



*The Strategy Development Workshop on Health Sector Reforms in Andhra Pradesh held at the Institute of Health Systems*



*Shri K. Madhav Rao, State Election Commissioner, AP, giving his comments after a review of the IHS Programs and Activities on 30 June, 2000.*

## **J**HS Activities

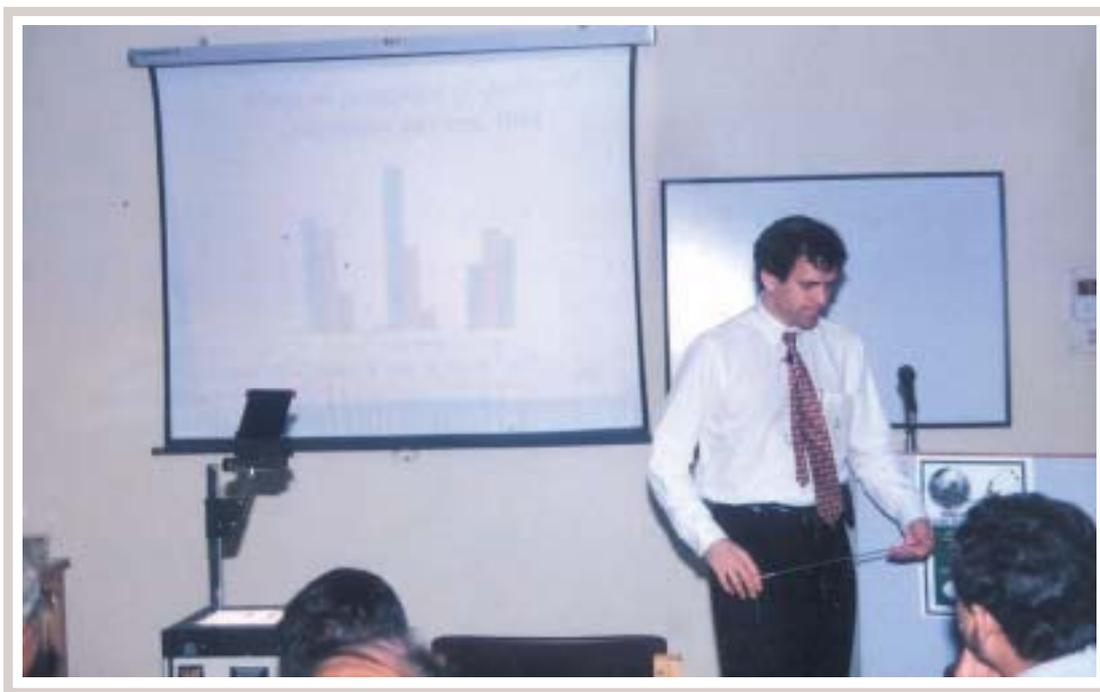
- **Research and Consultancy**
- **Academic Programmes and Training Services**
- **Health Informatics**
- **Public Services**

## Research and Consultancy

The Institute conducts research and offers consultancy services in four major areas; (a) National Burden of Disease (b) Health System Performance Assessment (c) Health Care Quality Assurance (d) Health Sector Reforms

### National Burden of Disease (NBD)

Epidemiological transition, increasing cost of health care, the unfinished agenda of controlling infectious and parasitic diseases and persisting gaps in access to primary health care, has made the job of health care policy and planning more complex than ever. The complexities of dealing with multifarious health problems, have led to refocused world wide attention on descriptive epidemiology and burden of disease. The Andhra Pradesh Burden of Disease (APBD) Study was started in 1993, in collaboration with the Administrative Staff College of India (ASCI), immediately after publication of the Global Burden of Disease Study results in the World Bank's World Development Report, 1993. The study provided an opportunity for a comprehensive estimation of disease burden in AP during the 1990s. Using the case of Andhra Pradesh in India, the study examined available sources of data and describes their usability. Deficiency in availability of local data was highlighted to draw attention to the need for improving vital statistics, cause of death and epidemiological surveillance systems. The Burden of Disease estimates arrived at in this study are of importance from two different policy perspectives. Firstly, National Burden of Disease (NBD) estimates will be of immediate interest to those concerned about health policy of the National or sub-national entity for which the study is made. Secondly, this study has highlighted the need for reliable and valid local data for National Burden of Disease Estimates. Recognizing the importance of NBD estimates in health care and planning, the GOI - Department of Family Welfare, commissioned the IHS to estimate burden of disease among women and children in India. The Institute's contribution was incorporated as a chapter in the report of the Planning Commission's working group on Women and Children's Health.



*Prof. Christopher JL Murray, Director, EIP, World Health Organisation, who has pioneered Global Burden of Disease estimation giving a lecture on "Trends and Challenges in global health and Health Systems", at the IHS on 8th May, 1999.*

To build national capacity in quantification of disease burden, the Institute has pursued many connected areas of research. These include studies on; (a) Causes of death (b) Health status measurement (c) Indirect estimation of mortality by smaller areas, and (d) Descriptive epidemiology

## Cause of Death Studies

Reliable statistics on causes of death in a population are essential for setting of priorities in the health sector. Most developed cause of death reporting systems rely on medical certification of cause of death according to the International classification of Diseases (ICD - 10), and have invariably achieved near total coverage. Developing countries like India depend on lay reporting of the cause of death for rural areas, where adequate medical facilities are not available, using a Sample Registration System (SRS). Usability of the cause of death statistics in India is questioned in view of poor coverage, and poor compliance with guidelines for cause of death reporting, coding and classification. Research work on cause of deaths started in IHS around 1993 and is an ongoing activity supported by various sources of funding and when no funding is available, by time contributions from faculty and staff. Work at the Institute led to identification of Maharashtra and Goa states, where a large number of deaths are medically certified. A pilot study on cause of deaths in rural areas of AP provided some preliminary information about the Survey of Cause of Death (SCD) - Rural statistics. Accordingly the Global Burden of Disease study, 1996 used the Maharashtra medically certified cause of death (MCCD) data to estimate cause of death pattern for urban areas and the applied some corrections to the SCD-Rural data to estimate the same for rural India. Further work at the IHS on cause of death reporting system in India led to the publication of two landmark articles<sup>1,2</sup> in the National Medical Journal of India. These articles reviewed the performance of cause of death reporting system in India and argued for its improvement. A small group of researchers in India and abroad got together and offered to collaborate with the Registrar General of India (RGI) to systematically design the SRS based cause of death reporting system. The IHS was a co-founder of this SRS-Collaborative group. Review of the world literature on verbal autopsy and systematic assessment of India's verbal autopsy based cause of death reporting system contributed to appreciation of the SCD-Rural statistics and appropriate design of the newly introduced SRS based cause of death reporting system. Results of the study to estimate cause of deaths in rural areas of AP contributed to the National Burden of Disease estimation for Andhra Pradesh and has provided more accurate cause of death statistics for policy analysis. The Institute has also developed a computer software for processing of cause of death reports by municipal health offices, state vital statistics offices as well as research and analysis teams.

## Health Status Measurement

Health status measurement is an important step in quantification of disease burden due to non fatal health outcomes. Ideally, burden of disease estimates should use community valuation of different health states. As community level health state valuation tend to be difficult and time consuming, most disease burden studies use expert rated disability weights. The AP Health State Valuation study conducted by the Institute in 1999 was the first community valuation of a set of health states in a developing country. The study, attempted to measure people's preferences about various health states. Two distinct sources of assessment was used in measuring people's opinion. Firstly, a series of workshops was conducted with the educated population from various professional backgrounds. Health state valuation was done using four procedures viz., card sort, Visual Analogue Scale, Time Trade-off & Person Trade-off methods. Second part of the study involved measurement of valuations given by general population through household surveys. Respondents were requested to give their valuations using card sort followed by visual analogue scales. The study had to deal with the unique challenge of communicating health state descriptions to semiliterate, illiterate population. This was overcome by development



Surveyors interviewing respondents during the Health State Valuation Survey

<sup>1</sup> Mahapatra Prasanta, Chalapati Rao PV. Cause of death reporting system in India: a performance analysis. *National Medical Journal of India (Natl Med J India)* 2001;14(3):154-62.

<sup>2</sup> Mahapatra Prasanta. Priority setting in the health sector. Why is a good cause-of-death reporting system important? *National Medical Journal of India (Natl Med J India)* 2002;15(2):90-2.

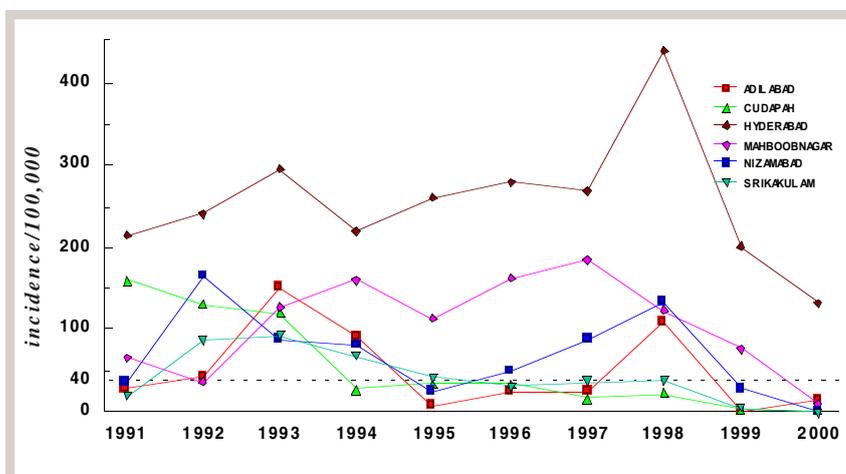
of a pictorial description system. This study is an important contribution to theoretical advances in health state valuation. The 6D5L health state description systems developed for this study<sup>3</sup>, theoretical and empirical aspects of community based health state valuation, their reliability and validity issues<sup>4</sup> were incorporated in the WHO publication on summary measures of population health.

### Indirect estimation of mortality by smaller areas

Conventional measures of premature mortality, like Infant Mortality Rate (IMR) continue to play an important role in health policy. Reduction of IMR is an important goal set by the National Health Policy. Currently the Sample Registration System (SRS) is the primary source of IMR estimates in the country. Unfortunately the SRS does not provide IMR estimates for smaller areas below the state level. Availability of IMR estimates for small areas will facilitate identification of areas with very poor population health status and targeting of public health programmes. The District Family Health Survey (DFHS) piloted by the Institute studied the feasibility of generating IMR estimates at the sub district level. This study was conducted in three districts of Andhra Pradesh, Chittoor, Nellore and Mahboobnagar, representative of the three political regions of AP. The indirect methods of estimation such as children ever born (CEB) technique for IMR, and Sisterhood Survival Method for Maternal Mortality Rate (MMR) were used. The sample was selected using a two-stage proportional stratification followed by random selection of clusters within strata assigning probability proportionate to population size. IMR estimates show significant variation in mortality in different districts and revenue divisions. One revenue division in Mahboobnagar district had IMR as high as 125/1000 live births, which is twice as high as the state average IMR of 66 / 1000 live births. We hope that identification of such high mortality risk areas would help in better targeting of public health interventions. The results of this study highlight the need for decentralised area specific planning and implementation of public health programmes.

### Descriptive Epidemiology

Descriptive epidemiology is about understanding the natural history of diseases, estimation of disease frequency and mapping of known risk factors. These are important contributors to estimation of disease burden. They help in identifying linkages between risk factors and disease burden. For example, the Institute's study comparing prevalence of morbidity and nutritional status of child labourers in aqua culture industry and other children did not show any significant difference. An exploratory study to identify social, economic and cultural processes that are of relevance for management of asthma<sup>5</sup>, revealed that there is a large social and economic burden on account of asthma. The study threw light on the existing social sharing of asthma morbidity and the institution of family as a particularly useful means of the coping up process. The study provided useful insights for the WHO task force on global strategy for asthma management. Government of Andhra Pradesh commissioned the Institute to prepare comprehensive manuals to achieve better control of the gastroenteritis (GE) and malaria situation in the state. Descriptive epidemiology studies for this purpose included analysis of seasonal pattern and geographic localization of gastroenteritis in AP, malaria trend in the state, etc.



*Incidence of Gastroenteritis in selected districts of AP. Hyderabad has the highest incidence of Gastroenteritis compared to other districts in AP. Obviously the potability and the quality of water is an important issue. The Institute is working on a Public-Private Partnership model to empower people to access water testing facilities.*

<sup>3</sup> Mahapatra Prasanta; Nanda Lipika; Rajshree K.T. The 6D5L description system for health state valuation. Ch7.4, in: Murray Christopher JL; Salomon Joshua A.; Mathers Colin D., et al., Editors. *Summary Measures of Population Health. Concepts, Ethics, Measurement and Applications*. First ed. Geneva: WHO; 2002. pp. 349-67.

<sup>4</sup> Mahapatra Prasanta; Salomon Joshua A.; Nanda Lipika. Measuring health state values in developing countries - results from a community survey in Andhra Pradesh. Ch9.3, in: Murray Christopher JL; Salomon Joshua A.; Mathers Colin D., et al., Editors. *Summary Measures of Population Health. Concepts, Ethics, Measurement and Applications*. First ed. Geneva: WHO; 2002. pp. 473-85.

<sup>5</sup> Mahapatra Prasanta, Murthy K.J.R, Kasinath P.C & Yadagiri R: *Social, economic & cultural aspects of Asthma: An exploratory study in Andhra Pradesh, India. Working Paper 3/1993.*

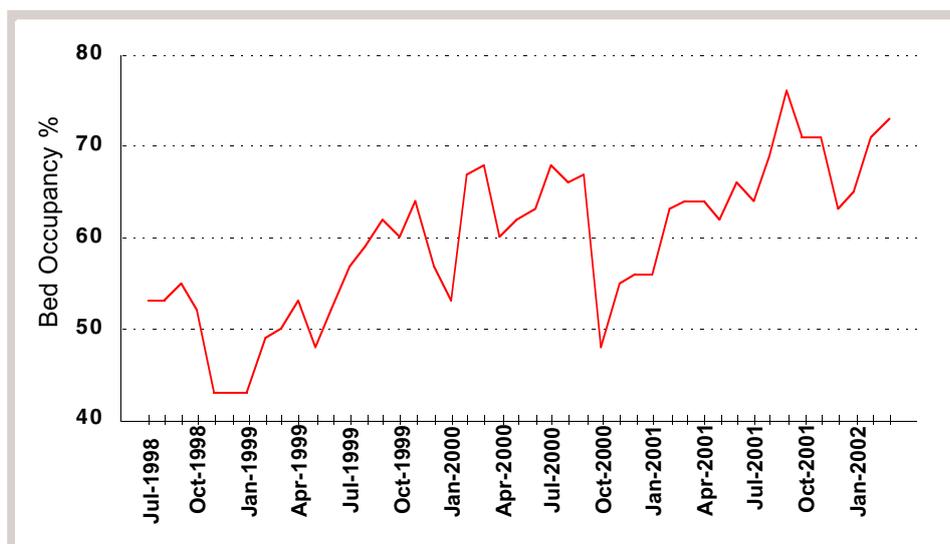
The Institute conducted a household survey as part of a collaborative study to develop a predictive model of exposures to indoor air pollution (IAP) from qualitative information about fuel use, and housing characteristics. The study revealed that households using mixed fuels have the highest Respirable Particulate Matter (RSPM) concentrations (732 mg/m<sup>3</sup>). Households with poor kitchen ventilation had a twofold risk of having high kitchen concentrations of RSPM compared to households with good ventilation. The IHS has been commissioned by Environmental Protection Training & Research Institute (EPTRI) to develop an initial estimation of the health impacts of ambient air pollution in Hyderabad, based on available secondary data. The health effects analysis project is essentially a correlation study, involving the determination of a statistical association between the frequency of a given health outcome and concurrent PM<sub>10</sub> concentrations. This task will draw upon existing data on ambient air pollution impacts on mortality and morbidity of selected health endpoints. Economic valuation of health impacts for both indoor and ambient air quality, will also be done using the Human Capital Approach (HCA) method. A study designed to understand the epidemiology of risk factors associated with high level of road traffic accidents in Hyderabad has been recently approved by the ICMR. Causative linkages between accidents and road design, road user behaviour, traffic regulation, and road worthiness of vehicles will be explored.

## Health System Performance Assessment (HPA)

Health system performance measurement is important: first as a means of identifying the shortcomings of health systems, as in explaining why countries with similar levels of income fail to achieve similar levels of health; secondly, for providing indicators that allow evaluation of a health system over time. Both these activities in turn could contribute in the future to a pool of evidence that can provide the basis for confirming or rejecting if specific financing and provision mechanisms are particularly appropriate under given socioeconomic conditions. A more efficient health system would mean that more health care services are provided for the same level of resource use. Improving efficacy of health systems through operations research and performance assessment is one of the important objectives of the Institute. Keeping with this objective, the Institute has fostered many research areas such as: (a) Hospital Performance Analysis (b) Patient Satisfaction Surveys (c) Responsiveness Surveys (d) National Health Accounts.

### Hospital Performance Analysis

The Institute's goal is to make public hospitals more efficient and responsive. As people become more aware of the hospital performance analysis they are more sensitive to accept required remedial actions for further improvement. The IHS was commissioned by the AP Vaidya Vidhana Parishad (APVVP) to undertake a performance analysis of APVVP hospitals on monthly basis. Every month hospital activity indicator and service mix data were collected from the APVVP hospitals. Hospital wise performance analysis was done. Each month the Institute's researchers visited about 20 hospitals to



Results of Hospital Performance Analysis : APVVP Bed Occupancy Trend

collect qualitative information and to verify data accuracy. The field reports and monthly analysis were furnished to the hospital management. The Institute assisted the APVVP for about three years between July 1998 to 2002. There after the APVVP is doing their performance analysis in-house. Starting May 2002, the Institute has been assisting the government of Maharashtra in improving efficiency and quality of service of hospitals under the Maharashtra Health Systems Development (MHSDP), using performance measurement and analytic techniques on a regular basis. The MHSDP hospital statistics is analysed for its consistency and based on the performance indicators, outlier hospitals are identified. Internal consistency of data is analyzed using a set of consistency indicators and by expert appreciation of the figures. A sub set of hospitals are identified each month for field visit to understand the potential sources of poor performance and to provide on job training to the hospital data compilation personnel.

## Patient Satisfaction Survey

Patient satisfaction survey is a reliable yardstick to assess the quality of health care extended by the health care institutions. The aim is to generate statistically accurate estimates of patient's feedback for each hospital, so that inter hospital comparison is possible. It generates data for theoretical importance and for practical purposes such as planning, administration and evaluation of health care services. The Institute of Health Systems conducted a study on the Demand for services and Satisfaction with the Mauritius Health System. The project was orchestrated by the Burden of Diseases Unit at the Harvard Center for Population and Development Studies (HCPDS). A systematically selected sample of in patients (IP) and out patients (OP) were interviewed using a structured questionnaire. Focus groups were conducted with members drawn from households and members of Local Health Committees (LHC) who were closely associated with the functioning of the peripheral health delivery institutions. The published HCPDS report titled "The Health Sector in Mauritius", contains substantial sections on the Demand and Satisfaction study conducted by IHS. The Institute was commissioned by the AP First Referral Health Systems Project (APFRHSP) to conduct patient satisfaction surveys in APVVP hospitals at half yearly intervals between June 1999 and March 2002. These surveys provide useful feedback on functioning of different areas in the respective hospital and helpful insights about patients' preference. The Institute brought out five half yearly reports on the survey beginning June 1999. The study on structure and dynamics of private health sector in AP included a patient exit interview component to compare the level of satisfaction among patients attending private and public health care institutions respectively. An early work in this area, is the study of patient satisfaction of Karimnagar district hospital.

## Responsiveness Surveys

Health system performance involves three discrete aspects: medical, responsiveness and fair financing. The AP Health System Responsiveness Survey measured responsiveness of the health system in AP to individuals' expectations regarding the non-clinical enhancing aspects of the health system. The survey sought to measure eight distinct aspects of health system responsiveness pertaining to elements related to respect for human beings as individuals, that are largely subjective and judged primarily by the client, and the more objective elements related to how a system meets commonly expressed concerns of patients / clients and their families as consumers of health system. The study provided valuable insights into responsiveness of the health system to patient/client needs and expectations. Respondents in urban areas had better access to health care institutions than those in rural areas. The average time taken for people to access health care was 56 minutes and 142 minutes in urban and rural areas respectively. It was found that people in urban areas have better access to public health care institutions than those in rural areas. Respondents in rural areas preferred to go to a private provider as they could not rely on the primary health centre for any serious health care need. Of the eight dimensions of health system responsiveness studied (respect for dignity, respect for confidentiality, respect for autonomy over treatment, prompt attention, communication, basic amenities, social support and choice of provider), 53% of the respondents rated prompt attention to their needs as most important. Communication of information relating to health condition and respect of dignity of patient was rated as most important by 23% and 14% of the respondents respectively. Only 3% of the respondents rated choice of provider as most important. The survey found that 36% of the respondents did not seek any health care because they could not afford it. About 16% of the respondents said that they were refused health care because they could not afford it.



*IHS Surveyors taking details of rural households during the Andhra Pradesh Health System Responsiveness Study*

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## National Health Accounts (NHA)

National health accounts (NHA) document total health care financing and expenditure within a particular health system. Health expenditure consists of financial outlays that service the health system. NHA trace the resources invested and consumed in the production of health and facilitates further research and meaningful policy analysis. In the Indian context, state level studies



*Prof. William Hsiao, Harvard School of Public Health, delivering a lecture on “Comparing health systems and their financing. What countries can learn from each other”- 14 April 1993.*

are at least as important as overall national analyses. In some respect, state health accounts (SHA) are more important, because many of the major policy decisions concerning resource allocation to health and social sector are made at the state level. The analysis of government expenditure on health in AP happens to be one of the first contributions towards building up of state health accounts in India. This study covered not only standard medical programs like curative and preventive care, but also health related activities such as primary education, water supply, sewerage, sanitation, housing, and community development. Such an approach has the important advantage of producing a much clearer picture of government’s overall orientation toward social development. The study found that during the 1980s AP government expenditure on public health nearly tripled in real terms. This was complemented by large increases in health related expenditure as well. For example,

expenditures on primary education more than tripled, and the amount of funds spent on housing and community development increased more than eight fold. This is not to say that everything went well. First referral (district and sub district level) hospitals received inadequate attention relative to urban tertiary hospitals. Too little was invested in training for nurses and paramedical personnel compared with the amounts spent on educating medical doctors. The amount provided for sewerage and sanitation programs was very low. Results of these studies have been published in journals<sup>6,7</sup> and others<sup>8</sup> in addition to the IHS publications.

To facilitate appropriate analysis of health expenditure of the state, the Institute has compiled data on public spending on health and related areas from 1980 - 1993. This was one of the first electronic compilation of government budget and accounts data. A software called Government Expenditure Analyst (GEA) was developed to allow researchers analyse expenditure data upto the sub head level. Expertise gained at the IHS in electronic compilation of government budget data contributed to preparation of the first budget data on disk in India. The first Budget Data on Disk of the Andhra Pradesh Government was released by the State Finance Minister in 1998. The IHS was one of the collaborating Institutions contributing to development and delivery of this new service.

The Institute is currently developing more comprehensive State Health Accounts for Andhra Pradesh. In addition to health services provided by the government (Central, State and Local Bodies), the study focusses on health care revenues and expenditure of NGO’s, voluntary and charitable organizations, public and private sector firms, social insurance schemes such as CGHS and ESIS, private insurance, households etc. The findings of the study is expected to contribute to the Government of Andhra Pradesh medium term financing strategy for the health sector.

### Health Care Quality Assurance (HQA)

Quality of care delivered by health care institutions is a matter of public concern. The Institutes research activities in this area started with an early study to assess the need for and designing of an accreditation system. This pilot study asked patients discharged from private hospitals about their experience and concerns of quality of care. There appeared to be some awareness and felt need for quality assurance in health care. A subsequent study<sup>9</sup> of expressions of need for quality assurance revealed that the level of awareness about the need for quality assurance in health, among general public was low. However, legislators,

<sup>6</sup> Mahapatra Prasanta, Berman Peter A. *Resource Allocation for Public Hospitals in Andhra Pradesh, India. Health Policy and Planning* 1995;10(1):29-39.

<sup>7</sup> Mahapatra Prasanta, Berman Peter A. *Allocation of Government Health Services Expenditure in Andhra Pradesh, India, During the Eighties. Demography India* 1991;20(2):297-310.

<sup>8</sup> Mahapatra Prasanta. *Government Health Expenditure in an Indian State. Government Expenditure on Health in Andhra Pradesh since the 1980s: Has it Been Appropriate? IHPP Working Paper* 1996 May.

<sup>9</sup> Nanda Lipika. *Quality management of the private health sector: a study of the expressed need for regulation in Andhra Pradesh. Journal of the Academy of Hospital Administration.* 2000 Jul; 12(2):23-31.



Dr. C.L. Venkata Rao, Member, Medical Council of India makes a point at the Private Health Sector Workshop held by IHS. To his left are Dr. U. Eswara Rao, General Secretary, APHNA and Dr. M. Thyagaraja Reddy, President, Indian Medical Association, AP.

study on the structure and dynamics of the private health sector in AP, the Institute has developed a framework for assessment of health care quality. An early study sponsored by the government of Andhra Pradesh, documented quality concerns of the users and non users of family planning methods. Social, cultural, economic and related factors affecting the acceptance of family planning methods were studied. This study has found a positive appreciation of vasectomy by its adopters as opposed to the negative biases of its non adopter males and also females, and also thrown important clues on quality of family welfare that is being provided. A UNICEF sponsored study, conducted in the year 2001, assessed the infrastructure for Emergency Obstetric Care (EmOC) in Medak and Adilabad districts. Effective availability of EmOC equipment and health care personnel such as obstetricians, and anaesthetists were found to be a major hindrance in provision of quality services. The study built up an inventory of private EmOC facilities around primary health centres (PHC) equipped to provide round-the-clock EmOC services. Functional status and adequacy of facilities in PHCs, Area and District Hospitals were assessed. To develop national capacity in health care quality assurance, the Institute has built up a collection literature about accreditation systems in other parts of the world. The Institute's President visited, in 1992, the Joint Commission

medical professionals, and consumer interest groups are increasingly conscious of the need for quality assurance in health sector. The Institute has been actively studying various aspects of the private health sector, with special emphasis on standards and quality assurance. A study was conducted to ascertain the perceptions and expectations of the women regarding quality of reproductive health care offered in private hospitals of Andhra Pradesh. The Institute then developed standards for selected reproductive health procedures, viz., normal deliveries, Caesarean section, medical termination of pregnancy, etc. Actual quality situation was assessed against these standards using various qualitative research methods, to assess quality gaps in the provision of reproductive health care. During the course of the

### Integrated framework for assessment of health care quality developed at the IHS<sup>10</sup>

Goal Framework	Operational alternatives	Scope (illustrative but not exhaustive)
<b>Health attainment (Technical quality)</b>		
Structure	Licensing / Regulation	Basic requirement to operate a health care institution. Safe disposal of biomedical waste Reporting requirements for surveillance of communicable diseases, vital statistics, cause of death reports, etc.
	State licensing	Quality assurance. Purchase of services by governments.
	Voluntary accreditation	HCLs voluntarily seek accreditation to reassure their clients about the quality of their care. Purchase of services by employers, health insurance plans, public authorities, etc.
Process	Practice guidelines	Evidence based physician and patient decision making
Outcome	Medical outcomes research	Provide information about causative linkages of patient outcomes with health care process, so that HCLs can adopt appropriate measures to improve patient outcome. Benchmarks of risk rated patient outcome.
	Law requiring maintenance of medical records, abstraction and publication of clinical data, etc.	Enable purchasers dealing with network of HCLs to screen potential foci of poor medical outcome. Assist bulk purchasers of health care services like employers and insurance plans in choice of providers. Educate people about provider choice decisions. Facilitate medical outcomes research
<b>Responsiveness (Interpersonal quality)</b>		
Structure	Provision of common area, and patient conveniences	Cleanliness, Facilities for attendant, etc.
	Cleanliness, Facilities for attendant, etc.	
Process	Grievance handling procedure Appointment and scheduling procedures, Timeliness norms, etc.	
Outcome	Patient / Client satisfaction	

<sup>10</sup> Mahapatra Prasanta; Sridhar P., and Rajshree KT. Structure and dynamics of private health sector in India A study in Andhra Pradesh, 2000. Hyderabad: Institute of Health Systems; 2001, page 75

for Accreditation of Health Care Organisations (JCAHO) in USA and had a two month attachment in an American hospital to study compliance with accreditation system from the hospital perspective. Another faculty while on a research fellowship with the Harvard University studied the accreditation system in the USA.

## Health Sector Reform



*Dr. Than Sein, Director, EIP, WHO-SEARO delivering a lecture on "Role of Private Hospitals in Health Care", on 8th December, 2002*

Health Sector Reform is a sustained process of fundamental change in policies and institutional arrangements of the health sector, usually guided by the government. Any meaningful reform process ought to be based on evidence and information about the current state of affairs, and potential effect of alternative policy choices. Many of the Institute's research activities take place with the objective of generating evidence and information for health policy. For example, the study of hospital autonomy, documented the experiences of the AP Vaidya Vidhana Parishad in Andhra Pradesh<sup>11</sup>. Some studies in this area describe and compare different health systems mainly in the developed (Organisation of Economic Cooperation and Development, OECD) countries<sup>12</sup>. Many studies have been taken up to understand the Private Health Sector including both for profit and nonprofit health care institutions. An early study taken up by the Institute was about the management of financial resources in voluntary health agencies<sup>13</sup>. Insights gained from

the Institute's study of organisation and management of community public trusts and civil society institutions were used to develop systems and procedures for Nandi Foundation, a community public trust based in Andhra Pradesh. The study on social evolution of hospitals and its relevance for health policy was an example of history of health care and its current policy relevance.

The IHS was commissioned by the AP First Referral Health Systems Project (APFRHSP), to take stock of the private health sector in Andhra Pradesh and identify appropriate policy choices for their overall development. A workshop was organised in May 1998, with participants from the private health sector and public health officials. Result of the studies spearheaded by the IHS were presented in the workshop and various issues were discussed. A comprehensive report on the private health sector in AP and policy recommendations regarding the private sector has been brought out. In 1999, the Institute started a more detailed study to understand the structure and dynamics of the private sector in Andhra Pradesh. The study was commissioned by the Government of India, Ministry of Health. This study collected data from within AP and reviewed literature from elsewhere in the world. The study found that there is hardly any difference in terms of efficiency and quality of care between private for profit, non profit and public health care institutions. Public and nonprofit health care institutions are clearly more accessible to the poor. One advantage of private forprofit health care institutions is their



*Shri M. Nagarjuna, Project Director, APFRHSP, addressing the Private Health Sector in Andhra Pradesh workshop as Dr. Alex George, Former Director of the Institute looks on.*

<sup>11</sup> Chawla Mukesh, George Alex. *Hospital autonomy in India: The experience of APVVP hospitals*. Harvard School of Public Health - DDM Working Paper No.40, 1996 Jul. Available for download at <http://www.hsph.harvard.edu/ihs/publications/pdf/No-40.PDF>

<sup>12</sup> Mahapatra Prasanta. *Aggregate allocation to health sector and health system effect: experiences from OECD countries*. IHS Working Paper: 1998; 23:1-17.

<sup>13</sup> Mahapatra Prasanta; *Management of financial resources in voluntary health agencies*. Working Paper 2/1991.

quick response to changing demand for services. The study recommends encouraging nonprofit health care institutions, and development of quality assurance infrastructure.

The IHS was commissioned by the Government of AP to prepare a State Action Plan for reproductive services and health sector reform. Review of the time trend and current status of reproductive and child health in the state, reproductive and child health program implementation in the state, focus group discussion with ANMs and PHC Medical Officers in the state, available results of other studies commissioned by the government in this regard, as well as the states vision 2020 health goals, contributed to the development of a state action plan. Major recommendations in the state action plan include; (a) basic package of services, drugs, equipment, supplies and furniture to be made available at the Sub center; (b) improvement of locational convenience and accessibility of PHCs and sub centres; (c) expansion of a scheme to increase institutional deliveries, using private partnerships, etc.



*Dr. Anji Reddy, Commissioner, APVVP and Director General, Health Services, AP, congratulating Dr. Peter Berman, Professor HSPH, after he delivered a public health lecture on "Reforming Health Systems : What have we Learned?" on 2nd March, 2002.*

The IHS was appointed as the State Consultant, by the Government of AP for the development of medium term financing strategy for the health sector. The reform strategy is to fulfill the State's structural adjustment targets pertaining to financing of primary health care. The Institute conducted a strategy development workshop in April 2001 to kick start the strategy development process. The DFID of the Government of United Kingdom which is likely to provide partial financial support for the reform process, appointed Harvard School of Public Health - International Health System Group (IHS) to continue the strategy development work in a two phase process. In Phase One, the Institute introduced the Harvard IHS team members to key stake holders, and familiarised them with relevant official documents and literature and provided other inputs gained from our experience in working with the AP health system. In addition, the IHS reviewed existing information and analysis on burden of disease in AP, suggested important gaps in current priorities and highlighted strengths of current priorities from a burden of disease perspective. Phase two of the exercise involves analysis and projection of the resource envelope for the health sector, development of specific strategies including the priority areas identified in phase one, and formulating a Medium Term Strategy Expenditure Framework in collaboration with the state government. The IHS role during this second phase is to contribute towards preparation of state health accounts for AP.



*Brainstorming at the strategic development workshop, held by the IHS on 24th & 25th April, 2001. Seated First Row (L-R) Ms. Neelam Sawhney, Commissioner, Family Welfare, Dr. Prasanta Mahapatra, Shri A.K. Tigidi, Prl. Secretary, Health and MD, APHMHIDC; Dr. Dinesh Nair, DFID.*

The Institute was assigned the task of developing community health insurance based family health protection plans by the GOI - Department of Family Welfare. The report of the study, presented to the government by end of March, 2003, recommends an income line for health and housing higher than the poverty line, for purposes of administration of state financing of health insurance coverage to families. The benefit package in the proposed family health protection plans include comprehensive ambulatory primary care, and access to first referral hospital services. The plans would mostly use private clinics for the ambulatory care and public or nonprofit providers for hospital services. Minimum quality of service standard have been recommended for clinics. The plans will provide better access to public hospitals and help improve their utilisation. Nonprofit mutual health organisations are envisaged to underwrite the health care coverage risk and administer the plans. The proposal is under active consideration of the government.

The Institute has made modest contributions by being available to the Prime Minister's Office (PMO) and in rendering assistance, according to its capacity. The Institute's comments on the draft new national health policy was sought. Accordingly a presentation was made at the PMO on 17 Jan 2002. Senior officers from the PMO and various ministries of the GOI were present. Suggestions and comments about expanding the health care coverage to ex-servicemen, sought by the PMO, was submitted. The Institute's Director is a member of the Task Force on Public Private Partnership, which works from the PMO. Institute has been contributing towards generation of creative ideas and identification of opportunities for public private partnerships to improve public health.

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## Academic Programmes and Training Services

The IHS is developing academic programmes and offering training services to build interdisciplinary skills for more efficient health system.

### Academic Programmes

As part of our continued efforts to build capacity in various areas of public health, the IHS has developed three full time academic programmes: (a) The Certificate Course in Health Care Software Development (HCSD) (b) The Certificate course on Health Intranet System Administration (CHISA) (c) The Advanced Studies in Public Health (APH) programme.

#### The Certificate Course in Health Care Software Development (HCSD)

Application of information technology to the domain of health care delivery is referred to as Health Informatics. The IHS offers a training program in software development for health care field. The Certificate Course in Health Care Software Development (HCSD) is designed to develop domain knowledge in health care field among computer software engineers. Participants in the course learn about health informatic standards like the Health Level Seven (HL7), general functioning of health care institutions from the information system perspective and various types of health informatics solutions. This is a fifteen month program consisting of three months full time course work and one year internship. The program started in 2000. Intake is between 5-10 students each year. Two batches have completed the course and are working in different software development organisations. Third batch finished their training and are in their internship phase



*Dr. Gullapalli N. Rao, Director, LVPEI, handing out certificate to a graduating HCSD student, on occasion of HCSD Commencement Ceremony, 2002*



*First batch of CHISA - Commencement Photo, October 1999. Seated (L-R) E. Srinath, Course Co-ordinator; Shri I.Y.R. Krishna Rao, MD, APBCCFC Ltd.; Shri Asutosh Mishra, MD, APSCCFC; Dr. Prasanta Mahapatra, Director, IHS & G. Kalyan Ram, System Administrator.*

#### The Certificate course on Health Intranet System Administration (CHISA)

The Institute of Health Systems has been making efforts to build health informatics infrastructure in India. The IHS offers a training programme to build manpower to meet system administration needs of hospitals and health care organisations. This certificate course offered by the IHS is a 15 month training course consisting of three months full time training followed by one year internship. The course teaches skills in administering and implementing windows NT, which is accredited to the State Board of Technical Education and Training. CHISA graduates are more versatile as they are trained for system administration PC hardware trouble shooting and building up small local area networks. The program started in 1999. Intake is between 20-30 students each year. Many students are sponsored by the SC and BC welfare department of the Government of Andhra Pradesh. The course has been recommended by the GOI

Ministry of Social Justice, to the Social Welfare administration of various states as an innovative scheme for employment. Three batches of CHISA students are already working in different hospitals and in reputed software companies. The feed back to us has been positive. And our fourth batch finished their training and are in the internship phase.

### The Advanced Studies in Public Health (APH) programme

Continuing its efforts to build capacity in various areas of public health, the IHS has developed a certificate of Advanced Studies in Public Health (APH) program. The program aims to equip students with essential public health competencies in such areas as research methods, policy analysis and management. The curriculum promotes an interdisciplinary and comprehensive approach to issues related to health, development and provision of health services. The program is designed to provide multiple opportunities for students to practice public health skills and foster critical thinking about issues addressed by them. Students are drawn from a broad range of medical, allied health, technical, humanities, physical and social science disciplines. The program requires four semesters of full time course work and two inter semester field placements. The first batch started in January 2003 with four students each coming from different parts of the country (Jammu & Kashmir, Gujarat, Andhra Pradesh, and Orissa). The Government of Gujarat sanctioned sponsorship for two candidates in the first year.

### Training Services

Public health related training services fall broadly into two groups namely, (a) Health System Operation (b) Health System Research Methodology

#### Health System Operation

The IHS has involved itself in development of human resources for better health care in Tribal and remote areas. The Institute's work on Tribal area health services started with an early study on potentiality and relevance of herbal and traditional medicine on health care in tribal areas. The Institute built an ethnobotanical database on medicinal flora in Tribal areas of Andhra Pradesh (MEDFLOR). These research activities were followed up by developing special course and teaching materials to train private health workers in Tribal areas. Some training programs were organised in Bhadrachalam ITDA areas. Thereafter, training programmes for medical officers and community development officers were organised in Paderu ITDA area. These activities lead to the development of more regularly offered training programme on Managing Primary Health Care in Remote Areas (MPHCR) designed specifically to benefit medical officers, ITDA officials, and PHC Extension officers in Tribal Areas. This two week programme builds required skills in organisational behaviour, public administration, rapid assessment of health situation, program management, monitoring and evaluation, accounting and financial management, working with tribal communities, disciplinary procedures, conduct rules, and office procedures. The programme also reinforces selected technical aspects of important public health problems more commonly encountered in remote areas. Nine batches of PHC officers have been trained so far in managing primary health care in remote areas.

The IHS training programme on Safe Management of Bio-medical Waste aims at raising awareness on hazards related to Bio-medical waste management, provide information on safe Bio-medical waste management practices, raising awareness about the policies and legal framework on Bio-medical waste and transmitting basic skills for development and implementation of Bio-medical waste management policy.

The IHS has been developing training programmes to harness the opportunities offered by computing and telecommunication technologies, in design, implementation and maintenance of robust, sustainable health care environments. The Institute's programme on "Smart use of computers by health executives", focuses on



*December, 1998 Batch of MPHCR participants and IHS Faculty with: Shri Smarajit Ray, Principal Secretary, Social Welfare Department (seated 5th from left); Shri T.S. Appa Rao, Commissioner, Tribal Welfare (seated 4th from left); Shri Chitta Ranja Biswal, Secretary Tribal Welfare (seated 6th from left)*

the use of computer applications in simple operating environments to resolve recurrent organisational and management challenges. The Health Level 7 (HL7) training programme, creates awareness about the HL 7 protocols which is an international standard for electronic data exchange in all health care environments. The programme covers all major modules including patient administration and observation reporting from a developers point of view. Software firms interested to develop health care software particularly for export usually avail of this program to familiarise their developers with the HL7 standard.

### Health System Research Methodology

These programs are designed to build national and regional health system research capacity. To generate required evidence and information for health policy, the Institute has sustained research on estimation of National Burden of Disease. Most countries, lack national capacity in burden of disease research methods. Fortunately, the Institute of Health Systems has been involved in this frontier area of research right from the beginning, starting with the publication of the Global Burden of Disease estimates in the 1993 World Development Report. The IHS is the only centre in the South and East Asian region with substantial expertise



*National Burden of Disease Workshop for ICMR Scientists - Valedictory Function on 19th November, 2001.*

in national burden of disease studies. Recognising this, the Indian Council of Medical Research (ICMR) approached the Institute to train its scientists in burden of disease study methodology and research on causes of death. A two week workshop was designed to train epidemiologists in the burden of disease estimation method. Two scientists each from various ICMR laboratories attended the workshops conducted at the IHS in two batches during November, and December, 2001. Two scientists from the Post Graduate Institute of Medical Research, Chandigarh also participated. The IHS is continuing to assist in consolidation of this capacity through e-mail support, and follow up workshops organised by the ICMR. More training programs in related areas of the burden of disease research methodology are contemplated.

Information about causes of death is an important input for estimation of disease burden. The Institute has sustained research programme on causes of death in India. Based on knowledge and skills gained from its research, a suite of programmes on various aspects of cause of death coding and research has been developed to meet the needs of different people involved in generation of cause of death statistics. These include programmes for training of doctors in reporting cause of death, training for municipal health officers and vital statistics personnel about collection, compilation and collation of cause of death statistics, and cause of death research methodology for scientists. A training program on Processing and Research Information System for Mortality (PRISM) data was held in the month of March, 2001. The ICMR has identified the IHS to organise workshops on cause of death research methodology for its scientists. Two scientists from the National Institute of Epidemiology, Chennai have been trained in cause of death research methods. Work at the IHS as well as other centres in the country contributed to development of detailed guidelines for verbal autopsy by SRS surveyors. The IHS conducted training programs for SRS surveyors at Hyderabad, in December 2002, and Bhubaneswar, in January 2003, for SRS surveyors from AP and Orissa respectively. The Institute's faculty also assisted in training at Bhopal of SRS surveyors from Madhya Pradesh.

Another important training programme developed at the IHS, is that on designing and implementing health state valuation studies. A community based health state valuation study was conducted at the IHS during 1998-99. Methodology and tools for community based measurement of health state values were developed. Scientists from the National Institute for the Mental Health and Neuro Sciences (NIMHANS), Bangalore and the All India Institute of Medical Sciences (AIIMS), Delhi, needed to train their personnel to take up a study that required health status valuation. A one week training program was organised during September, 1999 for this purpose. The participants were introduced to theoretical concepts of health status valuation and were familiarised with the health state valuation kit developed at the IHS. Participants received practical training to work with respondents and elicit their valuation of a health state.

Other training programmes on health system research include; Introduction to Methods of Epidemiology; Academic and Business Communication (ABC workshops); etc.

## Health Informatics

Application of information technology to the health sector has tremendous potentiality for efficacy of health care delivery institutions and provision of cost-effective health care. Health care delivery institutions will require information technology to meet their client demands and stay competitive, since, the future for them lies in cost-effective health care. General purpose information technology solutions are usually inadequate for specialised needs of the health sector. That is why a host of solutions, standards and services are emerging to meet needs of the health sector. Application of information technology to the domain of health care delivery is referred to as Health Informatics. The Institute has been making concerted efforts to build the health

informatics infrastructure (HII) in India. Major HII activities of the Institute are (a) human resource development for health informatics, (b) health informatic standards, and (c) health care identification systems.

To build skilled manpower for health informatics, IHS runs different kinds of academic and training programmes which have been described above. A major determinant of the rate of adoption of information technology in the health care sector is the personal computing skill of health care professionals. If doctors, nurses and other health care professionals are comfortable with personal computing, the rate of information technology adoption in health care institutions is likely to be faster. Towards this goal, the Institute incorporates



*Dr. R.S. Rama Devi, Director Medical Education, conferring certificates to CHISA 2001 graduates, on 31st August, 2002.*

a personal computing component in all its training programmes and takes up fully dedicated training courses in use of personal computers by health care professionals. Inputs on EpiInfo (WHO software on epidemiological information system) as a part of the training on Managing Primary Health Care in Remote areas is an example of the former. The programme on smart use of computers by health executives is an example of the later.

IHS has recently adopted a regulation for setting up a health care identifier (HCId) system, which will be an useful infrastructure for electronic transfer of information between health care and related institutions. The Institute also develops soft ware to meet needs of health system research. In addition software for health care institutions are developed as a part of the Institutes educational program of developing human resources in health informatics.

## Public Services

### Library and Bibliographic Services

Over the years, the IHS Library has accumulated a modest but specialized collection of health information resources comprising books, reference manuals, journals, reports, monographs, newsletters, statistical publications, government publications, newspaper clippings, annual reports, conference proceedings, audio / video resources etc. The library's collection in the area of health economics, health informatics, community health, health insurance, health services research, health policy studies,



*Shri Arjun Rao, Spl. Chief Secretary, Department of Health & Family Welfare, AP, visiting the IHS Library.*

vital and health statistics includes resources not easily available elsewhere in the country. The library's official documents collection (ODC) includes communications, reports and documents on health issues, services and programmes, issued by state and central governments. Vital and health statistics related reports by the National Sample Survey Organisation, RGI and other organizations are regularly collected. A computerized catalogue of library resources is available for easy retrieval. The catalogue gives details of the library holding, including author, title, and keywords. Two dedicated Internet access stations are provided for library users. Access to bibliographic databases such as the POPLINE and MEDLINE is available. The library is open for extended hours from 9 am to 7 pm. A full time librarian and assistants are available to help users access the bibliographic resources. Printing and photocopying services are provided to library users. Students and staff of IHS have unrestricted access to library resources. Health care professionals, researchers and general public can access library resources for a nominal membership fee.

## Publications

The Institute, as a matter of principle, publishes all its research and consultancy outputs through working papers, reports, data sets, or monographs. These publications are available to public for a nominal price, to cover cost of publication. List of IHS publications are provided in the IHS capacity statement, which is updated from time to time as well as through the Institute's web site. Publications can be obtained personally from the Institute's Front Office or by writing to the Communications and Services Officer.

## IHS - Public Health Lectures

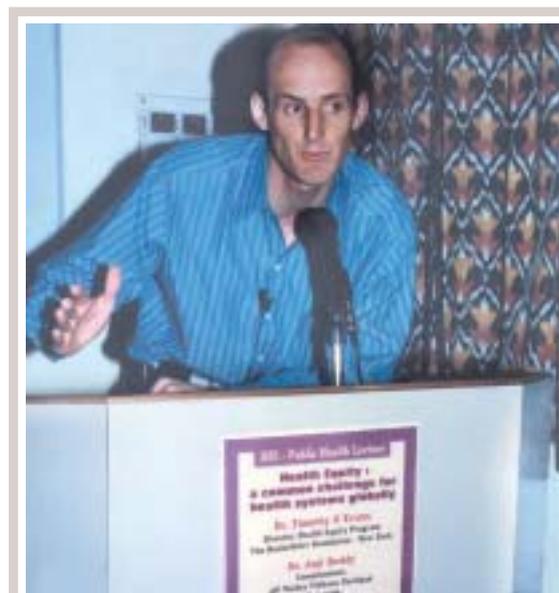


*Prof. Susan Beth Rifkin, London School of Economics, delivering a lecture on "Future of Primary Health Care?", 6th June 2003*

related studies. Towards this end, the IHS has been striving to provide opportunity to persons interested in improvement of the Andhra Pradesh health system to share and learn from the insights of top class intellectuals and public health analysts.

The Institute arranges public health lectures, whenever there is an opportunity of having the time from reputed health system researchers and health policy analysts. Title of the lecture is identified in consultation with the visiting public health analyst. The public health lectures are open to any one interested in the subject. Admission is free. The events are publicized through posters, notices and news paper. In addition, special invitations are sent out to members of the IHS, public health officials, news media persons, and opinion leaders in the medical and health community.

Generating the evidence and information base for health policy is necessary to improve a community's capacity to effectively deal with its health care and related issues. But mere availability of research results is not enough. A community must be able to use evidence and information through its various formal and informal institutions. Usage of evidence and information for policy is predicate on awareness by general public and knowledge among the public health community, of results from health system and



*Dr. Timothy G Evans, Director, HEP, The Rockefeller Foundation, delivering a lecture on "Health Equity : a common challenge for health systems globally", 25th January, 2000.*

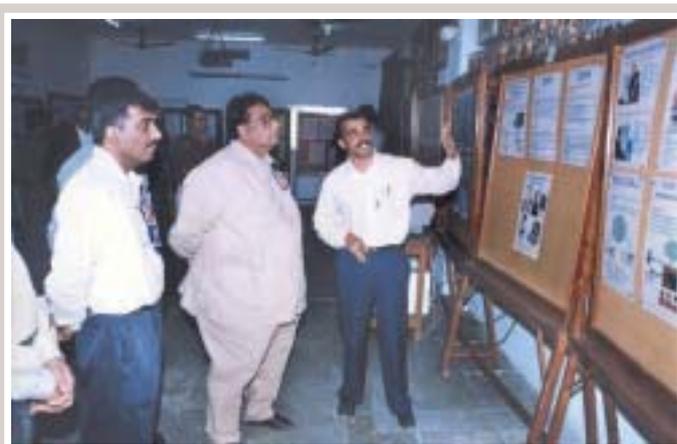
## IHS - Public Health Symposium



*Dr. C. Rangarajan, Governor, AP inaugurating the Public Health Symposium service of the Institute, 7th April, 2002.*

presentations, a book exhibition, an inaugural session, speaker presentations, Question & Answer interaction, and a valedictory session. A report of the proceedings is published along with a review of literature concerning the topic. Two Public Health Symposia have been conducted till date. The first Symposium was on "Costs of Poor Health Habits - Sedentary Lifestyle, Heavy Drinking and Smoking". The second Symposium was on "Shielding our Children from Accidents".

The IHS Public Health Symposia provide the platform for generation and sharing of ideas among representatives from the Government, Administrators, Policy makers, Public Health experts, Researchers, and the Media. A topic of current importance is chosen, and many experts are invited to present on various aspects of that topic. Symposia last the whole day, and include poster



*The Chief Guest, Dr. Thakur Hari Prasad, viewing the IHS poster presentation, on the occasion of the second Public Health Symposium, 7th April, 2003*

## Database Services

### Andhra Pradesh Health Institutions Database (APHIDB)

This database of Health Care Institutions (HCIs) in the AP (APHIDB) contains basic identifying information about public, private for-profit and non-profit HCIs. This data base was set up in the year 1993, starting with 3,000 records. As of May 2003, the data base has 19,824 HCI's listed in it. APHIDB is an effort to make comprehensive information available about HCIs in a structured way. APHIDB is made available by IHS over its local area network to visiting public, researchers and health policy analysts for reference. Standard queries to generate summaries by hospital location, size or type of service, etc. are provided. Individual hospitals can also be queried. Special queries have been written to meet specific requirement of researchers. Mostly people have used the data base to generate list of hospitals at a chosen place, or to generate a sampling frame of hospitals in a given area for purposes of research. Nominal service charges are collected for the query services.

### MEDFLOR - INDIA

The Institute of Health Systems has set up a computerised database of Medicinal flora called "MEDFLOR - INDIA". Published and unpublished literature containing ethnobotanical information are collected. These articles are coded by an ethnobiologist to yield structured information for the database. The Institute provides search and query services to researchers, research institutions, public health workers about medicinal plants. This database was set up in the year 1993. To start with, the Institute is focusing on the medicinal plants in A.P. So far 200 unique usage entries of 400 plant species have been incorporated in the database. The database was set up in technical assistance from the department of pharmacy, University of Illinois at Chicago (UIC) and the department of botany, S K University, Anantapur, Editorial guidelines for MEDFLOR and a format for collection of ethnobotanical information has been developed.