Health Needs of North Coastal Prakasam region Andhra Pradesh, India

April 2011

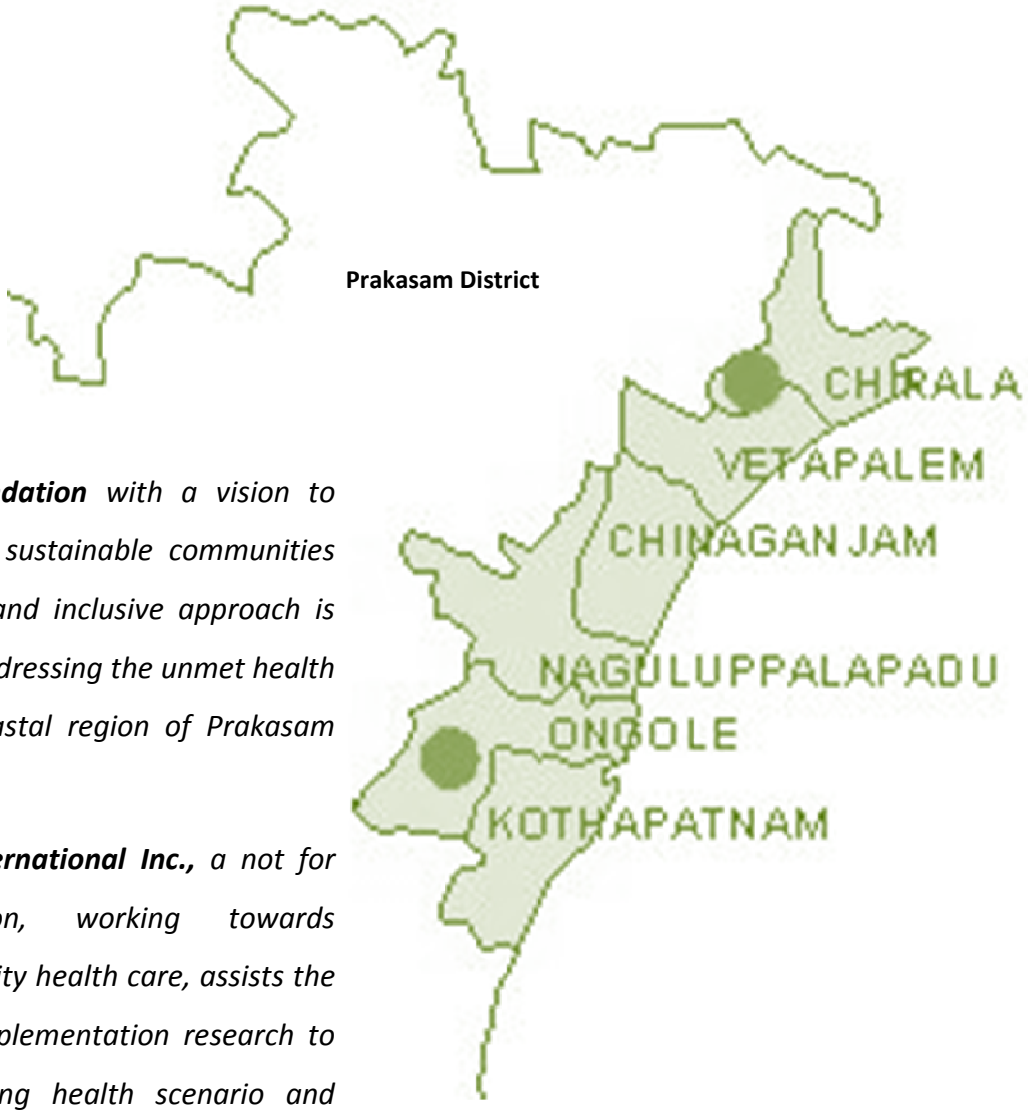
Dr. K. Rahul Reddy

"Health needs assessment is a systematic method for reviewing the health issues facing a population, leading to agreed priorities and resource allocation that will improve health and reduce inequalities"

- National Institute of Clinical Excellence (NICE), UK

"All people, no matter where they live, have a right to access high quality, affordable healthcare"

- ACCESS Health International Inc.



Nimmagadda Foundation *with a vision to create progressive, sustainable communities through a holistic and inclusive approach is working towards addressing the unmet health needs in North Coastal region of Prakasam district.*

ACCESS Health International Inc., *a not for profit organization, working towards affordable and quality health care, assists the foundation with implementation research to examine the existing health scenario and create necessary interventions to improve the health status of the population in the region.*

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Executive Summary

Ways to provide healthcare to all in an effective and efficient way without financially burdening the people or the exchequer is achievable only when people's needs are understood. This report presents the health care scenario and health needs of the North Coast region of Prakasam district in Andhra Pradesh, India. The research was carried out from August 2010 to January 2011. The report acts as an evidence base to support development of health policy and funding applications to provide enhanced services in the region.

The health needs of the region were arrived at by a systematic study of the healthcare scenario, existing health status of the population and the health service delivery mechanism. Qualitative and quantitative research methods were used to reveal the deficiencies and challenges faced by the district public health system and the private sector in provision of health care. The community was surveyed to understand the availability and access to quality health care. The disease burden, health expenditures, preferred providers and population's health needs were also enquired.

Research findings indicate that the region faces a disease burden of malaria and respiratory diseases. Non-communicable diseases are on the rise and a majority of the population is not well aware of them. The disease control management response and surveillance capacity of the public health authorities is poor. Sanitation in villages and towns is also poor due to lack of proper waste management and sewerage systems leading to an increase in mosquitoes, flies and other vectors. Diarrheal diseases are rampant due to contamination of drinking water especially during the rains.

The household health expenditure for primary and secondary care is very high (37%) and pharmaceuticals occupy a large proportion of the expenditure. The region has a good network of private and public facilities. Public facilities are well distributed and private facilities are concentrated in towns of Chirala and Ongole. People accept grass root health workers (ASHA, ANM, Anganwadi workers) as messengers for family planning services and counseling for pre and post-natal care, maternal nutrition and child health. Informal health care providers (RMPs) are still the first point of contact for common illnesses and queries related to 'curative care'. They play an important role in influencing the health seeking behavior of the household. Though households do not seem to have a preference for seeking care from private qualified providers over public providers, majority attended private hospitals for curative primary and secondary care actually when they were ill. The main reason being, the households were unable to access public providers due to inconsistencies related to their opening hours, absenteeism/ lack of personnel and

unavailability of laboratory services etc. (our research through survey of public facilities also draws similar conclusions). Their perception that private hospitals serve better, have qualified doctors and support staff who behave cordially and take good care also influences health seeking behavior (our research through the facility survey draws similar conclusions) . People have also started to recognize that some private providers over-prescribe diagnostics and medicines.

The report throws a light on the challenges faced by the public system that incapacitates their performance. Challenges faced by private sector are also discussed. Availability of skilled nursing and paramedical personnel is a challenge for both the public and private health sector in this region.

EMRI 108 (Emergency Management Research Institute), emergency services has been rated as the best health service provider. People appreciate 'Rajiv Aarogyasri Health Insurance scheme'. HMRI 104 (Health Management Research Institute), mobile health services have brought 'health services and personnel' to people's neighborhood. It helped to increase awareness on non-communicable diseases, their treatment (especially hypertension and diabetes) and the importance of prenatal checkups. There are challenges faced with by these service providers and the relevant section in the report gives a better understanding.

Health interventions providing awareness on available health services, disease prevention and health promotion through community participation can lead to sustainable improvements of health status of the population. Evidence from research shows, awareness creation can be effective if grass root level workers are used, but care should be taken not to over burden them. Problems related to sanitation and waste management need multi-stake holder approach to be effective.

People aspire for public health facilities especially primary health centres where the doctor, personnel and the necessary equipment is always available to ensure quality treatment. This requires strengthening of the public health system with primary health care at the heart of the agenda to address people's health needs. Reorienting the system towards patient and personnel satisfaction is necessary. Regular payment of salaries, upgrading their skills, training in communications, health management and implementing a continuous recruitment system to fill vacancies are the needs of the hour. Changes in provider payment mechanisms in the public sector and partnerships with the private health sector through public private partnerships to optimize resources and improve access to quality, affordable health care in the region can be explored.

The complete report and relevant sections will give you a good understanding of the issues.

Overview of the Report Structure

The report compiles the research findings. Various research methods and tools were used to assess the health needs. An appropriate and lucid narrative has been used to emphasize the translatable results impacting health outcomes in the region.

The report has been structured into different sections. Each section will present findings from both stakeholder based (in-depth interviews, facility surveys, focus group discussions with stakeholders) and community based research (household survey, group discussions). Findings have been segregated appropriately giving attention to inferences of research results, stakeholder and community perspectives on relevant issues.

The report starts with an introduction to the project. Health Needs Assessment as a tool for understanding health needs of communities is explained next. The next section provides information on the research methodology used for the study. Detailed information on the target region is provided and the characteristics of the sample population in terms of economic status, caste, and literacy, access to drinking water and toilet facilities will be outlined.

In the section “Health Care Scenario - North Coast Prakasam Region”, the details of the results of the study will be explained. It informs about the burden of disease, awareness of the population, health financing and expenditure, health facilities, provider preference, family planning and maternal services. The following section focuses on the specific health needs of the population and the challenges for the private and public sector, as well as for the community. Finally, the conclusions of the project are outlined and recommendations for possible interventions to meet the health needs of the population of North coastal Prakasam region are given.

Introduction

The movement across the world, founded in the principle of 'health is wealth' to ensure quality health care to the population has gained momentum in the first decade of 21st century. Health care is at the heart of the agenda to ensure accessible, affordable and quality care for all.

High income nations grapple with increasing cost of health care due to demographic and epidemiological shift in disease patterns making their health systems inaccessible. Middle and low income nations are struggling to ensure access to at least basic health care to their populations. Aspiration to achieve the Millennium Development Goals addressing health issues related to women, children and communicable diseases in these countries have further persuaded them to strengthen their health systems. Disease control programs and primary health care systems are still the backbone of health service delivery in many countries. A change in implementation of such strategies has been observed due to adoption of ways to optimize resources and achieve better health outcomes. Barriers to seek health care (financial, transport, indirect costs of accessing care, awareness on health and disease) are also now being addressed. Innovative supply and demand side health financing mechanisms, monitoring of quality and use of technology are the broad areas of focus in these countries. Various ways to bring health care to all, effectively and efficiently without burdening people and the exchequer are being researched.

One way to begin planning effective and sustainable health interventions is to exactly understand the needs of the people. It is important to put people themselves on the forefront of planning and involve them in the decision making process to ensure that interventions are participatory and sustainable. Discussions with people on their health issues and the possible solutions to serve them better is valuable for governments to orient themselves to plan and provide health services in the best interests of people.

This project is one such experiment to ensure a better understanding of both the health sector and community health needs to design effective health interventions. In July 2010, Nimmagadda Foundation granted research funding to ACCESS Health International, Inc. to conduct an exercise to understand the health needs of people and come up with feasible interventions that people aspire for to live healthy in North Coast Prakasam region, Andhra Pradesh, India.

Health Needs Assessment

Health Needs Assessment (HNA) is a systematic method to understand the healthcare scenario and to determine, prioritize the unmet health needs in a region. It involves stakeholders in health to elicit the challenges faced by them and the existing system with objectives to set priorities, plan for needed services, allocate resources and develop evidence based policy and interventions to improve the health of the population.

The main idea has been founded in the HNA principles by Cooper and Longworth (2002) and NICE (National Institute of Clinical Excellence), UK according to which,

- HNA is a recommended public health tool to provide evidence about a population and how to plan services and address health inequalities.
- HNA provides an opportunity to engage with specific populations and enable them to contribute to targeted service planning and resource allocation.
- HNA provides an opportunity for cross-sectoral partnership working and developing creative and effective interventions.
- HNA provides information for an evidence base of need which can support funding applications to provide enhanced services.
- The HNA approach provides an ideal opportunity for different agencies to build trust with communities to ensure genuine partnership involvement in reconfiguring services.

'Health Needs' in Health Needs Assessment are attributed to perceptions and expectations of the profiled population (felt and expressed needs), perceptions of professionals providing the services, perceptions of managers of commissioner/ provider organizations, based on available data about the size and severity of health issues for a population, and inequalities compared with other populations (normative needs), priorities of the organizations commissioning and managing services for the profiled population, linked to national, regional or local priorities (corporate needs) (See also definitions of need by Stevens and Rafferty, 1994, 1997)[1]. A balanced approach culminating the best practices of the HNA approaches given below are used to gather information for HNA in this project.

[1] Stevens, A. and Rafferty, J. (1994, 1997) *Health care needs assessment: the epidemiologically based needs assessment reviews, Vols 1 and 2.* Oxford: Radcliffe Medical Press.

- **Comparative** – comparison of levels of services between different populations. It should take into account local population characteristics (demography, mortality, morbidity).
- **Corporate** – it is based on the demands, wishes and perspectives of interested parties (professional, political and public views). It is essential if policies are to be sensitive to local circumstances. A disadvantage with this approach is that it blurs the difference between need and demand and between science and vested interest.
- **Epidemiologically based** – it combines epidemiological approaches with patients' perspectives, assessment of the effectiveness and possible cost-effectiveness of interventions.

The assessment involves a multi-stakeholder approach and brings together all the stakeholders in the target region to participate in discussions and recommend solutions to their unmet health needs and the challenges faced. The HNA approach starts when deficiencies and the health needs of that population are known to all the stakeholders. Proposals are put forward for the development and delivery of improved programs and services during the discussions.

The method was adapted to the Indian scenario and the target region. Considering the unavailability of relevant data about the target region in Prakasam district, like statistics on relevant population health status and health system deficiencies in service delivery, a survey for quantifying key issues was incorporated. Challenges in obtaining commitment from the officials in public authorities and the private health care sector in the region, interests of different stakeholders involved in health care provision (both private and public sector) and the hierarchical relations within the public system and between the public and private sectors made it difficult to develop a shared language between the sectors involving communities to bring all the stakeholders and make the exercise acceptable and participatory. Especially the communities or patient groups in rural areas do not play a significant role (many are not even aware) in the decision making for health or appealing to the authorities about their unmet needs or challenges faced by them. Accordingly it was decided to conduct qualitative and quantitative research to determine the deficiencies, challenges of the health system and unmet health needs of the population and compile them through this report.

Research Methodology

Qualitative and quantitative research methods were used to obtain relevant information from the private and public sector health sector as well as from the community in the target area.

Secondary Research comprised of literature review of published studies form research databases to obtain relevant health, social and economic information on Prakasam district and the sub districts of the target area. Not much information was available but it helped to understand the gaps in existing literature and data, followed by categorizing the focus areas of research, plan and determine the design and techniques for primary research.

Primary research comprised of eliciting stakeholder based health needs, community based health needs and health facility surveys (both public and private) in six sub districts (target area).

Stakeholder based research – In-depth interviews and group discussions with various stakeholders working in healthcare in the district and target area were conducted.

- In-depth interviews using semi-structured schedules were conducted with 22 private providers, 30 informal health care providers (RMPs) and all the important public health officials in the district (names and designations are not provided to maintain confidentiality).
- Two focus group discussions were conducted. One with private providers in Ongole and the other in Chirala. Each group comprised of 12-15 private providers from different specialties. Discussions were conducted by a moderator and notes were taken by two note takers.

Community based research – Household survey and group discussions were conducted.

- Door to door household survey was done using the structured schedules in all the six sub-districts adding to a total of 534 households (1733 individuals) in 25 villages and 11 wards (urban wards of Chirala, Vetapalem and Ongole) in the study area to get information on diseases suffered by the family in the last one year, annual expenditure on health care, use of health services, awareness on health, disease and various health programs, preferred providers and the quality of health care in the public and private sector. The perceptions on deficiencies of the public and private health sector and challenges being faced by them were also enquired.

  Sampling – Six villages/ wards per sub-district were randomly selected using the Indian National census data list (2001). 15 households per village/ ward were selected randomly using village

house numbers from Panchayat office. Out of 540 household schedules, six were eliminated during data entry due to various errors in the schedule. A total of 534 household schedules from 25 villages and 11 urban wards in Ongole, Vetapalem and Chirala were analyzed.

- Group discussions were conducted in each of the sampled villages and wards (total 36) with a group of 6-10 people living there. Each group discussion was conducted by a moderator (investigator) and notes were taken by a note taker. The main health problems in their village, their preferred providers, deficiencies of the private and public health sector, challenges faced by them and their unmet health needs were discussed.

  Village health and sanitation committees were contacted in each of the 25 villages and a semi-structured schedule was used to obtain the information about health and educational facilities in and around the village, available local practitioners (private, informal health providers), prevalent diseases in their village and possible solutions to tackle various unmet health needs.

Health facility survey

- Structured schedules each according to the category of the public health facilities were used to conduct the facility survey in all the public health facilities in the six sub-districts. District hospital Ongole, Area hospital Chirala, 8 primary health centers, 4 urban health centres, 3 dispensaries, 30 sub-centers (total existing 63) and 40 Anganwadi centers (total existing 533) were surveyed. IPHS (Indian Public Health Standards) schedules for the survey of public health facilities adapted to the district health structure and research needs were used. A separate schedule was prepared for survey of Anganwadi centers. The existing infrastructure and functioning of the health facilities and Anganwadi centers, services provided, utilization of health services by people, and the quality of services, medical supplies and vacancies in the centers were surveyed.

  Structured schedules were used for survey of private facilities; two multi-specialty hospitals (50 beds) in Ongole, 5 nursing homes in Ongole and Chirala each (total 10) and 10 private clinics of individual specialist practitioners in Chirala and Ongole town each (total 20). 5 private clinics of rural practitioners (only MBBS qualified doctors) and 30 clinics of informal health care providers (RMPs) were also surveyed. The available infrastructure and staff, costs of procedures, cleanliness, sterilization and waste disposal mechanisms were surveyed.

Challenges during research

The research was undertaken over a period of 6 months and the following challenges were encountered:

- The study area was hit by cyclone and floods during the research period. The households were not very enthusiastic during the period because of which the survey had to be postponed for a month until the situation got back to normalcy.
- Issues related to the disaster, crop loss for farmers, loss of existing resources (both economic and physical) may have an influence on the outcomes of research.
- Political agitations and protests during the research period for better benefit packages of farmers due to crop loss (floods and cyclone) and for statehood of Telangana region in Andhra Pradesh caused frequent delays in field research and people of the region.
- Identifying suitable candidates as field investigators and training them was a challenging task
- Non-availability of key staff members in public health facilities (PHC and SCs) during the facility surveys delayed the survey as investigators had to visit the facility more than once.

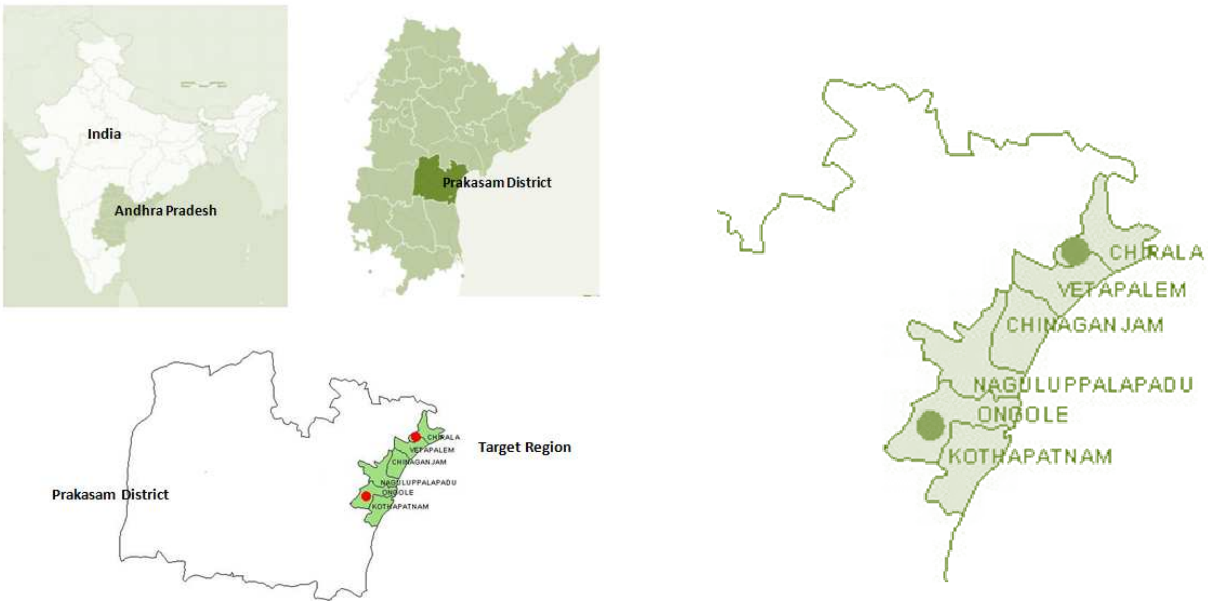
Limitations

- Research was focused on a specific target area, though the issues discussed are translatable but all the results may not be generalized.
- The results were not validated as the 2001 census population data was old and changes in the sampled villages (migration) occurred during these years where the census data cannot represent the present situation.
- The information on various indicators collected during the health facility surveys like cleanliness of the facilities, communication among the staff in health facilities and communication of staff with patients was dependent on respondents' and investigators' perception.
- Other influencing factors of functioning of the health system like financial flows and hierarchical relations in the public health system, in-depth analysis of pharmaceutical and diagnostics sector, population aspects related to cancer, accidents and injuries, working of various vertical disease control programs could not be covered, leaving a scope for further research on particular areas of interest.

North Coastal Prakasam region (study area)

The target region for the study comprised the six North-coastal sub districts - Chirala, Vetapalem, Chinaganjam, Naguluppalapadu, Ongole and Kottapatnam in Prakasam district, Andhra Pradesh, India. It was identified after consultations with the Nimmagadda foundation, keeping their future aspirations of sustainable development and improvement of health in coastal regions.

The six sub-districts are located along the north coast of Prakasam district. Naguluppalapadu and Ongole are almost similar in size with an area of 200 sq. km. Chinaganjam is 172 sq.km. Chirala and Vetapalem are of just around 100 sq. km area. Ongole town is the (district headquarters) and Chirala is the other major urban center. The total population is around six lakhs (600 thousand). Among the sub-districts, Ongole and Vetapalem registered a decadal population growth rate (14%) according to 2001 census. Interestingly Naguluppalapadu registered negative growth rate.



Prakasam district *is situated in the South East of Andhra Pradesh to the Coast. It occupies an area of 17626 Sq.Km. with 102 Kms coastline. The district has 56 sub-districts under three revenue divisions Ongole, Kandukur and Markapur. Ongole, Kandukur, Chirala and Markapur are the four municipalities. As per 2001 Census, the total population of the district was 30, 59,423 with a population density of 174 per Sq.Km. A majority, (84.73%) was rural and urban population living in nine towns was (15.27%). The decennial growth of population in the district was 10.88%. Scheduled caste (SC) and Scheduled Tribe (ST) population together constitute nearly 25 percent of total population.*

All the sub-districts are well connected by road to Chirala, Guntur and Vijayawada in the North and Ongole, Nellore, Chennai in the south. National highway (NH5) runs through Ongole. Ongole and Chirala have railway stations well connected to different parts with in Andhra Pradesh and India.

Major occupation in the region is agriculture (labourers and land owners). Tobacco is the major cash crop. Fishing is another important occupation in the coastal region. Chirala and Kottapatnam are home to weaving industry. Many households are engaged in weaving or work in related occupations. Rock Quarry owners, public and private sector employees are the other working class. People migrate to other areas for work especially as labourers in fishing and construction industry in the cities. Government plans to introduce industries in this part of the district to contribute to employment opportunities and economic growth in the region. Except Chinaganjam, all the sub-districts recorded a literacy rate similar to or more than the district level (of 57.38 %, 2001 census).

Natural disasters (Cyclone 'Laila', May 2010; Cyclone 'Jal' November 2010) caused massive damage to life and property, significantly impacting the already poor economy and the delicate physical infrastructure of the fishing communities in coastal Prakasam. It was traumatic for the agriculture and fishing dependent population. Paddy, vegetable and sugarcane crops were completely destroyed in over 40,000 acres due to heavy floods. Several regions were completely submerged and went without electricity even before the cyclone hit the coast due the heavy rains. Thousands of families were rendered homeless following inundation of many villages and towns.

The sex ratio in Prakasam district was 972 females per 1000 males in 2001, lower than the State (978).

Majority of the population are daily wage agricultural and non-agricultural labour (construction workers, quarry workers). Other major occupations are weaving, fishing and formal workers in public and private sector. Though there was an increase in numbers in all categories of workers from 1971 to 2001, number of agricultural labourers was decreased in last census (2001). There are no major industries in the district. According to 2001 census, the district has recorded a low literacy rate (57.38 %). High percentage of low caste population and low levels of literacy, and particularly among females can be barriers to awareness about health, disease and seek care. The district is ranked 16th among 23 districts of Andhra Pradesh and 204th among 593 districts in the country on basis of socio-economic, demographic and health indicators. (Ranking and Mapping of Districts 2006, International Institute for Population Sciences, Mumbai, India)

For more on healthcare on Prakasam district go to national health systems resource center and read the quarterly and annually report: http://nhsrcindia.org/health_systems_databases.php

Characteristics of the sample population

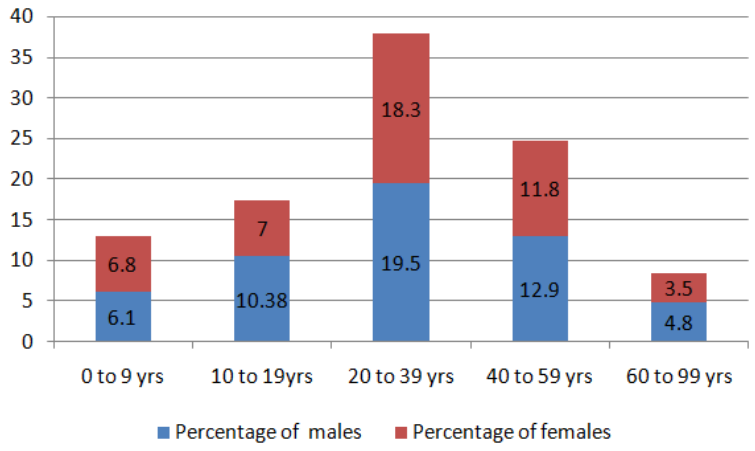
The sampled population in the target region for the community based household survey comprised of 534 households (total of 1733 individuals) in 25 villages and 11 wards (urban wards of Chirala, Vetapalem and Ongole).

Table 1: Sampled households and population

Variable	Chirala	Vetapalem	Chinaganjam	Naguluppalapadu	Ongole	Kottapatnam	Total
No. of households	90	88	90	87	89	90	534
Population	287 (16.5%)	266 (15.3%)	293 (16.9%)	276 (15.9%)	300 (17.3%)	311 (17.9%)	1733

Among the total sample population of 1733, a majority (61.52%) is in the age range of 20 to 59 years, 7.91% are 60 years and older (Figure 1). Only 30.5% of the population is below the age group of 19 years.

Figure 1: Sample population according to age and sex



Economic status

The sampled hosueholds are poor and a majority of these households are from the Below Poverty Line (BPL) segment (99.4%) and have Below Poverty Line cards issued by the Government of Andhra Pradesh (Figure2). Majority of the households (66.29%) have an average annual household income in the range of INR 5000 –INR 15000. Kottapatnam sub-district has a majority of households in this range (81.11%) (Table 2).

Figure 2: Households with Below Poverty Line cards

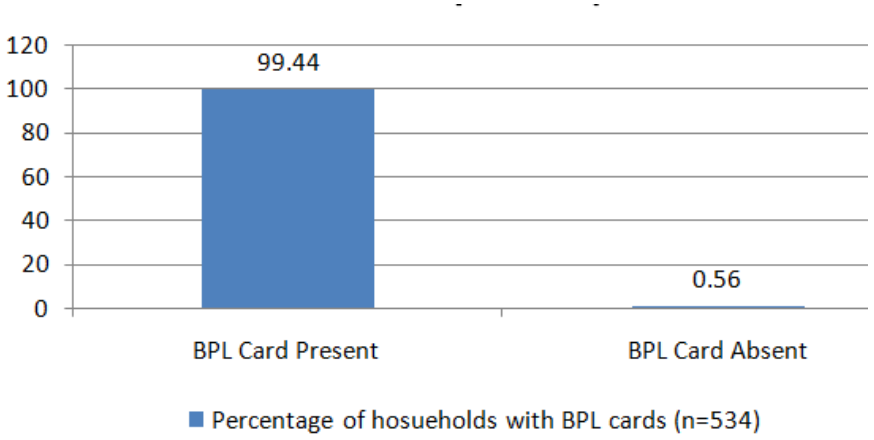
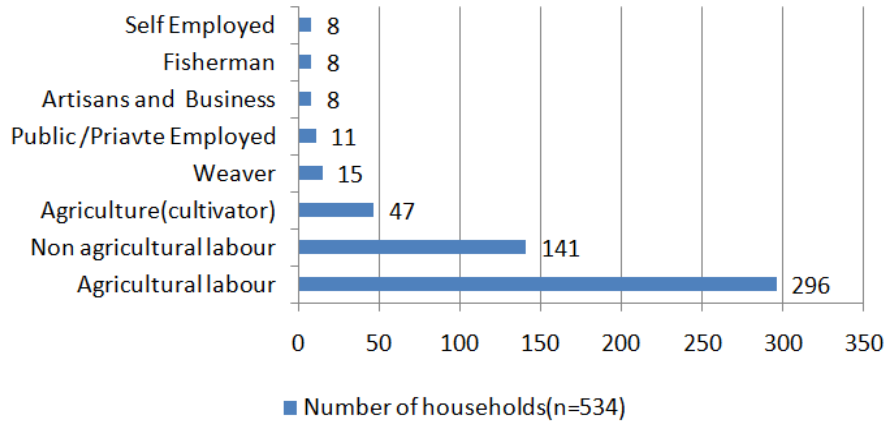


Table 2: Average annual household income (percentages in brackets)

Average Annual household income	Chirala	Vetapalem	Chinaganjam	Naguluppalapadu	Ongole	Kottapatnam	Total
INR 5000-15000	41 (45.56)	51(57.95)	68 (75.56)	50 (57.47)	71 (79.78)	73 (81.11)	354 (66.29)
INR 15000-25000	49 (54.44)	37 (42.05)	22 (24.44)	37 (42.53)	18 (20.22)	17 (18.89)	180 (33.71)
Total Households	90	88	90	87	89	90	534

A majority, 437 (81.8%) households were engaged as daily wage laborers in the agricultural and non-agricultural sectors. Only 47 (8.8%) of them were cultivators. The other occupations were fishing, weaving and formal employment in public or private sectors (Figure 3).

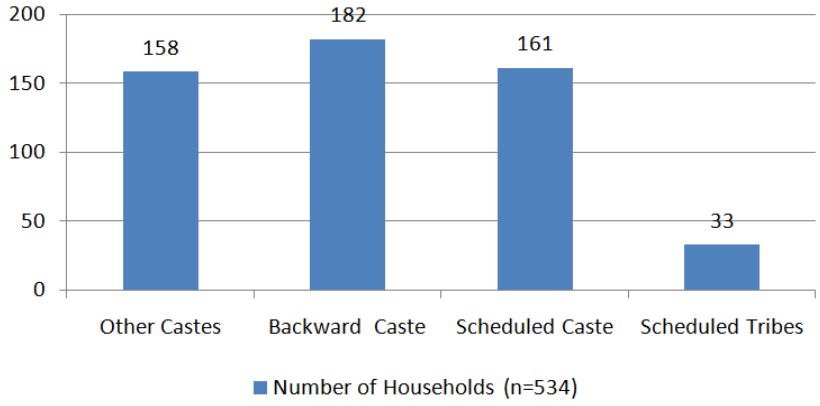
Figure 3: Households according to occupation



Caste

Majority of the sampled households were from the lower caste status 376 (70.4%) and only 158 (29.5%) were from the upper caste. Of the lower castes, (34.08%) were backward caste (BC), (30.1%) scheduled caste (SC) and 6.1% scheduled tribes (ST) (Figure 4). Caste is an important determinant of socio-economic status in the country and lower castes usually perform poorly in health indicators.

Figure 4: Households according to caste status



Literacy

Among the total sampled population, a maximum (61.5%) are illeterate, (48.4%) of them were males and (51.6 %) females (children below 6 years were considered under illiterate as they were not part of the formal education which might have increased the illiterate population but children in the age group of 3-6 years attended anganwadi centres considered as preschool education). (60.5%) in the age group of (20-99) years are illiterate which is an important consideration influencing the knowledge and attitude on disease and health seeking behaviour of the household. (table in Annexure)

Access to drinking water

Majority (88.4%) has access to safe drinking water and faces no problems to obtain it. Drinking water is piped to homes or fetched from the nearby tanks. Mineral/bottled water (1.12%) also occupies a share as a drinking water source, mainly in the urban areas. Majority of the households (98.5%) purify the water before drinking. (92.9%) households use water filters and (4.9%) of them boil and cool the water before drinking. The households attributed source of awareness on purification to television advertisements on water purification (96.6%); wall posters and neighbor's advice (3.4%).

Figure 5: Source of drinking water in the sampled households

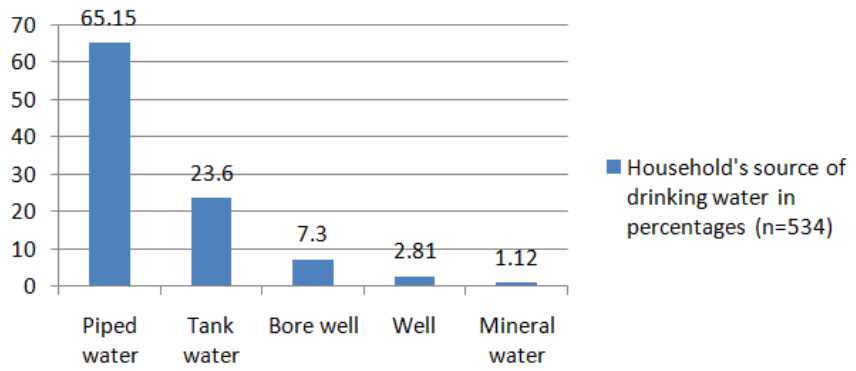
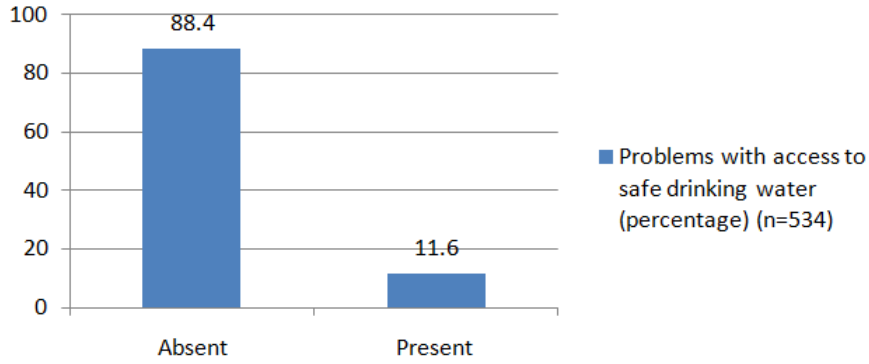


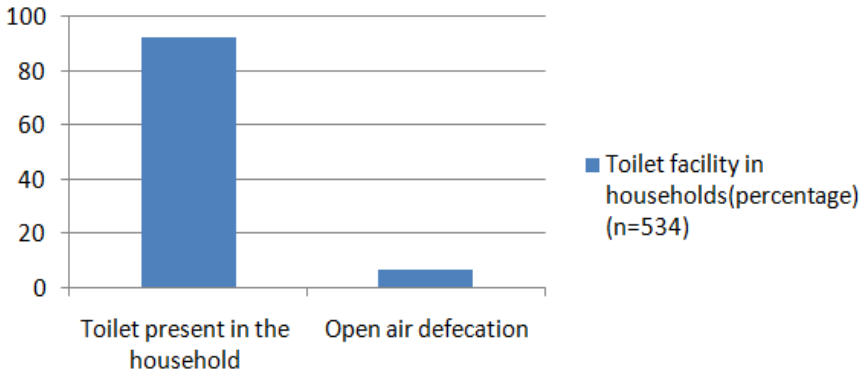
Figure 6: Access to safe drinking water



Toilet facilities

(92.3%) of the households have toilets. (6.7%) of the households admit to defecate in the open. (96.6%) of the households are aware about causation of water borne diseases due to open air defecation.

Figure 7: Presence of toilet facilities in the households



Health Scenario in North Coastal Prakasam

Health care scenario in the target region is reflective of health indicators in Prakasam district and may be better than the other regions in the district as the headquarters of district health authorities and health facilities (both public and private) are concentrated in the study region providing relatively better access to care to the people of the region.

This section presents important insights into:

- Burden of disease
- Awareness and knowledge on common diseases
- Health financing
- Health expenditures of the sampled households
- Health facilities in the region
- Awareness on health workers and health facilities
- Preferred qualified providers
- Family planning and maternal services

Burden of Disease

The most common diseases prevalent in the region are malaria, typhoid and diarrhoeal diseases. Diarrhoeal diseases and gastroenteritis are rampant during rainy season related to contamination of potable water due to lack of good sanitation facilities in the villages and urban areas. Urban areas do not have an underground sewage system. Open drainages and unsanitary surroundings also serve as breeding grounds for mosquitoes.

There is an increase in cases of dengue and hepatitis B since the last five years. The incidence of HIV/AIDS and TB has been decreasing over the last decade but the prevalence is high especially in Chirala and the coastal villages. Prakasam district is categorized as 'A'[2] according to National AIDS Control society (NACO) for prevalence of HIV/AIDS. The decrease of TB and HIV/AIDS indicators is mainly due to integrated testing and counselling centres (ICTC for HIV/AIDS), partnering with local NGOs and tribal development society to create awareness, provide supplementary nutrition and medicines and DOTS (Direct Observed Therapy Short term to treat TB). Public private partnerships with such NGOs have been fruitful according to district public health authorities in the last few years. Fluorosis is a major problem in some areas south to Ongole which recorded high fluoride water content.

Non-communicable diseases like diabetes, hypertension cardio vascular diseases, strokes etc. seem to be increasing. Age-related diseases like cataract and joint pains are a common problem in the elderly age group. Alcoholism is another problem and it can be seen all over the coastal belt. Consumption is bound to increase in the future unless awareness on negative effects of alcoholism is created.

According to the household survey, the disease burden of the households is given in (table 3). In the last one year the households suffered diseases that were common in the district (as also informed by the public health authorities, private providers and communities during discussions and interviews). From (table 3), it can be seen that majority suffered from fever (48.9%) and malaria (36.5%). Other important diseases for consideration are skin disease, respiratory diseases like cough, TB and pneumonia and asthma. Non-communicable diseases seem to occupy a less share among the disease burden in the sampled households.

[2]For the purpose of planning and implementation of National Aids Control Program -III, all the districts in India are classified into four categories based on HIV prevalence in the districts among different population groups for three consecutive years. 'Category A' is defined as more than 1% ANC (ante natal clinic) prevalence in district in any of the sites in the last 3 years.

Common diseases in the sample population

In the last one year, in (98.1%) of the sampled households at least one person fell ill (figure 8). The most common symptoms /complaints were fever, common cold, cough, weakness and itching.

Figure 8: Households with at least one person fell ill in the last one year

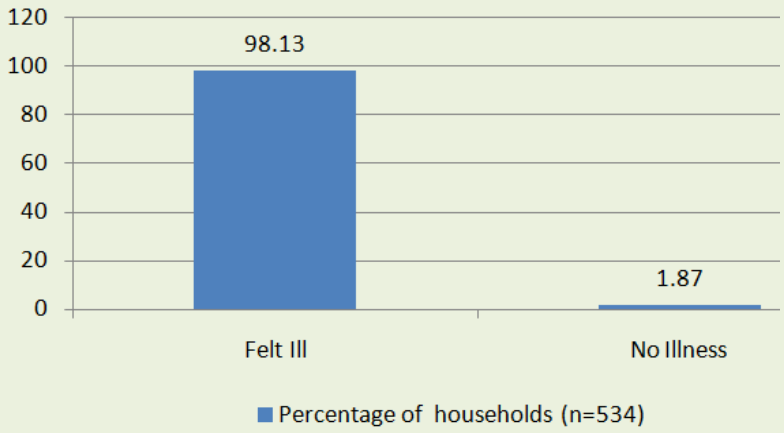
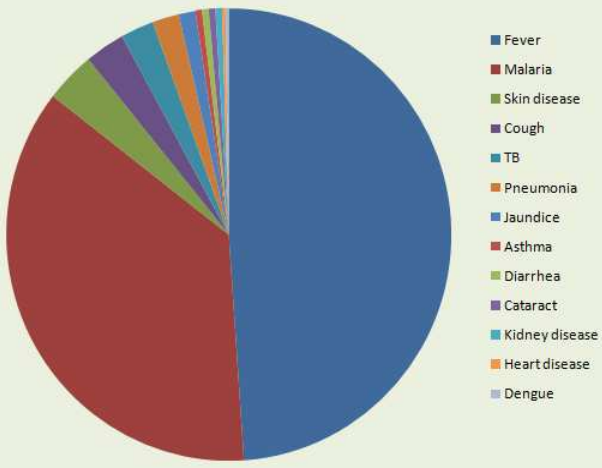


Table 3: The most common diseases suffered by the households (adjudged after diagnosis from a qualified provider) were the following -

Disease	Number of cases (n=413)
Fever	202 (48.9%)
Malaria	151 (36.5 %)
Skin disease	15 (3.6%)
Cough	12 (2.9%)
TB	10 (2.4%)
Pneumonia	8 (1.9%)
Jaundice	5 (1.2%)
Asthma	2 (0.4%)
Diarrhea	2 (0.4%)
Cataract	2 (0.4%)
Kidney disease	2 (0.4%)
Heart disease	1 (0.2%)
Dengue	1 (0.2%)
Total	413



Awareness and knowledge on common diseases

All the sampled households (100%) are aware of malaria and diarrhea. Majority of the households were aware about TB (90%) and HIV/AIDS (91.1%). Only (52.2%) were aware of hypertension and only (27.1%) were aware of diabetes. Majority of the households (83.5%) were unaware of dengue (Figure9).

Most of the households had knowledge on the transmission of disease and available treatments for diarrhea, malaria, TB etc. but knowledge on dengue, hypertension and diabetes was absent in many households (Figure 10). Treatment for dengue is not provided by either public or private health facilities in the region due to non-availability of fractionated blood products like platelets.

Figure 9: Awareness on common diseases

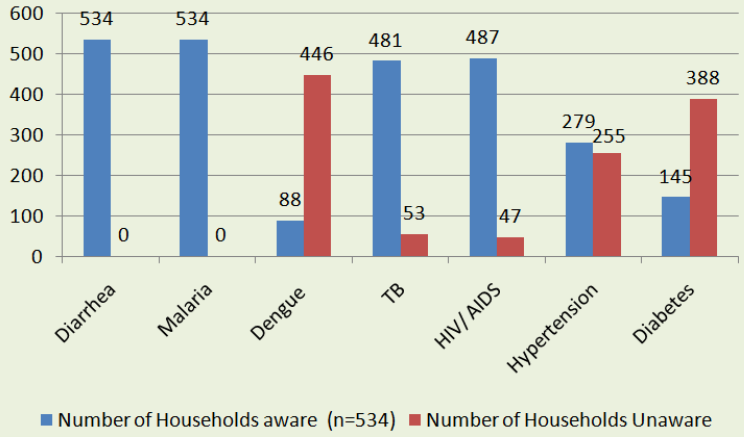
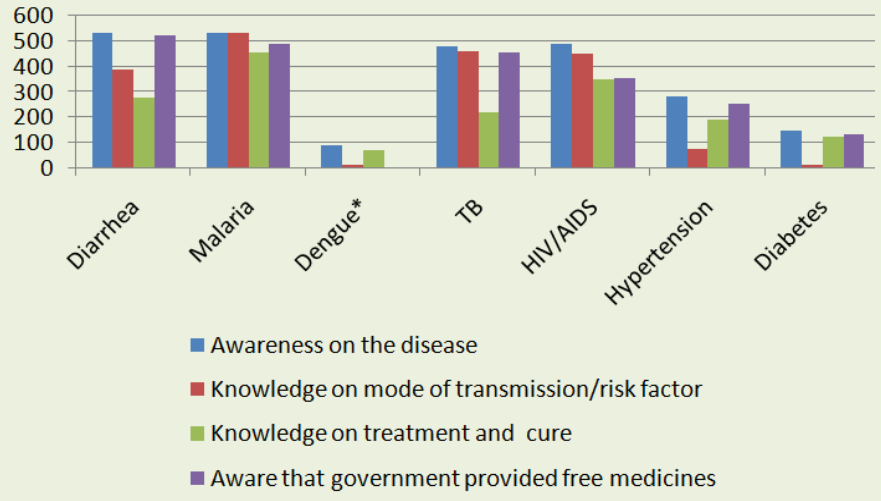


Figure 10: Knowledge on disease



Health Financing

Financing of health care in Prakasam district and the study area is representative of the Indian scenario where out of pocket payments for health care constitute a majority. Specific to the context of state of Andhra Pradesh, the government pays for secondary and tertiary in-patient/ hospitalized care in any empanelled public and private hospital for families below the poverty line (2.03 crore, 80% of the population of the state and 98% in Prakasam and 99.4% in the study region) through Rajiv Aarogyasri Health Insurance Scheme[3] since 2008 across the state.

This section gives an overview of the health financing status in the study area bringing in references from both the Andhra Pradesh and Indian context.

Public health system in the district is financed by the State and Central Governments as per the guidelines from the Central Ministry of Health and Family welfare, New Delhi. The structure is the same all over India only with few state specific variations. Item-line budgets are paid to the health facilities at various levels in the public health care system from the shared budget between centre and the state. Across Andhra Pradesh, care is provided free of cost to the patient with no user fee. Cost for unsupplied drugs in health facilities (not in the essential drug list of the state), investigations unavailable at the health facility and surgical supplies like 'cardiac stents' are borne by the patients themselves.

At the district level, the primary care facilities (Primary Health Centers, Dispensaries, Sub-centers, Accredited Social Health Activists, and all National Health Programs) receive funds through the office of District Medical & Health Officer (DM&HO). Community Health Centers which have above 30 beds, the Area hospitals and Maternal and Child Hospital in Ongole receive funds through a specific institution for Andhra Pradesh called the Andhra Pradesh Vaidya Vidhana Parishad (APVVP). The Directorate of Medical Education, Andhra Pradesh pays for the District Hospital in Ongole as it has now been converted into a teaching hospital. Additionally, hospitals with Rajiv Aarogyasri Health Insurance scheme empanelment (Area hospital Chirala and District hospital Ongole) are financed by the money generated through the claims of services provided to patients under the scheme. The Rajiv Aarogyasri Health Care Trust pays for the claims. Anganwadi centers (under the integrated child development scheme) are paid for by the Integrated Child Development Scheme (ICDS) project offices under the Department of Women Development and Child Welfare, implementing authority in Andhra Pradesh.

[3] visit http://www.aarogyasri.org/ for details

Emergency services EMRI 108 (Emergency Management Research Institute)[4], HMRI 104 Mobile health services and health helpline services for health advice by Health Management Research Institute (HMRI)[5] are provided as a partnership between these private organizations and the Government of Andhra Pradesh. A predefined amount is paid by the government and the private organization to operate the services. These services are provided free of cost to the people.

Private sector in the district is majorly financed by out of pocket payments. A majority of such payments in the districts are for primary care and non-hospital care services. After the initiation of Rajiv Aarogyasri in 2008, pre-defined secondary and tertiary care services needing in-patient care in empanelled hospitals for below poverty line population (about 98% population in Prakasam district and 99.14% in study area) is paid though Rajiv Aarogyasri Health Care Trust.

The market penetration of voluntary insurance is very less in the district and hospitals in the region do not have the capacity to equip themselves with such administrative demands. Though there are ESI (Employee state Insurance)[6] beneficiaries and CGHS (Central Government Health scheme)[7] beneficiaries, they undergo treatments in other urban areas rather than in Prakasam district.

Rajiv Aarogyasri Health Insurance scheme in Prakasam

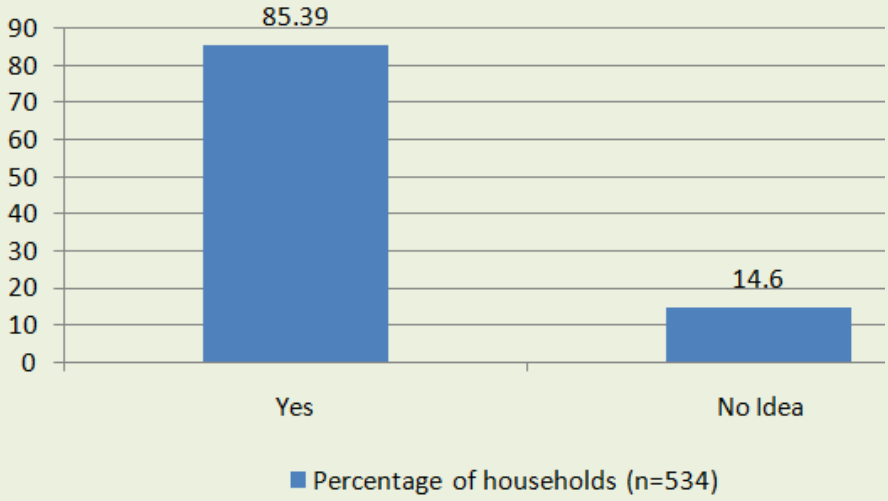
According to secondary research and focus group discussion with providers in the district, Prakasam was covered under Aarogyasri scheme in Phase 3 of implementation. Around 660000 families are covered under the scheme in whole of Prakasam. The district recorded the maximum number of beneficiaries (30.7 per lakh BPL population per month) only after Krishna district (35.1 per lakh BPL population per month) in the whole state (Indian Institute of Public Health, Hyderabad). Aarogyasri has increased awareness among the patients to seek health care and also increased the quality of care provided among the private providers. They are under a stringent check for quality, patient satisfaction, treatment outcomes, sanitation, food quality, and follow ups etc. Many other hospitals/ doctors without an empanelment have decreased flow of patients due to Aarogyasri. The empanelled hospitals in the district are unable to handle the load for secondary services, especially surgical cases and are referring the patients to other cities.

[4] See details at http://www.emri.in/
[5] See details at http://www.hmri.in/
[6] See details at http://esic.nic.in/
[7] See details at http://mohfw.nic.in/cghsnew/index.asp

Rajiv Aarogyasri Health Insurance scheme in the target region

All the sampled households were aware of the scheme. (85.3%) of the households thought it was beneficial.

Figure 11: Is Rajiv Aarogyasri Health Insurance Scheme beneficial?



10 (1.87%) of the sampled households have availed the services of scheme in the last year. The households used the scheme (as told by households, discharge reports were not seen) for treatment of fracture, thyroid surgery, treatment of gangrene due to scorpion bite, poly-trauma due to accident, high fever, and treatment of stroke, surgery for vertebral growths (2 cases), treatment for cardiac arrest and treatment for complicated delivery. All The households availing the services reported that they were satisfied with the services. (100%) were satisfied with the treatment.

- No postoperative infection was detected in any of the case.
- 100% reported that they were cured after treatment.
- In (100%) of the cases, Aarogya mithra was helpful with all the necessary procedures for using the scheme.
- In 100% of the cases the chosen facility was clean and hygienic.

Further details of choice of providers for the treatments used under the scheme are provided in chapter 'Health Needs – Community'.

Health expenditure of the sampled households

(Figure 12) shows the average health expenditure of all the sampled households in the six sub-districts in the last one year. Almost (37%) of the annual household income is spent on health care and related issues , which is quite a high proportion and is being spent only on primary and secondary care non-Aarogyasri listed treatments.

When the health expenditure is further divided into components (Figure 13), the largest proportion of the health expenditure in all the sub-districts is proven to be on pharmacueticals.

Figure 12: Health expenditure in comparison to household expenditure in the last one year

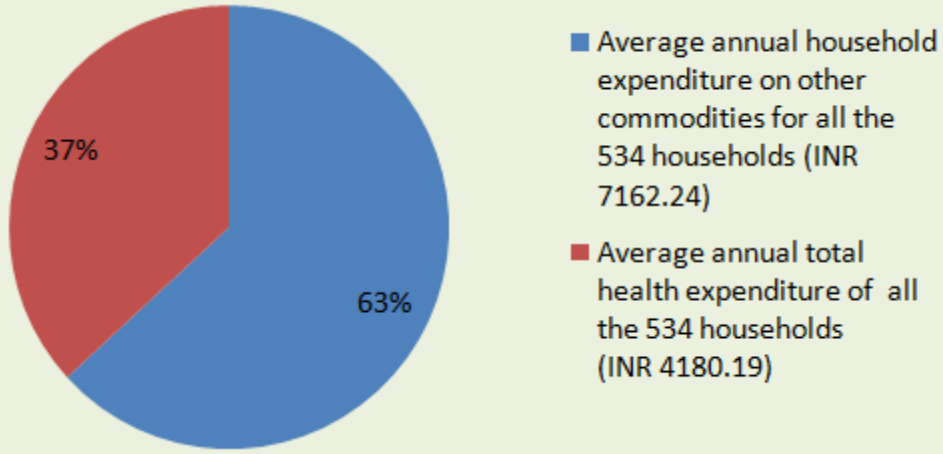
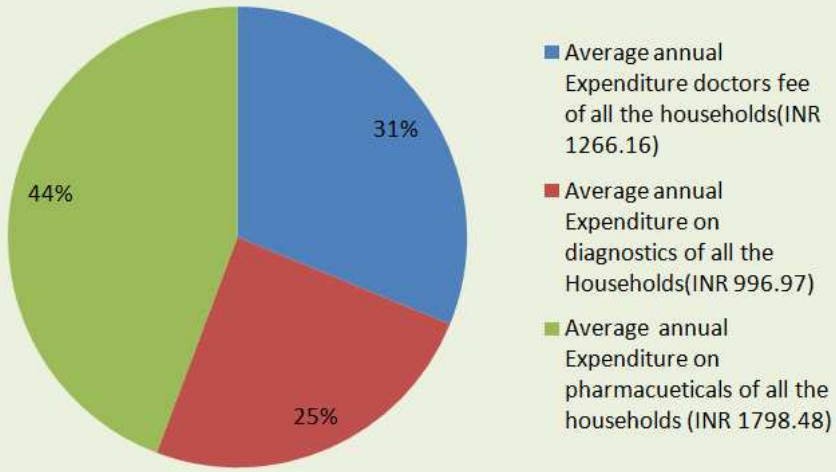


Figure 13: Average annual expenditure on components of healthcare in all the sub-districts



Health facilities in the region

The availability of health facilities (both public and private) in the study region is better than in the other parts of the district as the urban centers providing health care services in the district are present in the study region. Given below are the types of health facilities and providers in the region.

Table 4: Health facilities present in the region

Health facility / services	Provider
District Hospital, Ongole	Public provider
Area Hospital, Chirala	Public provider
Mother and Child Hospital, Ongole	Public provider
Urban Health centers	Public private partnership. Local NGO is the provider
Primary health care centers	Public provider
Dispensaries	Public provider
Sub-centers	Public provider
Anganwadi centers	Public provider
Nursing Homes (10-30 beds)	Private providers (different specialties)
Clinics of Individual practitioners	Private provider and Informal health care provider
Hospitals (50 beds)	Private provider
Emergency services (EMRI 108)	Public private partnership- EMRI is the provider
Mobile health services(HMRI 104)	Public private partnership- HMRI is the provider

The public facilities are run by the state government of Andhra Pradesh according to the guidelines from the Ministry of Health, India set frameworks and guidelines.

Private facilities are run by individual practitioners who may also work in the public hospitals (it is legal for public doctors to have individual private practices). There are no corporate or chain hospitals/ clinics in the region. Majority of private providers practice in urban areas, only few are present in the rural.

Informal health care providers are the mainstay of health advice and provision of basic care in the rural areas and urban slums. At least one such provider (RMP-Registered medical practitioner, traditional healer etc.) is present in every village or an urban ward in the study area. They are from the community, charge a low fee or sometimes provide services for free, advice people on choosing doctors to seek care.

Public private partnerships for emergency care, urban health centres and mobile health services are initiatives from the state government of Andhra Pradesh and are present across the state.

The following maps represent the location of various health facilities in the Prakasam district and the study region (The maps are not in accordance with population density).

Figure 14: Health facilities in Prakasam district

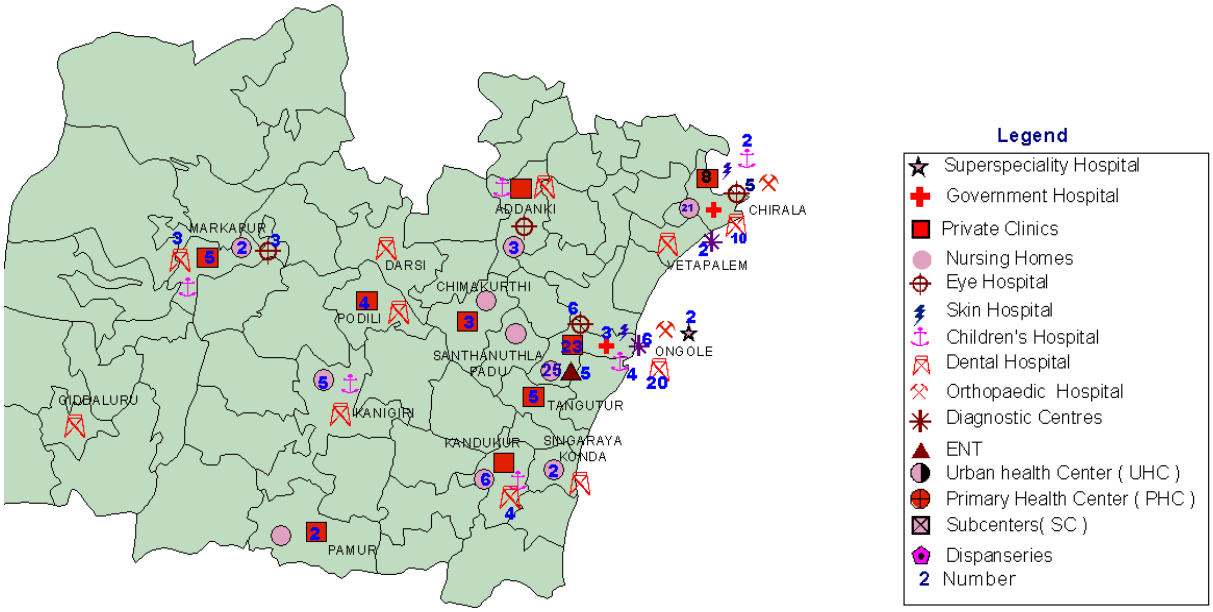


Figure 15: Health facilities in the study region(six sub-districts)

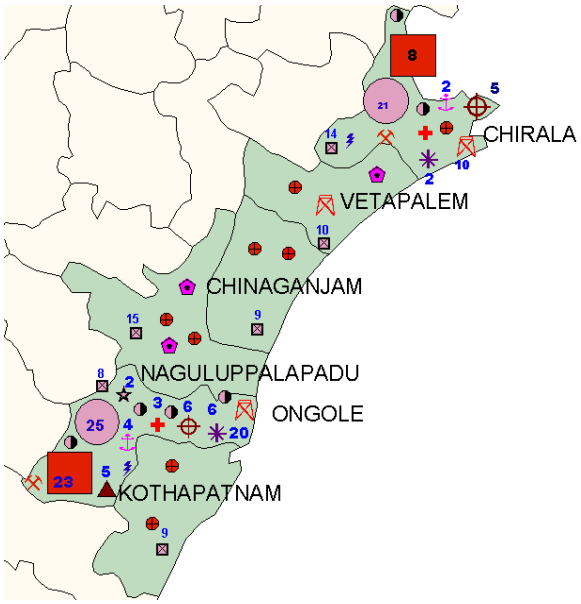
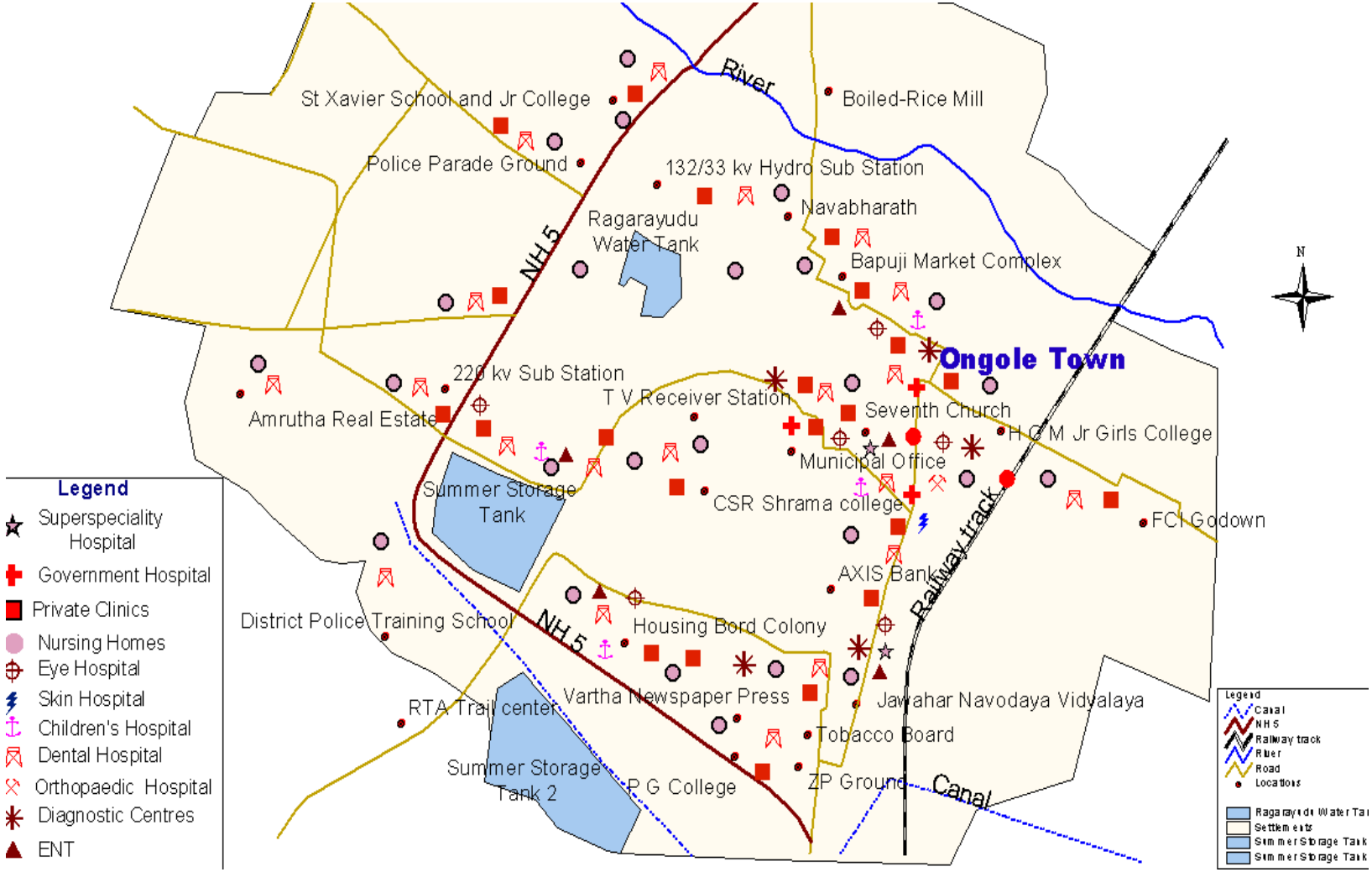


Figure 16: Ongole town map with Health facilities



Private health care sector (urban)

Majority of the private health facilities are concentrated in Ongole and Chirala towns. There are about 100 private clinics and hospitals (Figure 16). Clinics of individual practitioners outnumber the hospital or nursing home establishments. Maximum hospitals or nursing homes (specialist in-patient clinics – orthopedics, gynecology and obstetrics, Ophthalmology, Pediatrics, ENT etc.) have 10-15 beds, very few have 30 beds. Two private hospitals in Ongole (one 75 beds and other 50 beds) have Rajiv Aarogyasri empanelment and provide secondary care level services. Chirala has no private hospital with Aarogyasri empanelment.

Only primary care services and specialist secondary care services are provided. General surgery, General Medicine, Pediatrics, ENT, Orthopedics, Dental etc. are the specialties present. In Ongole, super specialists in Cardiology and Neurology are available but they provide out-patient care only, usually for diagnosis of the disease and follow up services for diagnosed/operated cases elsewhere.

Tertiary level care requiring hospitalization like Cardiology, Neurology and emergency care is not available in the study region and also in Prakasam district. There are no super-specialists to provide such care. The infrastructure and equipment needed to provide such care are also expensive and not in the reach of private providers in the region. Tertiary hospitals of repute are present in Guntur and Vijayawada cities (about 2 hours from Ongole and 1 hour from Chirala); Nellore, Tirupati, Vellore and Chennai (near to southern parts of the district) where people prefer to go for serious illnesses, emergency care (accidents and any case that needs Intensive care unit stay) tertiary care cardiac and oncology advanced treatments (Figure 17).

Figure 17:
Referral centres for the study population

Since the last 2 years, the private hospitals and nursing homes in Ongole and Chirala have made arrangements with few specialist doctors from other cities, to visit their hospitals as visiting consultants for a specific day in the week or during the weekends. Out-patient services are provided during these

visits. In need of in-patient management, the visiting doctor refers the patient to his private hospital in the other city.

The cost of care in private clinics and hospitals is paid through out of pocket payments when the services are provided. Usually the prices are tailored according to economic condition of the patients and the physician's relation with the patient or his family. 30- 40% discount is given for services provided in such cases. In Chirala the prices are 20% lower than Ongole (Table 5).

Table 5: Prices of some health services in the private sector

Characteristic	Price(INR)
Consultation fee per out-patient visit	
MBBS Doctor	30
General Physician	50
Ophthalmology	100
ENT	100
Dental	75
Orthopedics	90-110
Pediatrics	100
Gynecology and Obstetrics	100
Dermatology and sexual medicine	70
Cardiology	150
Neurology	150
Cost of Maternal services	
Monthly checkup	100
Cost of laboratory investigations	550 till delivery
Cost of one Ultra sonogram investigation	550 per scan
Cost of normal delivery (inclusive of stay at the hospital for 3 days)	6000
Cost of cesarean section (inclusive of stay at the hospital for 7 days or more)	15000-20000
Informal Health care providers	
Consultation fee per visit	10-15
Consultation fee per visit inclusive of medicine (1 dosage/1 injection)	15-20

Pharmaceuticals

Majority of private facilities have a pharmacy attached to it. The doctor may also own the pharmacy or he is in partnership with the pharmacy shop owner. Very few individual pharmacies exist. There are chain pharmacies like Hetero, Apollo pharmacy in Ongole and Chirala. The pharmacies exist in towns and sub-district headquarters. There are few rural pharmacy shops selling common drugs. Over the counter drugs used for symptoms like fevers, cold, painkillers, and cough syrups are also sold in general stores in some rural areas.

Diagnostic facilities

Most of the hospitals have minimal diagnostic laboratory setups for routine blood and urine investigations, diabetes monitoring etc. catering to the needs of specialties practiced. There are some individual diagnostic centres for specialty diagnostics for radiology (CT scan and X-rays), thyrocare for thyroid and other endocrine tests. A private chain of diagnostic centres called 'Sneha' diagnostics has all the diagnostic facilities at one place (all blood and urine investigations, radiology, ultra sonogram etc.). Now it operates diagnostic centers in Ongole and Chirala. Hospitals in these regions outsource tests to them or ask patients to get the tests done and get back with the reports.

Non-Governmental Organizations and Charitable Hospitals

There are only few Non-Governmental organizations working in health care in Prakasam. Red Cross society is involved in running a blood bank on Ongole. They also conduct health camps and blood donation camps. Health camps in the last three years have been decreased as such camps are being conducted by Aarogyasri. They also run three of the four Urban Health centers in Ongole which are contracted out by the government under the Urban Slum Health Project, being implemented since 2002.

HELP and Shanti Nilayam health care center are the NGOs which provide care to HIV/AIDS affected families in the region. HELP provides the affected families with supplementary nutrition and ensures access to ART drugs. They conduct awareness campaigns. They also pay the annual insurance premium on behalf of HIV/AIDs affected patients to Star Health Insurance Company which has a special package for the HIV affected. The coverage amount is INR 15000 for hospitalization.

Individual local donors and politicians conduct ad hoc health camps in the region along with Lions club, Indian Medical Association Prakasam chapter.

There are two charitable/ trust hospitals in Ongole and one in Chirala run by the church or Christian missionaries. They are not working to full capacity due to lack of funds.

Health infrastructure in private sector

All the facilities, pharmacy shops and distributers, diagnostic centres, other health related businesses are located as a cluster on two main roads in Ongole town and Chirala town. The private clinics are usually very small. Majority of the sampled clinics (90%) has two rooms, one is the waiting area and the other is the doctor's chamber. 10% had only one room, doctor's chamber is divided with a curtain. Majority (85%) have no proper patient waiting areas so patients also waited outside the clinics.

Nursing homes are usually 2-3 storied buildings with provisions for in-patient wards and doctor's residence in the building making him available 24hrs for service of the patients. The two hospitals (50 beds) had buildings specifically built for multi-specialty care with provision for laboratories, wards, consultation rooms etc. Nursing homes and hospitals had adequate space in the waiting areas. None of the facilities had good ventilation or free space around their buildings. They were situated in the centre of the city.

Quality of Care in Private sector:

Quality of care was one of the components of the facility survey and was obtained through qualitative research from investigators impressions and in-depth interviews with the doctors of the facilities.

Cleanliness/ hygiene:

The facilities were not clean (subjective impression) except for the Aarogyasri wards of two empanelled hospitals. Also non-Aarogyasri wards in the same hospitals were relatively not clean. The operation theatres were well maintained and sterilization procedures were followed. All the necessary equipment was available and was in working condition.

Communication with the patients:

The facilities had compounders/ attendants who were in charge of providing answers to patient's queries regarding consultation fees, purchasing of drugs, diagnostic investigations etc. Communication was very cordial and it made the patient at ease (patients travel long distances and are illiterate – it is very important to comfort them and help them understand about the treatment procedures). The doctors and nursing staff or paramedics were very cordial with the patients.

Human resources:

All doctors were qualified and trained in the respective specialties being practiced. The personnel (nursing and paramedical staff) were not adequate for the size of the hospitals and the patient load. Majority of the staff was trained by the doctor over the years on skills that are needed specific to his specialty. There is shortage of nurses and paramedical staff in the region and qualified personnel do not prefer to stay in small towns.

Private health sector (rural)

Private health sector in rural areas is very sparse; only five qualified practitioners are practicing in the study region. These are relatively old (in the age group of 50-60 years) physicians (MBBS qualified). The providers are either native to the village or were living there from more than 20 years. They chose to practice in rural area as when they passed out of medical college the only option was to open a practice in their own home area and settle there. They earn around INR. 10,000 to 15,000 per month. They have personal satisfaction as they are self-employed and have a good name in the community they belong to.

These clinics only provide out-patient consultation. They provide services round the clock and are located within the community, so people come to them to avoid going to urban areas. About 20-30 patients attend these clinics every day. The minimum charges are INR 10 and maximum INR 20 per visit excluding drugs. Drugs are bought by the patients themselves in the pharmacies. The practitioners sometimes provide Intravenous (IV) fluids and injections to patients.

For complaints requiring diagnostics and further management by specialists, patients are referred to urban areas (High fever, acute chest pain, respiratory distress, delivery cases, high blood pressure, poisoning, snake bites etc). Referrals are made to Ongole, Chirala, Guntur and Vijayawada as they are the best centers for treatments in the surrounding area. Providers agree that they have good relations with the private providers in urban areas and they refer their patients to them. They say that they are not given any incentives/ kickbacks for referrals.

Private health Infrastructure in rural areas

There are only clinics in rural areas which are housed in 1-2 rooms. Two beds are there in two of the five clinics which are used when a patient needs IV fluids or stabilization in cases of emergencies and deliveries before he/she can be transported. There is minimal equipment used for measuring vital statistics (BP apparatus, thermometer, etc.).

Quality of care

The providers running the clinics were all qualified MBBs doctors. Two out of five have attendants to help the doctor with the non-clinical work and enquiries of the patients. These are not qualified clinically but are trained to give IV fluids and Injections by the doctor himself. The communication with patients is cordial.

Informal health care providers

In the sampled villages/wards for the study, 44 informal providers were identified and in-depth interviews were conducted with 30 of them to understand the services they provide. Majority of the RMPs chose this as a profession as it bears them continuous income. Some of them are continuing their father's practice. Another reason is they feel good to be serving people of their own community. Twenty one (70%) of them worked as 'attendants' and 'helps' under qualified practitioners for 4-7 years. Six (20%) of the RMPs have been trained for the HMRI community paramedic training. Twenty eight (93.3%) of the RMPs are enrolled with Prakasam district Rural Medical Practitioners Association.

They opine that people come to them because they are from the community, are available 24hrs, give medicines or advice where to go in urban areas for qualified providers. The RMPs receive on average income of Rs.5000-7000/ month. None of the RMPs have other occupations. RMPs see an average of 10-15 patients a day. (70-90%) of the patients coming to them are from low social-economic status. They are from the same village or sometimes from nearby villages around 4-6 kms radius.

All informal providers charge according to the economic status of the patients. They charge a minimum of Rs. 10 and a maximum of Rs. 15 from every patient if it includes medicines for the visit. About (62%) did not provide drugs to the patients. They asked them to buy from the nearest pharmacy. RMPs who provided medicines procured them from pharmacies in urban areas themselves. Sometimes medical representatives and qualified private providers in urban areas also give samples.

They provide out-patient consultation and first aid services only. Out-patient services are usually checking of vital signs - blood pressure, pulse, and temperature. They prescribe drugs for fevers, cough, common cold, joint pains loose motions, pain abdomen. Ten of the RMPs (31%) provided diabetes test through use of strips. All prescribed Cefaxim and other antibiotics for fevers and cough and provided IV fluids and injections (pain killers and B-complex) to their patients. None of the providers offer maternity services. Females also do not come to them when encountered with menstrual problems or related problems involving female genitalia.

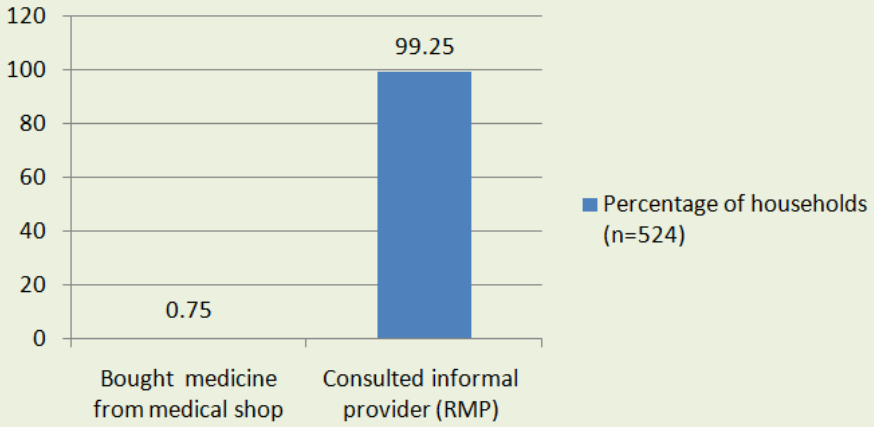
RMPs receive new information on diseases, medicines and treatments through media, newspapers, medical representatives, qualified doctors known to them, RMP association meetings where qualified doctors take classes, medical camps conducted by Aarogyasri, HMRI 104 etc. They refer the patient if they do not understand the symptom of the patient. They refer them to a qualified doctor in Ongole, Chirala, Guntur and Vijayawada as they are the best centers for treatments in the surrounding area. All

informal providers agree that they have good relations with the private providers to whom they refer their patients. Sometimes they receive reimbursement of travel expenses to bring patients to the respective hospital. Sometimes a percentage on the medical bill of the patient is given as a kickback. Hospitals in Guntur and Narsaraopeta pay the RMP around 30% of the bill paid by the patient as an incentive. Some RMPs opined that in such a competitive environment, between providers and also RMPs, giving kickbacks and having formal specified relation has become very rare at least in Ongole and Chirala.

RMPs are preferred providers for first medical consultation during illness

Among the households that fell ill during the last one year, a majority of them (99.25%) consulted an informal health care provider (RMP - registered medical practitioner) in the first instance. About 0.75% of the households bought medicine from the pharmacy nearby for the ailment fever and cough.

Figure 18: Choice of first medical consultation



The households consulted the RMP for the following reasons:

1. Everyone else in the community went to the RMP
2. He is nearer to their house
3. He takes less money (cheaper than any other provider)
4. He gives advice on which qualified provider to consult next

Public sector

The public system is organized into different levels of care each with defined functions, human resource cadres and responsibilities. The next pages give details of every level/health facility.

Ongole has a 200 beds District hospital (DH) and a 50 beds Mother and child hospital (MCH). A 100 beds Area hospital (AH) is present in Chirala. There are 8 Primary Health Centres (PHCs) and 63 Sub-centres (SCs). 3 dispensaries and urban health centres (2 in Chirala and 4 in Ongole) are present. There is one Accredited Social Health Activist (ASHA) for every 1000 population. 533 anganwadi centres (ICDS) are present (Table 6). There are integrated testing and counselling centres (ICTC) for HIV/AIDS and Tuberculosis testing centres within the public health facilities. All national programs are also run by the health facilities as per the guidelines.

The public health facilities only provide primary care and District hospital, Ongole and Area hospital Chirala provide specialist and secondary surgical care (for performance of the public health facilities in Prakasam district see annex).

Table 6: Available public health facilities in the region

Facility	Chirala	Vetapalem	Chinaganjam	Nagupalapadu	Ongole	Kottapatnam	Total
District Hospital	-	-	-	-	1	-	1
Area Hospital	1	-	-	-	-	-	1
Mother and Child Hospital	-	-	-	-	1	-	1
Urban Health centers	2	-	-	-	4	-	6
Primary health care centers	1	1	2	2	-	2	8
Dispensaries	-	1	-	2	-	-	3
Sub-centers	14	10	9	15	8	9	63
Anganwadi centers	87	75	60	81	55	81	533

District Hospital, Ongole

District Hospital (DH), according to guidelines from Ministry of Health, functions as an apex body in provision of health services in the district with 150-250 beds. It is supposed to provide specialized and secondary level referral services for public health institutions in the district. It should also provide all primary care services, out-patient and in-patient specialist services, emergency services, general medicine, general surgery, obstetrics and gynecology, pediatrics including neonatology, critical care (ICU), anesthesia, ophthalmology, ENT, dermatology and venerology including Reproductive Tract Infections (RTI)/ Sexually Transmitted Infections (STI), orthopedics, nephrology, cardiology, pulmonary medicine, urology, plastic surgery, radiology, dental care and public health management. In Andhra Pradesh, district hospitals function under the control of Andhra Pradesh Vidya Vidhana Parishad (APVVP). District hospitals are headed by a superintendent. They have prescribed norms for staffing according to adequacy of services provided (Details of performance of DH in annex).

District hospital in Prakasam is situated in the district headquarters, Ongole town. It is a 250 beds hospital. The district hospital has been upgraded to a teaching hospital (Rajiv Institute of medical sciences, Ongole). It is headed by a Director and functions under the control of the Directorate of Medical Education (DME) Andhra Pradesh. The hospital has Rajiv Aarogyasri Health Insurance scheme empanelment.

During the study period the hospital was shifted to a new location to house the hospital and the Medical College in a single campus. The new campus is being built just on the outskirts of Ongole town, 3 kms away from the old hospital. It was shifted in July 2010, just a month before the beginning of the study. The new building was still under construction during the research period, making the hospital barely functional. There was confusion among the public health authorities on the functionality of the hospital and services being provided. Having been to the hospital three times during the research period to see the progress of the hospital, the investigators noted not much progress in terms of service provision. There were barely any patients in the hospital. The hospital authorities opined some departments were functional and others will also be functional soon. Only the out-patient departments were functional for about 4 hours a day (9 am - 1 pm). Capacities for providing general medicine, general surgery, obstetrics and gynecology, pediatrics ophthalmology, ENT, dental were present.

There were no proper seating facilities and directions in the hospital. The in-patient wards were still under construction. There were no facilities or capacities in terms of equipment or staff to provide

specialized services like cardiology, pulmonary medicine, urology, neurology, neurosurgery, and plastic surgery. (More details of the working status of the hospital have not been shared in the report as it was considered inappropriate to judge the functioning and usage of services at the hospital when the construction is still going on and changes are expected in near future.)

It has been reported that this district hospital has also been sanctioned a trauma center and modern diagnostic equipment like CT scan, in the budget year 200-09 by the Government but little is known about the implementation.

In the community group discussions, people expressed that they have not been satisfied with the services provided at the hospital. The hospital neither now nor in the past performed efficiently to provide secondary care services. There have been instances where services were not provided due to absence and non-availability of doctors, support staff like laboratory technician, radiology technician etc. They have also described the attitude of the personnel both doctors and support staff as not cordial. Now they are more confused on the functioning of the hospital due to the shift in location and ongoing construction. They opined that they cannot rely on the hospital in cases of emergencies as they never know if it functions properly with all the doctors and support staff. The same doctors working in the hospital have their private clinics and nursing homes. People prefer to attend their clinics as all the necessary equipment and staff to provide timely treatment is present there.

Area Hospital, Chirala

Area hospital (AH) or the Sub-district / Sub-divisional hospitals is expected to function as a First Referral Unit (FRU) for provision of specialist services to the population from neighboring community health centers and primary health centers (about 5-6 lakh population). They have a capacity of 100 beds and provide emergency obstetric care and neo-natal care. Delivery services including caesarian sections are available around the clock. Specialist services in general medicine, surgery, obstetrics and gynecology, emergency/ (A&E) and dental care, ENT, orthopedics, radiology and dermatology.

Area hospital, Chirala functions with a capacity of 100 beds and also has a CEMONC center (Comprehensive Obstetric and Emergency Neonatal care). It is headed by a superintendent and is under the control of Andhra Pradesh Vidya Vidhana Parishad (APVVP). It is a Rajiv Aarogyasri empanelled hospital.

It covers around 4-5 lakh population in and around Chirala. It provides services in general surgery (1 surgeon), gynecology and obstetrics (2doctors), pediatrics (2 doctors) ophthalmology (3 doctors), anesthesia (1 on contract basis). There are five duty doctors (MBBS qualified, work on 'contract' basis) who assist the above staff to see that the hospital functions smoothly.

It also renders services related to the National Health Programs. It has a Direct Observed Therapy Short Term (DOTS) clinic for registration, testing and providing drugs for patients with Tuberculosis. There is a Sexually Transmitted Infections (STI) clinic, integrated counseling and testing center to provide services for HIV/AIDS patients. Prevention of Parent to Child Transmission (PPTCT) center catering to special needs of pregnant women with HIV/AIDS, AYUSH clinic with Homeopathy and Ayurveda specialties.

It has adequate support staff to provide all necessary services. All facilities and personnel to conduct basic laboratory investigations, X-ray and ECG services are present. There is a blood bank and it is functioning well. Support services are available in case of medico legal and post-mortem services, dietary and laundry services, housekeeping and sanitation and safe management of hospital waste. Citizen's charter is available, various health promotion and disease prevention charts and posters are present. All necessary medicines are available and there is no delay in procurement of medicines.

The hospital is not well maintained. It is not clean and hygienic; especially the operation theatre and surgical washrooms are not in good condition.

Discussions with the patients, hospital personnel and the superintendent recognized the following challenges with AH -

1. The hospital does not have general physicians, to provide basic specialty care.
2. There are no directions provided to navigate the hospital making it difficult for the patients and visitors to find their way around.
3. It has five major Operation Theaters (OT) and two minor OTs but only one major and one minor OT is functional. The others are not in use due to lack of staff and budgets to run and maintain them.
4. The hospital is understaffed and overburdened- it caters to 300-400 out-patients a day and more than 100 in-patients (accommodated though lack of functional capacity) almost every day of the year. The staff needed to manage and make things work smoothly and take good care of patients and perform their best is not available.
5. It has Rajiv Aarogyasri empanelment but there is no equipment, instruments and trained paramedical staff to work and engage treating all cases under aarogyasri which could potentially bring in finance to the hospital. The general surgeon performs surgeries using his own instruments from private practice (laparoscopic kit and others). He also calls in specialists from other private hospitals to perform surgeries in the hospital.
6. The hospital though handles Aarogyasri case and is supposed to be a referral unit does not have an intensive care unit. This deters the specialist doctors from admitting emergency cases that need intensive care. Such cases are referred to other places.
7. Delays in receiving salaries for the doctors and support staff especially for those working on contract basis, due to which they do not attend or on long leave, get transferred or resign.
8. The doctors and support staff admitted that they are not motivated to work in the hospital. There are no defined responsibilities and adequate support to deal with the dynamic hospital atmosphere. There are more non – clinical paper work, reporting, meetings, camps which do not provide quality time to deal with patients problems, because of which they come around as being angry, not cordial and impatient. The support staff bears the brunt of all the mis-happenings in the hospital. They are over worked, not paid enough, no incentives or even proper working atmosphere. The support staff admits to charge petty cash from the patients to perform their duties.
9. The hospital superintendent has no authoritative control over the staff as there are many who worked since long in the same hospital. He admits he does not have the necessary management training or experience to run the hospital. He is a surgeon and feels over burdened with the administrative chores. Micro-politics in the hospital further makes it hard for people to work together as a team.

Urban Health Centres

Urban health centres were established in Prakasam district in Ongole and Chirala towns as part of the state wide urban slum health project by the government of Andhra Pradesh in the year 2002, funded by the World Bank. According to the guidelines, these centres function to provide ante-natal care, immunization and Vitamin 'A', family planning services,reproductive tract infections and sexually transmitted infections, general out-patient, participating in all national programmes, health education and counseling, conducting regular field follow-ups, behavior change communication, community mobilization. The management of all the UHCs in the project all over the state is contracted out to the local NGOs. A district level committee selects NGOs and scheme envisages people's participation in management of the UHCs and placing the power for identifying the health priority in the hand of the community through establishing local women's groups to monitor the functioning of the UHCs.

The following is the human resource structure of the UHC. (*Revised in April 2010, but not implemented yet.)

Table 7: Human resource structure

Personnel	Salary	Job description
One medical officer (MBBS doctor)	INR.6000 (INR 11,000)*	Examines patients in the out-patient department and writes prescriptions. In-patients are not usually treated in the facility.
One Medical assistant	INR.1500 (INR 3900)*	Is trained to assist the doctor in the out-patient department and gives free medicines to patients available in the clinic.
Two ANMs (Auxiliary Nurse Midwife)	INR.3000 (INR. 4500)*	The ANMs cover around 30,000 population (each 15,000) in around 3-4 kms radius. They have to walk the distance and are not provided with any travel allowance. They vaccinate children and women on Wednesdays and Saturdays. They give counseling to pregnant women on nutrition and vaccines. They also provide them calcium and iron tablets.
Community organizer	INR 2000 (INR.4000)*	Organizes community participation activities for behavioral change communication exercises in the community.
Watch man	INR.1500 (INR.3000)*	

(For further information on Urban Slum health project in Andhra Pradesh and Its performance see "Provision of Reproductive Health Services to Urban Poor through Public-Private Partnerships: The Case of Andhra Pradesh Urban Health Care Project , Ramesh Bhat, Dileep Mavalankar , Sunil Maheshwari , Somen Saha ,W.P. No.2007-01-07 ,January 2007)

The centres are located within the community and are easily accessible. Only one of the six UHCs was well maintained (neat and hygienic). The others were not in a good condition, the surroundings and interiors were dirty. But all the UHCs were well built and they had separate rooms for doctor's examination and immunization. A small counseling room was also present. The health information (TB/ Leprosy/ HIVAIDS, Nutrition etc.) was advertised clearly and within reach so that patients can read it if they are literate. There were 2 in-patient beds provided, for emergency treatment and a labour table to attend emergency delivery. The personnel were all present and all the registers were filled up to date. All basic medicines for fever, painkillers, antacids, antibiotics, anti-hypertensives, vitamins and minerals etc. are present and are being disposed to patients. They were in good condition. Daily on an average there are about 30 out-patients.

According to the discussions with the communities, they are happy with the services provided by the UHCs. They are using them for minor illnesses and counseling services for maternal and child health. The doctors were present during the timings regularly and ANMs provided immunization and counseling at homes. The NGOs running the UHCs were also positive about the partnership initiative and had no complaints, except for the payments of the revised salary schedule did not come into effect since April 2010. Public health authorities opined they have had good and bad experiences with UHC partners during the last decade. The NGOs act like administrators but do not provide any additional funds or benefits to the UHC or the community around them. Two UHCs under Red Cross in Ongole are functioning well and they have realized that it is very important to have a good partner in such initiatives.

Some of the NGOs were not performing well and there were delays in reporting and sometimes no added benefits provided to the people through the partnership. The contracting NGO of one of the badly performing UHC was changed this year; the UHC was contracted out to Red Cross society.

Primary Health Centres

Primary health centres provide both preventive and curative health care services. Reproductive and child health services, such as antenatal care and immunization in addition to routine in-patient and out-patient services are provided. PHCs are expected to serve population of 30,000 in plains and around population of 20,000 in tribal and hilly areas. There are eight PHCs in total in the study area.

Connectivity:

All the eight PHCs are well connected by road and easily accessible to the population. They are ideally located in the center of town/ village or near the important village/ mandal level institutions like the Panchayat office, police station etc. However there are villages located remotely from the PHCs. The maximum distance one has to cover to reach their PHC is about 30 kms. In such situations people cannot access a PHC due to travel costs or no proper transport facilities. Motupalli village in Chinaganjam sub-district is one such remote village with no road connectivity and people have to walk 4 kms before they can take any transport facility for travel.

Infrastructure:

All PHCs have a well-built building owned by the government. They also have a good compound wall. There is a lot of free space around the building. Buildings are rather old and the roof and flooring is not in a good condition. Plaster on the walls is falling in some PHCs (5 of 8). There are boards/ name plates to guide the patients. There is adequate working space and enough rooms for functioning of the centre but they can be better differentiated for privacy of patients and also for the personnel working. (The laboratory and the accountant's room is one and the same in 5 of the 8 PHCs)

In Vetapalem PHC the operation theatre (OT) is located about 10 meters from the consultation room in a separate building. There is no ramp and one has to push the stretcher on soil to the OT. There is minimal furniture in 7 of the 8 centers. There is no provision of patient waiting room. There is space for sitting area outside the main building with tables (6 of 8 PHCs) for patients when they wait for out-patient consultation or laboratory tests, counseling etc.

None of the PHCs has a telephone connection (landline). In some they were disconnected as the government stopped paying the telephone bills. But all the medical officers and personnel were provided with cell phones. 3 PHCs had computers but there were not functional.

The OT equipment was functional but was rusted and dirty in 5 of the PHCs. Only 3 PHCs out of 8 had phototherapy units, oxygen cylinder and equipment for new born care. Out of that only in 1 PHC all the

equipment was functional and there were trained personnel to carry out such treatments. All the PHCs have equipment needed to maintain the immunization cold chain in working condition.

None of the personnel stay on PHC campus. There are no residential quarters built near the PHC. Vetapalem PHC has a quarter but that has been occupied by another governmental organization and the doctor stays 5 kms away from the PHC.

Quality:

None of the PHC surroundings are clean. One can find waste papers, plastic, cartons of medicines, expired medicines etc. The laboratory room is the most unhygienic place and the sink and walls around it are stained with chemical stains. There are broken and used smear slides and cotton lying around. The bathrooms of 5 PHCs did not have piped water facility. They were not clean and are unhygienic. In some PHCs there were no separate bathrooms for males and females. The wards are also in bad condition. The wards were dusty and had no patients. In a majority (6 out of 8) PHCs they were locked. There were just 2-3 patients during our visits. They did not have anything good to say about the center. They just came because they can get the medicines for free rather than buying them outside.

The personnel's communication with the patients was not cordial. The doctor when present was forthcoming in his approach towards the patients. The support staff were not informative especially while answering queries or giving directions to patients.

There was a lot of information on different diseases displayed through charts and flow diagrams in the PHC. They could be easily followed by the literate patients. Standard Operating Procedures (SOP)/ Standard Treatment Protocols (STP)/ guidelines, citizen's charter, were all available and well placed in the centres. But how well these are followed by the personnel and patients cannot be judged. As per the interviews with the doctor, sterilization procedures are followed. There are bio hazard dustbins provided, needle cutter and safety pots for safe waste disposal. If all the methods are being followed is questionable.

Human Resources:

There are not enough human resources present in the PHCs for them to be fully functional and provide services as planned. None of the PHCs have all the required staff in place. Every PHC needs to have 2 medical officers, but all the PHCs have 1 medical officer each. The other post is vacant. There are also shortages in support staff like female health workers, ANMs, health educators and health assistants.

Out of 8 PHCs, only 3 of them have pharmacists. Out of 8 PHCs, only four of them have a laboratory technician, in Vetapalem PHC there is no laboratory technician for the last 7 years and in Chinaganjam PHC a laboratory technician has been deputed from Chirala area hospital. He comes twice a week to the PHC. All the ASHAs have been recruited. There is no continuous training for the staff in new techniques of treatment or related to diseases.

There is no option for substitution when a staff member is on leave (only long leaves and vacancies are substituted by deputing some personnel from other centres/ hospitals). This paralyses the treatment process and non-functioning of the PHC to achieve the motive of serving the patient. In practice the absenteeism among the doctors from their work places is very high which is observed to be a binding constraint in utilization of health care services in the sample PHCs.

Services:

PHCs are supposed to provide services as given in the guidelines. The visits clearly inferred that they did not have the full capacity to provide all the listed services. According to allotments, 7 were not 24hrs PHCs, they could only provide out-patient care and family planning services (outreach by ANMs and family planning surgeries at the PHC), which they were doing. Vetapalem PHC which is a 24hrs PHC does not have a provision for doctors and personnel to stay on campus. (In case of delivery at other than the general working hours, women come for delivery with the ASHA, where ASHA has to inform the PHC well before arriving to the center so that the doctor and support-staff arrive at the PHC to make necessary arrangements for conduct the delivery. This had led to the women to choose private providers as they do not want to take any risks during delivery.)

Immunization services are being provided through the sub-centers and at the PHC. The doctors attended their duties only from 9 am - 2 pm. They don't stay there for the whole time and do not attend every day. Except in 3 PHCs the doctors in the PHC were not available when the investigators went. They were told they are on visits, camps, meetings etc. or are absent. Laboratory services are not provided due to lack of technicians in 6 of eight the PHCs.

Medicines are being provided and there have not been any procurement problems except that they are sometimes short in supply. Such problems have been substituted by using money from the emergency fund or hospital development fund from the National Rural Health Mission. (There are chances that personnel misuse such funds (reported in group discussions) rather than for genuine problems related to patient care.

Sub Centres

Sub-centres are the lowest referral linkage of the primary health care in India. According to norms, there is one sub-centre for every 5000 population (4-5 small villages) in plain areas and for every 3000 population in hilly/ tribal areas. A sub-centre is manned by one female health worker commonly known as Auxiliary Nurse Midwife (ANM) and one male health worker commonly known as Multipurpose Worker (Male). A health assistant (female) commonly known as Lady Health Visitor (LHV) and one health assistant (male) located at the Primary Health Centre (PHC) level are entrusted with the task of supervision of all the sub-centres under the PHC preview (usually 6-10).

In Andhra Pradesh all the sub-centers are controlled by the Directorate of Health at state level and the District Medical and Health officer (DM&HO). The Ministry of Health and Family Welfare (MOHFW), GOI has been providing assistance to all the sub-centres in the country since April 2002 in the form of salary of ANMs and LHVs, rent (if located in a rented building) and contingency, in addition to drugs and equipment kits. The salary of the male health worker is borne by the state governments.

A sub centre is required to provide promoting, preventive and a few curative primary health care services. These services include immunization, antenatal, natal and post natal care, prevention of malnutrition and common childhood diseases, family planning services and counseling. It also includes provision of elementary drugs for minor ailments such as Acute Respiratory Infections (ARI), diarrhea, fever, worm infection etc., and it is also their duty to carry out the community needs assessment/ help in the village health action plan by ASHA. In addition to the activities mentioned above, the government implements several national health programmes delivered through these frontline workers of the sub-centres in the country.

There are 63 sub-centres in the region and 30 of them were surveyed as part of the research. A majority (70%) of the sub-centers are located within 1 km from the main village. The farthest village from a sub-center was 3 kms. The average number of villages covered by a sub center was 4. All sub-centers are located in a place well known to the community. A majority of them (62%) were located within 5 kms distance from the health center (both public and private). The rest are within 10 kms of distance.

ANMs (Auxiliary Nurse Midwife)

All sub-centers have been allotted ANMs. A majority of ANMs (66%) live in the same village where the sub-center is located. ANMs working in a sub-center near to towns reside in the town (30%). The others (4%) live in the nearby village.

Infrastructure

50% of the sub-centers are rented buildings. The other 50% are government buildings and among them 10% of buildings were donated by individuals and local non- governmental organizations. The sub-centers had one room. 70% of them had piped water facilities and 60% had a toilet. In 94% of centers, soap for hand washing was available. A majority of 94% had electricity. 90% of the facilities were not clean. One sub centre was very old and in a bad condition with a leaky roof.

Services provided:

All the listed services were provided aptly by the ANM and the registers were up-to date.

Anganwadi Centres

Anganwadi centers are units of the integrated child development scheme, a national programme. One center is allotted per 1000 population to provide nutrition, education and a list of health care of services for improving child and maternal health. The beneficiaries are children below 6 years of age, pregnant and lactating mothers. There are 385 ICDS projects in the state of Andhra Pradesh which translate to a total of 73944 Anganwadi centers, 61880 are in rural, 7021 in urban areas and 5043 in tribal areas. In the study area there are 533 Anganwadi centers.

In Andhra Pradesh the scheme is implemented under the Department of Women Development and Child Welfare, which also manages other programs and institutions for welfare of the women and children in the state. This department works through six regional offices in the state. Regional office of Department of women development and child welfare is situated in Ongole, Prakasam district.

At district level, there is one ICDS cell headed by a project director covering 10-18 ICDS projects. Each project is headed by a child development project officer. Each project is further divided into sectors manned by supervisor and each sector covers 25 Anganwadi centers. Each center is managed by Anganwadi worker and assisted by an Anganwadi helper.

The department monitors the scheme through a prescribed monthly progress report. The following registers are maintained at the AWC to collect the information on coverage of beneficiaries. All parameters are reviewed every quarterly.

The following are the main programs:

- Supplementary nutrition program
- Preschool education to children
- Immunization services
- Health checkups
- Referral services
- Health and nutrition education to mothers

30 Anganwadi centres were covered as part of the facility survey. They were all functioning well and rendering services. People accept and appreciate the services and the Anganwadi workers. All the centers are supposed to be strategically located within the village and in the study area; (75%) were located ½ a kilometer within the community they covered and the rest (25%) were within one kilometer. The centres are well known to the community population and are in locations which are easily accessible. They are also close to the referral centers for provision of health care when needed. For 57% of the Anganwadi centres, referral centres (PHCs) are within 3 kms distance. 19% have referral centres within 3-6 kms and the rest 27% have referral centres located within 10kms distance.

Most of the centers are run in rented buildings. In the study area about (48%) were in rented buildings and only (28%) were in government and (24%) ICDS owned buildings. The buildings were in good condition with ample cross ventilation and were well maintained. The centers were clean. Only 25% have functional toilets as piped water is not available in other centers. Only 25 % have electricity.

All Anganwadi workers and assistants stay in the same village. They receive about INR 2200 per month. They are very cordial with clients and communicate the nutrition and maternal advice well (In the study they were not tested for their capabilities).

Anganwadi workers mentioned that there are no problems in getting regular food supplies. They are delivered monthly on time. Upma, Halwa, RTE, Khichdi and eggs are given to children and women according to prescribed norms. Only 50% of AWs cook at the center, the rest cooks at home and gets the food due to unavailability of water and cooking facilities at the centre. The quality of food grains and prepared food was found to be good.

Toys, charts and poems are used as teaching tools by the Anganwadi workers to teach the pre-school children.

Only 95%of the centres had a functioning weighing scale and the rest had them but they are not working. Immunization services are provided in coordination with ASHA and ANM. They are to-date with all the registers.

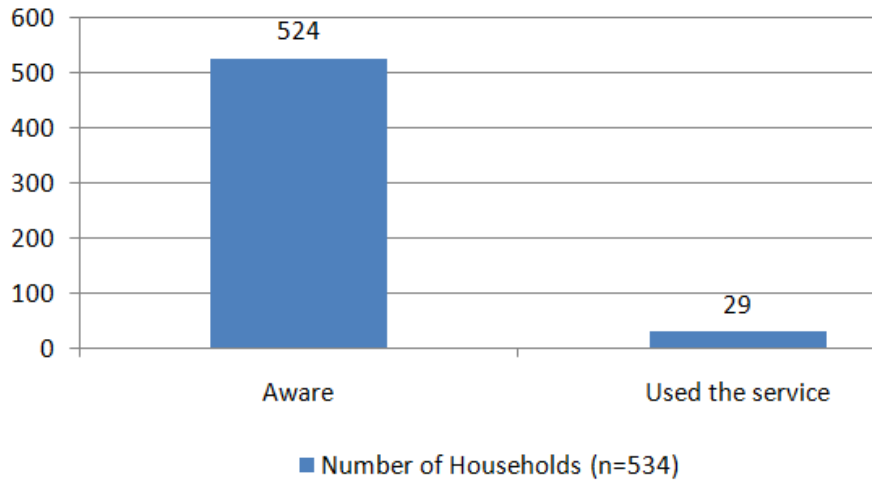
Only 40% of Anganwadi workers were happy and satisfied with their job. The main reasons for the dissatisfaction were low salaries, budgets allotted to cover the rent of the building were very low and unavailability of cooking facilities in the centres. However, villagers are happy with the services and consider the centres and Anganwadi workers to be useful.

EMRI 108 emergency services

EMRI (Emergency Management Research Institute) 108 emergency services provide transport services to people to reach health facilities in accidents and emergencies. It is implemented through a public private partnership in the whole state of Andhra Pradesh. Trained paramedical personnel stabilize the patient and provide first aid before transporting the patient to a health facility. The services are provided free of cost for the people. It is the most appreciated service by the people.

According to the survey, about 524 households (98.1%) are aware of the EMRI 108 emergency services and 29 of them (5.4%) used the service. All the beneficiaries (100%) reported that the services were useful and satisfactory. Though the service was free of cost to the patients, in 26 cases (89%) the beneficiaries paid about INR 100-200 for the service as a token of appreciation or gift.

Figure19: Awareness and utilization of EMRI 108 services



According to the group discussions with the community and personnel, EMRI emergency services are the most appreciated health services. People are happy that the van reaches the place very fast and is helpful in transferring the patient as quickly as possible to a health facility.

People opine that the 108 vans have become very old and are not well maintained. It would be good to refurbish the vans and increase allowances for their maintenance. The personnel complain that their salaries are not being increased even when there is inflation in food prices during the previous year. They are satisfied with the job but better seating facilities to drive would prevent them from back pain. There is no accessibility of the service in some remote coastal villages as there is no road connectivity. In emergencies or otherwise it becomes very difficult for people to reach health facilities.

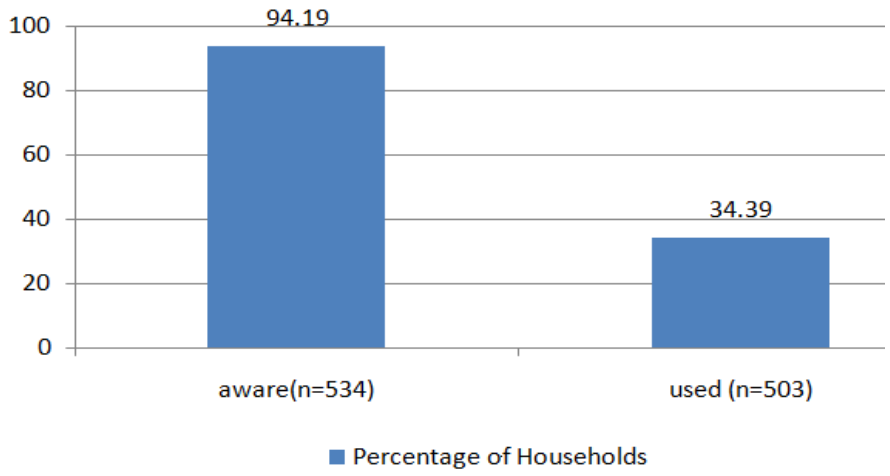
HMRI 104 mobile health services and call services

HMRI 104 services are also provided in the region. 104 call services are used for consultation and counselling for advices on illnesses. The 104 van services act as a mobile health unit where the van equipped with health workers and paramedics visits a village once a month to provide medicines for minor illnesses, antenatal care, hypertension and diabetes check-up and monitoring.

According to the survey, the following figures provide some evidence on the awareness and utilization of both the HMRI104 call and van services.

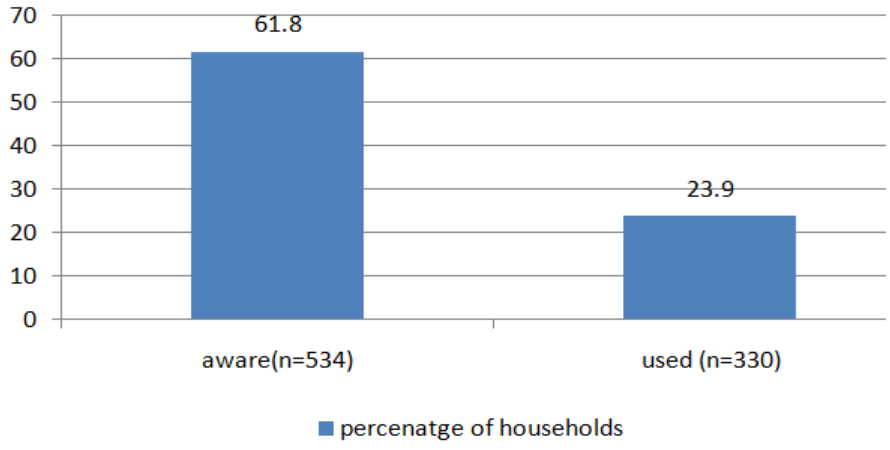
(94.19%) households are aware of HMRI104 van service and 34.39% used the service in the last one year.

Figure 20: Awareness and use of 104 Van services



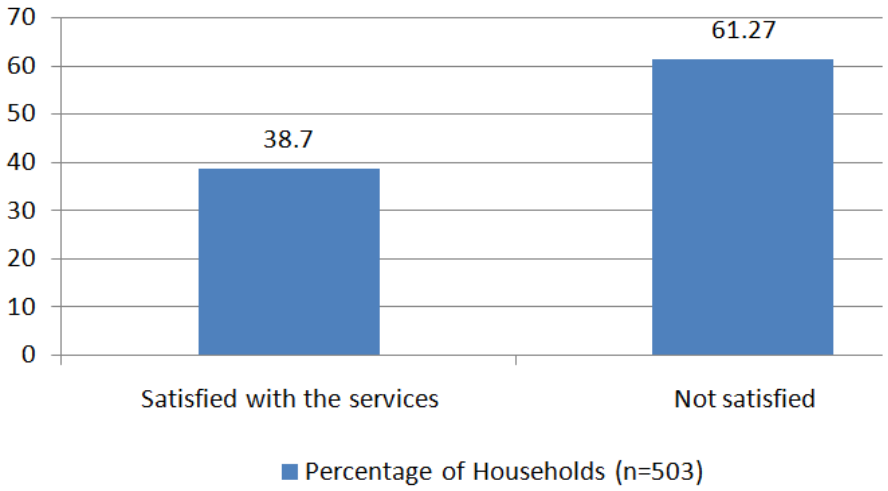
(61.8%) of the households are aware of the HMRI104 call service and 23.9% used it during the last year.

Figure 21: Awareness and use of 104 call services



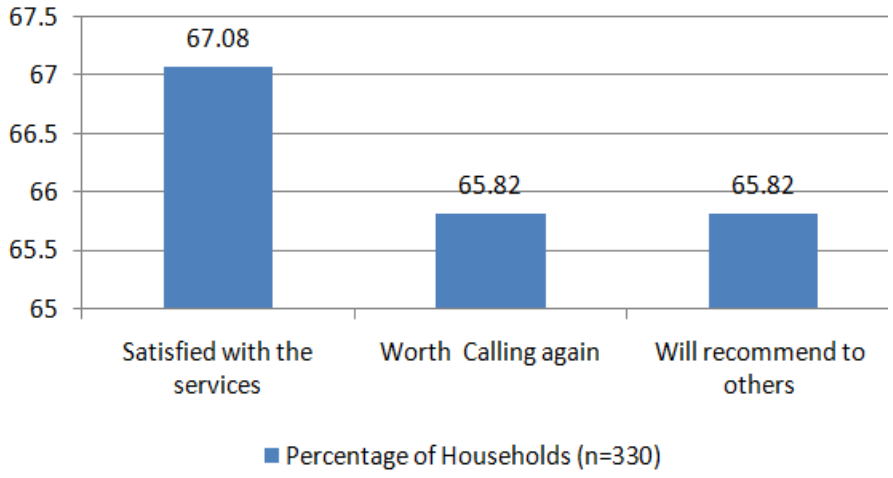
A large majority of the households (61.27%) is not satisfied with the van services. The reason being unavailability of medicines, some also opine the medicines do not give them relief. During the last year the services were very irregular and from November 2010, the vans did not come to the village.

Figure 22: Satisfied with the van services



The call services were used to discuss personal problems, stressful situations and queries on HIV/AIDS. 67.08% of the households are satisfied with the call services and 65.82% think it is worth calling again and will recommend the service to others.

Figure 23: Satisfied with the call services



From the discussions with personnel of 104 mobile health services and the people, it can be summarized that the services have helped in creating awareness on maternal health, diabetes and hypertension among the populations they cover and to an extent helped the people to be diagnosed and regulate their blood pressure and diabetes by providing timely monitoring and medication. They have helped in bringing care to peoples door step and save a lot of money and time for travel and consultations. People complain that the services have become irregular during the last year and the medication being provided is not treating their symptoms (for example in conditions of fever, cold, muscular pains etc.). The personnel say that they are respected in the community for their services but job satisfaction is not there due to challenges being faced by the personnel in rendering duties to the people. The personnel expressed that…

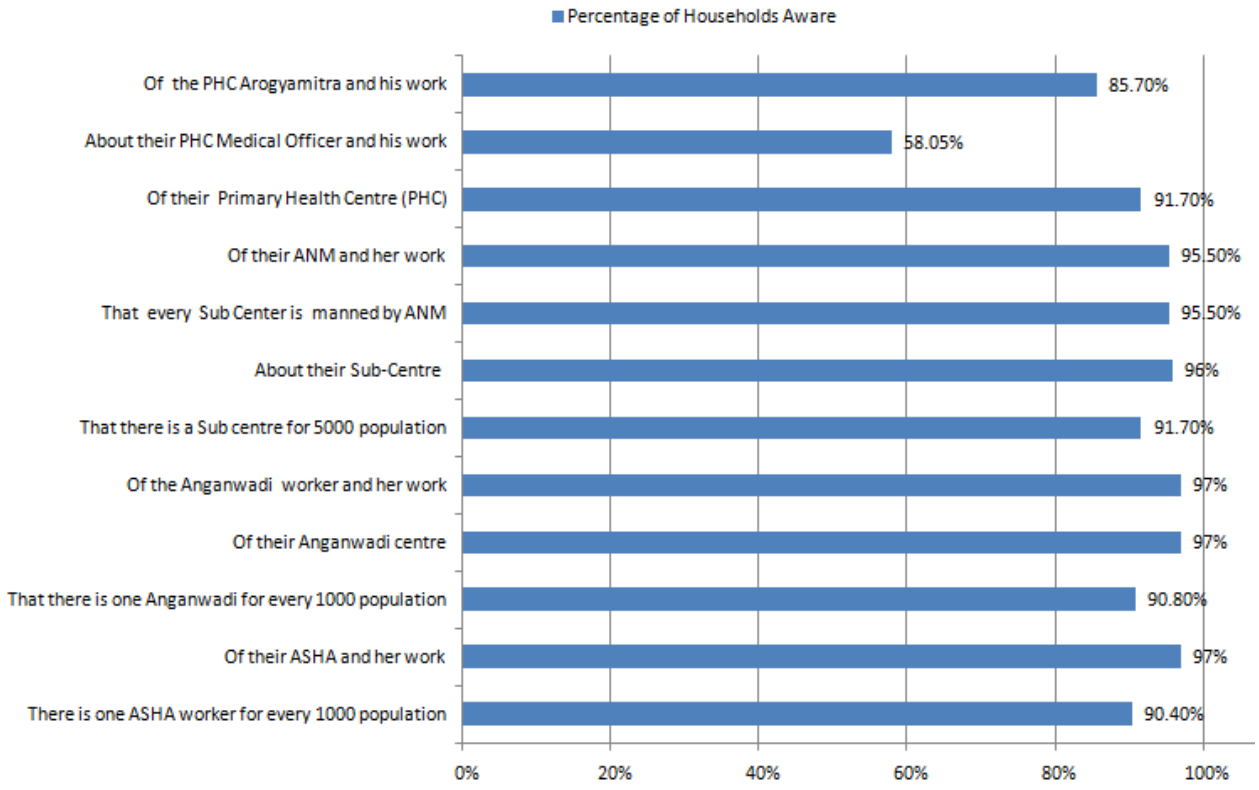
1. The working hours are too long. Every day they work from 7am until7 pm.
2. They have to travel away from home (very difficult for ANMs posted) for their place of posting which is not convenient for their families. It would be good to be posted in vans nearby their places of residence.
3. Medicine supplies are not sufficient in the vans to give them to patients and this makes them angry many times.
4. They do not receive their provident fund (PF) even though salary for that has been cut.
5. They neither have any days off nor are they paid for doing any extra duties/ over time.
6. There is no possibility of substitution when one of the team members is on leave. It is overburdening the team and results in inability to communicate well with people and provide good service.
7. Actually their responsibilities were to work only 20 days a month but now increased to 24 without an increase in salaries or any other benefits.
8. Daily allowances (INR 50) are not given in time (stopped since July 2010).

Awareness on health workers and health facilities

Majority of the households in the target region are aware of the public health facilities present in the area and their health workers. (Figure 24) gives the details of the results. During the group discussions, the ASHAs, ANMs and Anganwadi workers were appreciated for their services. People explained that these workers have increased their knowledge on nutrition, family planning services, immunization and child care, care of women during pregnancy and after delivery etc. The Aarogyamithra also notifies them about medical camps and helps them when there is a need to go for treatments through Aarogyasri.

Note: The percentage of people aware of PHC medical officer seems to be low as 90 households of Ongole sub-district were not asked the question as Ongole sub-district does not have a PHC.

Figure 24: Households with at least one person falling ill during the last one year



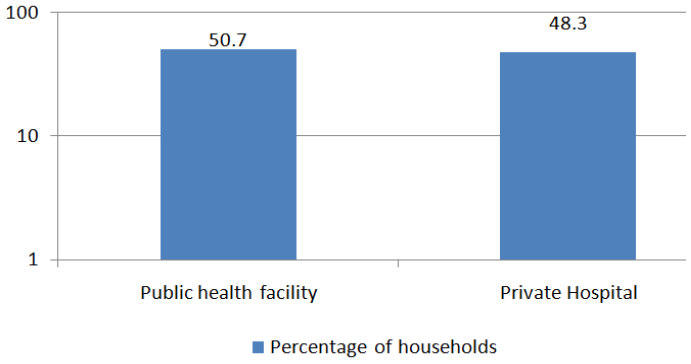
These results throw a positive light that the various health promotion activities being conducted by the public authorities are reaching people and they are satisfied with such system. For future, such health promotion and disease prevention activities on non–communicable diseases and other diseases of importance can be adopted through using the health workers.

Preferred qualified providers

The household survey, group discussions with the community and focus group discussions provide ample evidence that the people's preference for providers rests on the self-perceived seriousness of the illness, economic condition, availability of the doctor in the facility, relationship with the doctor and also importantly advice from the known RMP to the household.

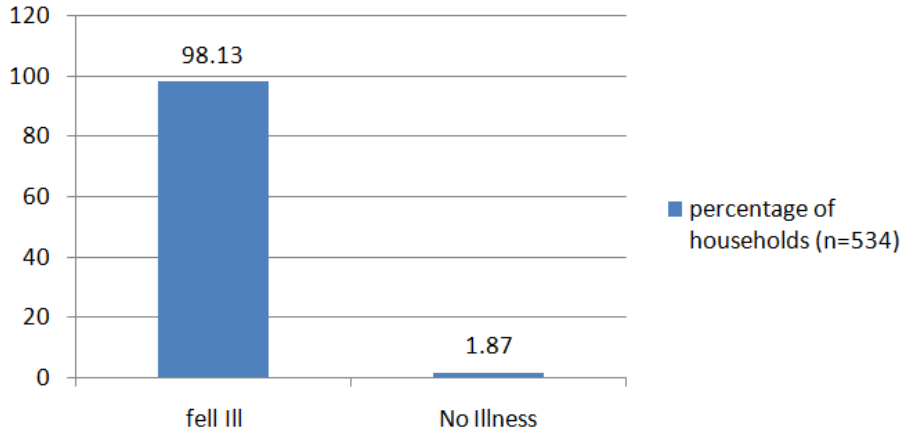
When enquired about which qualified provider would they choose to attend when ill, 50.7% of the households preferred to get treated at private facility where as 48.3% preferred a public facility and the others (1%) said they shall choose a traditional system of medicine (Ayurveda or Homeopathy).

Figure 25: Households with at least one person falling ill during the last one year



But among the (98.13%) households that had at least one person feeling ill in the last one year (fever, common cold, cough and weakness), 99.25% of the households consulted an RMP first on onset of symptoms.

Figure 26: Households with at least one person falling ill during the last one year



In their second consultation 413 people from the households consulted a qualified provider with the same symptoms (as they were advised by RMP to go to a qualified provider) or feeling better after RMPs consultation or self-medication but not completely alright. While (19.2%) households consulted a public provider, (80.8%) of them consulted a private provider.

Table 8: Diseases and choice of provider

Disease	Number of cases (n=413)	Choice of provider	
		Public	Private
Fever	202 (48.9%)	56	146
Malaria	151 (36.5 %)	20	131
Skin disease	15 (3.6%)	-	14+1RMP
Cough	12 (2.9%)	2	10
TB	10 (2.4%)	1	9
Pneumonia	8 (1.9%)	-	8
Jaundice	5 (1.2%)	-	5
Asthma	2 (0.4%)	-	2
Diarrhea	2 (0.4%)	-	2
Cataract	2 (0.4%)	-	2
Kidney disease	2 (0.4%)	-	2
Heart disease	1 (0.2%)	-	1
Dengue	1 (0.2%)	-	1
Total	413	79 (19.2 %)	334 (80.8%)

Almost 334 cases (80.8%) of the people who fell ill underwent treatment at a private facility. Public facility was a choice for fever (27.7%) and malaria in (15.2%). Another important inference is (90%) of the TB patients were undergoing treatment from a private provider though the government has a provision of free treatment with DOTS for TB.

The main reasons for consulting a qualified private provider were

- The RMP advised the specific provider
- They have no trust in public facility
- They have a good relation with doctor
- Doctor was not available in public facility

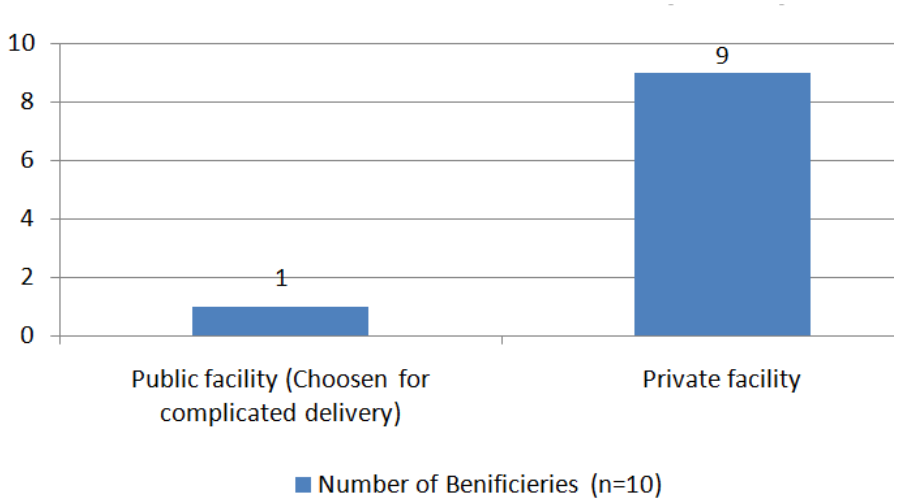
The main reasons for consulting a public provider were

- They did not have money to spend for a private doctor

- They did not think the illness was serious enough to consult a private doctor
- They did not want to travel to town
- The doctor at the primary health centers is good

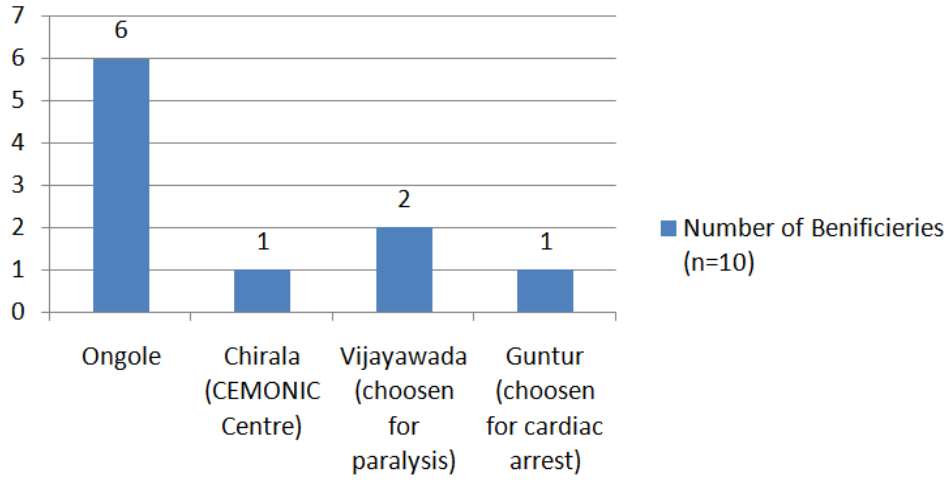
People availing services like Rajiv Aarogyasri or 108 EMRI emergency transport services under went treatments in a private facility indicating that when perceived seriousness of the illness is high and in emergency conditions people prefer private providers/facilities.

Figure 27: Choice of facility of Aarogyasri beneficiaries among the households in the last one year



Nine (90%) of the beneficiaries chose a private facility for treatments. Only in a case of complicated delivery a public facility was chosen as private facilities do not accept high risk pregnancies.

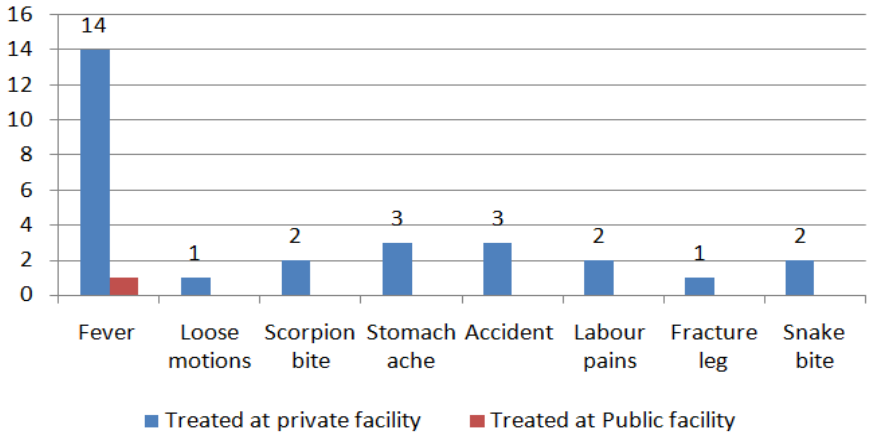
Figure 28: Place of treatment



The place of treatment for condition requiring secondary care was within the region (Chirala, Ongole) but condition requiring tertiary care like intensive care units and specialized care were in the nearby referral urban areas of Guntur and Vijayawada.

The following figure shows the instances for which the EMRI 108 services were used and the patients choice of facility for treatment. Almost all of the beneficiaries were treated at private facilities.

Figure 29: Emergency condition for use of EMRI 108 and choice of facility for treatment

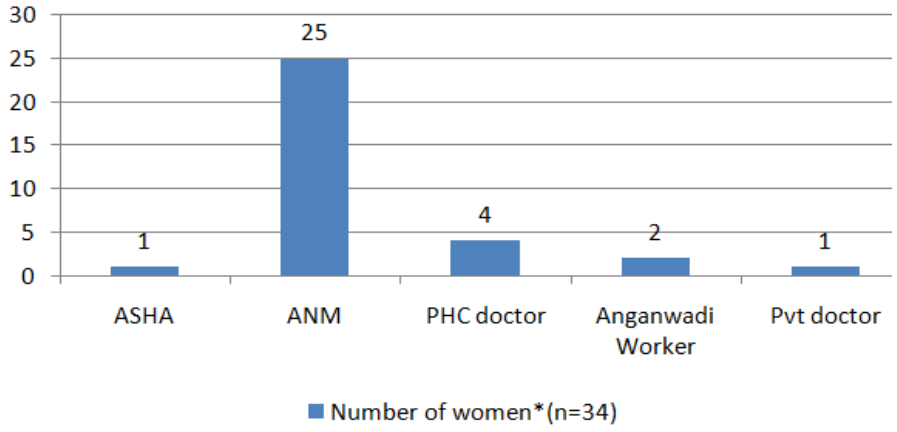


Family planning and maternal services

*To understand about family planning and maternal services , women currently pregnant or had children of 2 years or below 2 years (indicating a post pregnancy status of three years) were surveyed. In total there were 34 women who fell into this category.

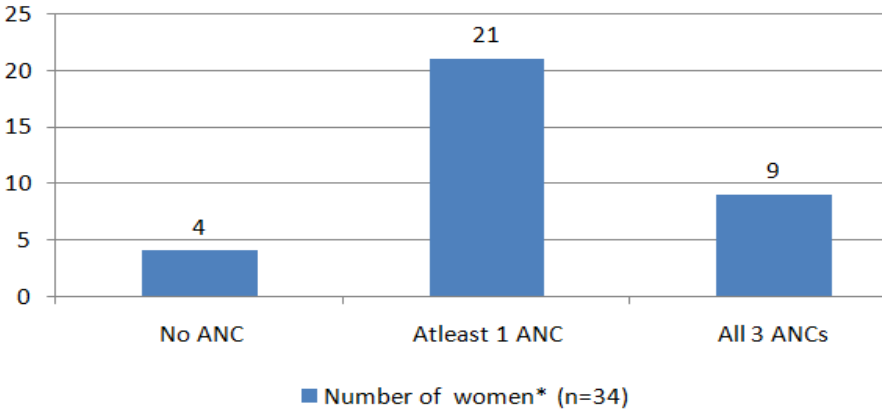
(97%) of women are aware of family planning and a majority (97%) of the women used public facilities or health workers for advice on family planning (Figure 30).

Figure 30: Source of advice on family planning services



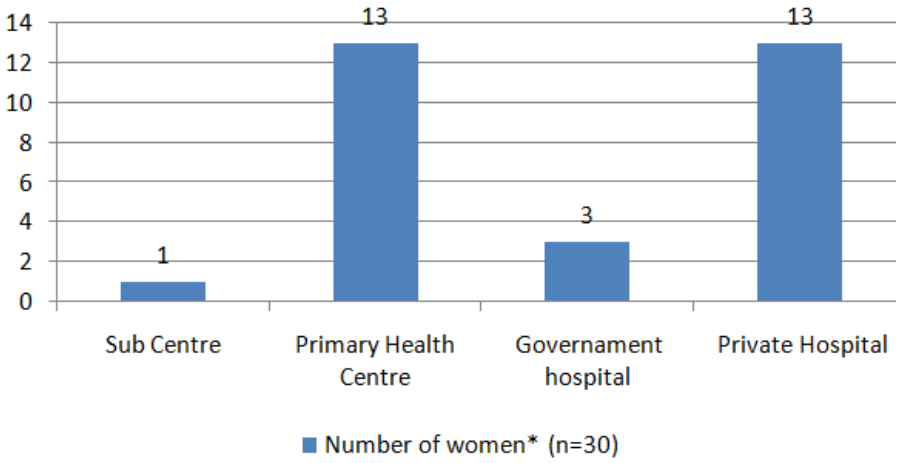
As shown below in (Figure 31) only 30 (88.2%) of the women had antenatal check-ups when they were pregnant. Out of which 9 (30%) had all the three antenatal checkups, the rest, 21 (70%) had only one antenatal check-up (when they went for ultra-sonogram in one of the trimesters).

Figure 31: Women attending Antenatal care



The women preferred using services of a qualified provider for antenatal care like doctors in the PHC or the Government hospital (Chirala, Ongole) or a private provider. Preference for using public facility or private facility was not so strikingly different, though majority of the women 17 (56.6%) used public facilities and 13 (43.3%) used private providers (Figure 32).

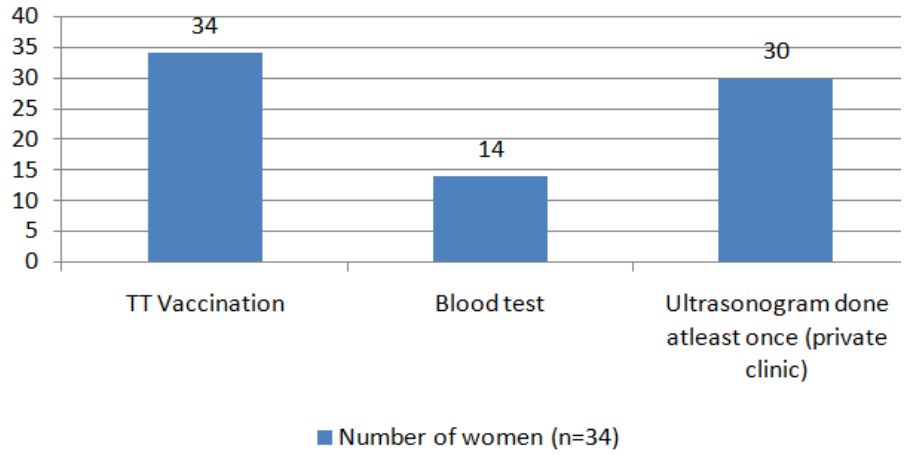
Figure 32: Source of Antenatal care



Public health facilities are known and near to the villages, women prefer to visit them rather going to towns (urban areas). The ANMs, Anganwadi workers, ASHAs are women and members of the same community, making them easily approachable and available for advice/ suggestions all through the day. ASHAs and ANMs also handhold women and register them with public facilities for antenatal care and family planning services and if required accompany them to the facilities. This pattern indicates that when the health personnel is available at all times and communicates well, good quality advice is given and people are ready to accept them and are also satisfied with services provided.

Antenatal care where ever provided was inadequate as blood tests during pregnancy have not been done in majority of cases (figure 33), bringing back our focus to non- availability of laboratory services in public facilities and no knowledge among the people for blood investigations. The reason however is unclear and can be further investigated.

Figure 33: Antenatal care services used when pregnant



All women took TT (Tetanus Toxoid) injections as they are given by the ANM at home. For an ultra-sonogram every pregnant women visited a private facility mainly as such services were not available in the public facilities.

Only 30 (88.2%) women had institutional deliveries; 13 (43.3%) delivered in public facilities and 17 (56.6%) delivered in private facility. Three women had home deliveries and one had been delivered by an RMP at his clinic (Figure 34). Though public facilities served the purpose for antenatal care services, deliveries were conducted at private facilities (Figure 35). This is mainly due to unavailability of the PHC doctor when needed for the deliver as conveyed by the women.

Figure 34: Facilities used for delivery services

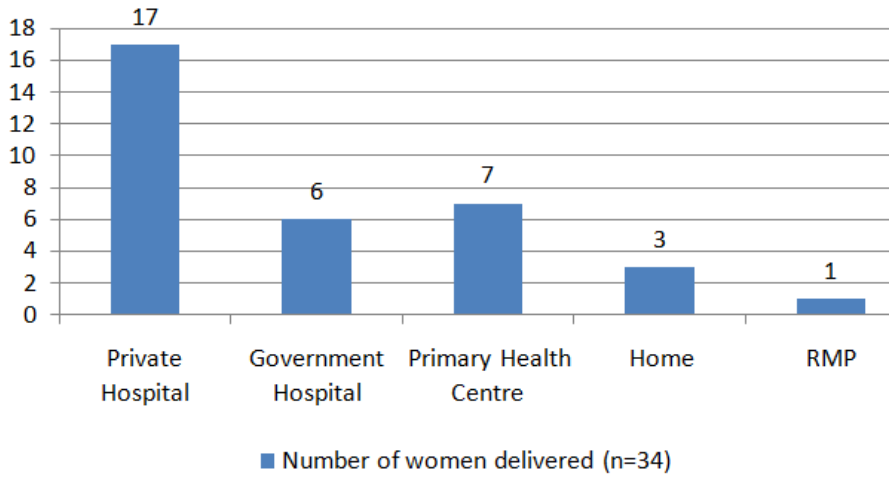
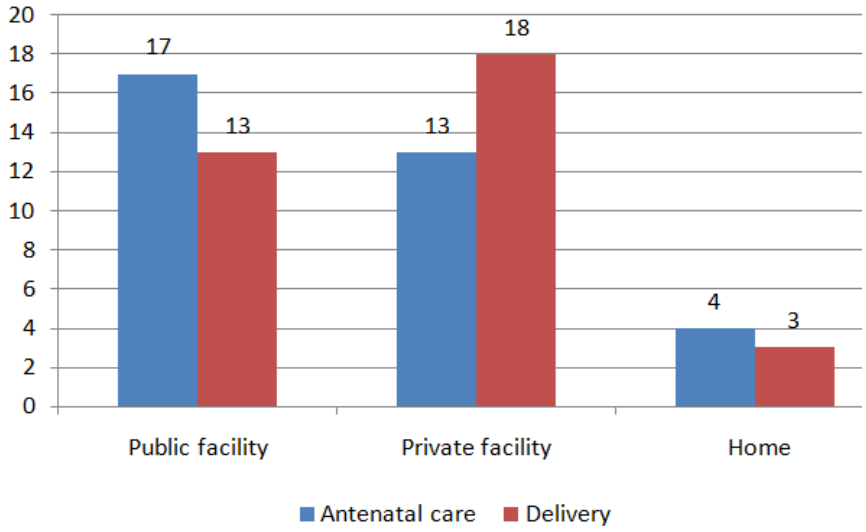


Figure 35: Facilities used for antenatal care and delivery – comparison



Health Needs

Private sector

- The private sector in the region provides only primary and secondary services. There is ***no emergency/ tertiary hospital*** and patients are referred in cases of stroke, cardiac arrest, falciparum malaria, pneumonitis, dengue fever, if they have problems which require mechanical respiratory ventilators, or need continuous life support etc. In such cases doctors ***do not even take the risk to assess*** and stabilize the patient due to instances of being alleged as mistreating the patients by the patient attendants and also the referral centres.
- There is a ***severe shortage of adequately trained paramedical*** staff and nurses. Presently, the doctors themselves are training new graduates according to their hospital's needs as they are not well trained during their education. It is also difficult to retain them in towns longer as they find better opportunities in larger cities.
- ***Bio-medical waste management*** is an issue. The government collects taxes for such waste and regulates the disposal but there is no system to safely dispose the waste. They now bury the biological waste and other material and supplies are burnt, both of which are not safe methods.
- The doctors face challenges in ***adapting newer techniques*** in medical practice as they have minimal access to training. Modern equipment is expensive and the financial support (grants, loans etc.) to purchase it is not easily available.
- Another important challenge is ***lack of adequate information*** on low cost drugs and technological advances like telemedicine - to make services comfortable and cheaper to the patient.
- The hospitals face ***challenges in administration and quality control*** after the advent of Aarogyasri and also other voluntary insurances. They have realized the need to be efficient to achieve their annual profit margins and satisfy patients' needs. They are being introduced to these concepts through continuous medical education programs by the professional bodies but implementation is a challenge as they neither have the time nor the management capacity.

Public sector

Through discussions and interviews with stakeholders from the public health sector, the challenges this sector has to face could be identified. The following section gives an overview of the unmet health needs in the public sector.

- ***Supportive equipment*** is generally lacking in public facilities or not up to the standards. Also day to day issues with the delivery of drugs and the maintenance of the equipment cause problems for the personnel and also the patients.
- ***Understaffing*** is another major issue leading to unavailability of services. The reasons for this problem are diverse. The government is taking a lot of time to fill the posts which are only advertised for during a crisis or media over howl. In addition, doctors are resistant to work in rural areas due to low pay scales, a lower standard of living and the strong administrative hierarchy. Also the fact that the private sector is a more lucrative option needs to be kept in mind. Lacking support staff is an issue leading to bad health outcomes for patients and also to loss of trust in public hospitals. It has also hampered the doctors' morale who find themselves helpless without proper support staff who should make services flow smoother.
- ***Absenteeism*** is also an issue. Majority of the personnel is living in towns due to better standards of living and because of the education of their children. Therefore they are sometimes late for work or cannot go to the facilities every day. Transportation and mobility has become a constraint.
- Personnel working in the field are difficult to monitor and ***lack motivation***. People also do not cooperate well with the management to abide rules as they are sometimes poor and illiterate. In general, there is a big lack of motivation leading to dissatisfaction and problems with working outcomes and accountability.
- Understaffed centers have to be run by the staff already present. Therefore, those who are in the facility are constantly ***over-burdened*** with work and are hence de-motivated.
    - *Salaries:* As hierarchies and promotion are mostly set according to age and influence rather than competencies motivation of the staff decreases. It also leads to dissatisfaction and problems in management, as employees are promoted without having received adequate training. On top of this, salaries in public facilities are much

lower than in private ones, increasing the desire of the staff to work for private institutions.

- The ***need for training*** has not been addressed adequately in the public sector yet. There is a need for continuous training on clinical skills and also due to lack of training in management skills, the hospital head as well as the personnel are unable to communicate well with patients. However, this would be important to clear their doubts and make their hospital stay comfortable and have a satisfactory experience.

- There is a severe lack of knowledge on ***health care planning and management*** among the government and also the personnel working in these hospitals. There are no processes and systems in place and no clear guidelines exist. Systematic planning for services and resources is missing.

  Strong differentiation and categorization of posts in public hospitals is also the cause of many problems. There are too many different posts in the hospitals, creating hierarchies and additional administrative procedures. This also makes the whole institution less accountable. The personnel sometimes do not know the exact responsibilities and hence tries to blame each other when the need in crisis arises. As the posts are restricted to one person each, problems come up in case of absenteeism of this special person, as substitution of the function is not possible.

Community

Various challenges to access health care faced by the community have been discussed during the group discussions and household surveys. This section summarizes the challenges. Emphasis on the following unmet health needs is critical for improving health outcomes.

According to discussions during research, it became clear that social, economic, sanitation of the surroundings, transport facilities, trust in the health care provider and literacy play a very important role in determining the health of people in the target area. These influencing factors determine the design, implementation and success of any health intervention in the region.

- ***Sanitation*** is a major issue for communities. The main problem which is the cause of water contamination and attracting mosquitoes are the open drainages and lack of proper waste disposal mechanisms. People take care of their household sanitation but the village Panchayat or town municipalities do not take adequate care regarding these problems albeit complaints from the households. The open drainages need to be closed and bins for disposal of wastes should be maintained.
- There is an increasing ***burden of high expenditures on health*.** People realize that a large proportion of their household income is spent on primary health care due to accessing the private sector. They have Aarogyasri for high cost treatment but basic care needs should be addressed adequately.
- Also challenges exist with ***accessing public facilities*.**
    - *Basic care*: People face problems with accessing public facilities due to lack of doctors, who either are late, on leave, absent or busy with camps or attending meetings. Therefore, they have to visit the facility 2-3 times to receive a doctor's consultation. Irregular pharmaceutical supplies, no checking of vital signs, lack of minimum laboratory facilities like blood and urine tests, in-cordial behavior of staff, and corruption impede access further. There is a strong request to revitalize government facilities accordingly to enable timely and quality care.
    - *Aarogyasri*: People appreciate Aarogyasri and when asked if they would agree to a similar system for primary care, a majority (76.04%) of them agreed that such a system would be beneficial to them (Figure 36). The main reason expressed was this would give

them cashless access to private clinics and they need not spend a lot to receive primary care in private clinics for consultation, diagnostics and medicines. (25.86%) were willing to pay a premium per month towards the scheme for primary care. But a majority (54.92%) was not willing to pay as the existing Aarogyasri scheme was provided without any such payment (Figure 37). However there is a possibility to explore the option (at least pilots) and understand the willingness to pay a premium or other cost-sharing mechanisms like co-payments, deductibles, minimal user fee (regulated by the authority) etc.

Figure 36: Opinion of the households on Aarogyasri for primary care (n=534)

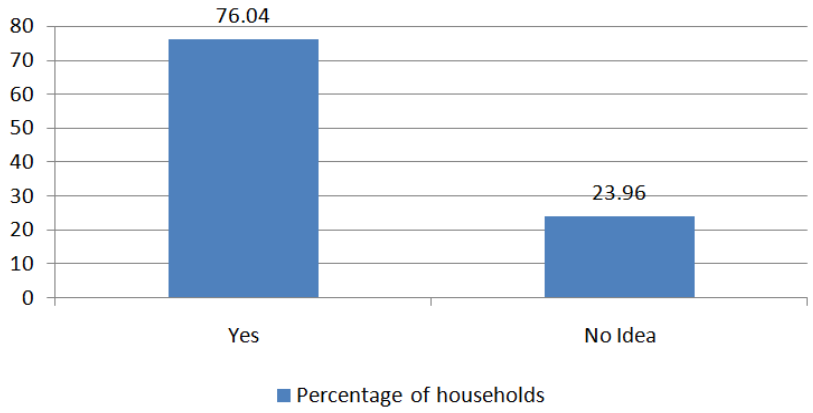
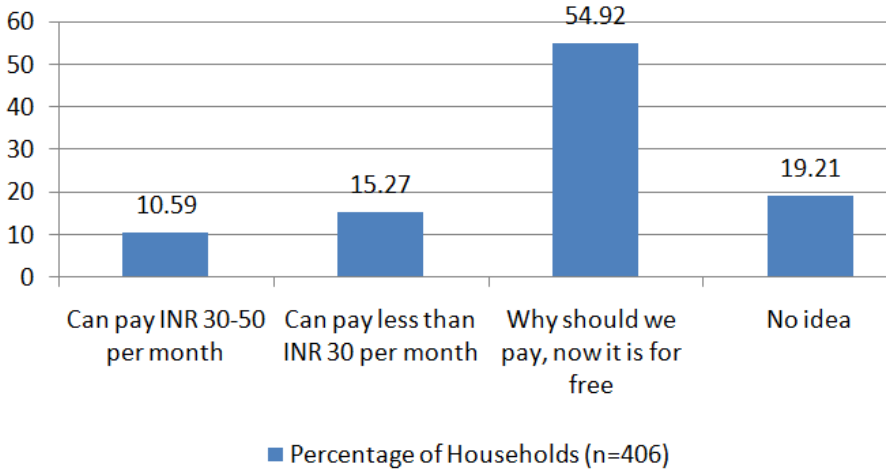


Figure 37: Households willingness to pay for primary care scheme



- *Specialty care*: Public facilities do not have the capacity to provide specialty care. Though care is provided at CEMONC centre Chirala for complicated pregnancies, it depends on the availability of the doctor at that time. There is no provision for neo-natal care. Other

emergency services function neither in Chirala nor in Ongole. Specialist services as cardiology and neurology are unavailable in these facilities, there is only one diabetologist in Ongole hospital, but insulin is not provided in these facilities.

Conclusions

The following conclusions can be drawn from the research:

- Majority of the target area population are poor, low caste and have BPL cards.
- They have access to safe drinking water but sanitation in the villages and towns is a major problem leading to water contamination causing diarrheal disease, and other diseases like hepatitis and typhoid. Open drainages and pooled water after rains act as breeding places of mosquitoes causing malaria and dengue.
- Preventable disease burden still remains high with malaria, fevers and respiratory tract diseases common in the area. Non communicable diseases are present, joint pains and cataract in elderly is common.
- The population is aware and has knowledge on transmission and treatment of malaria, diarrheal diseases, HIV/AIDS, TB etc. Awareness and knowledge on non-communicable disease like diabetes, hypertension and communicable disease like dengue is poor. People also recognize that private providers over-prescribe diagnostics and medicines.
- Health facilities in the region are well distributed. Private facilities are concentrated in towns but they are within accessible distance. 1-2 RMPs or informal health care providers are present in almost every village and town. Almost 334 cases (80.8%) of the people who fell ill underwent treatment at a private facility. Public facility was a choice for fever (27.7%) and malaria in (15.2%). Another important inference is (90%) of the TB patients were undergoing treatment from a private provider though the government has a provision of free treatment with DOTS for TB.
- Only primary and secondary care facilities are available in the region. For emergency and specialist care needing intensive care unit therapies, Guntur and Vijayawada about one and two hour's distance respectively are major destinations.
- The health expenditures for primary and secondary care (Non-Aarogyasri covered treatments) are very high occupying around a third of the annual household expenditures, though people (BPL families) have access to in-patient care on specified diseases through Aarogyasri.
- Majority of population prefer RMPs (informal health care providers) as their first choice for medical consultation when they are ill (% …..). In cases requiring qualified providers, people prefer

to get treated in private facilities (50%) or public facilities (48.3%). During the last one year a majority attended private facilities (for curative services, treatments under Aarogyasri, use of EMRI 108 services etc). Also majority of women underwent antenatal care in public facilities but for delivery they attended private facilities. The preference for private facility for curative services is due to people's perception that for such services and especially emergencies public facilities cannot be relied upon as the service may not be rendered due to unavailability of personnel, personnel's lack of skill, inadequate equipment or drugs etc.

- Though there is not a huge difference, majority of deliveries occur in a private facility. The shift in women attending private facilities though they had ANCs in public facilities shows the (dis?)functionality of the public facilities in case of unplanned events.
- EMRI 108 emergency services are highly appreciated. HMRI 104 mobile clinics and medical advice services were serving their purpose and were helpful in raising awareness on chronic diseases, regular monitoring in case of maternal services, hypertension, diabetes, counseling on personal and sexual problems but recently there has been irregularity and discontinuity of mobile services in the area. ANMs and ASHAs are the main source of family planning methods and counselling for antenatal care, institutional deliveries whereas Anganwadi workers inform women on safe maternal, child and nutritional practices. Women attend antenatal care (ANC) in public facilities except for ultra-sonograms (done in private clinics).
- The public sector has good physical infrastructure but falls short on qualified staff, particularly at primary-level facilities, especially doctors and laboratory personnel. Further lack of functional equipment and in-cordial behaviour of support and paramedical staff makes the system unable to function with full capacity and inaccessible to population when they need it. The inadequacy to function with full capacity of the public system can also be attributed to a deficiency of skills in management and planning of public health and lack of managerial expertise at the district level.
- The private sector has poorer physical infrastructure and shortage in paramedical staff but has skilled doctors and trained staff, good laboratory facilities, and it is open 24 hours. Personnel behave cordially with patients and communicate well. Facilities charge discounted prices for returning patients and the poor.
- Health facilities need improvement in terms of cleanliness, maintaining hygienic conditions, sterilization, biomedical waste management, total quality control, access to low cost

technologies, improving personnel skills etc. It is an unregulated environment, where neither the private sector nor the public sector can assure people quality of care.

Recommendations

Recommendations for improving access to healthcare and health status of population of the target area –

1. Communicable diseases such as malaria, dengue and respiratory diseases are still a major problem. It can be judged that sanitation is a concern and it needs to be addressed. Relevant authorities (municipalities, Panchayatraj institutions, concerned vertical program authorities) need to work cohesively to achieve a plan for intervention. Further research and discussions within the authorities organizing the sanitation work can exactly delineate the reasons and inform the responsible authorities about the gaps that need to be addressed earliest.

2. Creating awareness and avenues for early diagnosis and treatment for non-communicable diseases like hypertension, diabetes, cancer, alcoholism is necessary.

   Increased focus on these diseases in the public health system is necessary. Programs targeting specific diseases are not efficient as they need more comprehensive, cohesively planned interventions involving health authorities (various departments) and communities to bring change in delivery of such services with emphasis on targeting the individual's behavior.

   The health workers can be trained to provide awareness and health facilities can be strengthened cater to needs of non-communicable diseases. Having the right laboratory equipment, drugs and trained personnel to manage such diseases at PHC level can be introduced. hools can create awareness among children and provide screening services for early diagnosis.

3. Skilled nursing and paramedical personnel

   Both the public and private sectors have problems in leveraging personnel with necessary skills to provide nursing and paramedical services. The main reasons for this issue are lacking training centres in towns and better job opportunities for the skilled personnel in cities due to a huge market demand. The issue needs to be explored further and necessary steps need to be taken in order to improve the availability of skilled nurses and paramedics, which is an inevitable step towards ensuring quality care.

4. Ensuring quality health care

   The present situation calls for interventions to ensure provision of quality services – both in terms of providers, laboratory services, drugs and behavioral change strategies which lead to improved health outcomes of the population.

   Setting up an independent regulatory body to oversee the quality of care in both public and private sector which monitors quality regularly and responds to the negative events immediately is required. The regulatory body should function to set standards of care, accredit the facilities and inform the people about the best valued health outcome for their money.

   A way could be to follow the Aarogyasri Trust example. Aarogyasri Trust fulfills some of the characteristics of a regulatory body for catastrophic care though there is no clear distinction between the purchaser and the regulatory body (no evaluation of its quality monitoring mechanism has been done as of now).

   A mechanism could be adopted to separate the purchaser and service provider especially for improving the quality and efficiency in the public system and maybe include the private sector under such an umbrella through various partnership initiatives (MOUs, PPPs etc). 

   When the population in the target area was enquired if they would be open to adopting a system for primary care similar to Aarogyasri, accepted the proposal. 

5. Decreasing the high expenditures for health care for primary and secondary care

   The best possible way is to understand the public system's existing capacities and build on the available structures to improve efficiency and target for the best outcomes. This is the most relevant, efficient, low cost and valuable strategy. 

   People are willing to use the public system if the necessary facilities for provision of care are present. Their aspirations could be garnered to strengthen the public system and make it efficient to provide care as per the needs of the population.

   The main reasons for the current under-utilization of public facilities in the target area are

   - Understaffing of facilities leading to over-burdening of some personnel,
   - Absenteeism of employees,

- Personnel spending low time at the facility (an average of two to three hours a day),
- Some personnel accepting informal payments,
- Doctors having private practices,
- Coupled with all of the above, lack of functioning equipment, upgraded training and skills, low salaries leaving the personnel helpless and de-motivated.

The issues above arise from systemic deficiencies of the health system which makes it an unattractive working atmosphere. Strategies according to Hicks and Adams (2001)[8] should focus on creating a system-wide change with the aim of having satisfied health workers who are motivated to work harder in order to improve quality of care and optimize the available resources. Aligning health workers and system objectives can be difficult.

Following are some strategies to achieve significant results -

a. Creating a complete working atmosphere - availability of all the allotted personnel and equipment will reduce majority of inconsistencies in the facilities in the target region. This is the most efficient immediate next step for the facilities in the target area. Once everything is in place and still there are no intended outputs and outcomes (highly unlikely but cannot be ruled out), according complementary interventions can be introduced.

b. Another problem that needs to be addressed is the current staffing norms for the health workers (support staff especially). The norms are too specific giving no space for personnel to be used for other job capacities. Such specificities are well suited for vertical programs and field work but at the facility level, when there is inadequate staff, such specificities deter from maximizing personnel capabilities (e.g. there are no laboratory technicians in most of the facilities making them unable to provide such services, while the ANMs/ nurses can be used to conduct basic investigations if they were trained). There needs to be emphasis on reorganizing the staffing structure in health facilities requiring careful analysis of affordability of salaries, skills needed, and the way to provide those skills most efficiently.

c. Recruitment and retention of health workers can be tackled by

   - Continuous government personnel recruitment policy for all public health facilities.

[8] Hicks, C., and O.Adams. 2001."Pay and Non-pay Incentives, Performance, and Motivation." Paper prepared for the World Health Organization's December 2001 Global Health Workforce Strategy Group, World Health Organization, Geneva.

- An optimal mix of financial and nonfinancial incentives can generate the desired behavior of health workers. Only financial incentives at this point of time may increase outputs but as skills and quality of care are poor among the workers, they need to be paired with pay for quality, and improving skills through training, targeting good health outcomes for people. A combination of incentives, including better salaries, appropriate rental (for sub-centers and Aganwadi centers), field and transportation allowances, streamlined management, specialized training, better health facilities and availability of drugs, supplies and required hospital resources can give anticipated results.

  Continuous training and skill improvement is the best positive incentive to retain health personnel anchoring them to the organization. This also improves competency and confidence of the personnel leading to improved quality of care.

Alternative financing mechanisms for improving public facilities

Public private partnerships

Public private partnerships at primary health centre and urban health centre level have shown good results in increasing output of health facilities in many places in the state. In the target area, the urban health centers were well run. The performance depended on the contracting NGO and it seemed they performed better than the PHC's. The PPP in primary centre level in Adilabad and Anantapur districts are new and cannot be judged at this stage but similar partnerships in other states (Orissa, Karnataka) have fared well.

It is important to emphasize that all such partnerships are related to the functioning of both public and private parties and inadequate regulation by the public authority can always lead to inadequate outputs and outcomes. The transaction cost associated with contracting and monitoring of each PHC/ UHC facility to separate organizations is high. Alternatives like contracting a cluster - a CHC, PHC's and Sub-centres under it can be attempted.

Payment mechanisms, organization and governance issues in such partnerships have to receive special attention. There should be clear guidelines to balance staffing and requirements in the region. According

to Kyaddondo and White (2003)[9] decentralization might create the autonomy needed for effective management of these problems, but without transparent management, career structures and job security, existing providers or the ones being hired might see such a change as a threat. Examples from Cambodia and Thailand show that such autonomy can give good results when done within the above mentioned confines.

Capitated provider payment mechanism

Alternate provider payment mechanisms for primary care can be piloted to understand the behavior of providers, their outputs and outcomes in the target area, Andhra Pradesh. There are successful payment mechanisms for primary care models where competencies of public and private providers can be optimized and their quality of care provision can be regulated. Thailand, Estonia and Brazil have been successful in implementing such models where the health authority (Government) instead of being a provider of services, enters into contractual agreements with providers, both private and public. The authority pays a specified monthly or annual fund to provide a package of pre-determined/ defined primary care services to a specified population. This method of provider payment is called 'capitation'.

Defined as per capita (or capitation) payment systems, the provider is paid, in advance, a predetermined fixed rate to provide a defined set of services for each individual enrolled with the provider for a fixed period[10].

Characteristics of a capitation system

- The provider has the incentive to increase output or attract more patients to enroll, which increases its total payment received. (*This would increase awareness of the existing facilities for treatments among the population and they will now have access to primary care when ever needed.*)
- It may attract these enrollees through improved quality of care, additional services that are not typically covered or other measures that patients may perceive as increasing the benefit of enrolling with that provider rather than with another provider (which is increasing competition between the providers to offer the best satisfactory care).

[9] Kyaddondo, D., and S. R. White. 2003. "Working in a Decentralized System: A Threat to Health Workers' Respect and Survival in Uganda." *International Journal of Health Planning and Management* 18 (4): 329–42.
[10] 'Designing and Implementing Health Care Provider Payment Systems' edited by John C. Langenbrunner, Cheryl Cashin, Sheila O'Dougherty

- Because the provider does not receive additional payments for these service enhancements, it is at risk for all inputs, and therefore has an incentive to reduce the inputs used per individual covered (increasing quality and providing appropriate care). It may do so by improving the input-mix to reduce expenditures in order to provide the same level of services and quality, by shifting services to less costly health promotion and prevention activities to keep enrolled individuals well and to reduce their need for more expensive curative services.
- There is also a risk of reducing the quality of care or under-provision of needed services. It may also reduce inputs and expenditures by taking measures that attract healthier individuals for enrollment (known as risk selection or "cherry picking").
- *All such risks can be monitored by regulating the providers and compensating providers for variations in predictable health needs across different population groups, such as age and sex groups.*

Annex

Performance of health facilities in Prakasam

Sampled population according to literacy status

Performance of health facilities in Prakasam

Health Facility available in Prakasam district	Prakasam
Number of Sub Centres	536
Number of PHCs	78
CHC (30 beds)	8
CHC (50 beds)	3
Area Hospital (100 beds)	3
District Hospital (200-300 beds)	1
District Hospital (300-400 beds)	-

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Availability of services in **district** hospitals	Prakasam
Specialist services	
General Medicine	100.0
Nephrology	-
Cardiology	-
Pulmonary Medicine	-
General Surgery	100.0
Urology	-
Plastic Surgery	-
Obstetrics & Gynaecology	-
Paediatrics including Neonatology	-
Emergency (Accident & other emergency) (Casualty)	100.0
Critical Care (ICU)	100.0
Anaesthesia	100.0
Ophthalmology	100.0
ENT	100.0
Dermatology and Venerology (Skin & VD) RTI / STI	100.0
Orthopaedics	100.0
Radiology	100.0
Dental Care	100.0
Public Health Management	-
Support services available	
Medico-legal/Postmortem	100.0
Ambulance Services	100.0
Dietary Services	100.0
Laundry Services	100.0
Security Services	100.0
Counselling services for domestic violence, gender violence, adolescents etc.	-
Waste management	100.0
Ware housing/ central store	100.0
Maintenance and repair	-
Electric supply	100.0
Water supply (plumbing)	100.0
Heating, Ventilation and air-conditioning	-

Transport	-
Communication	100.0
Medical Social Work	-
Nursing Services	100.0
Sterilization and Disinfection	100.0
Horticulture (landscaping)	-
Lift and Vertical transport	-
Refrigeration	100.0
Para-clinical services	
Laboratory services	100.0
X-Ray facility	100.0
CT Scan services	100.0
Sonography (Ultrasound)	100.0
ECG	100.0
EEG	-
Echocardiogram	-
Pathology	-
Blood Bank	100.0
Physiotherapy	100.0
Dental Technology	-
Drugs and Pharmacy	100.0
Personnel – Clinical Manpower	
Hospital Superintendent	1
Medical Specialist	1
Surgery Specialist	2
O & G Specialist	-
Paediatrician	-
Anaesthetist (Regular/ trained)	1
ENT Surgeon	1
Ophtalmologist	1
Orthopedician	1
Casualty Doctors / General Duty Doctors	4
Dental Surgeon	2
Public Health Manger	-
AYUSH Physician	-
Personnel – Para-medical Manpower	
Staff Nurse	36
Hospital Worker (OP ward + OT + blood bank)	18
Sanitary Worker	16
Ophthalmic Assistant / Refractionist	2
Social Worker / Counsellor	-
Cytotechnician	-
ECG Technician	1
ECHO Technician	-
Audiometrician	-
Laboratory Technician (Lab + Blood Bank)	7
Laboratory Attendant (Hospital Worker)	2
Dietician	-

PFT Technician	-
Maternity Assistant (ANM)	-
Radiographer	3
Dark Room Assistant	2
Pharmacist	9
Matron	-
Physiotherapist	1
Statistical Assistant	1
Medical Records officer	-
Electrician	1
Plumber	1
Essential Infrastructure	
Number of hospitals	1
Blood Bank	100.0
Separate ward for male/ female	100.0
Critical Care Area	100.0
Fully Equipped OT	100.0
Delivery Suite Near OT	-
Medical Equipment	
Number of hospitals	1
Instrument Sterilizer (Small)	-
Phototherapy Unit	-
Ventilators (Adult)	100.0
Ventilators (Paediatrics)	-
Oxygen Cylinder	100.0
Suction Apparatus (MTP)	-
Quality Control Mechanisms	
Number of hospitals	1
Citizen's charter	100.0
Constitution of Rogi Kalyan Samiti	100.0
Internal monitoring by PRI/RKS	-
External monitoring (outsiders)	-
Monitoring of Laboratory	-
Record Maintenance	-

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Availability of services in **area** hospitals	Prakasam
Specialist services	
Number of hospitals	3
General Medicine	100.0
Surgery	100.0
OBG	100.0
Paediatrics	66.7
Anaesthesiology	33.3
Orthopaedics	-

Radiologist & Ultrasonologist	33.3
Ophthalmology	66.7
Community Health	66.7
Dermatology	33.3
Dental Care	100.0
Support Services	
Number of hospitals	3
Finance	100.0
Medico legal/ post-mortem	100.0
Ambulance Services	100.0
Dietary Services	100.0
Laundry Services	100.0
Security Services	100.0
Housekeeping and Sanitation	100.0
Inventory Management	33.3
Waste Management	100.0
Office Management	-
Counselling Services for Domestic Violence, Gender Violence	33.3
Diagnostic and para-clinical services	
Number of hospitals	3
Laboratory	100.0
X-Ray	100.0
Ultrsound	33.3
ECG	100.0
Blood Transfusion and Storage	33.3
Physiotherapy	-
Availability of Doctors	
Number of hospitals	3
Hospital Superintendent	3
Medical Specialist	-
Surgery Specialist	3
O & G Specialist	6
Paediatrician	2
Anaesthetist	2
Ophtalmologist	5
Orthopedician	-
Casualty Doctors / General Duty Doctors	8
Dental Surgeon	3
ENT Surgeon	1
AYUSH Physician	4
Para-medical Manpower	
Number of hospitals	3
Staff Nurse	47
Attendant	15
Ophthalmic Assistant/ Refractionist	3
ECG Technician	1
Audiometry Technician	-

Laboratory Technician (Lab+ Blood Storage Unit)	4
Laboratory Attendant (Hospital Worker)	1
Radiographer	3
Pharmacist	8
Matron	3
Physiotherapist	-
Statistical Assistant	-
Medical Records Officer/ Technician	-
Electrician	3
Plumber	1
Infrastructural facilities	
Number of hospitals	3
Water Facility piped	33.3
Water Facility bore well	33.3
Overhead tank & pump exist	100.0
Electricity in all parts	100.0
Generator	100.0
Telephone	100.0
Laboratory	100.0
Operation Theatre	76.9
Separate Asepticlabour room	100.0

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Equipment, furniture and support services in **area** hospitals	Cherala	Markapuram	Kandukur
Imaging Equipment	50.0	30.0	30.0
X-Ray Room Accessories	100.0	85.7	71.4
Cardiac Equipment	61.5	61.5	38.5
Labour ward & Neonatal Equipment	83.3	50.0	55.6
Ear Nose Throat Equipment	47.1	0.0	0.0
Eye Equipment	85.7	71.4	0.0
Dental Equipment	80.0	80.0	60.0
Operation Theatre Equipment	60.0	64.0	56.0
Laboratory Equipment	73.3	46.7	46.7
Surgical Equipment Sets	55.3	31.9	29.8
Physiotherapy Equipment	0.0	0.0	0.0
Endoscopy Equipment	0.0	0.0	0.0
Anaesthesia Equipment	66.7	40.0	26.7
Furniture & Hospital Accessories	70.9	59.5	53.2
PM Equipment	88.9	77.8	11.1
Linen	66.7	37.5	41.7
Teaching Equipment	44.4	0.0	33.3
Administration	30.0	20.0	10.0
Refrigeration & AC	71.4	57.1	42.9
Hospital Plants	37.5	25.0	25.0
Hospital Fittings & Necessities	50.0	65.0	20.0
Transport	30.0	10.0	20.0

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Availability of services in **specialized** hospitals	Prakasam
Place of Hospital	Ongole
Type of hospital	MCH
Number of beds	50 beds
Specialist Services Available	
General Medicine	-
General Surgery	-
Obstetric & Gynaecology	100.0
Paediatrics	100.0
Anaesthesia	-
Diagnostic Services	
Laboratory	100.0
X-Ray	-
Ultrasound	-
ECG	-
Support Services	
Medico legal / postmortem	100.0
Ambulance Services	100.0
Waste Management	100.0
Fully Equipped Blood Bank	-
Critical Care Area	-
Fully Equipped Operation Theatre	100.0
Fully Equipped Delivery Suit Unit	100.0
Water Supply (1-pipped, 2-bore well, 3 others)	1
Waste Disposal System	100.0
Man Power	
Hospital Superintendent	1
Medical Specialist	-
Surgery Specialist	-
O & G Specialist	9
Paediatrician	-
Anaesthetist	2
Casualty Doctors	2
Staff Nurse	17
Laboratory Technician	2
Pharmacist	3

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Availability of services in **CHCs (30 beds)**	Prakasam
Specialist services	
Number of CHCs	4
Medicine	100.0
Surgery	75.0
Obs & Gynaec	100.0
Pediatrics	25.0
Specific services	
Number of CHCs	4
Emergency services (24 hrs)	100.0
Delivery services (24 hrs)	100.0
New born care	25.0
Family planning	25.0
Safe abortion	25.0
RTI/STI treatment	100.0
Para-clinical services	
Number of CHCs	4
X-Ray	75.0
Ultrasound	-
Laboratory	100.0
Referral Transport	100.0
Available reagents glassware	87.6
Doctors	
Number of CHCs	4
General surgeon	-
Physician	-
Obs/Gynaec	1
Pediatrician	-
Anesthetist	1
Eye surgeon	1
GDMO	4
Nursing and para-medical staff	
Number of CHCs	4
ANM	9
Staff nurse	23
Pharmacist/ compounder	4
Lab. Technician	4
Radiographer	2
Ophthalmic assistant	-
Essential infrastructure	
Number of CHCs	4
Emergency/ causality room	50.0
Separate ward for male & female cases	100.0
Operation theatre	100.0

Labour room	100.0
Blood storage facility	0.0
Basic amenities & ancillary facilities	
Number of CHCs	4
Incinerator	0.0
Electricity	100.0
Generator	75.0
Telephone	50.0
Vehicle	50.0
Essential furniture	
Number of CHCs	4
Examination table	9
Delivery table	7
Saline stand	34
Stretcher on Trolley	5
Iron bed	102
Almirah	30
Medical equipment and kits	
Standard surgical set - I Instruments FRU	57.1
Standard surgical set - II	17.4
IUD insertion kit	27.6
CHC surgical standard set – III	26.5
Normal delivery kit	81.3
Standard surgical set – IV	7.8
Standard surgical set – V	3.6
Standard surgical set – VI	11.4
Equipment for Anesthesia	33.8
Equipment for neo-natal resuscitation	41.0
Material kit for blood transfusion	46.7
Equipment for operation theatre	61.5
Equipment for labour room	61.7
Equipment for radiology	44.4
Equipment for laboratory tests and blood transfusion	82.1

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

More than 80% of CHCs have separate male and female wards available in Prakasam. However, they have no blood storage facility. Standard surgical kit (50 percent of 32 different items) recommended for the First Referral Unit (FRU) was available in the centres of Prakasam. The availability of specialist doctors is poor in Prakasam.

Availability of services in **CHCs (50 beds)**	Prakasam
Specialist services	
Number of CHCs	3
General medicine	66.7
Surgery	33.3
OBG	100.0
Pediatrics	100.0
Anesthesia	66.7
Orthopedics	-
Radiologist and Ultrasonologist	-
Ophthalmology	-
Community Health	-
Dermatology	-
Dental Care	66.7
Doctors	
Number of CHCs	3
Hospital superintendent	1
Medical	-
Surgery	-
O&G	7
Dermatologist/ Venereologist	-
Pediatrician	4
Anesthetist	1
Opthalmologist	-
Orthopedician	-
Radiologist	-
Casualty Doctors/ General Duty Doctors	2
Dental Surgeon	2
Forensic Specialist	-
ENT	-
AYUSH Physician	-
Para-medical staff	
Number of CHCs	3
Staff nurse	18
Hospital worker (OP/ward+OT+blood bank)	4
Sanitary worker	21
Ophthalmic assistant/ Refractionist	-
ECG technician	1
Laboratory technician (Lab + blood storage unit)	6
Laboratory attendant (hospital worker)	-
Radiographer	2
Pharmacist	4
Matron	1
Physiotherapist	-
Statistical assistant	-
Medical Records Officer / Technician	-
Electrician	3

Plumber	-
Infrastructure and Facilities	
Number of CHCs	3
Water facility piped	66.7
Water facility bore well	33.3
Overhead tank and pump exist	100.0
Electricity in all parts	100.0
Generator	100.0
Telephone	100.0
Vehicle	33.3
Laboratory	100.0
Operation theatre	100.0
Separate Aseptic labour room	100.0
Linkage with district blood bank	33.3
Operation theatre equipment	
Number of CHCs	3
Autoclave HP vertical (2 bin)	100.0
Operation table hydraulic major	100.0
Operation table hydraulic minor	66.7
Shadow-less lamp ceiling type major	100.0
Sterilizer big (instrument)	66.7
Bowl sterilizer – big	66.7
Section apparatus (electrical)	100.0
Ultraviolet lamp Philips model	-
Surgical equipment sets	
Number of CHCs	3
P.S. set	-
MTP set	100.0
Biopsy cervical set	33.3
D & C set	66.7
I.U.C.D. kit	-
Furniture and hospital accessories	
Number of CHCs	3
Hospital Cots (ISI model)	33.3
Medicine – Almairah	100.0
ICCU	-
Stretcher/Patience Trolley (SS)	100.0
Delivery table (SS Full)	100.0
O2 Cylinder Trolley (SS)	100.0
Saline Stand (SS)	100.0

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Equipment & support services in **CHCs (50 beds)**	Kanigiri	Giddalur	Ongole
Imaging Equipment	65.0	65.0	-
X-Ray Room Accessories	80.0	100.0	-
Cardiac Equipment	57.0	70.0	-
Labour ward & neonatal equipment	65.0	60.0	60.0
Eye equipment	-	-	-
Dental equipment	100.0	100.0	-
Operation theatre equipment	70.0	65.0	60.0
Laboratory equipment	40.0	50.0	55.0
Surgical equipment sets	-	-	25.0
Physiotherapy equipment	-	-	-
Endoscopy equipment	-	-	-
Anesthesia equipment	75.0	75.0	-
PM equipment	65.0	75.0	-
Teaching equipment	-	-	-
Refrigeration & AC	50.0	65.0	30.0
Hospital Plants	100.0	50.0	100.0

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Availability of services in **PHCs**	Prakasam
Infrastructure	
Number of PHCs	78
Own building	84.6
Toilet facility	47.4
Tap water piped	31.3
Electricity available in all parts	92.3
Labour room	82.1
Laboratory	87.2
Telephone	62.8
Vehicle functional	15.4
PHCs with at least one bed	97.4
Segregation of hospital waste	88.5
Manpower	
Medical officer	115
Pharmacist	63
Nurse Midwife	115
Health worker female	77
Health assistant	91
Clerks	61
Lab Technician	57
Driver	16
Ophthalmic assistant	18
Location-specific availability of PHCs	
Number of PHCs	78
Within village boundary	79.5

Village outskirts	17.9
Far from village	2.6
Total	100.0
Distance ranges from the farthest village to PHCs	
Number of PHCs	78
Up to 10 Kms	15.4
11-20 Kms	35.9
21-30 Kms	26.9
>30 Kms	21.8
Total	100.0
Distance ranges from the PHCs to the respective CHC/D.H.	
Number of PHCs	78
Up to 10 Kms	10.3
11-20 Kms	42.3
21-30 Kms	28.2
>30 Kms	19.2
Total	100.0
Assured services	
Number of PHCs	78
OPD services	97.4
In-patient services	25.6
Emergency services	46.2
Transport/ referral services	73.1
MCH services	
Number of PHCs	78
Antenatal care	97.4
24 Hour delivery service	69.2
Post-natal care	94.9
New-born care	82.1
Immunization	100.0
Family planning	75.6
MTP	17.9
Specific services	
24 Hour delivery facility	69.2
Availability of DPL facility	25.6
Availability of NSV facility	30.8
Treatment of gynaecological disorders availability	80.8
Management of LBW babies	21.8
Essential laboratory services	
Routine urine test	84.6
Stool test	14.1
Blood test	76.9
Blood grouping	20.5
Diagnosis of RTI/STDs with mounting, grams stain etc.	7.7
Sputum test for TB	32.1

Blood smear exam for malaria	84.6
RPR test for syphilis	3.8
Rapid test for HIV	25.6
Operational labour room equipment	
Labour table	92.3
Suction machine	35.9
Sterilization equipment	85.9
24 Hour running water	74.4
Electricity backup facility	79.5
Attached toilet facility	74.4
Emergency drug tray with all seven drugs	51.3
Critical inputs and facilities	
Number of PHCs	78
Infrastructure (% of PHC having at least 60%)	78.2
Staff (% of PHC having at least 60%)	48.7
Supply (% of PHC having at least 60%)	79.5
Equipment (% of PHC having at least 60%)	59.0
Average weekly OP	352

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

In any health facility continuous supply of water is one of the crucial requirements. Low percentages of piped water supply were recorded in Prakasam (31 percent). Prakasam has a lower percentage (90-92%) of electric facilities in PHCs. The availability of newborn care equipments in working condition was noted in Prakasam (44 percent), as compared to less than 10 percent of availability in majority of the districts.

Availability of services in **Sub-centres**	Prakasam
Distance ranges from farthest village to SCs	
Number of SCs	536
< 3 Kms distance	31.9
4-7 Kms distance	38.6
8-10 Kms distance	15.9
11 & above Kms distance	13.6
All	100.0
Distance ranges from SCs to PHCs	
Number of SCs	536
< 5 Kms (distance form SC to PHC)	26.8
6-10 Kms (distance form SC to PHC)	26.4
11-20 Kms (distance form SC to PHC)	31.7
21-30 Kms (distance form SC to PHC)	8.4
31+ Kms (distance form SC to PHC)	6.7
All	100.0
Distance ranges from SCs to CHC/DH	
Number of SCs	536
< 8 Kms (distance from SC to CHC/DH)	22.7

9-15 Kms (distance from SC to CHC/DH)	19.2
16-20 Kms (distance from SC to CHC/DH)	43.5
21+ Kms (distance from SC to CHC/DH)	14.6
All	100.0
Time taken to travel from farthest village to SCs	
Number of SCs	536
< 15 Minutes	65.2
16-30 Minutes	28.7
31-45 Minutes	2.2
45+ Minutes	3.9
All	100.0
Availability of SCs building status	
Number of SCs	536
Government building	9.9
Rented building (SC functioning form)	92.1
Other Govt. building (SC functioning form)	3.9
AWWs (SC functioning form)	4.0
Total	100.0
Physical infrastructure facilities in SCs	
Number of SCs	536
Condition of building (good)	56.2
Fencing around SC (complete)	34.9
Condition of wall (wall plastering)	75.0
Condition of ground (good)	82.8
Cleanliness at SC (good)	81.2
Display boards in Telugu	87.5
Complaint/ suggestion box	12.9
Amenities at SCs	
Number of SCs	536
Functioning from Government building	9.9
Water supply (tap)	67.9
Water supply (others)	32.1
Electricity	11.0
Toilet	2.2
Display board in local language	87.5
Population coverage of SCs	
Number of SCs	536
Below 3000 (Population covered by SCs)	1.5
3001-5000 (Population covered by SCs)	44.6
5001-7000 (Population covered by SCs)	47.3
7001+ (Population covered by SCs)	6.6
All	100.0
MCH Care and Family Planning services	
Antenatal	100.0
Natal Care	96.8

Postnatal care	99.8
Child immunization and diseases	100.0
FP	100.0
Adolescent health services	100.0
School health care services	100.0
First aid	98.3
Treatment for minor ailments	100.0
Antenatal care services	
TT injection	99.8
IFA tablets	99.8
Weight measurement	95.7
Height measurement	96.3
Blood pressure examination	72.4
Availability of malaria examination facility	96.3
Manpower	
One ANM	39.0
Two ANM	58.4
MPHW male	46.6
Voluntary worker	11.4
Equipment	
Number of SCs	536
Regent strips for urine	33.4
Scale, infant (metric)	6.9
Vaccine carrier	97.4
Ice pack box	84.1
Thermometer oral/ rectal	69.8
Foetoscope	49.6
Scale-weighing (baby) hanging type	14.9
Uristix	32.8
Stethoscope	55.8
Micro-glass slides for malaria	89.0
Essential furniture	
Number of SCs	536
Examination table/cot	33.4
Armless chairs	23.5
Labour table	6.9
Green cloth-screen	32.1
Stool	42.7
Almirahs	22.4
Torch light/ lamp	12.9
Needle-cutter	98.5
Water-filter	11.0
Meckintosh rubber-sheet	12.5
Talquist HB scale	26.3
Drugs	
Number of SCs	536

Drug Kit – A any 3	93.1
Drug Kit – B any 5	74.3
Tab chloroquine	98.5
Tab primaquine	40.5
Tab DEC	59.1
MDT	38.4
Rapid diagnostic kit for malaria	37.3
RNTCP drugs	77.6
Citizen Charter (Quality control)	
Number of SCs	536
Availability of citizen charter board	32.3
PHC MO/Staff Examination of Records	98.3
Monitoring of SC by VHSC	98.1
Availability of guidelines	89.0
Consolidated services	
Number of SCs	536
Pregnancy test – 4 tests	23.9
Pregnancy test – all tests	70.3
Assured services	96.3
Surveillance programs	99.4
Other health services	86.2
All services available in SCs (all 28 services)	58.8
All services available in SCs (>75% of all services)	99.8

Source: Sekhar, P., S. et al., 2008. *Facility Survey of Public Health Institutions – 2008*, [Online]. Available at: http://mohfw.nic.in/nrhm/Documents/AP_Facility_Survey_Report.pdf [Accessed 29 January 2011].

Slightly above 10 percent of SCs in Prakasam are located more than 20 km from CHC/AH. More than 50 percent of available quarters were occupied by ANMs in Prakasam. Less than half of the sub-centres in Prakasam have one ANM.

Sampled population according to literacy status (M...Male, F...Female)

		Chirala		Vetapalem		Chinaganjam		N G Padu		Ongole		Kothapatnam		Total	
	Age group	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Illiterate	0 to 9	9	10	16	8	9	6	11	17	10	14	12	15	67	70
	10 to 19	7	11	7	7	11	9	6	2	9	3	5	8	45	40
	20 to 39	27	31	22	26	43	51	29	24	24	45	33	47	178	224
	40 to 59	25	29	34	36	28	18	30	32	25	21	26	23	168	159
	60 to 99	15	7	13	13	5	7	11	11	4	5	12	15	60	58
	Total	83	88	92	90	96	91	87	86	72	88	88	108	518	551
Primary	0 to 9	3	4	7	11	3	10	3	4	9	3	11	13	36	45
	10 to 19	6	3	5	2	2	2	4	2	9	3	2	3	28	15
	20 to 39	1	2	5	5	4	1	3	3	5	9	1	2	19	22
	40 to 59	1	1	2	0	1	1	5	2	6	5	0	0	15	9
	60 to 99	0	0	2	0	2	0	5	1	2	0	0	0	11	1
	Total	11	10	21	18	12	13	20	12	31	20	14	18	109	91
Secondary	0 to 9	0	1	0	0	0	0	0	0	1	1	3	2	4	4
	10 to 19	12	5	3	4	12	14	13	3	14	10	21	13	75	49
	20 to 39	14	13	5	4	6	9	16	12	15	10	11	9	67	57
	40 to 59	3	9	1	1	4	3	6	2	5	2	4	2	23	19
	60 to 99	1	1	0	0	0	1	1	0	1	0	0	0	3	2
	Total	30	29	9	9	22	27	36	17	36	23	39	26	172	131
Intermediate	0 to 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10 to 19	3	3	4	4	13	2	2	2	3	4	7	4	32	19
	20 to 39	5	1	4	0	1	2	2	0	3	0	2	1	17	4
	40 to 59	1	0	0	0	0	0	1	0	2	0	0	0	4	0
	60 to 99	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	9	3	8	2	7	2	3	2	7	2	8	4	42	15
Graduate	20 to 39	14	3	9	3	11	1	11	0	8	4	4	0	57	11
	40 to 59	5	0	3	0	1	0	0	0	5	0	0	0	14	0
	60 to 99	1	0	0	0	0	0	0	0	1	0	0	0	2	0
	Total	20	4	12	5	19	4	13	0	15	6	5	1	84	20
	Grand Total	153	134	142	124	156	137	159	117	161	139	154	157	925	808

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