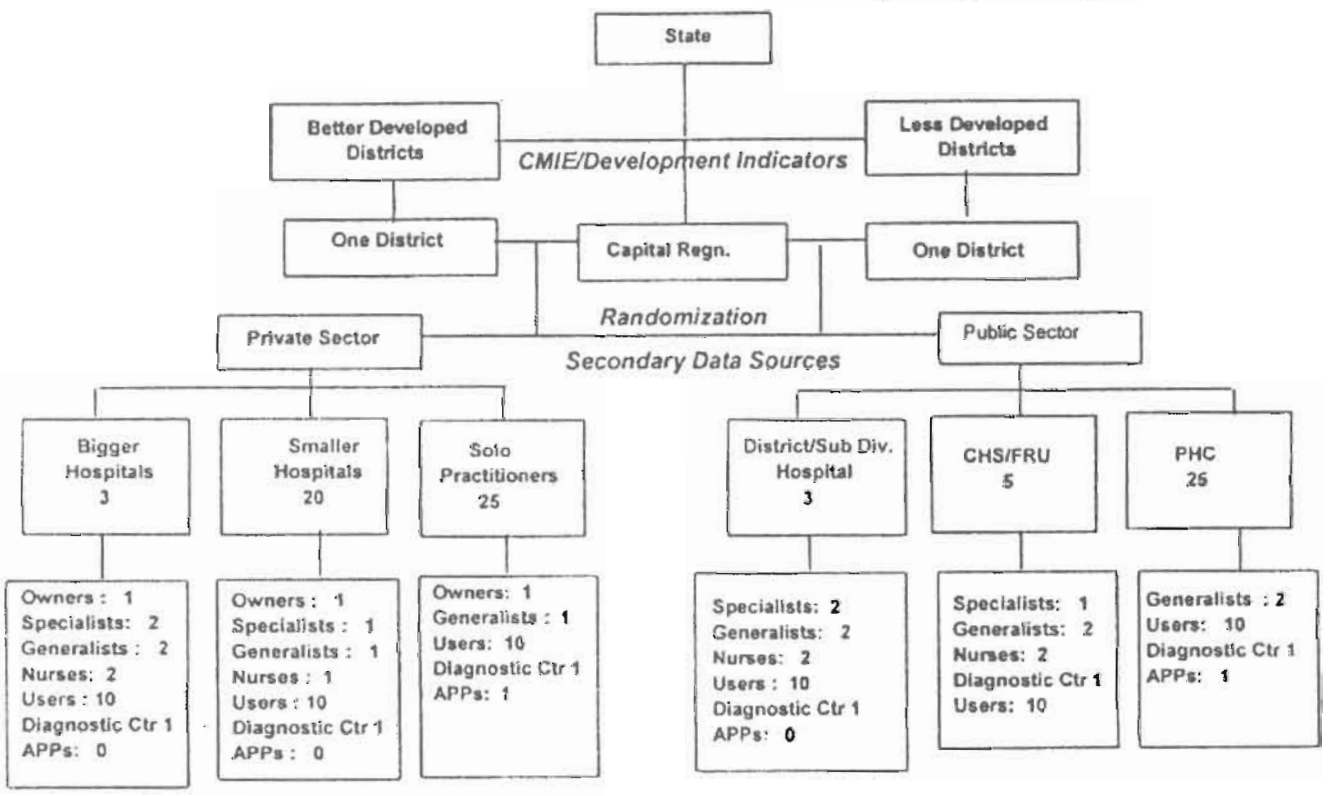
Chapter - 2

Materials and methods of the study on the structure and dynamics of private health sector in Andhra Pradesh

I. Sampling of health care institutions for the study

Three areas in Andhra Pradesh were selected for the study. The area around the state capital namely Hyderabad - Ranga Reddy districts was chosen purposively. To select the other two areas, we collected information on socioeconomic development status of the 22 districts in AP, excluding Hyderabad. We have used the Centre for Monitoring of Indian Economy (CMIE) index of socioeconomic development. This index is computed by the CMIE for all districts in the country. The districts were classified into two groups based on socioeconomic development, namely underdeveloped and developed, based on CMIE index. We then identified the largest city (i.e. with the highest population) for each district and collected its population figure. We then arranged the cities in their respective groups by their population and selected the district which contained the city with the highest population according to the 1991 census. Vishakhapatnam district was chosen from the economically developed districts and Warangal was selected from the economically backward districts. Thus the sample areas are; (a) Hyderabad - Ranga Reddy, (b) Visakhapatnam, and (c) Warangal districts.

Figure-2.1: SDPHS-AP Study: Overview of Sampling design.



The Institute of Health Systems maintains an electronic database of health care institutions in Andhra Pradesh (AP), called the AP Healthcare Institutions Data Base (APHIDB). The database contains the name and address of health care institutions in the state both in the private and the public sector. This database was built out of a survey taken up in 1993 and some validation effort in 1994 (IHS, 1996). Although active validation and updating of the database has not been feasible due to lack of funding, the Institute updates the database whenever any information on health care institutions becomes available to it. This database was actively updated for the three identified areas, by collecting latest lists of health care institutions from concerned municipal authorities, and other sources like the Yellow pages, etc. The public sector component of the database was updated with information obtained from the Commissionerate of Family Welfare and the Directorate of Health of the Government of Andhra Pradesh. The APHIDB, updated for the three chosen study areas provided the sampling frame to identify different kinds of institutions for purposes of this study. Figure-2.1 gives an overview of the sampling design.

It was decided to study three types of institutions, namely (a) large hospitals, (b) small hospitals, and (c) clinics. Institutions are sampled from both the private and the public sectors for comparative purposes. Bed strength and ownership status as in the APHIDB was used to stratify the health care institutions (HCI) into the three different categories. Health Care Institutions with 100 or more beds are classified as big hospitals. Health care institutions with 10-30 beds are classified as small hospitals. Private health care institutions without any bed or with less than 10 beds are classified as solo clinics. Three fourths (75%) of the private clinic sample consists of solo clinics and the rest 25% are nursing homes with less than 10 beds. On the public side, dispensaries, primary health centres (PHC) and urban family welfare centres (UFWC) are included in the clinic category. We found, after the survey, that the bed strength of some health care institutions had changed. For purposes of analysis we have used the current bed strength as the basis of classification of health care institutions. As a result some health care institutions moved from one sample category to another. Details of these moves are as follows. There was movement across ownership category. Among the private health care institutions, one big hospital moved to small hospitals category, six small hospitals moved to clinics and 11 clinics moved to small hospitals. In case of the public sector, 26 clinics were moved to small hospitals, and two clinics were moved to big hospitals category.

Table-2.1: Sampling plan and number of health care institutions actually surveyed and analysed.

Health care	Private sector				Public sector				All			
institution category	Pln	Smpl	Srvy	Anal	Pln	Smpl	Srvy	Anal	Pln	Smpl	Srvy	Anal
Big hospitals	9	14	11	10	9	12	9	12	18	26	20	21
Small hospitals/FRU	60	74	63	69	15	18	16	41	75	92	79	111
Clinics / PHC	75	156	76	71	75	83	81	53	150	239	157	124
All	144	244	150	150	99	113	106	106	243	357	256	256

Pln = Planned, Smpl = Sampled, Srvy = Surveyed., Anal=Analysed after taking into account actual beds and consequential movement to respective category. FRU = First referral unit, PHC=Primary Health Centre

Table-2.1 summarises the number of institutions we planned (Pln) to study, the number randomly drawn from the list of HCIs (smpl) and the actual number under each category after the survey. A larger number of HCIs were sampled to allow for dropouts and non responses. The response rate is 72% overall, 77% for big hospitals, 86% for small hospitals and 67% for clinics. The response rate for private clinic was the lowest at 49%. This is mainly because of inaccuracies in the sampling frame. Recall that the sampling frame was built up by updating the APHIDB with supplementary information. For clinics, we obtained the list of practicing doctors from the local municipality, medical college, professional associations or such other agencies. These lists contained names of doctors some of whom do not actually do any private practice. Hence we had to draw additional samples of solo clinics to make up the shortfall in the number of clinics originally planned to be included in the study. Altogether 256 health care institutions have been surveyed consisting of 150 HCIs in the private and non profit sector and 106 HCIs in the public sector. Three types of HCIs were studied, namely (a) large hospitals, (b) small hospitals and (c) clinics or primary health centres. To sample diagnostic facilities, we built a list of diagnostic facilities, to which the private and public HCIs in the sample either refer patients for diagnostic services or their patients happen to use their services. Thus each of the private or public HCI randomly selected for the study acted as a sampling locator of diagnostic facilities. Similarly, alternate private practitioners sample was built by locating the nearest Alternate Private Practitioners (APP) for each of the solo clinic or PHC included in the sample. Health care professionals were identified from each of private and public HCI according to the sampling design shown in Figure-2.1.

II. Data collection formats and the questionnaires

Six questionnaires were prepared to study various aspects of the health care institutions. Table-2.2 lists these questionnaires with a brief description of their purpose. The questionnaires are given in Appendix-1. The questionnaires were designed through brainstorming session by the investigators and by drawing items from similar survey instruments. The questionnaires were pilot tested by administering them to five HCIs. Experiences from the pilot study were used to rephrase some of the questions. The basic information questionnaire (BIQ) and the owner manager questionnaire (OMQ) can be visualised as one single questionnaire. We split them into two for various reasons. The BIQ identifies the health care institution and collects information that are likely to be common knowledge among people working in the institution. Our expectation was that we could fill this one with the help of lower level functionaries. However, we found during the course of the study that in many HCIs we needed help of the owner managers to fill in the BIQ as well. Matters of opinion were included in the owner manager questionnaire. Questions not relevant for public health care institutions were included in the OMQ. OMQ was administered for private HCIs only. The diagnostic facility questionnaire (DFQ) actually combines the features of BIQ and OMQ with some modification appropriate for diagnostic facilities. The patient exit interview (PEI) questionnaire is based on the QOST (Quality of Outcome and Service in Texas) visit satisfaction questionnaire, with some extensions suggested by David Peters (1999).

Table-2.3 shows the actual position regarding collection of data in various questionnaires. Basic information questionnaire could be filled in for all 256 HCIs as planned. However collection of data for three private HCIs was partial, since the owner-managers were uncooperative. The owner-manager questionnaire, applicable to private HCIs only, could not be filled for four HCIs, since the respondents declined to cooperate. The HCIs in primary sample were used to locate diagnostic facility. The located facility would be private or public. Hence the expected column is left blank against the diagnostic facility questionnaire. The same diagnostic facility was located through more than one institution. 17 out of the 202 diagnostic facilities located through HCIs in primary sample belonged to the primary sample itself. Thus the net additional institutions studied through the diagnostic facility sample reduces to 185 (161 private and 24 public). In some HCIs number of Health Care Professionals (HCP) available were less than the required sample. For APPs only clinics and PHCs were used as locators. So we expected about 157 APPs in the sample. Actual number of APPs surveyed is 158. This is because, for some private clinics APPs were identified and interviewed but the concerned clinic in the primary sample was found to have been closed. All APPs are by design from the private sector. We targeted to interview 2550 patients, but were short by about 300 patients. The

shortfall was mostly in the private sector arm of the study. In quite a few private HCIs, there were not enough patients to interview, on the date of our visits. Some HCIs did not allow patient exit interviews.

Table-2.2: Questionnaires used to study structure and dynamics of private health sector in AP

Questionnaire Name	Nature of information sought	Informant / source
1.HCI - Basic Information Questionnaire (BIQ)	Name, location, capacity, facilities and resources.	Assessment by surveyor, front office personnel, nurses, managers, owner and others
2.HCI - Owners and Managers Questionnaire (OMQ)	Experiences and opinion of owners / managers about infrastructure, utilities and regulatory environment for private health care institutions.	HCI - Owner or Manager
3.HCI - Diagnostic Facility Questionnaire (DFQ)	A combination of BIQ and OMQ with specifics about diagnostic facility and services.	Diagnostic facility owner or manager.
4.HCI - Patient Exit Interview (PEI)	How satisfied is the client / attendant with services received at the facility?	Patients attending the sampled HCIs
5.Alternate Private Practitioners (APP).	Medical systems followed and cases managed. Training received and common treatment practices for important ailments.	The practitioner of alternate system of medicine or those providing allopathy without any formal education.
6.Health care Professional Personal Questionnaire (HPQ)	Expectation, aspirations, experience, satisfaction and motivation of health care professionals.	Specialists, General duty doctors and Nurses working in sampled HCIs

Survey teams were constituted at IHS and a collaborating institution at Vishakhapatnam. The survey team consisted of persons with social science background and had interviewing skills. Investigators from the collaborating institutions at Vishakhapatnam were specially briefed and guided by a visiting team of faculty and associates from IHS. All surveyors were briefed about the

questionnaire. A written project brief was prepared and provided to each surveyor. In addition, periodical reviews took place to take stock of the survey and to clarify emerging doubts. During the pilot study we experienced reluctance by some private health sector personnel in providing detailed information about their institutions. Hence, the briefings specially emphasised the need for courtesy, tact and diplomacy and patience to secure cooperation of the respondents from the private sector.

Table-2.3: SDPHS-AP Expected (Etd) number of questionnaire and actual collection data

Questionnaire	Pvt sector		Public sector		All	
	Etd	Actual	Etd	Actual	Etd	Actual
Basic information (BIQ)[1]	150	150	106	106	256	256
Owner manager (OMQ)[2]	150	146	NA	NA	150	146
Diagnostic facility (DFQ)[3]	–	167	–	35	256	202
HCP (HPQ)[4]	331	331	–	296	291	–
627	622	–	–	–	–	–
Alt Pvt Practitioners (APP)[5]	157	158	–	–	150	158
Patient Exit Interviews (PEI)[6]	1,500	1,175	1,060	1,053	2,550	2,216

The survey was conducted during most of the year 2000. The questionnaires provided space to record the dates of visit for collection of data. Our intention was to use this information to assess the level of effort required to collect data about various health care facilities. Unfortunately the surveyors interpreted the guidelines differently and recorded the dates of visits that resulted in collection of actual data. As a result some of the preparatory visits made to build up rapport prior to actual data gathering are not captured here. We have classified the HCIs according to the number of visits made by surveyors to collect data in the basic information questionnaire.

Table-2.4: Distribution of HCIs by the number of visits required to collect basic information.

HCI Category	Private HCIs(N)	# of visits category 1	2	>3	Public	#of visits category 1	2	>3
Clinics	71	44%	35%	21%	53	70%	25%	6%
Small hospitals	69	42%	29%	29%	41	69%	29%	7%
Big hospitals	10	50%	30%	20%	12	25%	42%	25%
Diagnostic Fac.	167	52%	36%	12%	35	63%	34%	3%

Table-2.4 shows distribution of HCIs by the number of visits made to collect basic information. Only about 42 to 45% private health care institutions provided basic information in one visit. Clinics and small hospitals in the private sector needed more than one visit to collect basic information. The public sector was better in this respect. But data from big hospitals in the public sector was not easy to get. Many reasons may account for multiple visits. Firstly, many private sector institutions were reluctant to provide even basic information. Additional visits were made to persuade the hospital managers to authorise data gathering. Although dates of most of these preparatory visits were not recorded in the questionnaire, some of the visits can be attributed to this cause. Secondly, the health care institutions do not have the basic information readily available. This is largely due to the poorly developed record keeping practices by the institutions. The big public hospitals required many visits, probably because of the big bureaucracies involved and the need to go to many functionaries to fill in different parts of the questionnaire.

Surveyors experienced a lot of difficulty in getting information. Although they used maximum tact and persuasion in their power, they were not always successful. Here is a list of comments made by one of the survey team leaders about difficulty in gathering data.

1. Getting the permission of the concerned person took time in most places. (2-3 visits minimum).
2. Most of the people we were interviewing, were doctors and they were unwilling to spare a lot of time looking at the length of the questionnaire.
3. Since all the questionnaires are quite protracted, we tried collecting most of the information from sources other than the owner/managers, so that we could avoid irritating the doctors by asking the entire length of the questionnaire.
4. Some respondents found the information asked, (charges, questions in the owner/manager questionnaire, etc.,) to be quite sensitive.
5. Some respondents found repeated visits to the same hospital for different questionnaires, an inconvenience.
6. In most cases as it was the doctor who answered the questions, they felt that some questions were not applicable. It was not feasible to record the respondents comments against each of these questions, since we were already taking up substantial time of the doctor.
7. In some cases, the doctor would retain the questionnaire with him and fill it in his own way, giving us no chance to explain the questions or to make further inquiries. Due to this reason also, some records have empty data.

8. There was always a time constraint for completing the questionnaire. Since we were conducting the survey in phases, we had to wind up one phase before beginning the next. Due to this reason, follow up of a few sections or questions was very difficult.

III. Secondary data analysis and review of literature

We recognise that the data collected through this study alone is inadequate to provide definitive answers to all our questions. Hence we supplement the findings from this study with results from elsewhere in India and abroad. It is worth noting here that India has a mixed health care system consisting of public, private forprofit and nonprofit institutions. Outside of India, United States (US) of America is one country that has a mixed health care system and is comparable in terms of its size and diversity. More importantly organisational behaviour of health care institutions in the US has been widely studied compared to other industrialised countries. That explains the preponderance of references to studies from the US in the following analyses. Data about various aspects of the private health sector reported by other studies in India are analysed from the perspective of policy issues relevant to the present study. Each data source is appropriately referenced. These include;

1. The Government of India, Central Bureau of Health Intelligence: Health Information India - Annual publications for the years, 1988, 91, and 94.
2. The AP Health Institutions Database maintained at the Institute of Health Systems.
3. National Sample Survey Rounds 42 (1986-87) and 52 (1995-96).
4. The National Council of Applied Economic Research (NCAER) Market Information Survey of Households (MISH) on health care utilisation.
5. National Family Health Survey-2, 2000.
6. American Hospital Association, Hospital Statistics.
7. Data on patient composition of public hospitals from the Patient Satisfaction Surveys in APVVP Hospitals, conducted by the Institute of Health Systems.

IV. Summary of materials and methods

To understand the structure and dynamics of the private health sector in AP, we studied a sample of 256 health care institutions (HCIs) consisting of 150 HCIs from the private sector and 106 HCIs from the public sector. Three types of HCIs were sampled from both the sectors. These are clinics, small hospitals

of 30 to 100 beds and big hospitals with 100 or more beds. The clinics sample included solo clinics, nursing homes with less than 10 beds, primary health centres (PHC), dispensaries etc. The sample of HCIs from private sector consisted of 76 clinics, 69 small hospitals and 10 big hospitals. The public sector sample had 53 PHCs, 41 small hospitals and 12 big hospitals. Six questionnaires were used to collect information. These include (a) a questionnaire to collect basic information of all HCIs in the sample, (b) a questionnaire for private HCI owner-managers, (c) the diagnostic facility questionnaire, (d) the health care professionals (HCPs) questionnaire to assess job satisfaction of HCPs working in private and public sector, (e) a patient exit interview form to assess levels of patient satisfaction in private and public sector, and (f) an instrument to survey alternate private practitioners (APP). The diagnostic facilities and APPs were located through the HCIs in the primary sample. For the exit interview, around 10 patients were sampled from each HCI in the primary sample. Primary data collected in this did not allow us to examine evidence about all relevant policy issues and research questions about private health sector. Hence, we supplement by analysis of secondary data collected from other sources in India. In addition we review the literature, particularly from a somewhat similarly placed mixed economy like the United States.