

Scaling up Primary Health Services in Rural India: Public Investment Requirements and Health Sector Reform

Case Studies of Andhra Pradesh and Karnataka

Nirupam Bajpai, Ravindra H. Dholakia and Jeffrey D. Sachs

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Abstract

We attempt to address two key questions in this paper: 1) In terms of state-wide scaling up of rural services (in Andhra Pradesh, and Karnataka) in the area of primary health, what will it cost financially and in terms of human resources to scale-up these services in all the rural areas of these two states? And 2) what policy, institutional and governance reforms may be necessary so as to ensure proper service delivery? As is well known, merely setting up more health clinics, for instance, is not going to be enough; higher public investments in these areas needs to be accompanied by systemic reforms that will help overhaul the present service delivery system, including issues of control and oversight, for example.

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During the week of December 10, 2007, Nirupam Bajpai presented this paper to the Honorable Dr. Manmohan Singh, Prime Minister of India, Montek Singh Ahluwalia, Deputy Chairman, Planning Commission of India, Dr. Y S Rajasekhara Reddy, Chief Minister of Andhra Pradesh and Principal Secretaries of Health of Andhra Pradesh and Karnataka.

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Key Recommendations

While Andhra Pradesh needs to spend an additional Rs. 17 Billion to scale up the rural primary healthcare services, Karnataka needs to spend almost half the amount (Rs.8.5 billion). On a per capita basis, it comes to Rs. 203 for AP and Rs.144 for Karnataka. This is significantly less than the estimated requirements of the northern states like Rajasthan, MP and UP. If we compare AP and Karnataka, we find that it is the capital expenditure in AP that makes the difference. In terms of the quantity of physical infrastructure for primary healthcare, Karnataka clearly scored over AP. However, since AP has already implemented NRHM norms and programs although it is not formally a part of the NRHM high focus states, it has started putting manpower in place and hence its additional recurring costs required to scale up the rural services works out to be much less than Karnataka.

Andhra Pradesh had allocated a total of Rs.411 per capita on the health, sanitation and water in 2006-07. The figures for Karnataka are not very different. It allocated a total of Rs.413 per capita on the same in 2006-07. The implications of scaling up health services in rural areas of these two states as given by our estimates are that Andhra Pradesh needs to step up its allocation by almost 49% over 2006-07 (BE) in 2008-09 (BE) whereas Karnataka needs to step these up by 35%. Since these increases are not over one year, but two years, they are not impossible to achieve though it is a challenging task.

There is a need to consider entitlement benefits to the BPL or poorer sections of the society. In the BPL survey conducted in every village, 19 points can be considered an effective cut off to identify the BPL families. These families should be given a Smart Card with clear entitlement to spend an amount, say Rs.2,000 p.a. on hospitalization, treatment, medicines, consultations, visit fees, etc. Once these cards are distributed to the BPL families, the public HFs can also charge regular (unsubsidized) fees from the patients and get their regular revenue for meeting most of their recurring and capital expenses. This in itself would act as a strong incentive to improve quality of services in public HFs because it would put them in direct competition with the private sector. Moreover, the managers or service providers in public HFs would also find themselves directly accountable to the local population and can face a reward / punishment system.

Introduction of a Smart Card to BPL families can also be conducive to the idea of introducing the social or community based health insurance. It will facilitate generation and investment of the required resources. The Smart Card to a BPL family can also be very helpful when they have to migrate for food, fodder and employment. Moreover, it can also promote some trade and exchange among the people with shortages and surpluses, thereby encouraging better utilization of the state resources.

There is a need to carry out frequent supervision of lower level HFs in rural areas. There should be enough powers vested in the supervisory / monitoring authority to immediately punish the defaulters like absentee staff, indifference to replenish the stock of medical supplies, rude behavior with patients, lack of cleanliness and hygienic conditions in the HFs, etc.

There is a need to introduce accreditation system based on annual or more frequent visits to the HFs for their infrastructure, human resources and drug and medical supplies.

There should be annual awards for best performing HFs in various categories. This should be a handsome cash reward from the state government and the selection should be made on the basis of a weighted feedback from people (beneficiaries), village *Panchayats*, and departmental higher-ups. There can be different types of awards emphasizing different aspects of the quality of healthcare service like cleanliness, cure, disease control, customer satisfaction, etc. All such awards should be distributed among the relevant staff in the winning HFs.

The medical and paramedical staff at the sub-Centre, PHC and CHC level should be stabilized for longer periods so that they can start living in the village. Under NHRM, District Health Missions should be made responsible to monitor, supervise and if required transfer such staff more as a punishment with adverse remarks in their Confidential Reports (CR).

There is an urgent need to focus comprehensively on the living conditions of the BPL families. Availability of basic facilities like toilet, bathing, electricity (or light), drinking water, etc., has to be ensured to them without which scaling up of primary healthcare services in the rural areas may not be effective for them on its own.

Considering the shortage of medical and paramedical staff in the HFs, there is an urgent requirement of appointing new doctors, ANMs, health assistants and other paramedical staff at all levels of HFs.

It is also important to reduce the administrative burden and unnecessary paper work for the medical staff (mainly doctors and ANMs) at all levels of the HFs so as to improve the general working of the HFs. This is more relevant in the case of PHCs and SCs as its functioning gets adversely affected by the effective absence of doctors and ANMs.

There is a need to check the proliferation of a large number of unregistered/unqualified private medical practitioners especially at the village level so as to ensure the quality of the services provided by them. Frequent inspections of the private practitioners at village levels to check their credentials may be desirable. Apart from this, there is a need to look into the private practice by paramedical staff and even the doctors of the government HFs, and if necessary allow them as is the case in some of the northern states like Rajasthan.

In order to improve the delivery of health services in AP and Karnataka, we suggest supporting community oversight of village-level health services, including panchayat responsibilities for oversight of sub-centers, and PHCs. While the 73rd and 74th Amendments to the Indian Constitution allow for a democratic system of governance in health to the multilayered local bodies, their implementation leaves much to be desired. Such devolution of authority has taken place only in Kerala, which invested time and resources in systematically building capacity for governance by local bodies. Both AP and Karnataka need to strengthen their existing programs of capacity building in the Panchayati Raj Institutions (PRIs).

We believe that the following six key broad issues are critical if the NRHM has to succeed on scale: 1) proper recruitment, comprehensive training, effective control and oversight and timely and adequate payments of the village Health Workers (VHWs); 2) a well defined and implement able role of the Panchayat Raj Institutions (PRIs) and a comprehensive and on-going training program for the panchayat members; 3) commensurate infrastructure and human resources in the sub-Centers (SCs) and the Primary Health Centers (PHCs) with the needs of the regions; 4)

necessary interventions to bring down the IMR and MMR; 5) in the area of community-based health care and home-based neonatal care program, NRHM to help incorporate and scale up lessons from the experiences of SEARCH (Dr Abhay & Rani Bang's NGO) in Gadchiroli, Maharashtra and CRHP (Dr Raj & Shobha Arole's NGO) in Jamkhed, Maharashtra and 6) NRHM to work hand-in-hand with the Aangan wadi workers and the ICDS program.

Current training programs of the VHWs are extremely inadequate, both in terms of the quality of training being imparted and the time being allocated for their training. Presently, training of VHWs is only for 21 days as a one-time crash course and occasionally an additional 5 days of in-field training, the latter being implemented very irregularly. Not only is the training required to be far more comprehensive than what it is currently, it should be an on-going process, at regular intervals, throughout the year, say at least for the first two years of an VHWs recruitment. Thorough training is a must in order to facilitate *task-shifting* and *task-sharing*.

Ideally, VHWs should be trained using information and communications technology (ICT) at the district headquarters. The training can be imparted by a group of trainers centrally from the State capital to all the districts simultaneously on fixed dates which can be announced well in advance. Additionally, trainers available at the district headquarters should supplement class room training with in-field training of VHWs. ANMs can play a critical part in the in-field training of the VHWs.

Untimely payment of incentives to VHWs is serving as a huge disincentive for taking on the role that is expected of them. The current system of paying the VHWs is a lengthy process which is not only cumbersome, but very poorly implemented as well. The result, almost all the VHWs we spoke to in Nalgonda received their payments once in three months only. A much simpler and straight forward system needs to be put in place for paying the VHWs so that they are paid EVERY month.

More importantly, we strongly recommend that VHWs be paid a regular salary which could be in the range of Rs. 1,000 to 1,500 per month plus that should be topped with the incentives. The incentive amounts being paid currently are extremely meager.

Many parts of rural India are experiencing an epidemiological transition and this is reflected in a growing burden of non-communicable diseases. Non-communicable and chronic diseases are increasingly being seen as a leading cause of death in rural India. Hypertension, Type II Diabetes and Cardiovascular diseases are on the rise in rural AP and Karnataka in particular and rural India in general. It is critical to keep these emerging disease burdens in mind while scaling up health services in rural Andhra Pradesh and Karnataka. We suggest that under the NRHM umbrella, programs are put in place to deal with the growing burden of these diseases.

With the exception of pre-natal checkups for expectant mothers, the delivery of healthcare in rural India is almost entirely curative in nature. With hypertension on the rise in the country, it was suggested that blood pressure be examined on a regular basis for all patients visiting sub-centers and PHCs. ANMs at the sub-centre level and nurses at the PHC level should in the normal course examine blood pressure as part of antenatal care, as pregnancy-induced hypertension is a major contributor to maternal mortality in India.

Since one of the core strategies of the National Rural Health Mission is to train and enhance capacity of the PRIs to own, control and manage public health services, the following questions need to be looked into: Has the power and authority that has been devolved to the PRIs on paper actually reached the people? Do they understand their duties/responsibilities on the one hand and

their authority on the other? Do the PRIs have the capacity to manage health centers? Are there regular and comprehensive capacity building programs in place? And are any measures being undertaken to ensure that the caste and patriarchy do not prejudice effective management at the local level?

In terms of mobilizing additional funds for health, our research suggests these to mainly come from cutting unproductive government expenditures (both central and state governments) relative to GDP rather than by raising revenues relative to GDP. However, we do suggest levying a 2 percent Health Sector cess for the remaining period of the NRHM that is up to 2012, proceeds of which should be allocated entirely towards NRHM.

We suggest a health sector strategy for India that is Millennium Development Goals (MDG) based not only at the national level, but also more importantly at the state and district levels. States and districts should strive hard to attain the MDGs, such as reducing infant mortality rate, under-5 mortality, maternal mortality rate, immunizations and access to safe drinking water and the like especially for in the laggard districts. Based on the MDGs, state governments should announce targets for health to be met at the state and district levels by the year 2015.

We suggest that the Central Government should plan to convene a meeting of Chief Ministers and Health Ministers of all Indian States in 2008 to discuss how the states will meet the health targets. This meeting will allow states to present their most successful initiatives, so that all states can adopt “best practices” in public health.

The increased public health spending should finance infrastructure improvements in the rural sub-centers, primary and community health centers and the district hospitals. Additionally, much higher levels of spending is needed for essential drugs and supplies, vaccines, medical equipments, laboratories, and the like. In terms of human resources in the health centers, state governments need to appoint more auxiliary nurse midwives (ANMs), trained birth attendants, technicians, pharmacists, doctors, and specialists. These measures will help increase the utilization of the public health centers in AP and Karnataka and consequently bring down the rather high out-of-pocket expenses of their rural residents.

Scaling up Primary Health Services in Rural India: Public Investment Requirements and Health Sector Reform¹

Case Studies of Andhra Pradesh and Karnataka

Nirupam Bajpai, Ravindra H. Dholakia and Jeffrey D. Sachs²

This report is based on the work undertaken during Year III of a four-year project on scaling up health services in rural India. The report focuses on two states: Andhra Pradesh and Karnataka. Nalgonda district in AP and Chitradurga district in Karnataka were taken up for in-depth studies. Furthermore, detailed questionnaires were administered in five villages in each of the two districts that were distinct from each other and representative of the different conditions so that these could be reasonably extrapolated to the district.

We attempt to address two key questions in this report:

- 1) In terms of state-wide scaling up of rural services (in Andhra Pradesh, and Karnataka) in the area of primary health, what will it cost financially and in terms of human resources to scale-up these services in all the rural areas of these two states? And
- 2) What policy, institutional and governance reforms may be necessary so as to ensure proper service delivery? As is well known, merely setting up more health clinics, for instance, is not going to be enough; higher public investments in these areas needs to be accompanied by systemic reforms that will help overhaul the present service delivery system, including issues of control and oversight, for example.

I. Introduction

The Draft Approach Paper to the Eleventh Five Year Plan (2006) recognizes at the outset that unless people have access to basic services like health, education, clean drinking

¹ This report is based on the work undertaken during Phase II for a project entitled 'Scaling up Services in Rural India' that is housed at the Center on Globalization and Sustainable Development (CGSD) of the Earth Institute at Columbia University. CGSD is grateful to The William and Flora Hewlett Foundation for providing financial support to this project and especially thanks Smita Singh, Program Director, Global Development, and Karen Lindblom, Program Officer for discussions and their keen interest in this project.

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water and sanitation, they may not get their due share in the benefits of growth. It further identifies better health and education as the “necessary pre-conditions for sustained long-term growth” and says that, “A key element of 11th Plan strategy should be to provide essential education and health services to those large parts of our population who are still excluded from these.” (p.12). the problem of access of people to such basic services is more severe in rural areas. Curative primary healthcare except for communicable diseases is not considered as a public good because its consumption does not fulfill the criteria of externality, non-excludability and non-rivalry. It is not even considered strictly as a merit good. However, in the rural areas and for economically weaker sections, the draft Approach Paper (2006) asserts, “Access for the mass of our people can only be assured through a substantial effort at public financing of these services. In most cases, this also means public provision though there is obviously room for partnership with private entities, including especially non-profit bodies and civil society involvement.” (p.4). There is a growing awareness and explicit recognition of the shortfall in the public health related targets of infant and maternal mortality rates and of the main factors responsible for the same. Thus, the draft Approach Paper (2006) clearly states that “rural healthcare in most states is marked by absenteeism of doctors/ health providers, low levels of skills, shortage of medicines, inadequate supervision/ monitoring, and callous attitudes. There are neither rewards for service providers nor punishments to defaulters.” (p.52). Scaling up of primary healthcare services in rural Andhra Pradesh (AP) & Karnataka would, therefore, require not only expansion of the quantum of the service, but also substantial improvement in the quality of the healthcare.

In the present paper we attempt to estimate the financial and human resources required to scale up the primary healthcare services in rural AP & Karnataka. In the next section we briefly review the existing situation in the sector. In the third section, we discuss our findings from a sample survey of poor households conducted during June-July 2007 in Nalgonda District (AP) and Chitradurga District (Karnataka). Methodology of sample selection is discussed in Appendix A. In the fourth section, we discuss our findings and observations from a sample survey of health facilities in the two districts. Appendix B provides the questionnaire used and other details pertaining to the survey. The fifth section then attempts to estimate the requirements of financial and human resources to scale up the services. The sixth and final section provides our recommendations and suggestions to improve the quality and reach of the services.

II. Primary Health in AP and Karnataka – Status Report

AP, the fifth largest State in India with an area of 276,754 square kilometres, was formed on 1st November, 1956 under the States' reorganization scheme. It accounts for 8.4 percent of India's territory and has a long coastline of 972 kms. The state has a variety of physiographic features ranging from high hills, undulating plains to a coastal deltaic environment.³ It is one of the most populous states in the country with a population of 76.2 million and a population density of 277 per sq. km. (as against the national average of 324). The decadal growth rate of the state is 14.6 percent against 21.5 percent for the

³ <http://www.aponline.gov.in/quick%20links/apfactfile/apfactmain.html>.

country. Thus, population of the state is growing at a slower rate than the nation. The state has 23 districts, 1127 blocks and 26,614 villages. The Total Fertility Rate of the State is 2.1; the Infant Mortality Rate is 57, and the Maternal Mortality Ratio is 195 (SRS 2001 - 03) which are lower than the National average. The Sex Ratio in the State is 978 (as compared to 933 for the country).⁴ *Table 1* provides a comparison of Andhra Pradesh, Karnataka and India on several critical demographic, socioeconomic and health indicators.

Sr. No.	Item	Andhra Pradesh	Karnataka	India
1	Total population (Census 2001) (in million)	76.2	52.8	1028.6
2	Decadal Growth (Census 2001) (%)	14.6	17.5	21.5
3	Crude Birth Rate (SRS 2005)	19.1	20.6	23.8
4	Crude Death Rate (SRS 2005)	7.3	7.1	7.6
5	Total Fertility Rate (SRS 2004)	2.1	2.3	2.9
6	Infant Mortality Rate (SRS 2005)	57	50	58
7	Maternal Mortality Ratio (SRS 2001 - 2003)	195	228	301
8	Sex Ratio (Census 2001)	978	965	933
9	Population below Poverty line (%)	15.8	20.0	26.1
10	Schedule Caste population (in million)	12.3	8.6	166.6
11	Schedule Tribe population (in million)	5.0	3.5	84.3
12	Female Literacy Rate (Census 2001) (%)	51.2	57.4	54.3

Karnataka came into being as a state of the Union of India on November 1, 1956 as a result of the merger of five territories where Kannada was the language of the people. The new state was initially known as Mysore, but subsequently, in 1973, it was renamed 'Karnataka'. For administrative purposes, the state is divided into 27 revenue districts. Karnataka spreads over the Deccan Plateau and has an area of 191,791 square kilometres, which constitutes 5.83 percent of the total geographical area of India. It has a population of 53 million (2001), which is approximately 5.13 percent of India's population. The rural population is 66 percent of the total and amounts to 34.98 million.⁵

The sex ratio of 965 in the state stands above the all-India average of 933, with an increase of 5 percentage points in the sex ratio of 2001 over 1991. But, the sex ratio for children (0-6 years) has declined from 960 in 1991 to 946 in 2001, which is a matter of grave concern. The population density in the state is 275 as compared to 324 at the all-

⁴ <http://health.nic.in/NRHM/State%20Files/ap.htm>,

⁵ <http://www.karnataka.com/profile/area.shtml>,

India level in 2001.⁶ Karnataka has 27 districts, 181 talukas and 29,406 villages out of which 27,481 are inhabited.⁷

The Karnataka Human Development Report – 2005 points out that, “*Good health is an invaluable asset for better economic productivity, both at the individual and national level, but above all, it is valued by those who own it as a prerequisite for a better quality of life and better standards of living.*” The report identifies the poor, the women, the Scheduled Castes and Scheduled Tribes as the Sub-populations who are at the highest risk from poor health and its effects on longevity and morbidity. The main reasons for the high level of vulnerability of these sub-groups have also been stated. These reasons are the inaccessibility of healthcare and, also, their inability to spend on healthcare interventions. It has been further stated that, “*Public healthcare systems must, therefore, provide that critical barrier between ill-health and the ones who are most vulnerable. Here too, factors such as financing and efficiency greatly influence the quality and coverage of public healthcare services.*”⁵

In most of the places in the country, the secondary health care infrastructure at the district hospitals and urban hospitals are currently taking care of the primary health care needs of the population in the city/town in which it is located besides working as secondary care centres. This leads to problems of overcrowding and over-utilization of the specialized services. AP, along with Karnataka, West Bengal and Punjab, had initiated Secondary Health System Development Projects to solve these problems. The projects emphasized on strengthening the CHCs, District Hospital and the referral linkages between these.⁸ Thus, the referral and higher levels of healthcare services to the rural areas would hopefully be addressed by these projects. In the present paper, our focus is on primary healthcare services in the rural areas of AP and Karnataka.

The Andhra Pradesh government has launched what it calls the Rajiv Health Mission, an over-arching health program that was launched in the State on August, 15, 2007 to dedicate three new public services to the people of the state in Public-Private-Partnership mode. These are: (a) Emergency services through a toll-free line 108; (b) Health Information Helpline through a caller-free line 104 and (c) Community Health Insurance for BPL Families. The aim of these initiatives is to bring organizational strength and financial resources of the Government and the technological and entrepreneurial talents of the private sector together. The aim is to serve the health and medical needs of the poor and of those residing in remote and interior areas of the State.

Emergency Services through 108 (EMRI) was launched by the AP government with a view to enable rural poor to have easy access to the hospital health care services free of cost in times of emergency, particularly in respect of maternal and neonatal and infant emergencies. The Rural Emergency Health Transport Services (ERHTS) was initiated under an MOU with the EMRI, a NGO set up by Satyam

⁶Karnataka Human Development Report – 2005, retrieved from <http://nitpu3.kar.nic.in/planning/khdr2005/English/Main%20Report/6-chapter.pdf>

⁷ <http://www.indiastat.com/india/showdata.asp?secid=356667&ptid=17686&level=3>

⁸ <http://planningcommission.nic.in/plans/annualplan/1999-00/ap9920ch5d.htm>.

Computer Services Ltd. The scheme is operated through a 108 toll-free line, which can be accessed from any location throughout the State. Under this scheme, 502 ambulances have been commissioned and their operation electronically controlled through a state-of-art call-centers run by EMRI on a 24-hour schedule. This service provides for other emergencies also, such as Fire and Police. In the two years that the scheme has been in operation, the service has received 350,000 emergency calls and helped to save 14,000 lives. Emergencies reported are (i) medical 50% (ii) Police 48% and (iii) Fire 2%

The Andhra government's Health Information Helpline (HIHL) is a toll free telephone service to disseminate information, advice and guidance related to any health problem for the rural and urban population of the State; details of availability, addresses, location, diagnostic service providers in the government, private and NGO sector in any part of the State and reports on any outbreak of diseases in any rural village or urban areas of any district in the State. All these services are made available on a 24 hour schedule to begin with in three districts - Anantapur, Mahaboobnagar and Srikakulam. The Helpline is receiving 8,000 calls per day and this is expected to go up to 12,000 calls per day by early 2008.

The Community Health Insurance for BPL families of the Andhra government is a unique community health insurance Scheme being implemented in the State on a pilot basis in the backward districts of Mahaboobnagar, Ananthapur and Srikakulam from April, 2007. The scheme provides financial protection to families living below poverty line up to Rs. 200,000 in a year for the treatment of serious ailments requiring hospitalization and surgery. The scheme is being implemented through Insurance Company, selected through a process of competitive bidding. There are 23.16 lakh eligible BPL families in the three districts comprising of a population of 83.40 lakh that are benefiting from the Scheme. Premium for the insurance is Rs.330/- per family per year for an insurance coverage of Rs.150,000 and buffer of additional Rs.50,000 for deserving cases. Government has undertaken to pay on behalf of the BPL families the entire premium and the service tax payable to the insurance company.

The Andhra government is planning to adopt Information Technology to capture basic healthcare data of its citizens. The data is captured at the point of generation, and proper records maintained, including feedback and evaluation of the various projects / programs (like anti-TB, malaria control, etc) undertaken by the health staff. CMC Limited has developed **FHIMS** (*i.e.*, **Family welfare and Health Information Monitoring System**) application software with modules for primary health centres (PHCs), district medical and health offices, offices of commissioners of family welfare (CFW) and the office of the director of health (DH).⁹ In terms of healthcare infrastructure, the availability of sub-centres is more or less similar in both AP and Karnataka. However, the availability of PHCs and CHCs is significantly more in Karnataka than in AP. *Tables 2 and 3* provide coverage ratios for these facilities in the two states. It can be seen that there are about 8 sub-Centers per PHC and about 9.6 PHCs per CHC in AP, whereas in Karnataka there are 4.8 sub-Centres per PHC and about 6.6 PHCs per CHC. It is important to acknowledge that physical existence of a facility is

⁹ http://www.cmcltd.com/case_studies/e-Governance/health%20care/fhims_case.htm.

only a necessary condition to determine or influence the health outcome. More essential is the effective delivery and the quality of the services. Quality of the healthcare services has three dimensions: (i) availability of infrastructure in SCs, PHCs and CHCs; (ii) availability of quality human resources; and (iii) attitude, motivation and commitments of human resources to the service.

Table 2: Coverage Ratios of Health Facilities in Rural Andhra Pradesh, September 2005.

Sr. No	Ratio	Sub-Centre	PHC	CHC
1	Average rural area (sq.km.)	21.59	172.16	1648.16
2	Average radial distance (kms.)	2.62	7.4	22.9
3	Average rural population covered	4,424	35,287	337,811
4	Average number of villages covered	2	18	171

Source: <http://www.indiastat.com/>.

Table 3: Coverage Ratios of Health Facilities in Rural Karnataka, September 2005.

Sr. No	Ratio	Sub-Centre	PHC	CHC
1	Average rural area (sq.km.)	22.92	111.02	734.74
2	Average radial distance (kms.)	2.7	5.94	15.29
3	Average rural population covered	4,285	20,755	137,358
4	Average number of villages covered	4	17	116

Source: <http://www.indiastat.com/>.

Tables 4 and 5 show the availability of infrastructure in SCs, PHCs and CHCs in AP and Karnataka respectively. Tables 6 and 7 show the availability of qualified medical personnel in the health facilities in AP and Karnataka respectively. It can be seen from the tables that healthcare facilities in Karnataka on an average are better equipped than in AP both in terms of infrastructure and medical personnel. However, both the states have serious shortfalls in infrastructure availability and required manpower availability. Tables 8 and 9 show official estimates shortfalls in infrastructure and manpower in healthcare facilities calculated by the Ministry of Health and Family Welfare (MoH & FW) in AP and Karnataka respectively.

Table 4: Infrastructure Availability in SCs, PHCs and CHCs in Andhra Pradesh, September 2005.

		SCs	PHCs	CHCs
1.	Own building	34%	100%	100%
2.	With Labor Room	-	100%	100%
3.	With Operation theatre	-	87%	94.3%
4.	With 4-6 Beds or more	-	100%	100%
5.	With 24 Hrs. Delivery Facility	-	30%	100%
6.	Without Electric Supply	47.8%	1.6%	1.4%
7.	With Telephone	-	82%	85.7%
8.	With Toilet	62.2%	89.5%	100%
9.	Generator Functional	-	-	95.2%
10.	Vehicle Functional	-	24.5%	94.7%
11.	OT for gynae	-	-	25.8%

12.	Gynaec OPD	-	-	48.6%
13.	RTI/STI OPD	-	-	11.4%
14.	Linkage with Distt Blood Bank	-	-	1.4%
Source: http://www.indiastat.com/ .				

Table 5: Infrastructure Availability in SCs, PHCs and CHCs in Karnataka, September 2005.

Sr. No.	Facility	% Having the Facility		
		SCs	PHCs	CHCs
1	Own building	55%	86 %	82%
2	With Labour Room	-	100%	100%
3	With Operation theatre	-	-	89%
4	With 4-6 Beds	-	100%	100%
5	With 24 Hrs. Delivery Facility	-	24%	100%
6	Without Electric Supply	11.2%	0%	2.7%
7	With Telephone	-	96%	95.9%
8	With Toilet	89.4%	88.9%	100%
9	Generator Functional	-	-	61.9%
10	Vehicle Functional	-	17.2%	84.6%
11	OT for gynaec	-	-	-
12	Gynaec OPD	-	-	45.2%
13	RTI/STI OPD	-	-	4.1%
14	Linkage with Distt Blood Bank	-	-	12.3%
Source: http://www.indiastat.com/ .				

Table 6: Availability of Medical Personnel in Health Facilities in Andhra Pradesh, September 2005

Sr. No.	Personnel	% of Health Facility with at least one person		
		SCs	PHCs	CHCs
1	Multipurpose Worker/ANM (Female)	97%	-	86
2	HW (Male)	49%	-	
3	Doctor	-	94%	25%
4	General duty doctor (Male)	-	100%	88%
5	General duty doctor (Female)	-	-	81%
6	Staff Nurse	-	-	100%
7	Laboratory Assistant	-	90%	75%
8	Obstetrician & Gynaecologist	-	-	44%
9	Paediatricians	-	-	32%
10	RTI/SSTI Specialist	-	-	100%
11	Pathologist	-	-	-
12	Anaesthesiologist	-	-	60%
13	Radiographers	-	-	84%
Source: http://www.indiastat.com/ .				

Table 7: Availability of Medical Personnel in Health Facilities in Karnataka, September 2005

Sr. No.	Personnel	% of Health Facility with at least one person		
		SCs	PHCs	CHCs
1	Multipurpose Worker/ANM (Female)	100%	-	100%
2	HW (Male)	39%	-	-
3	Doctor	-	100%	76-%
4	General duty doctor (Male)	-	50%	-
5	General duty doctor (Female)	-	70%	-
6	Staff Nurse	-	-	95%
7	Laboratory Assistant	-	73%	86%
8	Obstetrician & Gynaecologist	-	-	85%
9	Paediatricians (NSS, 1999-2000)	-	-	46%
10	RTI/SSTI Specialist (Census 2001)	-	-	100%
11	Pathologist (Census 2001)	-	-	100%
12	Anaesthesiologist	-	-	33%
13	Radiographers	-	-	12%

Source: <http://www.indiastat.com/>.

Table 8: Health Infrastructure of Andhra Pradesh (2005)

Particulars	Required	In position	Shortfall	% shortfall
Sub-centre	11699	12522	-	0.00
Primary Health Centre (PHC)	1924	1570	354	18.40
Community Health Centre (CHC)	481	167	314	65.28
Multipurpose worker (Female)/ANM at Sub Centres & PHCs	14092	13740	352	2.50
Health Worker (Male) MPW(M) at Sub Centres	12522	6327	6195	49.47
Health Assistants (Female)/LHV at PHCs	1570	1564	6	0.38
Health Assistants (Male) at PHCs	1570	1814	-	0.00
Doctor at PHCs	1570	2202	-	0.00
Obstetricians & Gynaecologists at CHCs	167	73	94	56.29
Physicians at CHCs	167	42	125	74.85
Paediatricians at CHCs	167	54	113	67.66
Total specialists at CHCs	668	224	444	66.47
Radiographers	167	140	27	16.17
Pharmacist	1737	1637	100	5.76
Laboratory Technicians	1737	1437	300	17.27
Nurse/Midwife	2739	2053	686	25.05

Source: RHS Bulletin, March 2006, M/O Health & F.W., GoI.

Particulars	Required	In position	shortfall	%shortfall
Sub-centre	7369	8143	-	0.00
Primary Health Centre	1211	1679	-	0.00
Community Health Centre	302	254	48	15.89
Multipurpose worker (Female)/ANM at Sub Centres & PHCs	9822	8544	1278	13.01
Health Worker (Male) MPW(M) at Sub Centres	8143	4576	3567	43.80
Health Assistant (Female)/LHV at PHCs	1679	1170	509	30.32
Health Assistant (Male) at PHCs	1679	837	842	50.15
Doctor at PHCs	1679	2041	-	0.00
Obstetricians & Gynaecologists at CHCs	254	215	39	15.35
Physicians at CHCs	254	192	62	24.41
Paediatricians at CHCs	254	116	138	54.33
Total specialists at CHCs	1016	691	325	31.99
Radiographers	254	30	224	88.19
Pharmacist	1933	1880	53	2.74
Laboratory Technicians	1933	1451	482	24.94
Nurse/Midwife	3457	3100	357	10.33

Source: RHS Bulletin, March 2006, M/O Health & F.W., GoI.

We can see from Table 8 that Andhra Pradesh has more than the required number of Sub-centres (SC) but there is a shortage of more than 65 percent Community Health Centres (CHC). But, even though the number of SCs is more than the required number, we can see that Health Worker (Male) at these SCs is almost half of what is required. The situation is even worse at CHCs where there is an acute shortage of Physicians (74.8%), Paediatricians (67.6%), and Obstetricians & Gynaecologists (56.3%). The total specialists at the CHCs are 66.5 percent less than the minimum number required. This clearly shows that, in addition to setting up of more CHCs, more specialists would also have to be recruited for them. Similarly, there is also a shortage in the no of nurses/midwife (25%), Laboratory Technicians (17.3%), Radiographers (16.2%), and Pharmacist (5.8%).

The number of government health institutions as well as the trained professionals in these institutions has increased considerably in the last few years in Karnataka. The number of primary health centres (PHCs) increased from 365 to 1,679 between 1985 and 2003, and the sub-centres increased from 4,964 to 8,143 whereas the community health centres (CHCs) from increased 27 to 254. But, as can be seen from Table 9, there is still a shortage of 43.8% of Health Worker (Male) at the SCs in the state. This shortage is even more acute for Radiographers (88.19%) and Paediatricians at CHCs (54.33%). Thus, healthcare facilities in AP and Karnataka suffer from inadequacies of basic infrastructure and availability of qualified health personnel. Public perception of quality of the service

and the faith people would put on such public services critically hinge on these physical aspects of the quality besides the attitude, commitment and sincerity of the staff.

In order to better understand the ground reality, the perception of people about the healthcare services and the extent to which these services reach the real target group, viz., economically weakened sections of the society, we conducted a sample survey of households and health facilities in rural AP and Karnataka. Appendices A and B provide the methodological details and the next two sections summarise our major findings.

Emerging Health Concerns - Hypertension, Type 2 Diabetes and Cardiovascular diseases:

Many parts of rural India are experiencing an epidemiological transition and this is reflected in a growing burden of non-communicable diseases. Non-communicable and chronic diseases are increasingly being seen as a leading cause of death in rural India. Hypertension¹⁰, Type 2 Diabetes¹¹ and Cardiovascular diseases¹² are on the rise in rural AP and Karnataka. These are relatively new disease burdens in the rural areas, but are rising rapidly. We heard about them in each and every field trip that we went on. While the health systems have been designed mostly to cope with infectious diseases, there is an urgent need now for services that can deliver care and prevention for chronic diseases.

Hypertension, for example, is one of the most easily detectable of diseases, and can be identified by a paramedic. However, measurement of blood pressure, an essential part of the physical examination of any adult, is for the most part neglected in rural India. For example, ANMs at the sub-centre level should in the normal course examine blood pressure as part of antenatal care, as pregnancy-induced hypertension is a major contributor to maternal mortality in India, yet this is rarely done¹³ (Mukhopadhyay, 2006 and Reddy et al. 2005).

Several studies have documented the increasing burden of diabetes in rural India. In one of the PHCs, which served a population of 25,000 and where the average daily outpatient attendance was 60–70, a minimum of six to 10 patients had diabetes. Many of these patients were 45 years or younger and were diagnosed coincidentally (Abdul, 2007). Similarly, (Chow et al., 2006 and Yoon et al., 2006) have also revealed a high prevalence (13.2 percent) of diabetes among rural Indians.

¹⁰ Hypertension, commonly referred to as "high blood pressure" or HTN, is a medical condition in which the blood pressure is chronically elevated. While it is formally called arterial hypertension, the word "hypertension" without a qualifier usually refers to arterial hypertension.

¹¹ Type 2 diabetes is the most common form of diabetes. In type 2 diabetes, either the body does not produce enough insulin or the cells ignore the insulin. Having type 2 diabetes increases risk for many serious complications, such as heart disease, blindness, nerve damage, and kidney damage.

¹² Cardiovascular disease refers to the class of diseases that involve the heart or blood vessels (arteries and veins). While the term technically refers to any disease that affects the cardiovascular system, it is usually used to refer to those related to arterial disease.

¹³ In fact, during our debriefing meetings with the District Collectors, we recommended that BP measurement should be made mandatory for all outpatients visiting the PHCs and the CHCs.

Cardiovascular disease is now a leading cause of death in rural India. In line with India's rapid economic and societal changes, there has been a shift in focus from infectious disease. Diseases of the cardiovascular system, such as heart attacks and stroke, caused 32 percent of deaths in rural Andhra Pradesh according to a study which was done as part of the Andhra Pradesh Rural Health Initiative (Joshi et al., 2006). The study was conducted in 45 villages in East and West Godavari districts in Andhra Pradesh and has an estimated population size of 180, 162. Mortality data were recorded through an ongoing surveillance system and information on causes of death was ascertained using the verbal autopsy for 98 percent of deaths. A specific underlying cause of death was assigned for 82 percent of all verbal autopsies. The leading causes of death were diseases of the circulatory system (32%), injury and external causes (13%), infectious and parasitic causes (12%), neoplasms (7%) and respiratory diseases (5%).

III. Findings of Household Survey, 2007

The basic purpose of conducting a sample survey of the poor households in rural areas of the two states was to better understand: (i) the household expenditure on healthcare by the poor; (ii) the extent of morbidity in the poor households; (iii) sanitation and drinking water availability among the poor households; and (iv) their use and perception about the public health facilities and its quality. One district from each state was selected as a representative of the state condition for our study. The sample survey of households was purposive. We surveyed 258 households in Chitradurga district of Karnataka and 263 households in Nalgonda district in Andhra Pradesh¹⁴. The average size of the household among the poor households surveyed by us in Nalgonda is only 4.6 compared to 5.3 in Chitradurga. Average annual family income in our sample households in Nalgonda was Rs.27,973 and Rs.20,377 in Chitradurga. While the land ownership was the same (60%) among the sample households in both the districts, cattle ownership was only 25 percent in Nalgonda compared to 45 percent in Chitradurga. Average cattle per poor household was only 2 in Nalgonda, but 4 in Chitradurga. Cattle ownership was relatively more among the land-owning households in Nalgonda but among non-land-owning households in Chitradurga. The poverty profile differed substantially in the two districts.

The weaker section households in Nalgonda (AP) have very poor access to electricity compared to Chitradurga (Karnataka). Only 35 percent of the poor households in Nalgonda have electricity in their homes against 55 percent in Chitradurga. Moreover, they get electricity for about 7 hours for only 5 days during a week on an average in

¹⁴ During the course of this study, we traveled extensively in and around the selected villages from the two districts. We had detailed interactions with the District Collectors of Nalgonda and Chitradurga, and several Medical Officers and Block Development Officers of the two districts. We met doctors, paramedical staff, ANMs and Anganwadi workers who were present in the CHCs, PHCs, and the sub-centers during our unannounced visits. Discussions were also held with Sarpanchs and other members of the panchayats besides a large number of villagers. We also spoke at length with the Principal Secretaries of the Health and Planning Departments among others of the Governments of Andhra Pradesh and Karnataka.

Nalgonda against 7 hours on all seven days per week in Chitradurga. Availability of electricity is an important determinant of the health outcome in the population.

The poor households had a considerably lower literacy rate of 41 percent in Chitradurga and 44 percent in Nalgonda. In terms of drinking water, only about 50 percent of the households had access to tap or hand-pump in Chitradurga, whereas almost 95 percent of the poor households had such an access in Nalgonda. In both the districts, there is no practice of filtering or boiling the drinking water before use. None of the households in our sample reported toilet facility on their premise. Drainage, sewerage or waste removal facilities did not exist in the surveyed households. Thus, the poor households in the rural AP and rural Karnataka suffered from complete lack of health and sanitation related infrastructural facilities.

The extent of illness and morbidity prevailing in the rural areas of these two states is about 25 percent with the incidence of hospitalisation being 6 percent in Nalgonda and 7 percent in Chitradurga. In both the districts, the proportion of gainfully employed persons was about 58 percent. Relatively lower incidence of hospitalisation and morbidity in our sample appears consistent with the high work-participation in the population.

In Nalgonda the poor households spent, on an average, 7.4 percent of their income on healthcare whereas in Chitradurga, they spent 18 percent of their income. Interestingly we found that almost 64 percent of the poor patients in Chitradurga went to public healthcare facilities and only 36 percent went to the private providers. Yet, their average expenditure on healthcare is so high as 18 percent of their income. On the other hand, in Nalgonda, we found almost 70 percent of the patients going to the private healthcare providers and only 30 percent going to the public facilities. Yet their average expenditure on health was only 7 percent.

During the survey, we obtained the patients' perception and evaluation of the healthcare services they received on a scale of 0 to 5 from very poor (0) to excellent (5). The poor in Nalgonda were highly dissatisfied with the public healthcare services and rated them at 0.7 on an average. On the contrary, they were reasonably satisfied with the private providers and rated them at 3.0 on an average. In Chitradurga, the people were not so unhappy with the public healthcare services and rated them at 2.2 on an average. However, they also rated the private providers better at 2.9. The difference in the ratings indicates the public perception of the difference in the quality of healthcare services provided by the public and private facilities. If the public healthcare facilities improve in terms of availability and effective availability of healthcare personnel with regularity and punctuality, it would not only improve the public perception of the quality of services but also improve the health status and thereby economic status of vulnerable sections of the rural society.

In both the districts (states), we found that a very high percentage of deliveries took place at home among the poor families in spite of elaborate primary healthcare infrastructure. In Chitradurga (Karnataka) 88 percent deliveries and in Nalgonda (AP) 85

percent deliveries were at home. Among the deliveries in hospitals, in both the districts only 10 percent of the deliveries took place in the public hospitals. Private hospitals accounted for 5 percent deliveries in Nalgonda and only 2 percent deliveries in Chitradurga. Only 5 percent mothers from the poor families received antenatal care in Nalgonda and 6 percent in Chitradurga. It is, therefore, not surprising that 10 percent babies died during deliveries in Nalgonda and 7 percent in Chitradurga. Vaccination of children of the poor households is, however, far more wide-spread with 90 percent receiving vaccination in Chitradurga and 100 percent receiving in Nalgonda.

In Nalgonda district, the state government has launched the National Rural Health Mission (NRHM). The village level functionary is called Village Health Worker (VHW). In Chitradurga district of Karnataka, NRHM has yet to be launched. In our household survey of poor families, we obtained some feedback/perception of the people on this new initiative. About 48 percent poor households surveyed in Nalgonda felt that the presence of a VHW improved the functioning of the sub-centre. However, only 42 percent felt that it improved the access to health services. A VHW is generally expected to provide the following specific services: (i) enlighten expectant mothers on the need for institutional delivery; (ii) antenatal care (ANC); (iii) post-natal care (PNC); and (iv) immunization of children. About 83 percent of the surveyed households received one of the services; and 16 percent received two services. Only 1 percent received all the four services. Regarding the visits of VHW to households, 96 percent responded saying that the VHW visited voluntarily, 3 percent said about VHW visiting when approached and 1 percent said that VHW did not come at all. Almost 95 percent of the poor households in Nalgonda found the information provided by the VHW somewhat useful and the remaining 5 percent found it not so useful. In a subsequent section, we describe the NRHM in detail and highlight areas of its success and failure.

IV. Findings of Sample Survey of Health Facilities

In order to better understand the status of the primary healthcare in the rural areas of AP and Karnataka, its quality, infrastructure, manpower availability and charges to participants, we conducted a survey of some health facilities (HFs) both in the public and private sectors in and around the selected villages in the two districts – Nalgonda (AP) and Chitradurga (Karnataka). Although we had a formal questionnaire (given in Appendix B), we elicited information by in-depth discussion with staff and observations during our visits. In all we covered 35 HFs in Chitradurga and 41 HFs in Nalgonda. The infrastructure, manpower and charges in the sample are summarised in *Table 10*.

Table 10: Infrastructure, Manpower and Charges in Government and Private Health Facilities in Chitradurga and Nalgonda								
Details	Chitradurga				Nalgonda			
	CHC/Taluka Hospital	PHC	SC	Private	CHC	PHC	SC	Private [@]
No. of Health Facilities (HF)	5	6	13	11	5	6	19	11
No. of HF with own building	5	6	12	8	5	6	15	4

No. of HF without Off. building	0	0	1	0	0	0	4	0
Average No. of Rooms	25	11	2	13	42	8	4	2
No. of HF with elec. Connet.	5	6	13	11	5	6	17	4
No. of HF with water supply	5	6	13	11	5	6	19	4
No. of HF with Vehicles	5	0	-	0	5	-	-	-
No. of HF with res for docs	5	4	-	4	5	0	-	0
No. of HF with res for Nurses	5	3	13	6	5	0	15	-
No. of HF with Gen Phys.	5	5	-	6	3	4	-	-
Paediatrician	2	-	-	3	5	-	-	-
Gynaecologist	2	-	-	7	5	-	-	-
Other Specialist	3	-	-	5	5	-	-	-
No. of HF with ANMs/Nurses	5	6	13	9	5	4	19	-
Attendants	5	6	-	8	5	4	-	-
Lab Technicians	5	4	-	8	5	4	-	-
Others (Fourth class)	5	6	-	9	5	-	-	-
No. of HF where doctor is available in the night	5	3	-	8	5	0	-	8
No. of HF where nurse/ANM is available in the night	5	4	13	9	5	1	-	-
No. of HF where attendant is available in the night	5	3	-	3	5	1	-	-
No. of HF with Medical Stock	5	6	13	6	5	6	13	11

Table 10: Infrastructure, Manpower and Charges in Government and Private Health Facilities in Chitradurga and Nalgonda (contd....)

Details	Chitradurga				Nalgonda			
	CHC/Taluka Hospital	PHC	SC	Private	CHC	PHC	SC	Private [@]
No. of HF with beds	5	4	-	9	5	5	-	-
Avg No. of Beds in HF	55	3	-	21	52	4	-	-
Avg. Bed utilization rate (%)	70	-	-	57	100	-	-	-
No. of Health Facilities where consulting fee is taken	0	0	-	11	0	0	-	11
No. of Health Facilities where bed charge is taken	0	0	-	9	0	0	-	-
Amt of consulting fees if any (Rs.)	2 [#]	0	-	20-40	0	0	-	10
Amt of bed charges if any (Rs.)*	10 [#]	-	-	100-150	0	0	-	-

No. of HF where delivery cases are handled	5	5	-	8	5	-	-	0
Delivery Charges (Normal)(Rs.)	0	0	-	1000-1500	0	0	-	-
Delivery Charges (Caesarean)(Rs.)	0	-	-	5000	0	-	-	-
Note: ' * ' : Charges for common ward.								
# ' : Token amount collected only once.								
@' : Private HF surveyed in A.P were RMPs (Registered Medical Practitioners)								
Source: Our sample survey 2007.								

Comparing *Table 10* with *Tables 4 to 7* above makes it clear that our selected sample HFs are fairly representative of the average HFs in the respective states. In terms of infrastructural facilities like buildings, rooms, vehicles, electricity, water supply, residence for doctors and nurses, etc., the sample rural HFs in AP and Karnataka were not seriously lacking. Similarly, although the shortage of specialists and trained medical staff is felt in some HFs, the situation in the HFs in these two southern states is not as bad as in some of the northern states in India. Even the bed utilization rates were reasonably higher at the CHC level in these states.

As per our discussions with the staff of the HFs, the incidence of malnourished children in the age-group of 0-5 years is on an average only 6.5 percent in Chitradurga and 7.5 percent in Nalgonda. However, on an average, children in both the districts suffer from 3 episodes of LRI/ARI and Diarrhoea per year. Moreover, the children in Chitradurga and Nalgonda suffer from about 4 episodes/ year of fever and only one episode/ year of the eye/ear infection. Thus, the health status of children in both these districts is far from satisfactory and hardly supports the estimate of malnourishment prevailing among them.

According to the staff of HFs in public sector, the coverage of antenatal care (ANC) of pregnant mothers in the area is as high as 90 to 100 percent in Chitradurga and around 60 percent in Nalgonda. This perception is, however, not corroborated in our survey of the poor families. Thus, the ANC coverage is likely to be very high – nearly perfect – among better off sections and significantly less among the poorer sections of the society. Similarly, in the perception of the HF staff, nearly 95 percent deliveries in Chitradurga and around 70 percent deliveries in Nalgonda are performed by skilled attendants including a doctor, a nurse or a trained *dai*. On the other hand, our survey of poor households revealed that a large proportion of deliveries take place at home in both the districts. This implies that even if these deliveries are performed by skilled attendants (mostly trained *dai* or ANMs); the proportion of institutional deliveries in the rural areas is still very low. There is also the possibility of the deliveries being handled by the private practitioners.

We found that at every level of the public HF, there existed at least one and sometimes 3 to 4 private HFs in the surrounding area. Availability of private

practitioners increased at higher levels of public HFs. Most of these private practitioners are unregistered. Some of them were ex-compounders in public or private HFs.

In the perception of the public HF staff, the problem of healthcare services in the area is both inadequate awareness among villagers about the available medical facilities in the area and the quality of the existing facilities. Regarding the awareness of villagers, their rating is between good and fair, and about the quality of the services their rating varies between poor to very good with average between fair and good.

The survey also included the visits to the newly appointed VHWs (Village Health Workers) in the villages of A.P as Karnataka has not yet implemented the scheme. *Table 11* below provides information regarding our survey findings from the VHWs. As per our discussions with the VHWs, most of them were clear about their roles such as creating health awareness, mobilizing the community toward better use of public health facilities and also facilitating the functioning of the sub-centres. Most of these VHWs have been working in their areas for more than a year now. However, according to the households the functioning of the VHWs was not found to be satisfactory. Also, most of the VHWs were provided with ORS, Condoms, drug kits and delivery kits but the refills for these are not made available regularly.

Total Number of VHW surveyed	30
Number of VHW from the same Village/Mandal	20
Average age of the VHW	28
Average Education level of the VHW(Grade)	8
Number of VHW from SC/ST/OBC	30
Average amount of time since when the VHW is working	1.3
Number of VHWs who are clear about their roles as in	
a. Creating Health Awareness	30
b. Mobilizing community for better access to public health facilities	29
c. Counselling women on birth preparedness & safe delivery, Family planning, infant care	29
d. Accompanying pregnant women & arranging escorts for pregnant women/Children	16
Number of VHW who have been provided with	
ORS	30
Iron Folic Acid (IFA)	28
Chloroquin	25
Disposable Delivery Kits	20
Oral Pills	26
Refills for Kits	1
Drug Kit	17
Condoms	27
Number of VHWs receiving adequate support from	
Supervisors	29
Village Panchayat	18

	PHCs	28
Number of VHWs who were trained before joining		30
Duration (days)		21
Number of VHWs who thought the training was		
	Very Useful	15
	Useful	14
	Not So Useful	1
Average Monthly Remuneration to VHWs (Rs.)		760
Number of VHWs happy with their job		30
Number of VHWs who have grievances		0
<i>Source: Our field survey, 2007.</i>		

Moreover, from our personal visits' discussions and observations in different health facilities in the two districts, the following points are worth noting:

I. Taluka Hospitals and Community Health Centre (CHC):

- In Chitradurga district 3 taluka hospitals and 2 community health centers (CHC) were surveyed. Under a recent change brought by the government of Karnataka all the community health centers that are supposed to be at the *taluka* level are converted into *taluka* hospitals.
- As this conversion was under process during the time of visit of the survey team, the team found that the immediate changes brought about by these health facilities were a) increase in the number of beds (from 50 to 100 beds) and hence the capacity of indoor patients and b) constructions of extra wards and rooms for increasing the capacity.
- The next unit to the taluka hospital is the community health centre (CHC). These are located at a semi-urban area of each taluka. Under the conversion process two PHCs were converted to CHCs. Each *taluka* now has two CHCs along with a *taluka* hospital.
- Another important change in the working of the *taluka* hospitals and CHCs in Karnataka is the timings of consultancy. Apart from the usual timings there has been an addition in the consultancy time for the out door patients. The new timing is from 5:30 pm to 8 pm along with the usual 10 am to 5 pm.
- In the Nalgonda district of Andhra Pradesh the survey team visited in all five community health centers. In A.P the next administrative unit to a district is a *mandal*. *Mandal* being smaller to a *taluka*, the CHCs are situated such that one CHC is common to 3 to 4 *mandals*.
- An important point regarding the CHCs / *taluka* hospitals is that most of the CHCs in both the districts are found to be short of doctors¹⁵. In Karnataka 3 CHCs were found without specialist doctors and in A.P two CHCs were found without

¹⁵ A CHC in Konapura, Karnataka is run single-handedly by one lady doctor who also resides at the center. The doctor complained of people troubling her for minor complaints in the middle of the night and has no one except a nurse to assist her during the day.

- general physicians¹⁶. In fact one of the CHCs in Karnataka was not working regularly as the post of doctor was vacant for nearly six months.
- It was found that all the *taluka* hospitals and CHCs, i.e. the health facilities located at the *taluka*/block level in Karnataka and AP worked round the clock. Also, since the doctors reside in the hospital premises, they are available during the night hours in case of any emergency.

II. Primary Health Centre (PHC):

- The survey team visited in all 6 PHCs in Karnataka and 6 in Andhra Pradesh. In Karnataka for each *taluka* there are about 3 to 4 PHCs and in A.P there is one PHC for each *mandal*.
- In Karnataka, apart from PHC there are public health units (PHU) that are smaller to the PHCs in terms of the staff and also the infrastructure. PHCs have 1 doctor and about 4 to 5 paramedical staff whereas in PHU there is one doctor and two paramedical staff.
- Most of the PHCs visited in Karnataka were found to be functioning well, though there were shortages of doctors in most of them¹⁷. The PHU visited by the team was not working well. The post of the doctor was vacant and the building was in a dilapidated condition.
- As in the case of CHCs and *taluka* hospitals in Karnataka, even the PHCs faced the problem of availability of required number of doctors. In some of the PHCs it was found that due to the vacant post, doctors from another PHC was given charge. As a result the functioning of both the PHCs was adversely affected.
- In A.P one of the PHCs was found without an official building. Another PHC visited was found locked and was not functioning at all. The utilization rates of public HF is grossly low and the public perception about them is rather poor¹⁸.
- Apart from this it was reported that in most of the PHCs in A.P enough medical equipments were not made available.
- The doctors at the PHC level are often busy in the administrative formalities such as meetings at *taluka* and district levels which affect their regularity of presence at the health facility.

III. Sub-Center:

- The survey team visited 13 sub-centers in Karnataka and 19 in A.P.

¹⁶ The Medical superintendent, CHC, Shadnagar, AP told us “From the budget that the hospital gets; only Rs. 5,000 is allocated to drugs. It is not enough, so we use the funds from the hospital development fund to purchase drugs, since that is the need of the hour. Atropine is our biggest expense and the government is just not providing it”. At the CHC in Shadnagar, suicide cases were abnormally frequent - up to 4 cases each day.

¹⁷ One of the PHCs we visited in Ashoka Siddhapura, Karnataka, served a population of 18,500 and was run by merely one doctor and one nurse. On an average, they had approximately 70 outpatients every day.

¹⁸ A village woman from Bhalnagar, AP told us “What is the point of going to the government hospital? Whatever my complaint may be, knee pain or diarrhea, they give me the same pill (a pain killer).”

- In Karnataka it was found that most of the ANMs were given the charge of more than one sub-center. One of the ANMs was found to be in charge of 3 sub-centers i.e. nearly 15 villages. This was not only due to shortage of ANMs but also because of mismanagement of authorities regarding allotment to duties.
- In A.P there is provision for a male health worker in the sub-centers but in most of the centers this post was found vacant.
- Regarding infrastructure it was found in A.P that most of the sub-centre buildings were not well maintained and in some cases were not in usable condition.
- Another important point regarding the working of ANMs is that they have to spend a lot of time in paper work and other administrative formalities which affect their usual schedules of visiting the villages.

IV. Private Health Facilities:

- In all 11 private health facilities were visited in both the states.
- In Karnataka, the private health facilities were mainly found in the respective *taluka* headquarters. All the doctors visited were trained and qualified M.B.B.S including general practitioners and specialists.
- In AP, there are no M.B.B.S doctors found at the *mandal* level. Hence all the private health facilities visited were registered medical practitioners (RMP). These practitioners do not have degree but are registered by government for providing medical services.
- Apart from these there are a number of unregistered/unauthorized health practitioners providing services mainly in the rural areas. Almost every village has one or two such practitioners.
- The private health services also include the medical and paramedical staff working at the government health facilities practicing during their off duty hours. Although by rule, the staff at the government health facilities is not allowed to undertake any private practice.

V. Village Health Workers (VHW):

- Under the National Rural Health Mission (NHRM) Village Health Workers (VHWs) have been recruited in AP, but were not in place in Chitradurga district in Karnataka at the time of our visit.
- The VHWs are deployed at the village level such that each and every village has at least one VHW. These workers who are all women are selected from the village they are married into and work in the same village. Their function mainly is to assist the ANMs and also to facilitate the community with better access of health services made available by the government.
- The team visited in all 30 VHWs in A.P. Most of the villages visited were found to have at least one VHW. From the 30 VHWs visited, 20 were from the same village/*mandal*. Also, all the VHWs visited were given some training, though far from being adequate before joining the work.
- The main problem reported by the VHWs was that they did not receive their remuneration in time. The VHWs do not get salaries, but are given incentives in return of their work. Refer to more details in a later section.

V. Estimating Required Scaling Up Efforts

Table 12 presents the norms in terms of population, staff and infrastructure for the ideal primary healthcare system required under the prevailing conditions in rural AP and Karnataka. These norms have been modified from the existing norms prescribed to the minimum extent required.

Table 12: Ideal Public Healthcare System for Rural AP & Karnataka – Norms & Infrastructure					
Sr. No.	Geographical Unit	Health Facility	Population Norm	Staff & Infrastructure	Functions
1	Village	Health Centre	1000 in Plain; 600 in Hills and Tribal Area	1 <i>Angan Wadi</i> Worker (AWW) + 1 Female (ASHA)	Maternal & Child Health, Nutrition and Immunization.
2	Village <i>Panchayat</i>	Sub- Centre	5000 in Plain; 3000 in Hills and Tribal Area	1 Male (MPHW); 1 Female (ANM); 1 Male (ANM) Telephone + Toilet + Labor Room.	Material & Child Health, Family Welfare, Nutrition, Immunization, Diarrhoea and Communicable disease control.
3	Block	PHC	30,000 in Plain; 20,000 in Hills and Tribal Area.	1 BMO 1 Child Specialist 1 LHV + 12 Medical & PMS 4 to 6 beds + Labor Room + Vehicle and Residence for Medical Staff + Telephone + Toilet.	Referral Unit for 6 Sub-centers, Curative, Preventive, Promotive & Family Welfare Services.
4	<i>Tehseel</i>	CHC	1,20,000 in Plain 80,000 in Hills and Tribal Area	1 BMS + 6 Specialists (Surgeon, Gynae, Paediatric, Anesthetic) + 2 AYUSH + 23 PMS and other staff + 30 beds + OT + X-ray + Blood storage + Laboratory + Vehicles (2) & residence for Medical Staff + Telephone.	Referral for 4 PHCs + Emergency Obstetric care + Specialist Consultation.
<i>Source: Department of Health & Family Welfare: Annual Report, 2005-06 and findings of our field survey, 2007.</i>					

To estimate the required HFs in the rural areas of both these states, we have projected the rural population based on the 2001 figures and the growth rates thereof. The total population of AP was 75.7 million and the rural population of AP in 2001 was 55.3 million, which shows an absolute increase of 6.6 million [13.6%] as compared to 48.6 million in 1991.¹⁹ If we assume that the population keeps on growing at this rate, the rural population in 2008 would be 60.37 million. [increase of 9.3%]. But, since the growth rate has slowed down across the country and also due to urbanization, we can safely assume that the rural population grew by roughly 7.3 percent during this period, and the rural population of the state would be 59.2 million.

Karnataka had a population of 52.7 million in 2001 and the rural population was 34.9 million. The decadal growth rate of population was 26.7 percent in 1971-81, but slowed down to 21.1 percent during 1981-91 and further declined to 17.5 percent during 1991-2001. If we assume this growth rate [decadal] to have come down to 16 percent for the period from 2001-2008 the percentage growth in population of the state would be approximately 11 percent for this period. The rural population growth can safely be assumed to be lower than this due to rising urbanization. If the rural population grew by 9 percent in this period, then the rural population of the state would be 38.1 million.

Table 13: Estimates of Required Health Facilities & Staff in Rural Andhra Pradesh, 2008-09

Facility	Required Number (R)	Existing Number (P)	Shortfall (R-P)	Unit Capital Cost (Rs.'000)	Unit Recurring Cost (Rs.'000)
Health Centre	59,255	53,713	5,542	-	5.25
SC	11,851	12,522	-	472.5	37.8
PHC	1,975	1,570	405	3150	252
CHC	494	167	327	15750	1260
Manpower					
Physicians	2,469	2,179	290	-	176
Surgeons	494	55	439	-	264
Paediatricians	494	54	440	-	264
Obstetricians & Gynaecologists	494	73	421	-	264
Anaesthetists	494	67	427	-	264
AYUSH Doctors	2,963	3,005	-	-	132
Lab Technicians	2,469	1,437	1,032	40.7	105.6
Radiographer	494	140	354	40.7	105.6
MPW/ANM (F)	23,702	13,740	9,962	40.7	72.6
HA/LHV (F)	2,469	1,564	905	40.7	92.4
MPW (M)	11,851	6327	5,524	40.7	72.6
HA (M)	2,963	1,814	1,149	40.7	72.6
Other PMS	1,27,400	1,09,831	17,569	-	39.6

Notes: 1. Cols. 5 & 6 are in Thousand Rupees

¹⁹ <http://envis-soe.ap.nic.in/images/CHAPTER2.PDF>.

2. For HCs, cost of kit and contingency.
3. For SCs, Capital cost includes cost of 1,000 sq. feet building with toilets, labour room, 4' oil paint, tap water, furniture, and platform.
4. Recurring costs for SC, PHC and CHC does not include salaries of medical & PMS and is taken @ 8% of the Capital cost.
5. Capital cost for PMS represents Training cost per person.
6. With appropriate policies, it should be possible to train doctors and specialists without additional direct capital cost to government.

Source: Tables 1 to 12 above and our Field Survey, 2007.

Table 14: Estimates of Required Health Facilities & Staff in Rural Karnataka, 2008-09

Facility	Required Number (R)	Existing Number (P)	Shortfall (R-P)	Unit Capital Cost (Rs.'000)	Unit Recurring Cost (Rs.'000)
Health Centre	38,130	40,301	-	-	5.25
SC	7,626	8,143	-	472.5	37.8
PHC	1,271	1,679	-	3150	252
CHC	318	254	64	15750	1260
Manpower					
Physicians	1,589	2,233	-	-	176
Surgeons	318	168	150	-	264
Pediatricians	318	116	202	-	264
Obstetricians & Gynaecologists	318	215	103	-	264
Anesthetists	318	85	233	-	264
AYUSH Doctors	1,907	2,326	-	-	132
Lab Technicians	1,589	1,451	138	40.7	105.6
Radiographer	318	30	288	40.7	105.6
MPW/ANM (F)	15,252	8,549	6,703	40.7	72.6
HA/LHV (F)	1,589	1,170	410	40.7	92.4
MPW (M)	7,626	4,576	3,050	40.7	72.6
HA (M)	1,907	837	1,070	40.7	72.6
Other PMS	81,982	40,991	40,991	-	39.6

Notes: 1. Cols. 5 & 6 are in Thousand Rupees

7. For HCs, cost of kit and contingency.
8. For SCs, Capital cost includes cost of 1,000 sq. feet building with toilets, labour room, 4' oil paint, tap water, furniture, and platform.
9. Recurring costs for SC, PHC and CHC does not include salaries of medical & PMS and is taken @ 8% of the Capital cost.
10. Capital cost for PMS represents Training cost per person.
11. With appropriate policies, it should be possible to train doctors and specialists without additional direct capital cost to government.

Source: Tables 1 to 12 above and our Field Survey, 2007.

Based on the unit costs given in table 13 and table 14 along with the estimates of the shortfall in HFs and medical staff, we can generate the required financial resources for scaling up the rural healthcare services in AP and Karnataka. Moreover, we may have to consider upgrading the HFs by providing the basic facilities like own

building, labor rooms, toilets, telephones, electricity connection, water tap connection, repairs, paints, etc. Tables 4 and 5 above provide percentages of existing HFs having various infrastructural facilities. There are 8,265 SCs in AP and 3,664 SCs, 235 PHCs and 46 CHCs in Karnataka which do not have their own building. We have provided for the capital costs only for the shortfall from the required HFs rather than excess HFs existing in the states. Accordingly, we have provided capital cost in table 13 (for AP) and table 14 (for Karnataka). We also see that 12,522 SCs in AP and 8,143 SCs in Karnataka do not have a proper labor room. We provide Rs.131,250 each for constructing either an additional room or converting one of their existing rooms with toilet, electricity and water connections, oil painting it, constructing a platform and providing appropriate furniture. Similarly, we have provided for a vehicle to 1,185 PHCs in AP and 986 PHCs in Karnataka. All CHCs must have two functional vehicles. Thus, we have provided for an additional vehicle to 159 CHCs in AP and 215 CHCs in Karnataka who already own one vehicle; and we provide two vehicles to the remaining CHCs – 8 in AP and 39 in Karnataka. For one vehicle, we allocate Rs.630,000. Correspondingly, the recurring cost would be at 8 percent of the capital cost. With all this included our cost estimation for scaling up primary healthcare services in rural AP and rural Karnataka is presented in table 15 and 16.

Table 15: Additional Expenditure Required in Andhra Pradesh for Scaling Up Primary Health Services in Rural Areas, 2007-08

Sr. No.	Item	Details		Unit Cost (Rs. Million)	Cost (Rs. Million)
1	Building	SCs	7,594	0.4725	3588
		PHCs	405	3.15	1276
		CHCs	327	15.75	5150
2	Labor Room	SCs	11,851	0.1313	1555
		PHCs	0	0.1313	-
		CHCs	0	0.1313	-
3	Vehicles	for HFs	1,360	0.63	857
4	Training of PMS		18,926	0.0389	735
	Total Capital Cost				13161
5	Recurring Cost per annum @ 8% of Capital Cost for SC,PHC & CHC	-			1053
6	Recurring Cost of Village Health Centre	VHCs	5,542	0.0053	29
7	Salaries of Doctors	GPs	290	0.176	51
		Specialists	1,727	0.264	456
		AYUSH Doctors	0	0.132	0
8	Salaries of PMS	Technicians	1,386	0.1056	147
		Nurses	16,635	0.0726	1208
		LHV	905	0.0924	84
		Lower level staff	17,569	0.0396	696
	Total Recurring Cost				3724

	Total Cost				16885
	Per Capita Basis	Estimated Population of AP for (October) 2008-09 is 83.43 million			In Rs.
	- Capital Cost	Per Capita(in Rs.)			158
	- Recurring Cost				45
	Total Cost				203
<i>Source: Table 13 and Text.</i>					

Table 16: Additional Expenditure Required in Karnataka for Scaling Up Primary Health Services in Rural Areas, 2007-08					
Sr. No.	Item	Details		Unit Cost (Rs. Million)	Cost (Rs. Million)
1	Building	SCs	3147	0.4725	1,487
		PHCs	0	3.15	0
		CHCs	110	15.75	1,733
2	Labor Room	SCs	7,626	0.13125	1,001
		PHCs	0	0.13125	0
		CHCs	0	0.13125	0
3	Vehicles	for HFs	1,279	0.63	806
4	Training of PMS		11,759	0.03885	453
	Total Capital Cost				5,480
5	Recurring Cost per annum @ 8% of Capital Cost for SC,PHC & CHC	-			438
6	Recurring Cost of Village Health Centre	VHCs	0	0.00525	0
7	Salaries of Doctors	GPs	0	0.176	0
		Specialists	688	0.264	182
		AYUSH Doctors	0	0.132	0
8	Salaries of PMS	Technicians	426	0.1056	45
		Nurses	10,823	0.0726	786
		LHV	410	0.0924	38
		Lower level staff	40,991	0.0396	1,623
	Total Recurring Cost				3,112
	Total Cost				8,592
	Per Capita Basis	Estimated Population of Karnataka for (October) 2008-09 is 59.33 million			In Rs.
	- Capital Cost	Per Capita (in Rs.)			92
	- Recurring Cost				52
	Total Cost				144
<i>Source: Table 14 and Text.</i>					

Tables 15 and 16 show that, while Andhra Pradesh needs to spend additional Rs. 17 Billion to scale up the rural primary healthcare services, Karnataka needs to spend almost half the amount (Rs.8.5 billion). On per capita basis, it comes to Rs. 203 for AP and Rs.144 for Karnataka. This is significantly less than the estimated requirements of the northern states like Rajasthan, MP and UP. (see, Bajpai, Dholakia and Sachs, 2005 and Bajpai and Dholakia, 2006). If we compare AP and Karnataka, we find that it is the capital expenditure in AP that makes the difference. In terms of the quantity of physical infrastructure for primary healthcare, Karnataka clearly scored over AP. However, since AP has already begun implementing NRHM norms and programs although it is not a NRHM high-focus state, it has started putting manpower in place (essentially the VHW and an additional ANM at each sub-Center) and hence its additional recurring costs required to scale up the rural services works out to be lower than Karnataka.

It is interesting to observe that both these southern states (AP and Karnataka) have much better physical healthcare infrastructure than the northern states (MP, UP, Rajasthan). They also have better availability of human resources qualified for delivering primary healthcare. Needless to say, they have better health outcomes than the northern states. Thus, the availability of the needed quantity of health infrastructure does matter for better health outcomes. Of course, improved quality of healthcare delivery would contribute to further improvements in the health outcomes, but for achieving a critical minimum level of health outcomes, availability of the needed physical infrastructure and the manpower in terms of quantity is a pre-condition.

In terms of budget allocation in 2006-07, AP has allocated Rs. 16.677 billion to medical & public health, Rs.3.813 billion to family welfare, and Rs.12.73 billion to water supply and sanitation on revenue account. Similarly, it has allocated Rs.0.11 billion, Rs.0.003 billion and Rs.0.012 billion on capital account to these heads respectively. On a per capita basis, this works out to Rs.207, Rs.47 and Rs.157 of combined revenue and capital account expenditures on these sectors respectively. Thus, AP has allocated a total of Rs.411 per capita on the health, sanitation and water in 2006-07. The figures for Karnataka are not very different. It has allocated a total of Rs.413 per capita on health, water and sanitation in 2006-07. Thus, the implications of scaling up health services in rural areas of these two states as given by our estimates in tables 15 and 16 are that AP needs to step up its allocation to these sectors by almost 49 percent over 2006-07(BE) in 2008-09 (BE) whereas Karnataka needs to step it up only by 35 percent. Since these increases are not over one year but two years, they are not impossible to achieve though it is a challenging task.

It is important to recognize here that additional resources required to scale up the services need not be entirely contributed and spent only by the state government. There is always a scope for public-private partnership in matters like infrastructure, buildings and training. Even in matters like vehicles, private sector enterprises can be brought in. There are also possibilities of the “salary” of ad hoc staff like ASHA or other PMS getting substituted by the incentives or payments received for the services

they provide. This not only helps to reduce the burden on the state government, but also improves accountability, regularity and commitment of the staff thereby improving the effective delivery and quality of service.

VI. The National Rural Health Mission

The National Rural Health Mission (NRHM) was launched in April 2005 in an effort to improve health with a special focus on states with weak public health infrastructure and indicators. The NRHM would expand the scope of the public health delivery system to reach the marginalized population, women and children, thereby bridging urban-rural disparities. It was also an effort to increase the total public spending on health from 0.9 percent of GDP to 2-3 percent of GDP. Current health spending since NRHM has been implemented has gone up to 1.15 percent of GDP.

The National Rural Health Mission was launched simultaneously with the Reproductive and Child Health (RCH)-Phase II. The NRHM is a larger and integrative Health Program that encompasses all the health programs in the area of Family Welfare, Reproductive and Child Health that are partially or entirely centrally funded, including vertical health programs for the control of diseases like Malaria, Filariasis, Blindness etc.

The RCH-I was launched as a five year project within the framework of fifty year old nationwide National Family Planning Program in India. Post - Alma-Ata, the Government of India in its National Health Policy (NHP), envisaged Health for All by 2000. A mid-decade evaluation of the NHP revealed the need to re-strategize in order to achieve certain reproductive health indicators. It was thought that the goals envisaged in the new RCH approach may coincide with the ninth five-year plan of the country. The RCH-I introduced a new approach of managing Population Growth by eliciting more community participation, especially the empowerment of women to take care of their own reproductive health. RCH-II is now being implemented over the period of 2005-2010, and is a large component of the NRHM.

Schemes under NRHM/ RCH-II

While the goals are enlisted by the programs, there is a lot of flexibility and room for innovation for the states to exercise in order to achieve these goals. Some of the key schemes initiated by the states in an effort to achieve these goals were:

(i) *Free Travel Facilities for rural BPL Expectant Mothers*: In order to encourage women below the poverty line to seek institutional care during their pregnancy, the ANM of the village was authorized to issue bus passes cum ID cards on which women who normally would not be able to afford transportation costs to and from the nearest hospital, could now make three round trips to the nearest PHC or government hospital for antenatal examinations etc.

(ii) *Janani Suraksha Yojana*: Implemented in almost all states under RCH-II, the JSY offers financial incentives to eligible rural BPL women for having institutional deliveries. In Nalgonda, the typical incentive amount was Rs. 1000 per institutional delivery, for the first two deliveries only. While in theory (according to the NRHM guidelines) women are also supposed to receive incentives for delivering in a private institution as well, not one such case was encountered by us in Nalgonda, Andhra Pradesh. In fact, if a woman delivered in a private institution, the ASHA who facilitated her delivery also did not receive any incentive payment for that particular case. In Chitradurga, Karnataka, a woman was given Rs. 700 as an incentive if she delivered in a government institution, but interestingly a woman was also entitled to Rs. 500 if she delivered at home, apparently to help with post-delivery costs related to the newborn. This latter incentive seemed to dilute the purpose of the former by not entirely encouraging women to seek institutional care.

In some cases, however, the financial incentives given by the government to encourage institutional deliveries were being circumvented to benefit the nurse/provider. We came to know of one such case from a person from Kalli Palli village in Bhalnagar, AP during our field visit. “My wife gave birth at the Shadnagar CHC. I was asked to pay Rs. 700 by the attending nurse or else they would not let my wife be discharged. I was told not to complain as I was soon going to get Rs. 1,000 under JSY and would still have Rs. 300 in my pocket. Since I had no choice, I had to pay, but I am still waiting to get the Rs. 1,000 that I am entitled to from the government”.

(iii) *Rural Emergency Health Transport Scheme*: Pioneered by Andhra Pradesh, this scheme makes available a network of rural ambulances upon dialing 108 for the transportation of all emergency cases, particularly those related to pregnant women, infants and children requiring emergency healthcare to the nearest hospitals.

(iv) Several CHCs in Nalgonda were classified as CEMONC centers, and were upgraded and equipped with emergency life-saving equipment related to maternal and child health. Currently Nalgonda has 5 CEMONC centers, with 2 more recently sanctioned. Similarly, BEMONC centers were identified (PHC or Block level clinics) where at least 1 obstetrician and 1 pediatrician along with the required paramedical staff will be available for basic maternal and child health services.

(v) *Mobile Medical Units*: Specific to Nalgonda, this scheme was implemented in partnership with two NGO's- Red Cross and Hope. These mobile units set up health camps on a weekly basis in remote and interior areas and provided basic healthcare.

NRHM Workers

The Village Health Worker (VHW)

a. Selection and Training

Under the NRHM, a provision was made for at least one Accredited Social Health Activist (ASHA) in each village. The ASHA, (called a Village Health Worker or VHW in

Andhra Pradesh) was by design a daughter-in-law of the village. Theoretically she is supposed to be at least an 8th grade graduate, but in practice the one with the highest level of schooling relative to the others was nominated by the gram panchayat. These women were then made to pass a basic reading and writing test. The VHWs in Nalgonda underwent a 21 day training session in Kota where they were given some training in dressing wounds, dispensing medicines for oral rehydration, coughs, colds, fevers, identification of diseases like TB, prenatal care, postnatal care, and community mobilization. In most cases but not all, VHWs were also given an additional 5 day practical training under the supervision of the ANM.

b. The Medical Kit

During training VHWs are provided with a basic medical kit consisting of various first aid paraphernalia, specifically:

- Bandages and cotton
- Oral Rehydration Salts (Citrate I.P.)
- Antifungal Ointment (500 gm)
- Gentamycin Eye Drops
- Antiseptic Benzyl Benzoate (450mL bottle required to be stored in a cool dry place)

She also receives a constant supply of Paracetamol from the nearest Primary Health Center. Additionally, she is supposed to be the source of Folic Acid tablets to expectant mothers, but it was a unanimous complaint in Nalgonda that Folic Acid tablets had not been supplied to them for the past eight months²⁰. The rest of the contents of the kit had not been replenished even once since their initial training. If the Barker hypothesis is to be believed, an *in utero* folic acid deficiency can lead to increased chances of neural tube defects.

c. Function and Role Definition

Her main task is to be the liaison between people of her village and the ANM, and the doctor of the PHC where required. She serves as the primary contact of the public health system for the people. It was envisaged that the presence of an ASHA would reduce the burden of the ANM, thereby increasing her efficiency, and also increase the outreach of health services, thereby improving access of the population to public healthcare, specifically the marginalized populations, women and children. Not just a provider of basic curative medicines and first aid, an important part of her role was to facilitate preventive care. The VHW motivates members of her community, especially expectant mothers, to use the health services offered and encourage institutional deliveries as opposed to potentially unsafe home deliveries.

²⁰ A VHW from Chandanpalli, AP told us “Recently there was a woman who gave birth to her baby at the PHC, and the baby died. The baby was Anemic and the doctors did nothing to save her. Iron supplements? We are supposed to distribute them to mothers, but we have not had stock for six months now.”

d. Incentives

The VHWs do not receive a fixed salary, but a performance-based system is followed instead for her payments. The Bhuvangiri primary health center in Nalgonda happened to have two VHWs present at the time of our visit²¹. One of the two was an exceptionally bright woman who excelled at the work she did as a VHW, her newfound occupation of serving the health needs of her community. For the passion and enthusiasm with which she served her community, she was paid a lump sum once every three months, which averaged to about Rs. 350 per month. Before being a health worker, she earned her livelihood as a tailor. When asked what she earned at this previous vocation, she shared that tailoring fetched her far more than health activism- approximately Rs. 3000 per month. It was puzzling why someone would give up such a lucrative vocation and settle for a little over 10 percent of what they could potentially be earning. “I want to help people. This gives me immense satisfaction”, she said. Her co-worker and she together served a population of 1300 people. She identified some challenges she faced as the lack of sufficient facilities and transportation to bring patients to the PHC. She also suggested the need for further refresher training.

However, the incentives offered were for the benefit of expectant mothers only. The incentives received by the VHWs in Nalgonda were as follows:

Incentive Structure for VHWs

Registration of Early Pregnancy: Rs. 25 if Schedule Caste/ Schedule Tribe, else Nil

Antenatal check-up: Rs. 25 if Schedule Caste/Schedule Tribe, else Nil

Three Ante-natal check-ups and TT Immunization: Rs. 50 if Schedule Caste/ Schedule Tribe, else nil

Testing (Pathological/Other): Rs. 50 if Schedule Caste/ Schedule Tribe, else Nil

General Check-up by Doctor: Rs. 50 if Schedule Caste/ Schedule Tribe, Rs. 25 if Backward or Other Class

Institutional Delivery (public or private): Rs. 150 if Schedule Caste/ Schedule Tribe, Rs. 100 if Backward or Other Class

Postnatal check-up: Rs. 100 if Schedule Caste, Rs. 50 if Backward or Other Class

Family planning: Rs. 150 + Rs. 20 for Anganwadi Worker

Immunization: BCG, DPT, OPV & Hep-B (3rd Dose): Rs. 50 if Schedule Caste/Schedule Tribe. *Source: These amounts were reported by the District Department of Health & Family Welfare, Nalgonda, and verified through Focused Group Discussions with VHWs.*

²¹ It is important to point out here that every village that we visited unannounced, we found VHWs in place. To begin with, for the NRHM, this is a great achievement.

The VHWs maintained a register with a log of how much and for whom she facilitated the receipt of institutional care. Once this register is verified by the ANM, it is then further approved by the Sarpanch, the head of the Gram Panchayat. Once this is done, the ANM then sends a payment request to the District Level Health Officer, who will dispatch the payment to the nearest PHC. Usually payments are only dispatched once every three months. Lastly, the ANM needs to pick up the checks from the PHC to then be delivered to the VHWs. Needless to say, this process is convoluted and inefficient.

While believe that NRHM is a great program to address the healthcare needs of rural India, however, it is also our belief that the following six key broad issues are critical if the NRHM has to succeed on scale and deliver what it promises to deliver: 1) proper recruitment, comprehensive training, effective control and oversight and timely and adequate payments of the VHWs; 2) a well defined and implement able role of the Panchayat Raj Institutions (PRIs) and a comprehensive and on-going training program for the panchayat members; 3) commensurate infrastructure and human resources in the sub-Centers (SCs) and the Primary Health Centers (PHCs) with the needs of the regions; 4) necessary interventions to bring down the IMR and MMR; 5) in the area of community-based health care and home-based neonatal care program, NRHM to help incorporate and scale up lessons from the experiences of SEARCH (Dr Abhay & Rani Bang's NGO) in Gadchiroli, Maharashtra²² and CRHP (Dr Raj & Shobha Arole's NGO) in Jamkhed, Maharashtra and 6) NRHM to work hand-in-hand with the Aangan wadi workers and the ICDS program.

VII. Recommendations

The draft Approach Paper of 11th Plan (2006) has spelt out several measures to improve the quality and quantity of rural primary healthcare system and its services. Their strategy is to generate demand for public HFs, provide options to population and increase participation by NGOs and private sector in the healthcare provision. Simultaneously, it rightly does not treat the problem as exclusive to the public health department. An integrated approach involving different departments like sanitation, construction, water supply, education, power, roads, etc. is well recognized. NRHM is a comprehensive effort in this direction. Appointment of VHWs and AYUSH practitioners and full involvement of *Panchayati Raj* Institutions (PRIs) in monitoring and delivering healthcare services to local population are important ingredients of the strategy.

In this context, we find that the conditions prevailing in the southern states of Karnataka and AP are distinctly better than the northern states in terms of quantity of infrastructure, availability of electricity and water, and availability of qualified manpower in the health facilities. Although we found shortages of doctors, specialists, nurses and PMS in both the states, the extent of absenteeism at village level was considerably less relative to the situation in the northern states. Moreover, in Karnataka recent initiatives to upgrade and expand HFs at the *taluka* level and at PHC level are worth commending.

²² Bang et. al. (1999) showed a 62% reduction in neonatal mortality in rural India through a community based approach ^{that} included training of traditional birth attendants and local women to treat sick newborn infants at home.

Similarly, the state also extended consulting time of specialists and doctors at both CHC and PHC levels. The focus of our specific recommendations here is on improving the quality of the services rather than the quantity of infrastructure and qualified manpower. Our specific recommendations are as follows:

- There is a need to consider entitlement benefits to the BPL or poorer sections of the society. In the BPL survey conducted in every village, 19 points can be considered an effective cut off to identify the BPL families. These families should be given a Smart Card with clear entitlement to spend an amount, say Rs.2,000 p.a. on hospitalization, treatment, medicines, consultations, visit fees, etc. Once these cards are distributed to the BPL families, the public HFs can also charge regular (unsubsidized) fees from the patients and get their regular revenue for meeting most of their recurring and capital expenses. This in itself would act as a strong incentive to improve quality of services in public HFs because it would put them in direct competition with the private sector. Moreover, the managers or service providers in public HFs would also find themselves directly accountable to the local population and can face a reward / punishment system.
- Introduction of a Smart Card to BPL families can also be conducive to the idea of introducing the social or community based health insurance. It will facilitate generation and investment of the required resources. The Smart Card to a BPL family can also be very helpful when they have to migrate for food, fodder and employment. Moreover, it can also promote some trade and exchange among the people with shortages and surpluses, thereby encouraging better utilization of the state resources.
- There is a need to carry out frequent supervision of lower level HFs in rural areas. There should be enough powers vested in the supervisory / monitoring authority to immediately punish the defaulters like absentee staff, indifference to replenish the stock of medical supplies, rude behavior with patients, lack of cleanliness and hygienic conditions in the HFs, etc.
- There is a need to introduce accreditation system based on annual or more frequent visits to the HFs for their infrastructure, human resources and drug and medical supplies.
- There should be annual awards for best performing HFs in various categories. This should be a handsome cash reward from the state government and the selection should be made on the basis of a weighted feedback from people (beneficiaries), village *Panchayats*, and departmental higher-ups. There can be different types of awards emphasizing different aspects of the quality of healthcare service like cleanliness, cure, disease control, customer satisfaction, etc. All such awards should be distributed among the relevant staff in the winning HFs.

- The medical and paramedical staff at the sub-Centre, PHC and CHC level should be stabilized for longer periods so that they can start living in the village. Under NHRM, District Health Missions should be made responsible to monitor, supervise and if required transfer such staff more as a punishment with adverse remarks in their Confidential Reports (CR).
- There is an urgent need to focus comprehensively on the living conditions of the BPL families. Availability of basic facilities like toilet, bathing, electricity (or light), drinking water, etc., has to be ensured to them without which scaling up of primary healthcare services in the rural areas may not be effective for them on its own.
- Considering the shortage of medical and paramedical staff in the HFs, there is an urgent requirement of appointing new doctors, ANMs, health assistants and other paramedical staff at all levels of HFs.
- It is also important to reduce the administrative burden and unnecessary paper work for the medical staff (mainly doctors and ANMs) at all levels of the HFs so as to improve the general working of the HFs. This is more relevant in the case of PHCs and SCs as its functioning gets adversely affected by the effective absence of doctors and ANMs.
- There is a need to check the proliferation of a large number of unregistered/unqualified private medical practitioners especially at the village level so as to ensure the quality of the services provided by them. Frequent inspections of the private practitioners at village levels to check their credentials may be desirable. Apart from this, there is a need to look into the private practice by paramedical staff and even the doctors of the government HFs, and if necessary allow them as is the case in some of the northern states like Rajasthan.

NRHM Specific Recommendations:

- We believe that the following six key broad issues are critical if the NRHM has to succeed on scale: 1) proper recruitment, comprehensive training, effective control and oversight and timely and adequate payments of the village Health Workers (VHWs); 2) a well defined and implement able role of the Panchayat Raj Institutions (PRIs) and a comprehensive and on-going training program for the panchayat members; 3) commensurate infrastructure and human resources in the sub-Centers (SCs) and the Primary Health Centers (PHCs) with the needs of the regions; 4) necessary interventions to bring down the IMR and MMR; 5) in the area of community-based health care and home-based neonatal care program, NRHM to help incorporate and scale up lessons from the experiences of SEARCH (Dr Abhay & Rani Bang's NGO) in Gadchiroli, Maharashtra and CRHP (Dr Raj & Shobha Arole's NGO) in Jamkhed, Maharashtra and 6) NRHM to work hand-in-hand with the Aangan wadi workers and the ICDS program.

- Current training programs of the VHWs are extremely inadequate, both in terms of the quality of training being imparted and the time being allocated for their training. Presently, training of VHWs is only for 21 days as a one-time crash course and occasionally an additional 5 days of in-field training, the latter being implemented very irregularly. Not only is the training required to be far more comprehensive than what it is currently, it should be an on-going process, at regular intervals, throughout the year, say at least for the first two years of an VHWs recruitment. Thorough training is a must in order to facilitate *task-shifting* and *task-sharing*.
- Ideally, VHWs should be trained using information and communications technology (ICT) at the district headquarters. The training can be imparted by a group of trainers centrally from the State capital to all the districts simultaneously on fixed dates which can be announced well in advance. Additionally, trainers available at the district headquarters should supplement class room training with in-field training of VHWs. ANMs can play a critical part in the in-field training of the VHWs.
- Untimely payment of incentives to VHWs is serving as a huge disincentive for taking on the role that is expected of them. The presently followed system of paying the VHWs is a lengthy process which is not only cumbersome, but very poorly implemented as well. The result, almost all the VHWs we spoke to in Nalgonda received their payments once in three months only. A much simpler and straight forward system needs to be put in place for paying the VHWs so that they are paid EVERY month.
- More importantly, we strongly recommend that VHWs be paid a regular salary which could be in the range of Rs. 1,000 to 1,500 per month plus that should be topped with the incentives. The incentive amounts being paid currently are extremely meager.
- In order to improve the delivery of health services in AP and Karnataka, we suggest supporting community oversight of village-level health services, including panchayat responsibilities for oversight of sub-centers, and PHCs. While the 73rd and 74th Amendments to the Indian Constitution allow for a democratic system of governance in health to the multilayered local bodies, their implementation leaves much to be desired. Such devolution of authority has taken place only in Kerala, which invested time and resources in systematically building capacity for governance by local bodies. Both AP and Karnataka need to strengthen their existing programs of capacity building in the Panchayati Raj Institutions (PRIs).
- Since one of the core strategies of the National Rural Health Mission is to train and enhance capacity of the PRIs to own, control and manage public health services, the following questions need to be looked into: Has the power and authority that has been devolved to the PRIs on paper actually reached the

people? Do they understand their duties/responsibilities on the one hand and their authority on the other? Do the PRIs have the capacity to manage health centers? Are there regular and comprehensive capacity building programs in place? And are any measures being undertaken to ensure that the caste and patriarchy do not prejudice effective management at the local level?

- Many parts of rural India are experiencing an epidemiological transition and this is reflected in a growing burden of non-communicable diseases. Non-communicable and chronic diseases are increasingly being seen as a leading cause of death in rural India. Hypertension, Type II Diabetes and Cardiovascular diseases are on the rise in rural AP and Karnataka in particular and rural India in general. It is critical to keep these emerging disease burdens in mind while scaling up health services in rural Andhra Pradesh and Karnataka. We suggest that under the NRHM umbrella, programs are put in place to deal with the growing burden of these diseases.
- With the exception of pre-natal checkups for expectant mothers, the delivery of healthcare in rural India is almost entirely curative in nature. With hypertension on the rise in the country, it was suggested that blood pressure be examined on a regular basis for all patients visiting sub-centers and PHCs. ANMs at the sub-centre level and nurses at the PHC level should in the normal course examine blood pressure as part of antenatal care, as pregnancy-induced hypertension is a major contributor to maternal mortality in India.

General Recommendations:

- In terms of mobilizing additional funds for health, our research suggests these to mainly come from cutting unproductive government expenditures (both central and state governments) relative to GDP rather than by raising revenues relative to GDP. However, we do suggest levying a 2 percent Health Sector cess for the remaining period of the NRHM that is up to 2012, proceeds of which should be allocated entirely towards NRHM.
- We suggest a health sector strategy for India that is Millennium Development Goals (MDG) based not only at the national level, but also more importantly at the state and district levels. States and districts should strive hard to attain the MDGs, such as reducing infant mortality rate, under-5 mortality, maternal mortality rate, immunizations and access to safe drinking water and the like especially for in the laggard districts. Based on the MDGs, state governments should announce targets for health to be met at the state and district levels by the year 2015.
- We suggest that the Central Government should plan to convene a meeting of Chief Ministers and Health Ministers of all Indian States in 2008 to discuss how the states will meet the health targets. This meeting will allow states to present

their most successful initiatives, so that all states can adopt “best practices” in public health.

- The increased public health spending should finance infrastructure improvements in the rural sub-centers, primary and community health centers and the district hospitals. Additionally, much higher levels of spending is needed for essential drugs and supplies, vaccines, medical equipments, laboratories, and the like. In terms of human resources in the health centers, state governments need to appoint more auxiliary nurse midwives (ANMs), trained birth attendants, technicians, pharmacists, doctors, and specialists. These measures will help increase the utilization of the public health centers in AP and Karnataka and consequently bring down the rather high out-of-pocket expenses of their rural residents.

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APPENDIX A

Methodology of Sample Survey of Households in Karnataka and Andhra Pradesh

The basic objective of the present study was to assess the prevailing conditions of primary education and health facilities in terms of quantity and quality in the rural areas of Karnataka and A.P. The adequacy of these services had to be considered from the perspectives of the access of vulnerable sections of the society. A sample survey of households was conducted to get this perspective.

It was decided to survey some households in the two districts – Chitradurga in Karnataka; and Nalgonda in A.P. In order to select a sample of households for a detailed survey to reflect conditions of the vulnerable sections in the rural areas of the district, it was necessary to select poorer households from different parts of both the districts. We, therefore, selected five *Tehseels / Talukas* (or blocks) of Chitradurga and five *Mandals* of Nalgonda district, and then, selected one medium sized village from each of those *Tehseels* and *Mandals* for survey. Since *Tehseel* in Karnataka and *Mandal* in A.P is the second level of the administrative unit, *Mandal* being smaller to *Tehseel* in size, selecting 5 *Tehseels* and 5 *Mandals* in respective districts would capture geographical diversity in the districts.

Selection of villages depend on several criteria, viz., literacy rate, female literacy rate, percentage of scheduled cast / tribe population, worker population ratio, sex-ratio, average size of households, and absolute number of households. The main consideration was that the selected village should reflect the conditions of rural areas of the *Tehseel* as closely as possible on all these counts. All the same, the selected village should not be too large or too small. We could consider all these aspects while selecting the villages because *Census of India, 2001* readily provided data on all these aspects by villages. *Table A-1* provides data on all these variables for the list of selected *Tehseels* and villages in the two districts for the year 2001. It can be seen from the table that the aggregate of the

Sample villages selected for Nalgonda (AP)																		
Level	Name	No. of HH	Total Population	Total Population - Males	Total Population - Females	ST Population	SC Population	Literate Population	No. of Literate Females	Working Population	Average Members/HH	% Literate Population	% Literate Female	% ST Population	% SC Population	WPR	Sex Ratio	SC +ST %
DISTRICT	Nalgonda	632336	2815304	1429458	1385846	525998	326906	1292171	482773	1457963	4.4522	0.459	0.348	0.116	0.187	0.518	0.9695	0.303
VILLAGE	Komme Palle	202	887	437	450	231	48	334	120	497	4.3911	0.377	0.267	0.054	0.26	0.56	1.0297	0.315
MANDAL	Alair	11327	50242	25185	25057	9802	1058	28102	11394	24005	4.4356	0.559	0.455	0.021	0.195	0.478	0.9949	0.216
VILLAGE	Suraram	212	924	476	448	265	0	414	152	509	4.3585	0.448	0.339	0	0.287	0.551	0.9412	0.287
MANDAL	Ramannapeta	11300	52322	26292	26030	9796	470	27732	10884	25080	4.6303	0.53	0.418	0.009	0.187	0.479	0.99	0.196
VILLAGE	Chan Palle	249	1101	569	532	366	5	624	261	653	4.4217	0.567	0.491	0.005	0.332	0.593	0.935	0.337
MANDAL	Nadigudem	9392	39543	19832	19711	9819	1877	18642	7532	21517	4.2103	0.471	0.382	0.047	0.248	0.544	0.9939	0.296
VILLAGE	Keshamneni Palle	258	1177	608	569	0	1070	403	159	696	4.562	0.342	0.279	0.909	0	0.591	0.9359	0.909
MANDAL	Pedda Adiserla Palle	8933	41061	21116	19945	6549	13010	14118	4416	22371	4.5966	0.344	0.221	0.317	0.159	0.545	0.9445	0.476
VILLAGE	Humanthulapalle	289	1313	674	639	397	242	401	137	763	4.5433	0.305	0.214	0.184	0.302	0.581	0.9481	0.487
MANDAL	Chintha Palle	9443	44053	22376	21677	8445	4747	17727	6020	23591	4.6651	0.402	0.278	0.108	0.192	0.536	0.9688	0.299
	Total	1210	5402	2764	2638	1259	1365	2176	829	3118	4.4645	0.403	0.314	0.253	0.233	0.577	0.9544	0.486
Sample villages selected for Chitradurga (Karnataka)																		
DISTRICT	Chitradurga	241640	1243658	635442	608216	294335	236111	654284	259054	632277	5.1467	0.526	0.426	0.19	0.237	0.508	0.9572	0.427
VILLAGE	Konapura	330	1967	975	992	0	1919	249	56	848	5.9606	0.127	0.056	0.976	0	0.431	1.0174	0.976
TALUK	Molakalmuru	19862	112609	57842	54767	23266	42821	46752	16628	52478	5.6696	0.415	0.304	0.38	0.207	0.466	0.9468	0.587
VILLAGE	Dasaramthenahalli	103	688	361	327	50	629	302	103	388	6.6796	0.439	0.315	0.914	0.073	0.564	0.9058	0.987
TALUK	Challakere	53191	283651	145160	138491	65039	82615	134914	51281	148906	5.3327	0.476	0.37	0.291	0.229	0.525	0.9541	0.521
VILLAGE	Ramagatta	195	953	474	479	285	125	516	224	612	4.8872	0.541	0.468	0.131	0.299	0.642	1.0105	0.43
TALUK	Holalkere	36473	183192	93218	89974	46900	21594	107614	44294	101475	5.0227	0.587	0.492	0.118	0.256	0.554	0.9652	0.374
VILLAGE	Guthikatte	239	1241	625	616	482	250	691	291	565	5.1925	0.557	0.472	0.201	0.388	0.455	0.9856	0.59
TALUK	Hosadurga	40110	196957	99732	97225	38975	15945	109638	44703	101681	4.9104	0.557	0.46	0.081	0.198	0.516	0.9749	0.279
VILLAGE	Vaddikere	248	1173	605	568	197	202	606	228	428	4.7298	0.517	0.401	0.172	0.168	0.365	0.9388	0.34
TALUK	Hiriyur	43957	215913	110231	105682	55176	21091	112911	44857	108629	4.9119	0.523	0.424	0.098	0.256	0.503	0.9587	0.353
	Total of Sample	1115	6022	3040	2982	1014	3125	2364	902	2841	5.4009	0.393	0.302	0.519	0.168	0.472	0.9809	0.687

5 selected villages from each district compares very well with the rural district in terms of all these characteristics.

At the second stage, we had to select households from the weaker section in each village for the survey. It is important, therefore, to identify households belonging to the vulnerable section. As per the instructions of the government of India, governments of both the states conducted a detailed census of all households in the rural areas to identify economically weaker section. It was called the BPL census and was conducted in 2002-03 by respective school teachers at village level. The survey collected information on land and other asset holding, physical living conditions, broad consumption items, literacy, source of livelihood, condition of children, etc. Based on the survey data, points were awarded to each household. The scheme of awarding points to households on the basis of possible responses to the 13 different questions in their survey is presented in *Table A-2*.

Before going to the field we obtained the BPL house lists off all the selected villages of both the states. Both the governments had decided about the aggregate cut-off to identify the BPL families. The first cut-off was decided to be 15 or lower points for the poor of poor (POP) families being the weakest on all fronts. Further another cut-off was decided of 25 points which included families between the two scores, not weak on all fronts but still are considered poor. We have selected the sample mainly from the POP families. However, in order to fulfil the required sample size we have also included families from the poor category by setting our cut-off to 18 points. We have added three points in order to cover the families that relatively weaker among the poor section.

Given the objective of our sample survey, we chose a purposive sample only from the weaker section of the rural society in the two districts in Karnataka and A.P. It was decided to survey about 250 households from each district²³. In Chitradurga

²³ The ideal sample size is given by $S = (z^2 \cdot p \cdot q / \alpha^2)$ where z and α are respectively the standard normal variate at the required confidence level and the significance level; and p and q are probabilities of required variate. Considering $z = 1.96$, $\alpha = 0.05$, $p = 0.8$ and $q = 0.2$, sample size (S) works out to be 246.

Table A-2: Scheme of Awarding Points on Possible Responses in the BPL Survey, Rajasthan, 2005

Sr. No	Questions	Points				
		0	1	2	3	4
1	Land (in Ha.)	No land	<1 non-irrigated <0.5 irrigated	1-2 non-irrigated <0.5 irrigated	2-5 non-irrigated 1-2.5 irrigated	>5 non-irrigated >2.5 irrigated
2	House type	No house	<i>Kachcha</i>	Partial <i>kachcha</i>	<i>Pukka</i>	City like
3	Cloths (per person)	<2	2-3	4-5	5-9	>10
4	Meals a day	<1	One but sometimes less	Once sufficient	Two but sometimes less	Sufficient food available
5	Toilet facility	Open space	Common toilet w/o water supply	Common toilet with water supply.	Common toilet with water supply & sweeper.	Personal toilet.
6	Consumer durables: TV, Elec. Fan, Pressure cooker, Radio.	None	Any one	Any two	Any 3 or all	All and more
7	Literacy level of most educated member of family.	Illiterate	5 th standard	10 th standard	Diploma	Professional
8	Labour situation in the family.	Bonded labour	Women & child labour	Only adult women labour.	Only adult man labour.	Other
9	Source of livelihood	Agricultural labour	Farmer	Rural artisan	Salary	Other
10	Situation of children	Do not go to school & employed	Going to school and employed	Not going to school and not employed	Going to school but working.	Going to school and not working.
11	Type of debts	For daily use from non-insti. sources.	For agriculture from non-insti. sources.	For other use from non-insti. sources.	Only insti. Sources	No debts.
12	Reason for staying away from family.	Accidental work	For seasonal employment	Any other type of employ.	Not staying away.	Any other reason.
13	Requirement of aid.	For employment	For self-employment	For training and skill addition.	For housing.	Aid not required.

Source: BPL Survey, 2002-03.

district, 471 households and in Nalgonda district 461 households from the selected villages belonged to the weaker section as per 18 points cut-off. Accordingly, we selected 55% and 57% of the households belonging to the weaker section from each of the selected villages respectively in Chitradurga and Nalgonda. However, in one of the villages of Chitradurga district (Vaddikere of Hiriya *Taluka*) the BPL list obtained from the district authorities, out of 289 households only 2 households had score less than 18. Hence we considered this as special case and included it in our sample. *Table A-3* provides the distribution of the total and sample households in the selected villages in the two districts.

We conducted the sample survey during June and July, 2007. While selecting the families for our sample survey it was important to avoid very small households without children below 14 years and women considering the purpose of the survey. We collected information from selected households through a 5 page questionnaire (given below for ready reference). In all we surveyed 258 households in Chitradurga and 263 households in Nalgonda.

<i>Table A-3: Distribution of Total and Sample Households by Selected Villages in Chitradurga and Nalgonda</i>					
District	<i>Tehseel/ Mandal</i>	Village	Total HH.	Weaker Section HH with Points \leq 18	
				Total	Sample
Chitradurga	Molakalmuru	Konapura	398	297	110
	Challakere	Dasaramuthenahalli	73	70	47
	Holalkere	Ramagatta	204	50	36
	Hosadurga	Guthikatte	74	52	35
	Hiruyur	Vaddikere*	289	2	30
Nalgonda	Gundala	Komme Palle	347	111	65
	Ramannapeta	Suraram	226	73	42
	Nadigudem	Chan Palle	269	111	65
	Pedda Adiserla Palli	Keshamneni Palle	215	78	37
	Chintha Palle	Humanthulapalle	242	88	54
* :- The households from this village were considered as a special case.					
Source: BPL Survey, GoR and the methodology described in the Text.					

Household Questionnaire (Karnataka and AP)

(For "Scaling up Services in Rural India" project)

Village: _____ Tehsil: _____ District: _____

Head of HH: _____ (M/F); Investigator:

Date: _____

A. 1 BPL Score _____; 2. Size of HH: _____

2. Land owned _____ (Ha./Acre/_____)

3. Caste: SC/ ST/ OBC/ Muslims/Others;

B. 1. No. of Animals/ Cattle: _____

Buffalo: _____; Cows: _____; Bullocks: _____; Goats & Sheep: _____;

Donkey: _____;

Camel: _____; Poultry: _____

2. How far do you take them for grazing? _____ km. 3. Who takes them?

C. **Information on HH Amenities:**

1. Is the HH electrified? Yes/ No.

2. Electricity available for _____ days/week and _____ hrs./ per day

3. Source of drinking water:

Winter: Tap/ Well/ Public Well/ Public Hand pump/ Pond/ Canal/ Other (
)

Summer: Tap/ Well/ Public Well/ Public Hand pump/ Pond/ Canal/ Other (
)

Monsoon: Tap/ Well/ Public Well/ Public Hand pump/ Pond/ Canal/ Other (
)

4. Distance to the source of drinking water: _____ k.m. 5. Who fetches drinking water? _____ 6. Do you filter water? Yes/ No
7. Do you boil the water? Yes/ No.
8. Facility for Latrine and Toilet: Exclusive/ Common/ Open space
9. Sewerage: Underground/ Covered path/ Open path/ No system
10. Drainage: Underground/ Covered path/ Open path/ No system
11. Road cleaning and waste removing facility: Yes/ No; _____ times per week.

D. Information on HH Members:

Sl. No	Questions	Member							
		1	2	3	4	5	6	7	8
1	Name								
2	Relation with Head of HH.								
3	Sex (M/F)								
4	Age (yrs.)								
5	Level of education.								
6	Enrolled in school? (Y/N)								
7	Gainfully employed (Y/N)								
8	Earnings per month. (Rs.)								
9	Hospitalisation last year (Y/N)								
10	Any major sickness last year								
11	How many days in the year for the sickness?								
12	For how many								

	days was treatment taken?								
13	From where? (Public/Private)								
14	At what cost? (Rs. /p.a.)								

E. Health Related Information:

a) Maternal Health:

1. # of deliveries performed in the HH: _____ so far.
2. # of children survived: _____ (out of the above)
3. # of children died during the delivery: _____
4. # of deliveries attended by *Dai*: _____
5. # of deliveries in hospital: _____; Govt. _____; Private: _____
6. Did the mother get antenatal checkups? Yes/No; _____ times.
7. Did the mother receive any injection / vaccination? Yes/No;
Any medicine? Yes/No
8. Did the mother die at the time of delivery? Yes/No; which delivery?

9. Was THE delivery attended by a *Dai* / Nurse/ doctor? Yes/No

b) Infants' Health (below 1 year):

1. Is the infant looked after regularly by any health worker? Yes/No;
How often?
_____/week; Examination? Yes/No; Weight? Yes/No; Medicines?
Yes/No

2. Are you aware about supplementary feeding program/ *Anganwadi* workers /

Any govt. program for your infant? Yes/No; Which ? -

3. Any emergency so far? Yes/No; What? _____

c) Child Health:

1. # of children surviving below 5 years: _____

2. # of children died within one year of birth: _____

3. # of children died before reaching 5 years of age: _____

4. Did the children receive immunization/ vaccination/ *Tika*?:
Yes/No

5. Do children (below 5 yrs.) suffer from:

○ Fever: Yes/No; _____ times/year.

○ Stomach related: Yes/No; _____ times/year.

○ Malaria: Yes/No; _____ times/year.

○ Respiratory Disease: Yes/No; _____ times/year.

d) Medical Facilities:

1. Are you satisfied with existing medical facilities in your village?
Yes/No

2. Do you go to the Govt. PHC/ CHC/ Town Referral/ Private Doctor/
Tantrik?

3. When you visit, is the doctor available? Yes/No

If No, what do you do? / Go to private doctor/ Tantrik/ Nothing.

4. What is the distance you travel for medical facility? _____ k.m.
5. On the whole, how do you rate the medical facilities available to you? By Govt. _____; by Private Sector: _____
(Excellent - 5; Very good - 4; Good - 3; Fair - 2; Poor - 1; Very poor - 0)
6. Is there a WHV deployed in the village SC? Yes/No. Is she from the same village/mandal? Yes/No.
7. According to you, with presence of VHW (Village Health Worker),
 - a. Has the working of the SC improved? Yes/No.
 - b. Is there any improvement in your access of services from government health facilities? Yes/No.
 - c. What kind of services do you receive from the VHW?
Delivery/ANC/PNC/Immunization of Children.
 - d. When does the VHW come to your place?
Voluntarily/ When approached/ Does not come at all
 - e. What kind of information does the VHW Provide you provide you with? Very useful/ Somewhat useful/ Not so useful.

F. Education Related Information

Number of children eligible for schools

(>5)

	1	2	3	4
Age				
Sex				
Going to school? (Govt./ Pvt./ No)				
Distance to school in k.m.				
Is cash subsidy given (Rs. / No)				
School uniform given? (Y/N)				
Text books given? (Y/N)				
School supplies given? (Bag, notebook, pencil, etc.) (Y/N)				
Mid-Day meal given? (Y/N)				
Food grains given? (Y/N)				
Transport provided? (Y/N)				
Library available? (Y/N)				
Sports facilities available? (Y/N)				
Attending the school regularly? (Y/N)				
Does teacher come regularly? (Y/N)				
If not attending school, why? @				
Are you satisfied with the school facilities? (Low/Medium/High)				
What is the cost of studying in Rs./p.a.				
Fees				
Private Tuition				
School supplies & text books				
@ HH activities - HH; Employment - Em; Sickness - Sk; Marriage - Ma; No interest - Ni; Irregularity of teachers - It; Behavior of teacher - Bt; Others - Ot (specify).				

APPENDIX B

Methodology and Questionnaire For Sample Survey of HFs

With a view to gaining good understanding of the ground realities in the operation and conduct of different levels of health facilities in rural areas of Karnataka and A.P, we decided to personally visit, discuss matters with staff and obtain some information on the working from a sample of HFs. We had selected two districts one in each state - Chitradurga in Karnataka and Nalgonda in A.P. From each of these districts, we had selected 5 villages for our household survey. We decided to survey the HFs in and around these villages in such a way that we get reasonably diverse facilities in our sample. The following types HFs were surveyed by us in the months of June-July, 2007:

Facility / Type	Chitradurga District	Nalgonda District
Public Facilities : CHC	5	5
PHC	6	6
SC	13	19
Private Facility	11	11
Total	35	41

Although, we used a formal questionnaire (given below), we carried out extensive discussions and observed things during our personal visits to gain better insights.

Health Facility Questionnaire (Karnataka & A.P)

(For "Scaling up Services in Rural India" project)

Village: _____; Tehsil: _____; District: _____; State: _____

Head of institution: _____; Investigator: _____

General

Name of the Facility/Institution: _____

Type of Facility: ANM/Clinics/Sub-Centre/PHC/CHC/Others

Managed by: Panchayat/District Panchayat/ District Administration/ Private

Timings of the Facility: from _____ to _____; Building: Own/Rented

Number of Rooms: _____;

Number of beds: _____ ; Bed utilization rate: _____

Electricity Supply: _____hrs./day; Water Supply: Tap/Well/bore/others

No. of Employees in the Facility:

General Physician: _____ Pediatrician: _____ Gynecologists: _____

Other Doctors: _____ ANMs/Nurses: _____ Attendants: _____

Lab technician: _____ VHW/ASHA: _____ Others: _____

The Health Facility has _____ vehicles: No. of Drivers _____

Are Doctors provided with residence: Yes/No

Are Nurses provided with residence: Yes/No

Who is available at night in the Health Facility?

Doctor: - Yes/No; ANMs/Nurse: - Yes/No; Attendants: - Yes/No;

Others:- _____

Does the Health Facility have its own medicine store/stock? Yes/No
 Is it functional? Yes/No

Does the medical team visit the villages at regular intervals? Yes/No

Do Medical Representatives of companies visit the doctors? Yes/No

Major diseases prevailing in the village/area:

1. _____, 2. _____, 3. _____.

4. _____ (Area Specific Disease).

Various charges levied by the health facility

Details of Charges	Yes/No	Amount (Rs.) with details
Consulting		
Medicines		
Injections		
Glucose Saline		
Bed Charges		
Delivery (Normal) (Caesarean)		
Laboratory -Malaria T.B Jaundice X-Ray		

How do you rate awareness of village people towards the medical facilities here? : - Excellent/Very Good/Good/Fair/Poor /Very poor

How would you rate the health facilities in terms of quality? :-
Excellent/Very Good/Good/Fair/Poor/very Poor

In your opinion, Will the situation improve, if management and oversight functions are shifted to: Village Panchayat/ District Panchayat/ District Administration? Y/N

How many private Health Facility beds nearby (5 km radius)?
(Registered) _____; (Unregistered) _____

How many private Doctors nearby (5 km radius)? (Registered) _____
(Unregistered) _____

Number of patients hospitalized last year: _____,

What in your perception are the important causes for health problems in the village?

Drinking water Problems: _____%; Sanitation problem: _____%; Drainage problem: _____%; Lack of cleanliness (hygiene): _____%; Climate/seasonal factors: _____%; others (specify): _____%; (*Total should be 100%*)

Infant/Child Health:

How many children in the village suffer from malnutrition? (Get the data from ANM): _____%

Do the parents report such cases in the Health Facility? Yes/No

Is the village covered under Supplementary Nutrition Program? (Ask ANM): Yes/No. Number of children covered last year: _____.

In case of severity of the disease, which is the nearest referral Health Facility? : Distance in K (in hrs. and minutes): _____;

How long does it take to travel? _____

Estimates of episodes for the following diseases per child per year:-

LRI / ARI: - _____ Diarrhea: - _____ Fever: - _____

Eye/Ear Infection: - _____ Bacterial Infections: - _____

Prevalence of feeding problem for infants: _____%

Problem of low birth weight among the infants? : _____%

Total number of children (less than 5 years) in the village: - _____
Total number of live births in the village during the last year: - _____
Total number of death of children last year --
of age < 1 week _____ ; of age < 1 month _____;
of age < 1 year _____; of age < 5 years _____.
What in your opinion is the major cause of child deaths here?

On Maternal Health

Nature of complications during pregnancy (number of cases):-

Severe anemia: - _____ Syphilis: - _____
STDs: - _____ Miscarriages: - _____
Caesarean: - _____

How many are reported to the Health Facility? _____%

How many are receiving antenatal care and advice? : _____%

How many are having access to EmOC(Emergency obstetric care)? : _____%

How many deliveries performed by skilled attendant in this village? :
_____%

Is there any practice of providing postnatal advice/care to the new mothers
by the Health Facility staff? : Yes/No

What is your opinion about the awareness of the villagers on family planning?
Very much/Much/Average/Fair/Less/No

How many people come forward for family planning voluntarily? : _____%

Are the families provided with incentives for undergoing family planning
operation? Yes/No: -

How much? : - Rs _____, Cash and/or Rs _____, kind

Is there any incentive for the Health Facility staff for achieving family planning targets? Yes/ No; What? _____

Is there any target given to the Health Facility for family planning?: Yes/ No

How many Abortions were conducted during last year? _____

- Do parents care equally for the healthcare of a boy and a girl child? Yes/No
- Is there a preference for a boy child over a girl child? Yes/No

G. Women Health Volunteer (VHWs):

- Is the VHW from the same village/Mandal? Yes/No
- Age____; Education of VHW _____; Cast? SC/ST/OBC/Gen;
Population Covered_____; Working from? _____
- Is the VHW clear about her job and role as in
 - a. Creating health awareness among people regarding nutrition, sanitation, cleanliness etc. Yes/No
 - b. Mobilizing community for their better access to public health facilities. Yes/No
 - c. Counseling women on birth preparedness and safe delivery, family planning, care for infants. Yes/No
 - d. Accompanying pregnant women and arranging escort for pregnant women/children to the nearest health facility. Yes/No
- Is the VHW provided with :

ORS? <u>Yes/No</u>	Iron Folic Acid (IFA)? <u>Yes/No</u> ;
Chloroquin? <u>Yes/No</u>	Disposable Delivery Kits? <u>Yes/No</u> ;
Oral Pills? <u>Yes/No</u>	Refills for Kits? <u>Yes/No</u> ;
Drug Kit? <u>Yes/No</u>	Condoms? <u>Yes/No</u> ;
- Does the VHW receive adequate support and coaching from Supervisors Yes/No, Village Panchayat Yes/No, PHCs Yes/No,

- Is the VHW sent for training before joining? Yes/No
Duration _____
- How useful is the training? Very Useful/ Useful/ Not so useful
- Average Monthly remuneration of VHW (Rs) _____.
- Incentives: Amount (Rs.) received per month (ask details of payment)

Incentive	ANC	Testing	Checkup by Doctor	Instant Delivery	PNC	Sterilization	Total
Amt (Rs.)							
Details							

- Is the VHW happy with her job? Yes/No; Any grievances? Yes/No

H. Investigator's Notes / Observations:

Please ask about regularity and punctuality of doctors / nurses; their behavior with patients, patients behavior with the doctors, nurses and others etc.

What are the problems of the quality of drinking water in the village?