

# **RELATIONSHIP BETWEEN ALLOCATIVE INEFFICIENCY IN PUBLIC HEALTH SERVICES AND ACCESS TO HEALTH CARE**

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## **Abstract:**

**OBJECTIVE:** This paper describes the effect of allocative inefficiency in public health services on access to health care.

**METHODOLOGY:** The paper is based on a descriptive cross-sectional, observational study, taking into account financial data stemming from the State health budget for the year 1999-2000. The findings were compared with actual resource utilisation in a sample of public health facilities in a district of Himachal, India. A hundred OPD patients and 50 in-patients per hospital, were interviewed randomly, for determining their treatment costs. The analysis is based on a conceptual model of supply and demand of health services.

**FINDINGS:** Medical drugs constitute less than 8% of total state health budget, whereas 88% goes to salaries. Government health facilities supply 40% of the value of average OPD and in-patient prescriptions, whereas the patients spend 60% to purchase it from private pharmacies.

**CONCLUSION:** Allocative inefficiency is manifested in low provision for drugs and consumables, creating shortage of these items. Allocation also neglects the combination of inputs, where physical inputs are not complemented by the human resources input. This leads the patient to bypass the referral system, approaching the higher-level institutions or private providers. This decreases their accessibility to basic health services, increasing their overall cost of treatment.

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## **Background**

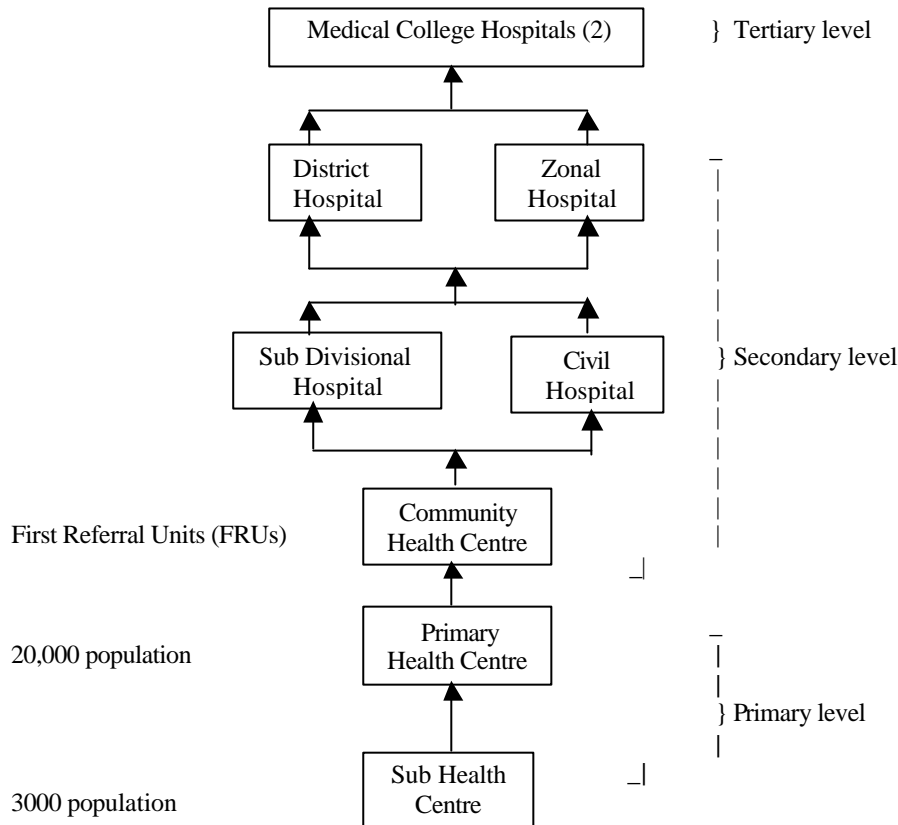
To make health services accessible to larger sections of the population, irrespective of their economic and social status is commonly regarded as the responsibility of the government. The importance of government provided public health services is paramount in less developed regions of the world, where private health care plays a minor role because of various factors like low per capita income, insufficient infrastructure, lack of institutional support, insurance schemes etc. There, governments are faced with the dichotomy of growing health needs of an increasing population on one hand, and the lack of resources to provide health services on the other hand. In a situation, characterised by a predominant role of government health care delivery and a scarcity of resources, the allocation of later becomes critical. Efficient allocation of scarce resources can contribute to maximising people's benefits when using public health infrastructure, i. e. by increasing access and quality. Taking the public health services of Himachal Pradesh

(H.P.) situated in the north of India as an example, the paper looks into inefficiencies in the allocation of resources within the public health care system in the state and its effect on people's access to health care. It is partly based on a study undertaken in July-August, 2000 in the district of Kangra within the activities of the Basic Health Project, Himachal Pradesh, which tries to improve quality of public health services. It is supported by German Development Cooperation (GTZ).

The state is spread over an area of 55,000 sq. km, in 1998, HP had an estimated population of 5.9 million, with a density of 106 persons per sq. km. The overall literacy rate is 64 per cent. Administratively it is divided into 12 districts and has a total of 2757 villages. The population is mainly rural. The per capita income, as per 1994-95 figures, is \$ 195 (Rs. 7800) at current prices. The major sources of income are agriculture, horticulture and tourism. Landholdings are generally small. There are some large industries especially in cement and power generation sectors. Overall, around 70 per cent of the workforce is in the informal sector, with no secured and fixed source of income round the year.

The health services in the state are delivered through a network of health facilities arranged hierarchically in a pyramid (see Fig.1). At the bottom of the pyramid is the Sub health Centre (SC), covering a population of around 3000 and staffed by a male and a female health worker. Above it is the Primary Health Centre (PHC) comprising a doctor and some basic laboratory facilities covering around 20,000 people. Then comes the First Referral Units (FRUs), which are Community Health Centres (CHC) or Block PHCs, with diagnostic facilities such as a laboratory and X-ray plant. CHCs normally have 30 beds. Above that are Sub Divisional Hospitals (SDH) and Civil Hospitals (CH), which have 50 and 100 beds, respectively. These Hospitals undertake surgical interventions and are equipped with additional imaging equipment such as ultrasonography. Above them are the District Hospitals (DH) and Zonal Hospitals (ZH) with 200 and 300 beds respectively serving at least the four basic clinical specialities, paediatrics, internal medicine, surgery, gynaecology / obstetrics. At the top of the pyramid, there are two Medical College Hospitals.

**Fig. 1: Health System in HP, India**

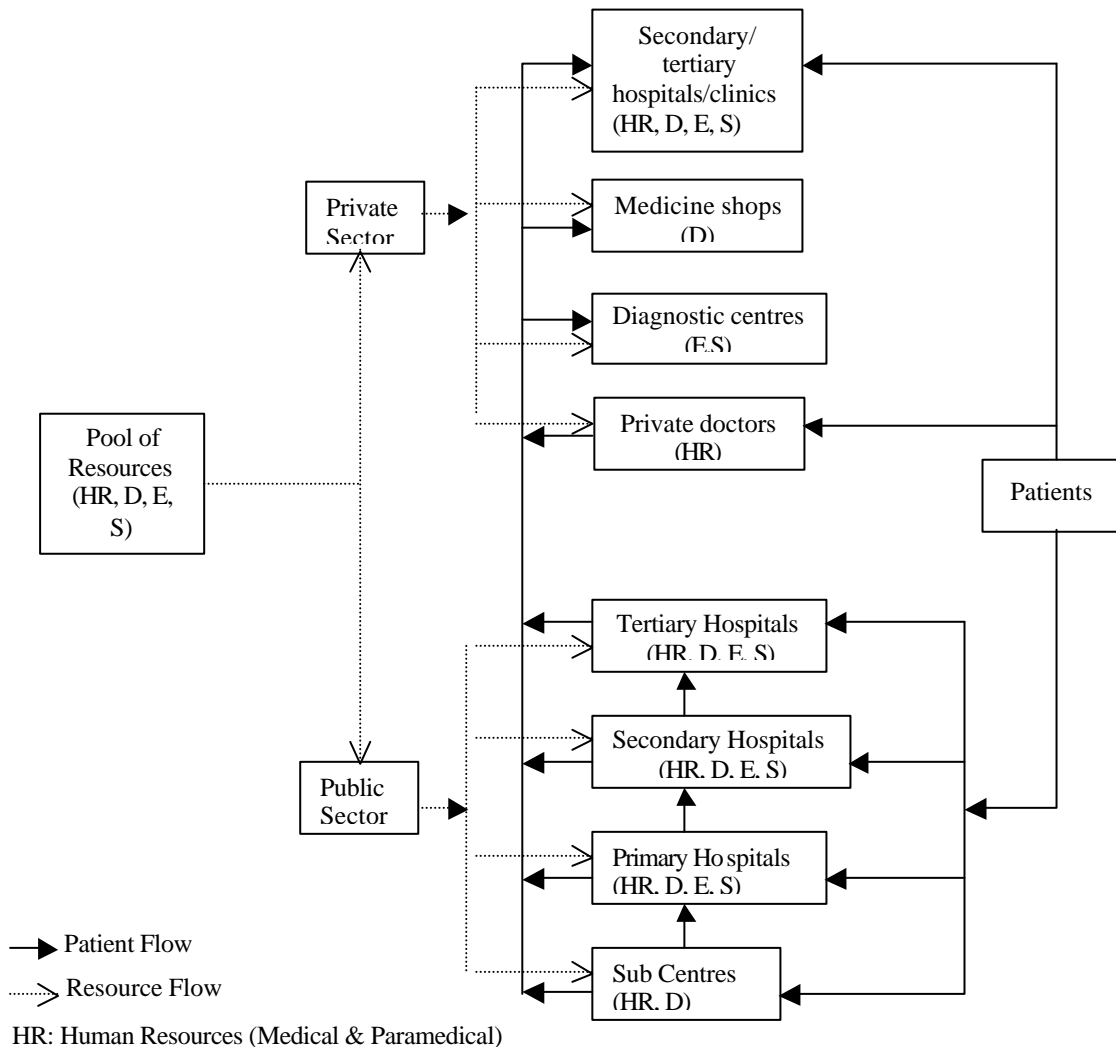


Over the last 3 years, the state government had been facing a severe resource crunch, the fiscal deficit of the state government being approximately 16 per cent of the state GDP, at current prices. The health department has also suffered from the financial crunch with the share of health in the overall state budget declining from 6.01 per cent in fiscal year 1999-2000 to 5.18 per cent in 2000-2001. This has induced the state health department to look into possibilities to improve cost efficiency through rationalisation of infrastructure and service provision and at the same time increasing the accessibility to public health care.

### Conceptual Framework

The discussion in this paper is based on a conceptual model of health services delivery, incorporating the interplay of elements from both supply and demand side. The model depicts two types of flows. On the supply side there is the flow of resources, and on the demand side there is the flow of patients. The division of resources into various sectors and levels of health services delivery involve allocation. The path traversed by the patients in reaching a point of service delivery depicts the accessibility. The longer and more complex the path, the greater is the burden of treatment in terms of cost, time and inconvenience. This would imply lesser access to health care, based on the rationale that people avoid inconvenience. The model is described in Fig. 2 below.

**Fig. 2: Model of Provision and Access to Health Care**



D: Drugs & Medicines  
E: Equipment  
S: Supplies

In the above model, the major types of resources considered are :

**Human Resources**, comprising of medical and paramedical staff,

**Hardware**, such as bio-medical equipment and

**Consumables**, such as medical drugs and other supplies including dressings, laboratory reagents, X-ray films, etc.

Allocation of these resources among the public and private sector is mainly dependent on exogenous factors, from the government health sector's point of view, namely the collective weight of the private sector in terms of paying capacity and command over capital and market forces. Allocation among various points of service delivery within the private sector, namely private hospitals/ clinics, drug stores, diagnostic centres and private doctors, is only determined by market forces. The health managers and administrators control allocation of resources within the public health care sector.

On the demand side, the patient can either go to the private or the public sector. In the private sector, the patient visits either a private doctor/ physician or the private hospital. Normally he gets diagnostic services and medicines from the hospital itself. In case he visits a private physician, he might further need the services of private diagnostic centres, and he has to purchase medicines from private pharmacies. If the private physician is not able to handle the case, he may refer the patient to the hospital. If the patient seeks public health care, he may follow the referral chain or go directly to any level of the health system.

Ideally, at lower level facilities the frequently required services should be available to the patient, be it diagnostic or therapeutic. But, in case he does not get the required range of services there, he must either approach a higher level facility or may need to seek private health care for any one or all of the required services. An efficient allocation of resources within the public health system would have to ensure the availability of the commonly

required services within the facility or the referral system. As public health care is subsidised by the government, the burden of treatment costs on the patient should be low, thus increasing his access to health care provided by the public system.

### **Methodology**

The survey was based on a descriptive cross-sectional, observational analysis taking into account available financial data at the same time. Sources and the amount of monetary and non-monetary inputs at various levels were determined and cost-efficiency aspects of most common diagnostic and therapeutic procedures examined. One SDH, one CHC, two PHCs were covered. Selection of the facilities was based on convenience and presumed availability of the required financial information. The state health budget of Himachal Pradesh for the year 1999-2000 was studied. Actual resource utilisation in the facilities was obtained by observing diagnostic and therapeutic procedures and interviewing hospital staff. A random sample of 100 OPD patients and 50 in-patients per hospital, were interviewed with standardized questions to determine actual treatment expenses.

### **Findings**

The health system in Himachal is dominated by the government, the allocation within it is characterised by inefficiency, especially for drugs, supplies and equipment, at primary and secondary level. This forces the patient to seek higher level care even for minor and common ailments, or seek the services of private providers outside the state.

**Public-Private Share in Health:** As is evident from the Table 1 below, almost 90 per cent of the health facilities as well as the majority of available hospital beds, fall under the public health sector. In Shimla the private sector plays a greater role due to its being the capital of the state and the relatively higher disposable income of the population, as compared to the other districts.

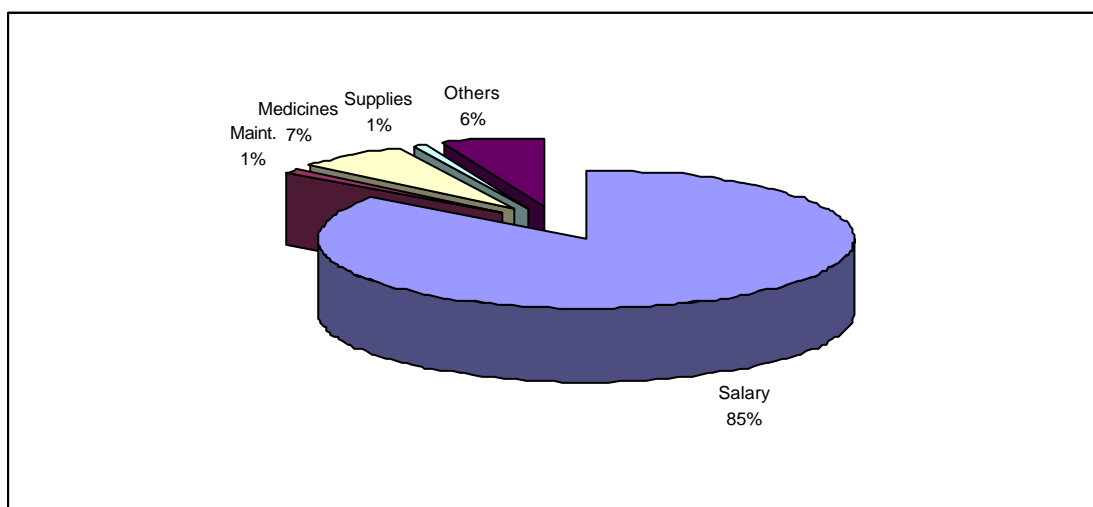
**Table 1: Public and Private Health Institutions and Beds in Five GTZ Project Districts in Himachal Pradesh, India**

District	Govt. Health Facilities	Priv. Clinics/ nursing homes	Percentage of Govt. facilities	Govt. Beds	Private Beds	Percentage of Govt. beds of the total
Bilaspur	153	10	<b>94</b>	200	0	<b>100</b>
Chamba	219	5	<b>98</b>	270	0	<b>100</b>
Kangra	535	60	<b>90</b>	730	190	<b>79</b>
Kullu	362	5	<b>99</b>	200	25	<b>89</b>
Shimla	158	50	<b>76</b>	1465	180	<b>89</b>

Source: State Health Statistics, H.P., 1998

**Government Health Budget:** As the government is the predominant player in the state health system, the resource allocation under its health budget determines in essence the health service provision in the state. As seen in Fig. 3 below, the major portion of the health budget goes to personnel salaries, leaving a minuscule 7 per cent for medicines and merely 1 per cent for supplies and maintenance. This leaves the government health system with very little funds for inputs having direct bearing on treatment, such as diagnostic and therapeutic equipment, consumables, including medical drugs, thus seriously affecting the quality of care and access.

**Fig. 3: Composition of Himachal Health Budget 1999-2000**



Source: GTZ Costing Study, HP, 2000

**Expenses Incurred by Patients:** The study mainly focused on the expenses incurred on the patients from medicines, as it is viewed by the patients monetarily the most visible and perceptually the most dominant factor of treatment. It was found that patients pay around 60 per cent of the average OPD prescription out of their own pocket for medical drugs. The government health facilities generally lacked more expensive drugs, even if those are part of the essential drug list in the state. As a result, patients have to purchase from private pharmacies. It was also found that patients had to seek private diagnostic services, especially for X-ray, sonography, etc., as the public facilities either do not have a trained operator, or the machine is not maintained properly and is lying idle. Therefore a patient pays around Rs. 150 for a private chest X-ray, whereas the equivalent public X-ray would not cost more than Rs. 50. In the end the patient usually pays a higher price for items like medicines and diagnostic services from private providers, as these may not be available in public facilities.

**Utilisation of Public Health Facilities:** As is evident from table 2 below, the utilisation increases with the level of the facility within the referral system, both for in-patient and out-patient care. Even the caseload per doctor is higher in higher level facilities. It was observed that patients with minor ailments directly approach higher level facilities, as their confidence in the lower level facilities is eroded because of their lack of critical inputs, such as medical drugs and bio-medical equipment for diagnostic and therapeutic services. Even higher level facilities lack diagnostic services, because of non-functional equipment or lack of trained staff. In such cases, the patients have to seek private care outside the state causing them additional transportation costs and inconvenience.

**Table 2: Average Annual Case-load in Public Health Facilities**

S. No.	Level of Hospital	No. of Doctors	Out-patient Cases ('000)	In-patient Cases ('000)	Out-patient per doctor	In-patient per doctor
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1.	Zonal Hospital	27	331.26	66.75	12,143	2,575
2.	Civil Hospital	10	84.62	17.95	7,273	1,480
3.	CHC	3	17.79	1.61	7,506	507
4.	PHC	2	14.62	0.28	9,212	143

Source: GTZ Baseline Study, HP, 2001

## Conclusion

As is evident from the above discussion, the allocation of resources in the government health system is inefficient, which is manifested in low provision for drugs and consumables, creating shortage of these items at the facility level. Allocation also neglects the combination of inputs, where human resources are not complimented by other critical inputs such as, supplies and consumables, preventive maintenance systems, etc.. This compels the patient either to approach higher-level institutions directly, bypass the public referral system, or to visit private providers that charge higher fees. The inefficient allocation of resources increases direct and indirect costs of treatment on the part of the patient and affects the function of the higher level public facilities due to overcrowding. At the same time lower level public facilities are underused for services they are expected to offer.