Lakhs in 2001)		25	26	506	10270
Decennial growth rate (1991-2001)		26.3	29.0	22.5	21.3
Sex ratio (Females per 1000 males)		931	930*	921	933
Sex ratio 0-6 population (Females per 1000 males)		907	844	878	927
Density of population (Per sq. km.)		233	282	258	324
Percentage of urban population		11.0	54.7**	37.7	27.8
Per cent Scheduled Castes population (1991)		10.6	7.3	7.4	16.5
Per cent Scheduled Tribes population (1991)		6.9	0.2	14.9	8.1
Literacy rate	Persons	51.3	75.9*	70.0	65.4
	Male	66.9	83.7*	80.5	75.9
	Female	34.5	67.6*	58.6	54.2

Notes: \* 2001 Census figures are presented excluding figures of Malia, Morvi and Wankaner taluka  
 \*\* Includes projected population figures of area where Census 2001 could not be conducted due to earthquake

Source: Provisional Population Totals, Census of India, 2001

**Table 2: Vital Statistics of Gujarat State and All-India**

Indicators	Gujarat State			All India		
	Rural	Urban	Total	Rural	Urban	Total
<b>Crude Birth Rate</b>						
1981	36.1	29.8	34.5	35.6	37.0	33.9
1991	28.2	25.9	27.9	30.9	24.3	29.5
1996	26.9	23.0	25.7	29.3	21.6	27.5
1997	27.0	22.6	25.6	28.9	21.5	27.2
1998	26.9	21.9	25.3	28.0	21.0	26.4
1999	27.0	22.0	25.4	27.6	20.8	26.1
<b>Crude Death Rate</b>						
1981	12.4	10.7	12.0	13.7	7.8	12.5
1991	8.8	7.9	8.5	10.6	7.1	9.8
1996	8.2	6.2	7.6	9.7	6.5	8.9
1997	8.3	6.2	7.6	9.6	6.5	8.9
1998	8.5	6.3	7.8	9.7	6.6	9.0
1999	8.8	5.9	7.9	9.4	6.3	8.7
<b>Total Fertility Rate</b>						
1981	4.6	3.4	4.5	4.8	3.3	4.5
1991	3.2	2.9	3.1	3.9	2.7	3.6
1996	3.2	2.6	3.0	3.7	2.4	3.4
1998	3.0	2.3	2.7	3.1	2.3	2.8
<b>Infant Mortality Rate</b>						
1981	123	89	116	119	62	110
1991	73	57	69	87	53	80
1996	68	46	62	78	46	72
1997	69	46	62	77	45	71
1998	71	46	64	77	45	72
1999	70	45	63	75	44	70

Source: Government of Gujarat (2000 and 2001), Basic Health Statistics, State Bureau of Health Intelligence, Commissionerate of Health, Medical Education and Medical Services, Gandhinagar

**Table 3: Health Infrastructure in Selected Districts and Gujarat State, 2000**

Health Facility	Banaskantha District		Rajkot District		Gujarat State	
	No.	Population Per Unit	No.	Population Per Unit	No.	Population Per Unit
<b>Infrastructure</b>						
Sub-centres	421	5,291	329	3,542	7,274	4,146
Primary health centres	60	37,124	43	27,100	980	30,776
Community health centres	9	2,47,491	14	83,237	216	139,630
Taluka/sub-divisional/cottage/hospitals	1	25,02,843	6	428,655	40	12,09,681
District hospitals	1	25,02,843	1	25,71,931	25	19,35,491
No. of beds (including of CHCs)	648	3,862	1,746	1,473	23,625	2,048

Source: 1. Office of the Chief District Health Officer, Rajkot and Banaskantha districts.

2. Government of Gujarat (2001), Basic Health Statistics, State Bureau of Health Intelligence, Commissionerate of Health, Medical Education and Medical Services, Gandhinagar.

**Table 4: Number of SCs, PHCs and CHCs Required and Working, by Districts**

District	Working SCs	Requirement as per 2000 population	Surplus/deficit	Working PHCs	Requirement as per 2000 population	Surplus/deficit	Working CHCs	Requirement as per 2000 population	Surplus/deficit
Ahmedabad	322	268	+54	48	45	+3	7	13	-6
Kheda	591	586	+5	97	98	-1	16	29	-13
Surendranagar	200	187	+13	28	31	-3	9	9	-
Mehsana	515	505	+10	80	84	-4	15	17	-2
Sabarkantha	413	424	-11	85	67	+18	15	17	-2
Banaskantha	478	448	+30 (+6.7)	67	74	-7 (-9.5)	9	21	-12 (-57.1)
Gandhinagar	58	53	+5	8	9	-1	4	3	+1
Vadodara	487	492	-5	67	78	-11	11	19	-8
Bharuch	292	373	-81	48	58	-10	10	13	-3
Panchamahals	732	842	-110	93	129	-36	16	29	-13
Surat	601	568	+33	64	86	-22	15	19	-4
Valsad	611	519	+92	65	80	-15	15	18	-3
Dang	47	47	-	7	7	-	0	1	-1
Rajkot	330	293	+37 (+12.6)	43	49	-6 (-12.2)	13	15	-2 (-13.3)
Jamnagar	265	206	+59	36	34	+2	10	10	-
Kachchh	251	191	+60	37	32	+5	9	10	-1
Bhavnagar	397	328	+69	46	55	-9	13	16	-3
Amreli	239	217	+22	33	36	-3	10	11	-1
Junagadh	445	356	+89	58	59	-1	15	18	-3
Gujarat state	7274	6901	+373 (+5.4)	980	1111	-131 (-11.8)	212	298	-86 (-28.9)

Note: Figures in brackets are percentage of surplus/deficit to total requirement

Source: Office of the Commissioner of Health, Medical Education and Medical Services, Gandhinagar.

**Table 5: Availability of Doctors in Gujarat**

Category	Number	Per cent to Total
Allopathic doctors	17,738	39.5
- Government facilities	4,265	
- Non-govt. organizations	5,139	
- Practicing privately	8,334	
Dentists	1,320	2.9
Ayurvedic doctors	21,033	46.8
Homeopathy	4,619	10.3
Unani	234	0.5
Total doctors	44,944	100.0

Source: Basic Health Statistics, Gujarat, 1999-2000

**Table 6: Health Manpower Position in Gujarat State as on 31.12.1998**

Category	Required	Sanctioned	In Position	Vacant	Short-fall
Total specialists (Surgeon, OB, GY, Physician and Pediatrician)	764	254	125	129	639
Pediatricians	191	30	9	21	182
Physicians	191	+	+	+	191
Obstetricians and Gynaecologists	191	30	12	18	179
Surgeons	191	194	104	90	87
Doctors at PHCs	967	990	940	50	27
Block extension educators	-	138	NA	NA	-
Health assistant (Male)	967	1265	725	540	242
Health assistants (Female)	967	1227	1027	200	**
Health workers (Male)	7274	5239	4098	1141	3176
Health workers (Female)	8241	7274	7068	206	1173
Pharmacist	1158	1186	945	241	213
Laboratory technician	1158	1146	1041	105	117
Nurse, midwife	2307	2625	1330	1295	977

Note: + Nil; NA = Not Available; \*\* = Surplus

Source: GOI (2000), Health Information of India, 1997 and 1998

**Table 7: Utilization of CHCs**

CHCs	Population Covered	No. of PHC Covered	No. of SC Covered	Total No. of Beds	No. of Daily OPD Cases	Reported Bed Occupation Ratio
CHC-1 (New)	6,050	NA	NA	30	55	20%
CHC-2 (Old)	190,077	2	NA	50	150	10%
CHC-3 (New)	15,000	2	NA	30	100	1%
CHC-4 (Old)	45,000	4	NA	56	350	20%
All CHCs	256,127	8	NA	166	655	-
Average	64,032	2	NA	41.5	164	-

Note: NA refers to Information Not Available

Source: Field Survey

**Table 8: Infrastructural Facilities at CHCs**

Facility	Banaskantha		Rajkot		Total		
	Available	Work-ing Condi-tion	Available	Work-ing Condi-tion	Available	Work-ing Condi-tion	Propor-tion in Working Condition
Telephone	2	2	2	2	4	4	100.0
Vehicle	2	2	3*	3	5	5	100.0
Water (in toilets)	2	2	2	2	4	4	100.0
Water (in wards)	2	2	2	2	4	4	100.0
Refrigeration system - ILR	-	-	1	1	1	1	100.0
Normal	2	2	2	2	4	4	100.0
A separate OT	2	1	2	1	4	2	50.0
A separate labour room	2	2	2	2	4	4	100.0
Laboratory	2	2	2	2	4	4	100.0
X-ray	2	1	2	1	4	2	50.0
ECG	1	1	-	-	1	1	100.0
Baby care unit	1	-	1	-	2	-	-
Residential facility for any medical staff	2	2	2	1	4	3	75.0

Note: At Wankaner, residential quarters were heavily damaged during earthquake.

\* It includes one jeep available at PPU

Source: Field Survey

**Table 9: Staffing Position at Four Selected CHCs**

Particulars	Posts Sanctioned	In Position	Vacant	Per cent Vacant Posts
CHC superintendent	4	3	1	25.0
Physicists	8	8	-	-
Anesthetist	-	-	-	-
Gynaecologist	3	-	3	100.0
Paediatrician	1	-	1	100.0
Pathologist	-	-	-	-
Dental surgeon	-	-	-	-
Staff nurse/Nurse midwife	35	30	5	15.2
Pharmacist	6	5	1	16.7
Lab. Tech/Lab. assistant	5	3	2	40.0
Radiographer	4	4	-	-
Ophthalmic assistant.	2	2	-	-
Clerk	1	1	-	-
Driver	5	5	-	-
Other staff including Class IV	12	7	5	41.7
Total	84	67	17	20.2

Source: Field Survey

**Table 10: Opinion about Utilization of Health Services**

<b>Services</b>	<b>Reasons for Utilization</b>	<b>Reasons for Not Utilization</b>
MCH service	<ol style="list-style-type: none"> <li>1. Free of charge</li> <li>2. Free and good service</li> <li>3. Only source</li> <li>4. Ante-natal clinic facility</li> </ol>	
FP service	<ol style="list-style-type: none"> <li>1. Ante-natal clinic facility</li> <li>2. Only source</li> <li>3. Better service</li> <li>4. Free and good service</li> <li>5. Incentive</li> </ol>	
Abortion related services	-	<ol style="list-style-type: none"> <li>1. No facility available</li> <li>2. Refuse to treat illegal abortion</li> <li>3. Absence of Gynaecologist</li> <li>4. Patient prefer to go to private outlet</li> <li>5. Kits not available</li> <li>6. No experts</li> </ol>
Emergency obstetrics	-	<ol style="list-style-type: none"> <li>1. No experts</li> <li>2. No facility</li> </ol>
RTI related service	<ol style="list-style-type: none"> <li>1. Only source</li> <li>2. Good care and free medicine</li> </ol>	
STI related service	<ol style="list-style-type: none"> <li>1. Good care and free service</li> </ol>	<ol style="list-style-type: none"> <li>1. No experts</li> <li>2. All goes to private outlets</li> <li>3. No facility</li> </ol>
HIV/Aids screening	-	<ol style="list-style-type: none"> <li>1. Diagnostic facility not available</li> <li>2. Kits not available</li> <li>3. No facility</li> </ol>
TB treatment	<ol style="list-style-type: none"> <li>1. Good follow-up</li> <li>2. Free medicines</li> </ol>	

Source: Field Survey

**Table 11: Basic Information about Selected PHCs**

Status	Year of Establishment	Population Coverage	No. of SCs	No. of Villages	No. of Beds
PHC-1: Mother PHC	1964	45,555	9	21	6
PHC-2: Upgraded from rural dispensary	1987	34,995	6	21	4
PHC-3: New PHC	1989	50,951	8	26	0
PHC-4: Upgraded from SC	1987	55,034	8	24	2
PHC-5: Upgraded from dispensary	1986	27,154	6	26	4
PHC-6: Upgraded from SC	1989	45,625	11	32	0
PHC-7: Upgraded from Ayurvedic dispensary	1987	39,080	8	15	8
PHC-8: New PHC	1988	27,500	6	13	1
Average per PHC		40,736	7.75	22.25	3.12

Source: Field Survey

**Table 12: Infrastructural Facilities at Selected PHCs**

Facility	Proportion Available	Proportion Working
Electricity	100.0 (8)	100.0 (8)
Telephone	87.5 (7)	100.0 (7)
Water (in toilets)	25.0 (2)	100.0 (2)
Water (in wards)	12.5 (1)	100.0 (1)
Refrigeration system	100.0 (8)	75.0 (6)
A separate OT	25.0 (2)	100.0 (2)
A separate labour room	50.0 (4)	100.0 (4)
Laboratory	75.0 (6)	100.0 (6)
X-ray	-	-
ECG	-	-
Vehicle	100.0 (8)	100.0 (8)
Residential facility for any medical staff	75.0 (6)	100.0 (6)

Note: Figures in brackets are number of PHCs reported such facilities.

Source: Field Survey

**Table 13: Items/Equipments Available at Selected PHCs**

<b>Type of equipment</b>	<b>Adequate</b>	<b>Not Adequate</b>	<b>Not Available</b>
Autoclave	6	1	1
Angle poise lamps	1	-	7
Oxygen cylinder	2	1	5
Generator	3	-	5
Refrigerator	6	2	-
Stethoscope	7	1	-
Thermometer	2	1	5
Disposable delivery kit	8	-	-
Haemoglobinometer	7	-	1
BP instrument	7	-	1
Weighing machine	6	1	1
Baby weighing machine	7	1	-
Test tubes	6	-	2
Slide	7	-	1
Uterine sound	6	1	1
Vaccine/day carrier	7	1	-
X-ray machine	-	-	8
IUD kits	8	-	-
Examination table	6	2	-
MTP suction aspirators	2	-	6
Equipment for infant	1	1	6
Labour room table	4	1	3
Microscope	7	-	1
MR. Syringe	2	-	6
Umbilical cord clamp	3	-	5
Gloves	8	-	-
Bed sheet	4	2	2
Plastic cover	4	-	4
Reagents to test Hb%	4	-	4
Other reagents used in the lab	3	-	5

Source: Field Survey

**Table 14: Staffing Position at Selected PHCs**

Particulars	Posts Sanctioned	In Position	Vacant	Per cent Vacant Post	Average No. in Position
Medical officer	8	7	1	12.5	0.87
Pharmacist	8	7	1	12.5	0.87
Lab. Technician	8	6	2	25.0	0.75
BEE	3	3	-	-	0.37
Staff nurse	1	1	-	-	0.12
Male supervisor	9	4	5	55.6	0.50
LHV	10	7	3	30.0	0.87
Male health worker	35	21	12	34.3	2.62
Female health worker/ANM	62	56	6	9.70	7.00
Leprosy worker	1	1	-	-	0.12
Driver	8	7	1	12.5	0.87
Others - Class IV	13	11	2	15.4	1.37
Total	166	131	33	19.9	16.37

Source: Field Survey

**Table 15: Coverage of SCs**

Particulars	Average	Range
Population covered by SC	4,647.1	2,734 – 7,185
Villages covered by SC	3.1	2 – 6
Distance from district HQ (Kms.)	52.8	-

Source: Field Survey

**Table 16: Place of Residence of ANM/FHW**

Particulars	Proportion of Cases		
	Official Quarters	Rented	Owned
Within SC/Institution	12.5 (2)	-	-
Within the village/locality	-	12.5 (2)	-
Outside the village/locality	-	-	75.0 (12)

Note: Figures in brackets are no. of FHWs

Source: Field Survey

**Table 17: Activities of FHW & MHW**

Activities	Average No. of Cases (During Last Month) Per Worker	
	FHW	MHW
Deliveries in SC	-	
Delivery assisted at home	3.9	
Deliveries referred	1.4	
ANC cases attended	8.8	
PNC cases attended	8.0	
Beneficiaries Served		
Permanent method	1.8	
* Temporary (IUD/Pill/Condom)	61.3	
Blood smears taken (for malaria)	16.1	-
Immunization		
BCG	10.5	
DPT	13.3	
Polio	12.8	
Measles	6.4	
TT (To pregnant women)	10.9	
Meeting attended	3.9	
Others	1.0	
FP Cases Motivated		
Permanent method	-	2.2
@ Temporary method	-	20.9
Fever cases attended	-	-
Slides sent for examination	-	111.2
Insecticide spread	-	-
Community meeting	-	5.3
Others	-	1.7

Note: \* It includes 3.9 of IUD, 13.7 Pill and 43.7 of Condom

@ It includes 3.6 of IUD, 6.6 of Pill, 10.7 of Condom

Source: Field Survey

**Table 18: Average Availability of Equipment and Its Use per SC**

Type of Equipment	Availability (in Nos.)	Working (in Nos.)	No of Times Used During Last Fifteen Days
Sterilizers	0.13	0.06	0.13
Solution for urine test	0.13	0.13	1.13
Scissors	1.38	0.94	3.19
IUD kits	1.19	0.94	2.06
Midwifery kit	0.87	0.81	1.06
Dai kit	0.63	0.50	0.31
Sterilizing lotion	0.06	0.06	1.00
Non-disposable gloves	1.75	0.50	2.06
Stethoscopes	0.87	0.63	5.25
Thermometer	0.44	0.44	0.94
Needles & syringes	66.25	66.25	11.75
Vaccine carrier	0.75	0.75	1.38
Disposable delivery kit	72.63	0.75	1.81
Cotton bandage	2.94	2.94	4.38
Faetoscope	1.06	0.87	3.38
Haemoglobinometer solution for Hb test	0.19	0.19	0.44
BP apparatus	1.00	0.75	5.00
Weighing machine	1.06	1.00	8.25
Baby weighing machine	1.06	0.88	2.75
Test tubes	1.50	0.38	0.31
Slide	20.13	0.75	6.44
Uterine sound	1.00	1.00	1.69
Soap	0.13	0.13	0.13
Nailbrush	1.44	0.56	0.94
Enema can	1.44	0.75	1.44
Catheter	1.38	0.75	0.75
Stove	0.69	0.19	0.44
Examination table	0.50	0.50	2.56
Vessels for water storage	0.50	0.37	1.44
Water disposal containers	0.19	0.19	0.94
Wastebasket	-	-	-
Torch with battery	0.50	0.13	1.13
Others (specify)	0.06	0.06	0.00

Source: Field Survey

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