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Invited Lecture

Health Policies and Human Capital: The Case of Pakistan

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The most valuable of all capital is that invested in human beings.
Alfred Marshall: *Principles of Economics*

Cash payment is not the sole nexus of man with man.
Thomas Carlyle: *Past and Present*

Things are seldom what they seem/Skim milk masquerades as cream.
W.S. Gilbert: *HMS Pinafore*

1. INTRODUCTION

All countries of the world confront complex dilemmas when dealing with their respective health sectors. In the industrialized democracies a seemingly insatiable demand for health care is outstripping supply, despite a relentless increase in the latter's share of national budgets and family incomes. Yet, there is little corresponding rise in general health indices, or even in human happiness about the quality of medical services. The inability of health services to deliver greater health for more money has ironically not blunted the public's appetite for them; rather, it has perversely increased it. Some of the evident reasons for this paradox are the following: (a) affluent humanity is less prepared than ever before to suffer minor ailments without drugs or other medical help; (b) demand for health care has been further stimulated by both new treatments for curable diseases and expanded coverage throughout the poorer levels of society; (c) new cures for old diseases come with ever higher price tags for their sophisticated technology so that much additional spending still saves few lives; and (d) the elderly, whose relative numbers in society are growing, require more routine medical care than the young. Clearly, health services in the developed North are victims of their own successes.

The Third World also confronts dilemmas in health care but for different reasons. There, insufficient resources are allocated to developing human capital,

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while the scanty resources available are often consumed by capital-intensive, high-technology, low-productivity investments. Health services and facilities are undervalued in national development plans, and there is little popular pressure for more appropriate and better care. Rhetoric notwithstanding, health service systems in the underdeveloped South' are patterned after the urban-oriented preferences and requirements of the former metropoles.

Without doubt, health care has become a major component of the contemporary state. In every industrialized country, it consumes significant proportions (6–12 percent) of the gross national product as well as places increasing stress on government budgets. In developing countries, health care is estimated to consume two percent or less of GNP, and it competes (usually unsuccessfully) for finance as a basic human need. Yet, in all societies, the health sector is a major source of employment and also affects the lives of all citizens. With so much at stake, arrangements for planning, financing, and operating health service systems have increasingly come to be regarded as important political issues. Politics permeates the very definition of health care *per se*, which can run from services provided by a physician to self-care, preventive medicine, nutrition, housing, and even employment. However, common usage equates health care with medical services provided through clinics and hospitals, a usage which can be justified because medical services account for most health expenditures [32; 42].

The political importance of health care derives partly from the evident contribution of adequate health services to the quality of human life, and so it is sought by both developed and developing societies. Political importance also derives partly from the increasing costs of these health services, a problem which is compounded because the direct contribution of health services to prolonged life expectancy, reduced morbidity, or other indicators of improved health in Western countries is increasingly marginal [16; 25]. Even in the Third World, investments in sanitation and clean water supply yield greater direct benefits than the construction of more clinics and hospitals or the deployment of additional highly trained medical personnel. Since all societies face limitations on resources and competing priorities about their allocation, the politically embarrassing fact has emerged that patients are receiving fewer unambiguously beneficial results despite higher expenditures on the health sector. This problem is worldwide.

One way to understand these dilemmas and to devise methods to deal with them is to examine empirical case-studies for the contribution of health policies to human-capital formation. Like the term 'political economy', the concept of 'human capital' has many interpreters and many variants, but a simple, fairly qualitative definition will suffice, which at some later date might be subjected to more rigorous estimation and quantification. As a major theoretician in the field observed,

> "Peoples of the world differ enormously in productivity, . . . these differences are in turn largely related to environmental factors, and . . . the latter are in turn related to the accumulation of knowledge and the maintenance of health. The concept of investment in human capital simply organizes and stresses these basic truths. Perhaps they are obvious, but obvious truths can be extremely important" [5, p. 237].

Much of what is called consumption actually constitutes investment in human capital. Direct expenditures on education, health, and internal migration to take advantage of better job opportunities are clear examples.

Economists have long known that people are an important part of the wealth of nations [30]. Schultz [64, p. 25] argues that measured by what labour contributes to output, the productive capacity of human beings is now vastly larger than all other forms of wealth taken together. What most economists have not stressed, however, is the simple truth that people invest in themselves and that these investments are very large. Although seldom timid about generating abstract analysis and often proud of being impractical, economists have not seriously grappled with this form of consumption-as-investment. Investments in health facilities and services include all expenditures that affect the life expectancy, strength, stamina, vigour, and vitality of a people [42]. Health activities have implications for both the quantity and quality of life.

Two decades ago, Gunnar Myrdal placed the development of human capital squarely within his theory of cumulative causation:

> "From the planning point of view the effect of any particular policy measure in the health field depends on all other policy measures and is, by itself, indeterminate. This means that it is impossible to impute to any single measure or set of measures a definite return in terms of improved health conditions. A generalized model, in aggregate financial terms, visualizing a sum of inputs of preventive and curative measures giving rise to an output of improved health conditions cannot be of any help in planning. In fact, such a model *presupposes* the solution of the planning problem, for it is premised on an optimum combination of all policy measures, which cannot be achieved without taking account of circular causation within the health field and in the whole social system" [49, p. 1618].

Logically, the problems of health become integrated in the general problem of planning for development. Thus, it is important for health that agricultural production be increased, education improved, and, even more generally, poverty be reduced. The Basic Human Needs approach during the 1970s gave somewhat higher priority to the fields of health and education, but the prevailing philosophy of development continues to stress the overriding importance of investment in the physical elements of national growth. Models centred on the concept of a capital/output ratio dictate

the direction of economic planning. One implication of this approach is that "non-economic" factors – not only institutions and attitudes but also levels of living, including health and educational facilities – continue to be undervalued in national plans.

Health policy, then, is an often neglected aspect of development economics. In terms of human aspirations, health standards are an important part of the quality of life. In its etymological sense of 'wholeness' or 'completeness', good health is a significant component of well-being. The improvement of health is also an essential element of socio-economic development. Unhealthy people are not very productive while healthy people not only are more productive but also appreciate the production all the more. However, while health services can play an important part in improving health standards, it must also be clear that they cannot do it alone. Activities which help to improve health range much wider than the mere provision of medical care. Such elements as food and nutrition, sanitation, clothing, shelter, education, and even employment are also important – and sometimes more important than clinical and medical services *per se.*

It is commonly understood that a national plan shows how a nation's resources are intended to be used in future years. Health services use resources, including imports and highly educated manpower, which might alternatively be used in other sectors of development. Since the resources available to a nation are limited and the resources used in investment are not available for current consumption, a plan for health services necessarily forms a part of the wider plan for the use of a nation's resources.

Development economics is not just an abstract theory; it is also a powerful tool of management. It encourages the planner to compare inputs with outputs – that is, the resources with the benefits, whether these can be expressed in monetary terms or not. It also encourages the decision-maker to deploy resources where he or she would derive the greatest benefit from them, and where he or she would lose the least benefit from the deployment of fewer resources. This management approach is one aspect of economics which is often under-utilized in the health sector.

Pricing, for example, can be used to direct users away from some services and towards other services. One function of prices is to provide revenue for an organized health service, or to pay a practitioner for services, or a producer for making pharmaceutical drugs. But a second function of pricing is to ration services among users. Prices act as signals indicating that one purchase is more attractive than another. For example, if out-of-hospital services were free, while charges were levied on all in-hospital services, the patient would choose to be treated, if at all possible, outside the hospital.

Furthermore, health services are very labour-intensive. Those people providing health services respond to incentives of many different kinds – including economic

incentives. Economic analyses can be used to construct appropriate incentives throughout the system to help to achieve desired objectives. For example, if trained personnel are reluctant to work in rural areas, then higher remuneration and/or good housing and/or other amenities might induce them to overcome their reluctance to do so. At the very least, economic incentives should not encourage counter-productive behaviour. If health workers engage in private practice (as many of them wish to do) and if such private practice is available only in urban areas, then the pay offered in rural areas must counteract this advantage with non-practice allowances. Economics then becomes a policy instrument to bring health workers into the rural areas where they are badly needed.

In making decisions on the use of resources in health programmes, there are several levels of concern. One is at the level of national planning itself: given total resources, how much should be spent on health? A second involves the health sector and its activities: given an allocation for the health sector, what will be the best use of the money for materials, personnel and services? And third at the level of delivery: what will be the best use of allocated resources in a given district or area? These concerns all entail the use of power in the selection of policy options.

In the competition for resources with other economic and social sectors, health does not usually have a high priority in most Third World countries. Whatever the validity of arguments presented in favour of greater support of health, the health budget of one year generally resembles that of the preceding year. Within the health sector itself, optimal uses of minimal resources are the central subject of health planning. Yet the services provided by the health system are often malco-ordinated, slipshod and distorted in proportions. Most planning decisions are guided by unaided intuition rather than by carefully developed data showing comparative costs and benefits of alternative possibilities. The reason is painfully simple: the data are not available. Often health policy is based on inertia; what was done before continues to be done.

Part of the problem has been the absence of a coherent framework for analysing the system of health services itself; this involves the realm of health-service research. Another part derives from not understanding – despite the lipservice – the linkages between health and development; this involves the field of health economics. A third part lies in our delicacy about discussing the reallocation of resources because it is an essentially political process; this involves the analysis of power. The robust assumptions of economists notwithstanding, socio-economic development cannot be discussed in a political void. Yet politics is not only about ideology and value preferences, nor even about the transfer of resources; it is also about the actual allocation of benefits and costs. As Easton [20] put it, politics is the authoritative allocation of values. In addition to the more metric measures of money and the

more judgemental measures of political participation, the social indicators of development mark changes in the allocation of well-being – even though such social indicators are notoriously "mushy", if not indeed "squish-soft".

Although unable to solve these problems, this overview does seek to address them and suggest avenues of analytic approach. To do so, it must be emphasized that policy is not what people (or a government) say will be done, but rather is what is done. Policy is an empirical record of the past and not just an ethereal goal for the future. While normative policy necessarily asserts and assesses preferred objectives or goals for the future, empirical policy monitors the practices of the present and the record of the past. Unfortunately policy is far too often merely the verbalization of hopes and dreams about what should be, with little commensurate attention to what will be or to methods for transforming what can be into reality. Indeed, policy as verbal future sometimes takes the form of "wish fulfilment" whereby something simply wished to be true becomes true in the mind of the wisher. Although objective reality always brings the dreamer back to earth, many opportunities have by then gone waste.

2. HEALTH POLICY: SKETCH OF A SERVICE SYSTEM AND ITS INDICATORS

Along with its systems of education, agriculture, transportation and many other social activities, every country has a system of health services. It may be more or less organized, but the health-service system is devoted primarily to protecting and improving the health of the population by the provision of a great variety of preventive and therapeutic services. It also has many secondary purposes, such as providing employment, generating profits, and training new health professionals.

To define health-service systems in this way does not imply that health services are the only or even the major determinant of an individual's or a population's health. It has been recognized for centuries that the health of people is influenced by the food they eat, the work they do, the knowledge they acquire, and much more. Nutrition, occupation, education and other physical and social factors, all exert a profound influence over health status. Yet, throughout human history, men and women everywhere have behaved as though they believed that health services were an important determinant of health. In this belief, every known society has taken actions to cope with disease or injury, to regain health, and, in more recent times, to prevent disease and promote health. The point is that health services are neither solely determinant of nor completely irrelevant to the health status of humanity.

The evolution of health-service systems has been influenced by major developments in both science and society. The steady expansion of mankind's knowledge of and control over nature has shaped not only medical science and clinical medicine

but also many aspects of health-service systems. Likewise the evolution of economic systems for exchanging goods and services has greatly influenced the shape of health-service systems. When feudalism declined in Europe and free trade emerged, medical care became one of the many commodities and services available in the market place. This process of bilateral exchange initially had many distinct benefits. By providing physicians, apothecaries and others with a source of income, it attracted many gifted persons into these callings and gave them incentives to work diligently. It also provided health services for many people in the newly emergent cities, people who lacked the protection (however imperfect) of being part of a feudal estate. At the same time, the growth of science and universities led to a great expansion of knowledge and skills among practitioners of the 'healing arts.'

By the end of the 19th century, the concept had emerged in Europe that health services were a civic responsibility [26]. This idea led to consequences in the domain of health services quite different from those associated with the process of free trade. Instead of expecting health services to be bought and sold in a market-place, mechanisms were developed to provide health care to people on the basis of their human needs and in the interests of general community welfare. These trends were implemented through the founding and operation of hospitals for the poor (later for everyone), the rise of the public-health movement, and many other strategies for extending health services to the general population. Unilateral transfer supplemented and sometimes substituted for bilateral exchanges.

Over the past one hundred years, these two concepts of health services developed side by side. The conflict of values between health care as a market commodity and health care as a social service has, however, become more and more manifest. Furthermore, a third alternative conceptualization of health care as a basic human right has also recently appeared. Accordingly, complete dependence of health care on market transactions in the private sector is now widely regarded as leading to social inequities and serious deficiencies in health-service systems. For these reasons, most countries have limited freedom in the market-place by developing various kinds of collective financing and regulated provision of health-service. The degree of this intervention has increased generally over time almost everywhere, although the manner and details of its application have varied greatly [4; 22; 63].

In terms of health-service research, a health service is an activity whose primary objective is health: its maintenance, its improvement, or, if lost, its recovery. A health-service system comprises the many activities that allow, facilitate, support and arrange for the delivery of health services to people [31; 62]. The interlinked components of a health-service system can be schematically organized as in Fig. 1. As in any system, these components interact with one another in such a manner that the whole is greater (although sometimes less) than the sum of its parts. It is very important for policy-makers and administrators – not to mention other academics – to understand the complex and interlinked structure of what is so glibly called the

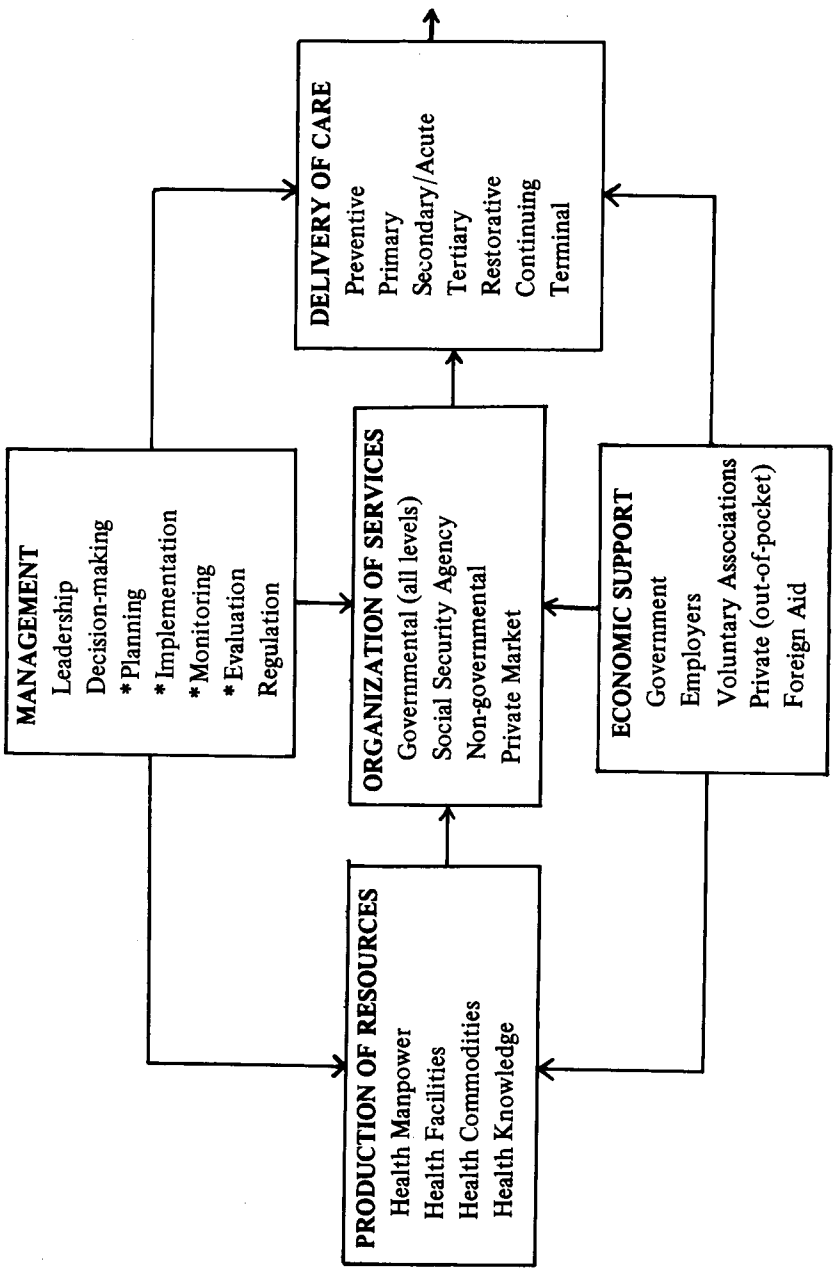

Fig. 1. Analytic Components of Health Services Systems

'health system'. Many people focus only on the 'delivery of care' and fail to realize the multitude of other factors that are prior to the delivery of these health services.

However, as a necessary caveat, the sense of orderliness and coherence conjured by discrete boxes and linking arrows in Fig. 1 is deceptive and possibly a disservice to hard-pressed policy-makers. The pieces and subpieces are often unbalanced, and the interlinkages are often not at all clear. In real systems, the relevant boundaries are blurred and the causal flows are interactive. The figure is only intended to serve a heuristic purpose as an organizational device, or a sort of check-list, which any coherent health policy needs to have considered.

These components, which are a series of subsystems, can be operationalized through selected empirical measures. The following paragraphs elaborate on the major categories and suggest indicators which are used to track changes within the system and subsystems. Obviously not all the components are easily quantifiable and many rely on extremely dicey data. Nonetheless, as information systems themselves improve, the utility of this framework would be enhanced.

In the subsequent empirical section, only two of these boxes are really considered: those labelled (i) Production of Resources and (ii) Economic Support. There are only sketchy materials on Organization of Services and on Management – and precious little on Delivery of Care *per se*. The reasons are lack of space, lack of time, and lack of information. The lack of information is a particular problem. Even in the sections with the most information, there are enormous gaps in available material; and the data are, simply put, often inconsistent. Before aught else is done, Pakistan needs to invest some of its scarce resources in assembling better information about its health-service system. It is hard to imagine how health planning can occur without at least partial data on these various categories.

Production of Resources

Health Manpower

Of the many categories of health personnel, the most important (in terms of measures) are *physicians* (general and specialized), *nurses*, and *health auxiliaries*. However, others include dentists, pharmacists, laboratory and X-ray technicians, nutritionists, rehabilitation therapists, hygienists and sanitary inspectors, health administrators, and so forth. Collectively, these may be called the 'helping professions' [21].

Health Facilities (or physical infrastructures)

These are of many types. The best known are *hospitals* for the bed-care of seriously ill patients. But there are also separate facilities for ambulatory care (such as *outpatient departments* and *health centres*), pharmacies, laboratories, etc. Indeed, the premises of every individual health practitioner constitute part of the health

facilities of a national health system. Associated with preventive health services are various facilities for environmental sanitation, such as plants for water treatment and sewage disposal.

The construction of modern hospitals is usually very costly and is therefore undertaken principally by units of government or health-insurance schemes. In many countries, however, hospitals are also built and operated by non-governmental bodies, such as religious groups, non-profit associations or private companies. In some instances, they are owned by individuals (physicians or businessmen) and operated for profit. Health centres for ambulatory care (mainly primary care) are also constructed and operated principally by governmental agencies.

Health Commodities

These include the great variety of equipment, supplies, drugs, and other materials required for the prevention or treatment of disease. Some entail very *complex and expensive technology* including radiological equipment, electrocardiographs, apparatus for biochemical analyses, and so forth. The poor cost-effectiveness of such elaborate equipment has stimulated a concern about "appropriate technology." One should note, too, that the equipment used in a health system is not exclusively medical, but may be required for transportation, refrigeration, chemical analyses, etc. Equipment also includes *prosthetic devices,* including glasses, hearing aids and artificial limbs. In short, there is a great diversity of equipment and supplies.

The production and distribution of *drugs and related substances,* such as vaccines, are particularly important. Because of their predominantly entrepreneurial nature, drug production and marketing have encountered extensive public regulation throughout the world. Expenditure on drugs has also risen very rapidly, particularly in developing countries where all or at least many drugs must be imported. To limit costs and to protect the quality of medical care, some countries establish official lists of "approved drugs" or even "essential drugs" authorized for purchase by public medical-care programmes.

Health Knowledge

This deals with various methods of disease prevention, treatment and rehabilitation. New information is continually being acquired, both from scientific experiments and from experience. In many countries, "traditional medicine" has accumulated a vast storehouse of theory and practice, only a fraction of which has been tested by modern scientific methods. The field of *biomedical research* integrates observations from many sources and permits the development of practical methods for the prevention or treatment of disease. Although such research is costly, its results are usually published and made available throughout the world.

Biomedical research has made important contributions to the fight against communicable diseases and the disorders caused by malnutrition. Countries are now confronted, however, by an increasing burden of non-communicable and chronically disabling diseases such as cancer, heart disease, hypertension and diabetes. Because the causative factors of these diseases are closely related to social and behavioural conditions, *socio-medical research* has emerged to analyse and understand them. Such research is conducted by epidemiologists, sociologists, psychologists and others. Action-oriented *health-system research* systematically studies the means by which biomedical, socio-medical and other relevant knowledge are brought to bear on the health of communities.

Organized Arrangement of Resources

National health-authorities begin with a principal governmental agency, usually a *ministry of health* but sometimes a subdivision of a larger agency (e.g. "health and social welfare") and sometimes a network of agencies operating at lower levels of government (e.g. state, province or region). Ministries of health usually contain subdivisions concerned with health education and promotion, preventive services and sanitary control, hospital and other curative services, rehabilitation and socio-medical care of the disabled, etc. Sometimes the subdivisions deal with elements of the health system, such as development and registration of health manpower, construction and supervision of health facilities, logistics of equipment and supply, and financing. Most countries have regional or *provincial agencies* below the national level, which may have a (large or small) degree of autonomy. A very important indicator of autonomy is the authority (and use of such authority) to levy and allocate tax-money.

Health-insurance programmes are often separate from, or only remotely related to, the Ministry of Health in most countries. The *proportion* of the population protected by health-insurance programmes also varies greatly. In the developing countries the proportion is usually small (less than 10%) whereas it is usually large (over 90%) in the industrialized countries. The scope of benefits (such as physician services, drugs, hospitalization, dental care and transportation) also varies widely from country to country [1].

Logically, a social security programme is a method of collective financing to protect people against certain risks (including unemployment and disease) but especially against the liabilities of the inevitable old age. In case of sickness, money can be given to the patient to pay for the services rendered by independent (generally private) providers of health care; this *indirect* pattern applies mainly to highly developed and moderately organized countries. Or, the health-insurance programme may employ and control its own providers of health care (physicians, hospitals, etc.) in

order to provide health services directly to the insured person; this *direct* pattern is used most frequently in the less developed countries.

Other Governmental Agencies include ministries of education (which arrange to protect the health of schoolchildren) and ministries of labour or industry (which arrange to protect industrial workers). Military/defence activities also usually include arrangements to provide health services to military personnel (both active and retired – and sometimes their dependants as well). Still other governmental agencies likely to contain a health component include those pursuing specialized objectives like rural community development, urban housing, criminal justice, public transportation, and even foreign trade – plus the government civil service. Needless to add, ministries of finance and sometimes national planning-bodies exert considerable influence on national health systems.

Non-governmental Agencies include many diverse *voluntary groups* and associations interested in health. Some tackle certain diseases (e.g. TB or leprosy); others aim at specific sectors of the population (e.g. children or the disabled); some provide direct services while yet others lobby the government to act and/or to educate the people. *Health co-operatives* in many countries, both developing and industrialized, are based on voluntary health-insurance schemes for unsalaried workers and the self-employed. *Associations of professionals* like physicians, nurses or other health personnel are also types of voluntary agencies, which enforce codes of ethical behaviour as well as lobby the government.

The independent private sector is a residual category of those who also provide health services. Physicians, dentists, pharmacists and others engage in private practice in most countries, as do traditional healers. Sometimes private practice provides most of their work; at other times, it supplements the provider's employment in an organized programme. Broadly speaking, the private sector of a health service is complementary to the public sector. In health systems where public sector (or publicly supported) services are relatively weak, private-sector services tend to be strong; and where public-sector services are well developed, the private sector is usually small.

Delivery of Health Care

This factor describes how health services are provided. Usually health-care delivery is classified by the objective of the service being delivered: e.g. promotional, preventive, curative, rehabilitative, and chronic care of the profoundly disabled and incurable; or it is classified by the complexity of the service: e.g. primary, secondary and tertiary health care. These may be combined as displayed in Fig. 2.

Broadly speaking, patterns of health-care delivery depend on the philosophical assumptions of the health system. At one extreme, health care may be regarded as equivalent to a commodity traded in the economic market; at the other extreme, it

Level of Care	Function	Provider Groups
1. Preventive	(1a) Education	Family Planning Clinics Maternal/ Child Health Centres
	(1b) Prevention	Neighbourhood Health Centres School Health Education Migrant Health Centres
2. Primary	(2a) Early Detection	Doctors in Office-practice Hospital Outpatient Departments
	(2b) Routine Care	Basic Health Units Industrial Health Units
3. Secondary (acute)	(3a) Emergency	Hospital Emergency Departments General Hospitals
	(3b) Critical	Teaching Hospitals
4. Tertiary	(4a) Special (very technical)	Speciality Hospitals Teaching Hospitals
5. Restorative	(5a) Post-operative Follow-up Care	Skilled Nursing Facilities Intermediate Nursing Homes
	(5b) Rehabilitation	Extended Care Services
	(5c) Home Care	Home Health Agencies
6. Continuing	(6a) Long-term Care	Nursing Homes Domicilary (Rest) Homes
	(6b) Chronic Care	Geriatric Day-care Centres
	(6c) Personal Care	Inpatient facilities for: *mentally retarded; *emotionally disturbed; *alcoholics & drug abusers; *physically handicapped
7. Terminal	(7a) Comfort	Hospices
	(7b) Human Dignity	Families

Source: Derived from CRI [13, p. 262].

Fig. 2. Delivery of Health Services

may be seen as a social right of the entire population of a country, requiring careful planning. Between these extremes lie other assumptions about selected population groups or specific diseases.

Economic Support for a National Health-System

Since there are obviously many competing needs in a country, there must be procedures for channelling money into the health system. But the need for health care is episodic; unlike food and shelter, the need for therapeutic health care often cannot be predicted by the individual – who may not even recognize the need for many valuable preventive services. Also, the ability to pay for health services ranges widely according to income level. For these reasons, all national health-systems have established certain mechanisms of economic support outside the free market [23; 27; 35].

Public sources of finance include all levels of government, including ministries of health, health insurance schemes, and other ministries. Employers include both industrial and agricultural enterprises. Organized voluntary agencies include charity and voluntary insurance associations. Local community efforts include financial contributions and unremunerated goods and services. Foreign aid includes both governmental and philanthropic aids, the latter often from religious agencies. Private households include out-of-pocket payments to organized programmes and purely private purchases. Other sources include lotteries and donations. The precise mix of these sources varies greatly among national health-systems, but all seven sources of finance are found in almost every health system: whatever the combination of economic support mechanisms, the aggregate amount of funding must be adequate if the health system is to be effective.

Management of a National Health-System

Ultimately the pattern of management in a health system depends on the history, culture and social values of a country. It also depends on the prevailing structure of governmental authority (i.e. whether centralized, federal, or decentralized). Three qualitative aspects of health-system management stand out which are, however, very difficult to measure: leadership, decision-making and regulation [10].

Leadership is required to overcome institutional inertia, particularly in the departmental structuring of health systems which are based on their own history, traditions, purposes, and power structure. There are several different styles of leadership; two basic modes are *autocratic* leadership, in which the superior gives orders and the subordinates report on their progress in carrying out these directives, and *democratic* leadership, in which many participate in decision-making because they share an interest in its good performance.

Decision-making may vary from an implicit – almost intuitive – process to a very explicit, well-organized undertaking. There are four basic aspects or stages of decision-making to consider.

Planning requires decisions about both health and health systems. Health planning is based on facts, prognoses, options and socio-epidemiological factors. Health-system planning concerns the adjustment of all system components in order to make the planned programmes operational [3]. The latter not only takes time to implement but also is inherently controversial in that old, established roles and routines may have to be changed. Consequently, health-system planning is difficult to do and often politicized. It is frequently postponed in practice, which explains why many national health-systems are not relevant to the needs of people. Indeed, many health systems perpetuate functions no longer relevant, and change only under the pressure of urgent (often crisis) demands. Health-system planning may be performed entirely within the ministry of health; or it may be one special responsibility within the overall planning agency. Sometimes the broad contours of system planning are drawn by a central planning-agency, while details are left to the health ministry. There are also different degrees of (de) centralization in national health-system planning; some countries conduct all planning in the national capital, but most carry out health planning at state, regional and/or local levels as well. Participation in health planning across several levels of government usually increases the relevance and acceptability of health plans; it also usually slows down decision-making.

Implementation involves putting the detailed plans into action. This means day-to-day administration of programmes and continuous follow-up to ensure that programmes are proceeding as planned [11]. Again, different systems vary according to their degree of delegation of administrative responsibility. Some systems are highly centralized with all significant powers retained at the top; other systems vest much decision-making authority in the lower echelons, although usually within the broadly defined guidelines of central authority.

Monitoring and *evaluation* serve to determine the extent to which a health system and its programmes have achieved their objectives. This process usually involves several levels of the system and is quite complicated. Proper evaluation is never easy because of the very nature of health-related activities and the difficulties of quantifying health consequences. Qualitative judgements are inevitable, but should be supported, whenever possible, by reliable quantified assessment. Clearly, for health-system management, *information support* is vital; but valid information on the health-system is very difficult to obtain. While there is usually ample information on urban hospitals, there are large gaps in information about primary care in both urban and rural settings. Also, data on the public sector are usually available but information about the private sector is often lacking. Information is the Achilles' heel of many health systems.

Regulation in the health system varies considerably in terms of its application but it includes licensing of health workers, approval of health-care institutions, the control of drugs, and the right to access to and use of health services. Since health legislation is usually very general in its aims, the law usually places responsibility for issuing regulations with a public agency. Sometimes the volume of regulation in a health-system may become burdensome and counter-productive, but regulations is typically issued in response to the occurrence of some abuse or in order to anticipate problems. Ultimately, regulation is expected to control a national health-system so that its goals can be achieved as far as possible.

3. HUMAN CAPITAL: LINKAGES OF HEALTH AND DEVELOPMENT

Although rarely voicing such sentiments, development planners sometimes suspect the provision of health services to be unhelpful, if not actually harmful, for increased productivity. There are lurking but unsubstantiated fears that health services do not affect production anyway since, as currently provided, they do not bring any lasting improvement in health indices. Therefore, those resources used for health services are being diverted from other uses that would be more likely to increase production. Worse yet, current health programmes, however small, also accelerate population growth. Such growth drastically reduces, and sometimes even reverses, the per capita impact of whatever modest aggregate growth is achieved. Finally, if better health does result in a greater work-output by those who are employed, this only increases unemployment and underemployment still further. It does not lead to higher output because the labour supply is not the factor that limits production.

Such a frame of reference is limited and limiting. It is also pernicious in that its unarticulated hypotheses are not empirically tested. Yet, one must simultaneously take care not to become mired in the simplistic cost-benefit argument that any and every increase in expenditure on health services will lead to improved health and thus to higher production. Not all investment in human capital is for future earnings alone. Some of it is for future well-being in forms that are not captured by enhanced productivity of the individual in whom the investment is made [65, p. 7]. Benefits that do not show up in earnings are hard to identify and measure, but nevertheless important. Furthermore, it is very difficult to produce unambiguous evidence of the economic return from health services because the relationship between expenditure on health services and improvements in health status is both imprecise and essentially a long-term one. Therefore, the contribution of health services must be assessed within their ecological context through non-economic criteria as well. Indeed, ample health services indicate a responsive and responsible government dedicated to providing a high quality of life to its people.

Nonetheless, public health-measures are sometimes blamed for the "population explosion" that has obsorbed whatever increased production was achieved.

Therefore, although substantial aggregate economic growth has been achieved, there has been no noticeable increase in income per head. If the population had remained stable or at least grown more slowly, the growth of output over the past few decades would now be acknowledged as a success rather than condemned for having failed to raise the standard of living.

Population growth has been seen as harmful in a number of different ways. To take just one example, it is argued that population growth adds to the available labour supply before jobs have been created for this labour to be used. The result has been growing unemployment and underemployment, accompanied by distress and social unrest [15]. Counterposed to concern about a premature supply of healthy labour contributing to problems of unemployment and social unrest is the clear thesis that ill health in the labour force reduces the level of production. Even in agriculture, despite large-scale unemployment and underemployment during much of the year, labour can be in short supply at seasonal times for planting and harvesting. Ill health compounds this shortage. In the influenza pandemic of 1918-19, for example, some 20 million people in British India died and many millions of others were incapacitated for a part of the crop year. Theodore Schultz [66, p. 67] estimates that the agricultural labour force in India may have been reduced by about eight percent as a consequence of the epidemic. Certainly, the area sown in 1920 was almost four percent less than that in the base year, 1917. In general, the provinces of India with the highest death rates from influenza also had the largest percentage declines in the area sown to crops.

Health status also affects fertility. There is evidence that the more rapid is the fall in infant mortality, the sooner a decline in the birth rate occurs. Historically, there appears to have been a lag of over 50 years before a decline in death rates was followed by a decline in birth rates. Since 1945, however, not only has the lag been greatly reduced but the rate at which birth rates have dropped has been greatly accelerated [34]. The rate of female literacy correlates particularly well with patterns of fertility. Systematic studies confirm that the higher the female literacy rate is, the lower the infant mortality rate is [84]. The fundamental fact in fertility behaviour is that when parents are confident that they can prevent their children from dying, they have fewer babies [60].

A successful maternal and child health (MCH) programme, therefore, offers a natural springboard for family planning and birth control programmes [12]. The promotion of family planning programmes with strong government support can facilitate the decline in fertility and secure the health advantage of better child-spacing. The key problem in family planning is not the logistics of making the necessary facilities available but the lack of desire on the part of people to reduce their fertility. Confidence that their children will survive can help to persuade them to practise family planning. Economic security, the spread of modern goods and

services, education and social change (particularly in the roles of and attitudes towards women) are also of great importance.

While comparisons are imperfect, historical experiences elsewhere are suggestive. The health standards of many European countries began to improve in the 18th and 19th centuries, long before the age of modern scientific medicine [14;43]. The improvements in health were partly due to greater food production per head and partly to better means of distributing food through improved systems of transport. These resulted in higher average levels of nutrition and a stronger ability to resist disease. Late in the 19th century, further improvement resulted from the wider availability of clean and plentiful water-supplies and the construction of efficient systems of sewage disposal. The predominant reasons for the higher health-standards of more developed countries are higher levels of nutrition, a more favourable environment, and adoption of certain patterns of behaviour important for the maintenance of health. (It is also true that health standards would be substantially higher if other unfavourable patterns of behaviour – such as cigarette smoking, abuse of alcohol and drugs, lack of physical exercise, and excessive eating – were abandoned and if the incidence of road and industrial accidents were lower.)

Likewise, there is persuasive evidence that differences in health standards cannot be explained by differences in the extent of provision of the more expensive services – for example, doctors or hospitals [14, pp. 14–27]. By the 1940s, Sweden had attained much more favourable mortality rates than virtually all its neighbours, though it had substantially fewer doctors per thousand population than most other European countries. In the Netherlands, maternal mortality rates were low even when the vast majority of births took place in the home. Furthermore, spending more on health services does not necessarily buy better health. The US spends more on health services in terms of dollars per head at current exchange-rates than any other country of the world; yet it has poor mortality rates compared to many other developed countries.

Most of the effort and expenditures of health ministries in all countries of the world have been on the provision of curative services, mainly to the urban population. In highly urbanized polities, this urban-oriented policy preference may make some sense. However, in the Third World only a small fraction of the rural population has reasonable access to health services. Some people fail to use these services as much as they might – or even ignore them altogether. It is not surprising, therefore, that the health services provided in Pakistan have not been very successful in improving health. Such improvements as have occurred have been achieved at wholly disproportionate cost. The total impact of the whole expenditure on health services has been small because so much has been spent on responding to health problems with curative action rather than on taking preventive services to the people.

It is a painful but obvious irony that the most skilled curative services may make only a temporary impact on health if the basic causes of ill health are not remedied at their source. A child admitted to hospital for extreme malnutrition, for example, may return home only to become malnourished once again. Its social context is much more relevant than its access to medical care. Malnutrition hampers the protective mechanism with which the human body fights infection and thus increases the incidence and severity of disease. The improvement of diet may do much more to improve health status than the effective cure of the specific diseases that are presented to the health services and can be cured by them. Indeed, malnutrition has been identified as the "biggest single contributor to child mortality in developing countries" [24, p. 29].

There is, of course, a trade-off between nutrition and access to health services. This trade-off explains the comparative anomaly between two Indian states where Uttar Pradesh has less evident malnutrition among children than Kerala, but Kerala has the higher life expectancy. The reason is the availability of health-service facilities that are easily accessible in Kerala whereas Uttar Pradesh requires long-distance travel to inadequately staffed centres. As a consequence, Keralites obtain quick corrective action for many potentially life-threatening conditions, but their longer lives remain characterized by relatively high morbidity. Hence, health status derives from a complex, interactive series of factors wherein longer life is not always an unmitigated blessing [61].

There is a vicious circle of poverty, ignorance and ill health, which has perpetuated itself from generation to generation because poverty and ill health waste educational resources [2]. Since rural children are expected to help in agricultural work, their rates of school attendance are low. Poor health lowers them still further. The child who is hungry while at school gains little from education. And a malnourished child who has already suffered mental impairment benefits even less from any education that is provided. Ultimately, the young adult enters the labour force with less physical and mental capacity and less capacity to learn work skills.

The downward spiral of disease, poverty and malnutrition is illustrated in the example of a worker suffering from malarial anaemia. Once this disease occurs, environmental, economic and nutritional factors are likely to enhance its debilitating effects. An anaemic individual will tend to work less and thus earn less, especially if he is on a piece-work or incentive basis. Reduced income, in turn, predisposes him to a poorer nutritional status, thus aggravating the anaemia and increasing susceptibility to infection. Increased absenteeism and lowered productivity result, and the individual becomes trapped in circumstances in which he cannot improve his income, his nutrition, or his health.

The resources available to any country are limited. If land, capital and manpower are used for one purpose, they are not available for another. Indeed, the cost

of using them for one purpose is the lost benefit from using them in the best alternative way. This idea of opportunity cost lies at the very heart of economic thinking. Choices have to be made in socio-economic planning between alternative uses of resources. For example, which use of resources would do most for the poor – more health services, more education services, or more support for agriculture? And what should be cut back to find the resources for any development? These are political decisions and are embodied in government policies.

Since the 1978 Alma Ata declaration of 'Health for All by the Year 2000,' priority consideration in the health sector has been focused on making primary health-care available to the whole population [70; 71]. The World Health Organization has defined this focus as "an integrated approach to services for prevention, cure and the promotion of health for both the community and the individual, with maximum reliance on available community resources." Health personnel are required to work with other development personnel to provide the health component to the team, to generate community organization, and to help secure active community participation. At the central level, ministries of health need to work particularly closely with those other ministries responsible for planning, finance, agriculture, industry, education and community development. Likewise, at the local level, community development requires the integration of the work of all these ministries in all relevant spheres of economic and social life. A team approach is required which involves the sharing of skills. But such co-ordinated local effort must be planned, and the staff needs training to accept the new co-operative role. Local staff in particular needs continuous supervision and support.

There is need for creative thinking in economics on how concepts are applied in government policy. Since the distinction between what is classified as capital investment and what is classified as consumption is imperfect, decisions about resource allocation require subtle, yet forceful, leadership. Education, for example, produces a lasting benefit like the production of a machine. Health personnel are educated and trained so that they will provide a working life of service. But education is counted as consumption. Similarly, certain health-service activities produce lasting benefits without being classified under capital expenditure – such as the elimination of malaria-carrying mosquitoes, or the eradication of smallpox.

The concept of capital formation in a direct financial sense is particularly relevant to the field of health. There, investment may take such forms as the construction of sewage-disposal and water-supply systems, and the construction and equipping of hospitals, health centres, and other buildings for health-service use. The key characteristic of any investment is that it involves waiting for the benefit. While pharmaceutical drugs can provide immediate benefits to patients, delays of several years (and sometimes a full decade) are likely from the day work starts on the construction of an elaborate hospital to the day the first patient uses it. Likewise, the training of skilled manpower in the health sector is necessarily a long-term

process. Money spent on such investments as construction and education could have been used elsewhere to give immediate benefits to patients. The political choice was instead to defer present benefits in favour of an enhanced future.

After capital expenditures come recurrent expenditures of operating all available physical facilities. The annual cost of maintaining a facility and paying its requisite personnel is usually estimated at between a quarter and a half of the initial capital expenditure. Ironically, such recurrent expenditures are both more important in terms of service delivery and less visible in terms of political image-building. They often get short shrift in government budgets. Often elaborate networks of health facilities, which incurred substantial capital costs to plan and install, fail to deliver the planned health services for want of operating funds. Once again, the budgetary cliche – that money spent is (assumed to be) money used to deliver services – rings hollow. Furthermore, the promulgation of what turn out to be unusable plans or non-implementable plans is a process that is highly destructive of the effectiveness of the planning concept itself. Without adequate provision for recurrent expenditures, planning justifiably obtains a degraded reputation because its plans fail to deliver the promised goods.

To return to the concept of investment in human capital, the cost of training personnel is not just the cost of providing schools or universities, but also the cost of students and trainees learning instead of earning. During full-time education, the economy loses because both the trainer and the trainee make very little current contribution. Consonant with any classic investment the community is waiting to obtain the advantage of trained (or better trained) staff. As a hypothetical example, assume that medical education in Pakistan costs Rs 20,000 a year per student. To calculate the economic cost, it is necessary to add the value of the contribution that the student might have made to the economy or the health service if he/she had not been attending medical school. Assuming this to be worth Rs 4,000 a year, the annual cost becomes Rs 24,000. A five-year medical course therefore costs Rs 120,000. Is a doctor's contribution to the health service worth not just the higher salary he/she will be paid, but also over a lakh of rupees spread over his/her working life plus approximately ten percent annual interest on this investment? The same student might have been trained in a two-year course as a medical auxiliary at Rs 2,000 a year. The cost of the training is therefore Rs 4,000 to which must again be added Rs 8,000 for the loss of the trainee's services over two years – thus a total of Rs 12,000. This amount (plus 10% interest) should also be spread over the working life of the medical auxiliary. Does the greater contribution of the doctor justify the higher (10:1) training cost as well as the higher salary?

In Pakistan, there are now growing numbers of unemployed graduates from medical schools. Jobs are not available at a level that past experience had led prospective doctors to believe would be available to them [29]. Also, if a high

proportion of the few who are equipped for higher education are accepted for medical training, they are not available for training as scientists, engineers, or senior civil servants. And there is an additional risk that after completing their training, doctors may not practise their medical skills but rather enter some other field, such as general administration or politics, for which their medical degree is of little or no relevance. Hence, higher education needs to be carefully thought through in order to meet the manpower needs of the whole development plan.

If health services are to be used by all who are intended to use them, they have to be near the user. This is true of curative services when the patient is actively seeking help. In the case of many preventive services, people have to be made aware that they need the services before they will use them. These services must, therefore, be taken to the people. In view of the limited amount that can be spent on health services in societies short of resources, the only services that can hope to reach the whole population are low-cost services. A low-cost service need not be a less effective service. Since the largest element in the budget of health services is the cost of staff, the most economical way of providing any services is for the people to try to provide them for themselves. Moreover, helping people to find solutions to their own health problems is likely to be more effective than providing services to solve the problems for them, provided the problems can be solved with the resources the community can command. Fortunately, by their nature, basic needs are relatively simple and easily understood. The most important health messages relate to the basic aspects of life – an adequate diet, safe water-supplies, the safe disposal of excreta, personal hygiene, and the control of disease vectors. In all these areas, the community can do much for itself. To work with the community to change customs, beliefs and behaviour handed down for generations is a formidable task. But this is what much of development is about. And it cannot be done without community participation [72].

Education can be used to support health policy. Both children and adults can be taught the causes of the main diseases, why clean water is important, why human refuse must be buried and not allowed to contaminate the water supply, and why personal hygiene is important. The elements of nutrition can be taught – how to maximize the nutritional value of local food supplies, what foods to grow in plots around the home, and how to cook them so as to retain maximum nutritional value. In addition, instruction can be given in the importance of breast-feeding, the care of infants, recognizing of the common diseases, the use of simple household remedies, and the elements of first aid. Finally, education can be used to press home the message of birth-spacing and the use of family-planning supplies, where such instruction is culturally acceptable. All these endeavours in health education are investments in human capital rather than mere consumption of resources. They all bring potential future returns.

4. NOTES ON THE CASE OF PAKISTAN: FRAGMENTS OF A SYSTEM

Context

Health is about people, and so are health services. During the past decades, the population of Pakistan has been changing demographically in both locale and size. It has steadily urbanized. The percentage of population living in rural areas of Pakistan declined from 82.3 percent at the 1951 Census to 77.5 percent in 1961, to 74.6 percent in 1972, and to 71.7 percent in 1981. In the same period, the total population more than doubled. In fact, in 1901 the present-day Pakistan had a

Census	Population	Percent Urban	Average Annual Growth Rate
1901	16,576,000	N.A.	0.6
1911	19,382,000	9.7	0.7
1921	21,109,000	9.8	0.9
1931	23,542,000	11.9	1.1
1941	28,282,000	14.2	1.8
1951	33,740,000	17.8	1.7
1961	42,880,000	22.5	2.4
1972	65,309,000	25.4	3.6
1981	83,782,000	28.3	2.9

population of 16.6 million, which doubled over a period of fifty years to 33.7 million in 1951. Another one-hundred-percent increase in the population occurred during 1951-72 when the population stood at 65.3 million people. The third doubling to 130 million Pakistanis is expected by 1997, approximately a decade hence. In mid-1985 the population had been estimated at 99.2 million; today it exceeds 100 million.

The Pakistani population is also growing younger, at least in proportional terms. Of the total population, that under 15 years of age was 43.1 percent in 1951; 42.4 percent in 1961; 44 percent in 1972; 44.5 percent in 1978; and 45.2 percent in 1981. With almost half the population under fifteen in the mid-1980s, the base of the population pyramid is broader than ever before. Furthermore, the dependancy ratio (children: adults) is higher in rural areas than in urban areas, especially for male children. The pattern suggests malnutrition (unintentional or otherwise) of girls in rural Pakistan, but at least the difference is narrowing between rural: urban and male: female ratios. In any event, there now are still more children below 15 years of age than ever before – and they represent a formidable potential for future population growth.

Pakistan: Percentage of Total Population under 15 Years

Year	Area	Both Sexes	Males	Females
1961	**Total**	**42.44**	**41.82**	**43.14**
	Rural	42.85	42.80	42.90
	Urban	41.15	38.93	43.97
	Rural-Urban Ratio	*1.04*	*1.10*	*0.97*
1972	**Total**	**44.04**	**43.38**	**44.69**
	Rural	44.49	44.28	44.73
	Urban	42.72	41.16	44.57
	Rural-Urban Ratio	*1.04*	*1.07*	*1.00*
1981	**Total**	**45.20**	**44.50**	**45.80**

Plans

Five five-year plans have been implemented in Pakistan since 1955 and a sixth (1983–88) is under way. Because political discord undermined sustained support, only limited progress occurred during the first plan period (1955–60). Nevertheless, the first three plans collectively spanned a period of rapid economic growth. During 1950–70, the country's GNP increased by 160 percent in real terms or at an annual rate of 4.9 percent. Population pressures, however, restricted the rate of growth of income per capita over the two decades to 2.2 percent per annum.

Pakistan: Population and Income
(at constant prices; 1959-60 = 100)

Period	GNP (million rupees)	Population (millions)	GNP per capita (rupees)
1949-50	12,380	33.2	373
1959-60	16,803	41.9	401
1969-70	32,338	59.7	542
1979-80	56,724	81.4	697

The basic objective of national economic policy during this period was to seek maximum possible economic growth. The means chosen was encouragement of private enterprise backed by governmentally provided physical and institutional infrastructure. An equitable distribution of income was deferred until the level of production had risen sufficiently to make such redistribution possible. This approach to economic growth caused serious problems, among which was the systematic neglect of the social sector. The benefits of increased generation of income were not equitably shared, and living standards did not show any significant upturn.

The main focus of the Fifth Five-Year Plan (1978–83) was to be "the rapid development of agriculture based on an efficient utilization of the considerable potential of the nation in terms of land, manpower and water resources." The target growth rate was set at six percent. The Plan's principal objectives were to (1) develop the rural sector, including "programmes of social services such as schooling, health and drinking water [to] primarily benefit the presently deprived rural areas;" (2) ease urban problems; (3) develop backward areas; and (4) generate employment, increase incomes, and make available "essential goods which are designed to improve the position of the urban and rural poor."

History

Although health was one of the first functional areas of social development to receive some mention in the national plans, Pakistan still lacks an unambiguous health-policy. Various governments since independence have made statements and announced commitments to guide the preparation and implementation of various health programmes, but a thoroughly comprehensive health-policy has not been formally declared by the government. This omission is somewhat ironic since over the years several high-powered committees have carefully examined the health-care system and made recommendations about it.

In October 1943 the then British Government of India appointed a "Health Survey and Development Committee" (the Bhore Committee), which published its report on 1 March 1946. Its contents markedly resemble the 1942 Beveridge Report in the UK, which led to the National Health Service and other institutions of the British welfare state. The main principles underlying the Bhore Committee proposals for future health development were as follows:

*No individual should lack adequate medical care because of an inability to pay;
*Health services should provide all the consultants, laboratory and institutional facilities necessary for proper diagnosis and treatment;
*Preventive measures must be emphasized;
*Both medical relief and preventive health care must be provided as close to the people as possible;

*The unit of health administration should be as small as practicable; and
*The active co-operation of the people in the development of their own health programmes must be secured.

With appropriate changes in nomenclature, the proposals of the Bhore Committee were adopted wholesale by the fledgling Government of Pakistan and submitted amidst the original Colombo Plan application for foreign aid (personal private communication from a retired ICS/CSP officer).

After independence, a series of commissions and expert panels examined the health-sector development process in Pakistan. A Medical Reforms Commission, appointed on 24 November, 1959, issued several reports during January-April 1960. It urged the creation of an all-Pakistan health service, recommended the take-over of municipal hospitals, and envisaged the district as the apex of a pyramid of health services radiating down through sub-districts to dispensaries with or without sub-centres. Other recommendations included training of male nurses, compulsory internship after graduation and before registration, and "official backing of voluntary effort in the field of family planning as too zealous official control of family planning activities will easily deter the satisfactory popularization of family planning."

The Rural Health Centres (RHC) Scheme was introduced in 1961 in order to provide basic health facilities and a graded system of medical care throughout rural Pakistan. Each RHC normally consists of one primary centre and three sub-centres located within a radius of 5–10 miles of the primary unit. One such centre was intended to provide public health and medical facilities to a population of about 50,000 persons. Originally the sub-centre was under the charge of a multi-purpose health auxiliary whose work was supervised by the physician at the primary unit. Recently, the RHC staff has been "upgraded" to include two permanently resident physicians – partly to improve the quality of health services but partly also to absorb the growing surplus of medical school graduates in Pakistan.

On 24 June, 1969, the Government of the then unified West Wing of Pakistan appointed a Health Study Group. Its report, published in March 1970, recommended setting up autonomous hospital authorities as self-financing public utilities with comprehensive charters, financing curative services to state employees through social security, shifting emphasis from curative to preventive care and establishing a country-wide preventive health service, reorganizing and expanding paramedical services, integrating malaria, family planning, and other similar vertical programmes into the public health system, and setting up a board of environmental health. As for the private sector, the government declared that "health will get the same incentives as any other favoured industry."

Efforts to develop a comprehensive health-policy gained momentum in the early 1970s. In March 1972, the federal health ministry put forward its People's Health Scheme which proposed vastly increased expenditure for health with an

emphasis on prevention of diseases and development of facilities in rural areas. However, the scheme was not what it appeared to be. The opening sections said noble things about preventive care and rural needs but the details over-emphasized physician training, hospital construction and sophisticated research. The government invited the Pakistan Medical Association (PMA) to assist in formulating a final health-policy. Since the PMA contended that the scheme did not provide adequate incentives and protection to doctors, it presented its own alternative scheme in June 1972. In August 1973, Pakistan formally adopted a new constitution which made health a provincial rather than a federal subject.

In October 1973, the Planning Commission formulated a set of national guidelines which reflected the priorities of the People's Health Scheme but tilted even more towards a rural emphasis in the initial phase of its implementation. Through conferences and frequent discussions with the provinces, the Planning Commission adjusted its draft guidelines to accommodate provincial perceptions. These guidelines were further influenced by the April 1975 country health-planning exercise conducted jointly by the Government of Pakistan and the World Health Organization. In 1978, the World Health Assembly issued the Alma Ata Declaration that committed its signatories to "Health For All by the Year 2,000." Pakistan has formally adopted that goal. Although a new comprehensive health-care plan has long been promised, it remains on the drawing board [58, p. 1].

Organization

In the Fifth Plan, the Government of Pakistan assumed responsibility for providing free medical treatment to all persons in need. Government health services providing medical care, including hospital care, free of charge, exist in almost all cities and towns. These hospitals and dispensaries are maintained for those who cannot afford to pay, although this distinction is not strictly enforced. The government only provides medical and surgical care based on the Western system of medicine. Other care has to be paid for by the citizens on a fee-for-service basis through the private sector.

Pakistan's health services are administered by its provincial governments. The federal government is mainly concerned with national health planning and provincial co-ordination although it also provides health services in the federally controlled areas (significantly Islamabad and the tribal border-areas). Agencies within the federal health ministry engaged in health delivery at the federal level are: a Science and Technology Division dealing with medical research; States and Frontier Regions Division for providing health facilities in the federally administered tribal areas; Kashmir Affairs Division for health delivery system of Azad Kashmir and the northern areas; Labour Division for industrial workers through social security organizations; Population Planning Division for the national family-planning programme; and

the Urban and Environmental Affairs Division for town planning, water supply and sanitation.

The federal health ministry is headed by a health minister (with a state minister for indigenous medicine on the periphery) and the mandatory, ubiquitous secretary. The Health Division is headed by a Director General (who is invariably a doctor) with the rank of an Additional Secretary. Under him are technical sections, each headed by a Deputy Director General, for development, medical facilities, public health, basic health services, and drug control – plus a Chairman for 'quality control of drugs.' The "general side" is headed by a non-MD with the rank of a Joint Secretary. The federal health ministry (not the ministry of education) has charge of medical education (including nursing, dental, pharmaceutical, paramedical and allied subjects). The federal health ministry is also in charge of vital health statistics plus "matters pertaining to Unani, Ayurvedic and homoeopathic systems of medicine."

Each provincial health department is headed by a Secretary who is assisted by two Joint Secretaries – one for public health, the other for medical care. There is also an exclusive directorate of health services at provincial level, headed by a director. The director functions under the secretary and is concerned with public health matters (both curative and preventive) in the province. The director is solely responsible for the administration of hospitals, dispensaries and rural health centres, except the teaching hospitals and special institutions which are directly under the control of the provincial secretary. The director is usually assisted by several deputy directors at provincial level, one each for development, administration, preventive health and curative care.

Agencies engaged in the delivery of health care in Pakistan are mainly at local and district levels, but urban institutions and teaching hospitals exist for specialized care and medical education. A brief classification includes

*district-headquarters hospital, headed by a medical superintendent (by and large a practicing physician);
*state-owned health services under the administrative control of the district health officer;
*municipal health services exclusively for urbanites under the administrative control of the municipal health officer;
*population-planning programme;
*social security services for industrial labour;
*health establishments of the Red Crescent Society; and
*private clinics offering Western medicine and indigenous medical services.

The Social Security Services scheme was initiated on 1 March 1967; it is jointly contributory. At first, six percent of wages (four from employer; two from employee) was required. Then in 1972 the employees' contribution was abolished and the employers' raised to seven percent in the Punjab and Sind and to eight

percent in the North-West Frontier Province (NWFP). Among its other functions, Social Security covers work-related injuries and compensation. Selected government agencies also provide independent health facilities to their employees; the three largest include the defence services, the railways, and the Water and Power Development Authority (WAPDA).

Health Planning

Pakistan's health-planning machinery is complex, disjointed, and sometimes at cross-purposes. On paper the Planning Commission and the federal Health Ministry have complementary roles. Likewise, the roles of the provincial planning, development and health departments are mutually supportive. The Planning Commission has the lead role in co-ordinating federal and provincial plans into an overall plan for the country. The Planning Commission prepares the guidelines which must then be approved by the Cabinet; but the actual details are developed by the federal health ministry. "The linkages between the National Planning Commission and provincial planning process are independent of the linkages of health department" [37, p. 34].

The 'mechanics' of the planning process *per se* are very complicated. They begin with the National Economic Council (NEC) and its Executive Committee (ECNEC) and proceed through the Central Development Working Parties (CDWP) to the provincial equivalents (PDWPs). The NEC is chaired by the President or the Prime Minister; the ECNEC is chaired by the Minister of Finance, Planning and Development. In April-May each year, the Planning Division places before the NEC the proposed Annual Plan and Annual Development Plan (ADP) which consists of development projects to be undertaken by the public sector. The NEC then determines allocations to federal ministries and provincial departments, although allocations to the latter are not rigidly fixed so that provincial governments retain considerable flexibility in determining programmes for their provinces. The Annual Plan is more comprehensive in that it sets targets for production, trade and private investment in addition to the public-sector programme; it, too, is approved by the NEC. In addition, the Planning Division prepares five-year plans. All projects costing more than 20 million rupees (external and domestic inputs) have to be cleared by the ECNEC.

Projects to be executed by the federal government have to be processed through the Central Development Working Party (CDWP) if their costs exceed five million rupees. The CDWP is chaired by the Secretary, Planning Division, and includes Development Commissioners and Additional Chief Secretaries, as well as Secretaries of central ministries. Likewise the PDWP is chaired by the Development Commissioner of each province.

Five-Year Plans seek to remedy specific inadequacies in the system of health services. Pakistan's Fifth Five-Year Plan sought to correct (a) the poor coverage of

organized medical care in rural areas, (b) the lack of specialist cadres, and (c) the low priority accorded to preventive and promotive care. Its principal policy-objectives in quantifiable, measurable terms were

- *to provide modern health-coverage to the entire population within a four-mile radius of primary residence by adding 5,221 Basic Health Units (BHUs) and Rural Health Centres (RHCs). The ratio of population served per unit would improve from 12,494 to 7,660 by 1983.
- *to reduce the crude death rate (CDR) from 14.0/thousand to 10.2/thousand.
- *to reduce infant mortality (IMR) from 105/thousand live births (NB: this baseline figure itself is inaccurate and far too low; see [68]) to 79/thousand.
- *to increase life expectancy for men from 54 to 60 years, and for women from 53 to 59 years.
- *to modernize existing urban facilities, and to add 15,000 new hospital beds to the existing stock.

The achievement record is mixed. During the Fifth Five-Year Plan (1978–83), although all indicators fell short of planned targets, positive (absolute) growth occurred in all categories of health facilities and manpower. Except for the production of dentists, these achievements appear on first inspection to be quite impressive. The growth in aggregate supply of doctors and paramedics is particularly noteworthy, but every category of physical facility displayed double-digit growth.

Production of Health Resources in Pakistan: 1978–1983

	1978 Benchmark	1983 Target	1983 Achievement	Absolute Addition	1978–1983 % Growth
Physical Facilities					
Hospital Beds	46,092	71,912	51,400	5,308	11.5
Rural Health Centres	289	914	374	85	29.4
BHU/MCH/Subcentres	5,850	10,446	6,489	639	10.9
Health Manpower					
Doctors	12,924	25,841	20,000	7,076	54.8
Dentists	1,047	1,642	1,100	53	5.1
Nurses	4,300	9,080	5,530	1,230	28.6
Paramedical Auxiliaries	15,428	49,314	37,000	2,486	139.8

However, when these additional facilities are normalized by population growth, some of the service ratios show a decided decline. Despite the stated objectives in the Plan to correct the urban bias of the health sector, the rural population actually

suffered a relative decline in some services. While the numbers themselves are imprecise, the trend lines are clear. Pakistan also manifests an unusual ratio of physicians to nurses. There are many more doctors than nurses and the ratio has been increasing from roughly 3:1 in 1978 to 4: 1 in 1983. The explanation derives, at least in part, from the cultural view that nursing is a low-status occupation rather than a professional calling. A nurse is a sort of servant whereas a doctor (any doctor) has a creditable status.

In short, other than some categories of health manpower, the improvement of health resources over the Fifth Five-Year Plan was not very successful. This was true particularly for physical infrastructural facilities. Part of the reason was the lack of capital funds, since only Rs 4.6 billion were actually spent on these projects compared to the proposed Plan allocation of Rs 6.6 billion. Furthermore, this latter figure was in constant prices of 1978; if the actual expenditure is adjusted for inflation, then it was equivalent to only about half of the planned allocation.

Pakistan: Population per Facility/Personnel Unit and Change in Service Ratios

	1978 Bench-mark	1983 Achieve-ment	1978–83 Absolute Shifts	Relative Percent Change
Physical Facilities				
Hospital Bed per X persons	1,666	1,790	124 *More* People/Bed	(–) 7.4
Rural Health Centre per X Persons	191,335	246,059	54,724 *More* People/RHC	(–)28.6
BHU/MCH/Subcentre per X Persons	13,128	12,943	185 *Less* People/etc.	1.4
Health Manpower				
Population per Physician	5,840	4,600	1,340 *Less* People/MD	22.6
Population per Dentist	73,352	83,000	9,648 *More* People/DDS	(–)13.2
Population per Nurse	17,860	16,636	1,224 *Less* People/Nurse	6.9

The current Sixth Five-Year Plan (1983–88) contains a similar mixture of quantitative and qualitative objectives in health. These include the following:

*to reduce the CDR to about 9 deaths per thousand inhabitants;

*to reduce infant mortality to 50 per thousand live births;

*to increase life expectancy from 55 years to a little over 60 years;

*to reduce communicable diseases to a negligible level;
*to protect all children and the new-born against the six preventable diseases of childhood, on a regular basis;
*to eliminate third-degree malnutrition among children;
*to provide assistance during child-birth to every mother by trained birth attendants (TBAs); and
*to prevent, as far as possible, occurrence of disabilities and to help the disabled toward better life prospects.

The broad strategy to achieve these objectives includes an emphasis on preventive care through immunization, diarrhoeal disease control and improved maternal care; a consolidation of the existing facilities (in contrast with the expansion and development of rural health infrastructure – with expansion only envisaged for unserved areas); staffing each rural health-facility only with a qualified doctor and no substitutes, plus organizing a double shift in the outpatient departments of all hospitals; freezing the seats in medical colleges in order to stress quality rather than quantity; and rehabilitating the disabled. The Sixth Plan also seeks government patronage of traditional medicine, community involvement through local bodies in primary health-care, proper management-training for health workers, introduction of user charges, and rapid expansion of the private health sector.

The Government of Pakistan has also identified a series of explicit targets for physical infrastructure which require considerable capital investment as well as subsequent annual operating-expenditures:

*conversion of 2,620 existing facilities into BHUs with residence attached for doctors;
*construction of 2,665 new BHUs with attached residences for doctors and staff;
*construction of 625 new Rural Health Centres;
*construction of 1,715 doctors' residences at the existing BHUs;
*provision of 4,000 teaching beds in the existing medical colleges and another 4,000 beds in district and tehsil hospitals, plus 1,220 beds in tehsil hospitals for referral care; and
*hostel accommodation for house surgeons, physicians and trainee registrars.

While these national goals are clear, they seem at variance with the capacity for implementation inherent in the health-service system of Pakistan. In particular, government spending on health in the past has not proved to be sufficient for either capital expenditures or for recurrent operating-costs.

There is also a gap between the formally articulated need for low-cost simple-technology health services and the aspirations of most professional health workers in the system. Most health workers are trained in, and attracted by, capital-intensive

high-technology medicine in anticipation of lucrative urban practice. In short, the assumptions and values held by a majority of influential health professionals differ from those on which primary health-care is based. Since public expectations have been (and will continue to be) most forcefully expressed by higher-income groups, the admirable national goals of the Sixth Plan seem doomed to remain rhetorical.

Data and Water Supply

Unfortunately for the adequacy of social indicators in Pakistan, the reporting of vital statistics pertaining to births and deaths is at present voluntary. Mortality figures are, therefore, poor in both quality and quantity. Under-reporting is chronic and there is no way to ascertain the correct cause of death. Since the existing system of reporting vital statistics is so bad, several surveys have been conducted to supplement the "official" data. Even so, the data reported are very sketchy.

Furthermore, figures derived from patient records reported by public hospitals and dispensaries in 1976 (and understanding that both the records themselves plus the reports based on them are somewhat dicey) indicate that diseases of the gastro-intestinal tract constitute nearly 30 percent of all diseases in Pakistan. Of these 30 percent, about three-quarters are due to dysenteries and diarrhoeas which are mainly water-borne diseases. Additionally, a Population Growth Survey in 1971 found that 53.8 percent of all deaths were due to "infective and parasitic diseases" with malaria accounting for another 10.4 percent. The corresponding figures for the causes of infant deaths are even more dramatic – 59.7 percent and 8.7 percent, respectively.

Drinking water contaminated by human and animal waste is believed to contribute at least 30 percent of all reported diseases in Pakistan. In 1978, about 61 percent of the urban population had safe drinking-water while 35 percent had acceptable sewerage and drainage facilities. In rural areas, only 14 percent of the population had access to potable water while sanitation facilities were virtually non-existent. Although a large number of handpumps have been privately installed in rural Pakistan, only 22 percent of water samples from these handpumps conformed to the WHO water-quality standards; an additional 19 percent could also be considered "reasonably safe" [69]. The remaining rural population fetches water from rivers, canals, dug wells and ponds, all of which are, as a rule, bacteriologically polluted.

Safe water and adequate sanitation are essential for the prevention of excessive illness and death from water-borne diseases. The provision of sanitation and safe drinking-water is carried out in different ways in each of Pakistan's provinces through departments of housing and physical planning, public health engineering, irrigation and power, and also through communications and public works departments co-ordinated by the federal Ministry of Housing and Works. Unfortunately, most sewerage is drained into open channels and discharged without treatment into water courses or rivers. In rural areas, defecation commonly occurs in open fields where

Pakistan: Water Supply and Sanitation

Year	Area	Population (millions)	Safe Water (%)	Sewerage and Drainage Facilities (%)
1978	Urban	20.7	61.1	34.8
	Rural	54.9	14.0	0.0
	Total	**75.6**	**26.8**	**9.7**
1983	Urban		72.0	42.0
	Rural		20.0	2.0
	Total	**90.6**	**31.0**	**14.0**

the accumulated excreta serve as breeding grounds for disease. Drainage facilities in Pakistani cities are also problematic since many urban areas have open sewers and open cement catchment bins where night soil and garbage are deposited. Since even in the early '80s safe water was available to less than one-third of the whole population and sewerage to less than 15 percent, rapid population growth continuously aggravates these environmental health problems. In short, water supply in Pakistan is unsafe and sanitation inadequate.

Manpower

Pakistan inherited two medical colleges in 1947 and a medical college for women was started in 1948 at Lahore. Between 1970 and 1981, medical education expanded at an accelerated pace. The number of medical colleges increased from six to 16 while the output of doctors went up from 805 to 3,552 per annum. In 1984, the privately endowed Agha Khan Medical School at Karachi began to admit students, too. At present 17 medical colleges are functioning in the country with an average annual graduation of more than 4,000 doctors. Each college is affiliated to a university which conducts the examinations. With two exceptions (Army Medical College, Rawalpindi, and Agha Khan Medical School, Karachi) the colleges are financed by the provincial health departments.

At independence, postgraduate education for physicians was almost non-existent. In 1949, an Institute of Hygiene and Preventive Medicine was started at Lahore to provide training in public health. In 1958, a basic medical sciences institute was established at the Jinnah Postgraduate Medical Centre in Karachi, which awards M. Phil. and Ph.D. degrees. In 1962, the College of Physicians and Surgeons of Pakistan (CPSP) was established as a semi-autonomous body "to lay down standards for postgraduate medical education in clinical sciences, to prescribe the

curriculum, to conduct examinations, and to approve various institutions for post-graduate training" [39]. As of 1979, institutions which had been approved by the CPSP included Jinnah PGMC (Karachi), King Edward Medical College (Lahore), Nishtar Medical College (Multan), Liaquat Medical College (Jamshoro), and Dow Medical College (Karachi).

Other facilities for health manpower production have also been added over the past four decades. In 1947, there was one dental college at Lahore. By 1979, Pakistan had four dental colleges. At independence, there were no provisions for training health visitors. In 1951, UNICEF helped to set up a 27-month comprehensive training course in midwifery and public health with an emphasis on maternal and child health; and by 1979 there were nine training schools for health visitors and a tenth was added in 1981. Other paramedical workers include laboratory technicians, radiographers or X-ray technicians, operating theatre technicians, and multipurpose health technicians for rural health services. In 1961, a school of medical technology was started. Sanitary inspectors have been trained at the Institute of Hygiene and Preventive Medicine in Lahore since 1949.

Pakistan: Health Manpower Development (1982)

Category	Number of Institutions	Output in 1970	Output in 1980
Graduate Doctors	16	800	3,500
Postgraduate Doctors	4	70	150
Nurses	29	300	1,000
Nurse Teachers	1	20	60
Lady Health Visitors	10	200	500
Dispensers	50	500	1,500
Multipurpose Paramedics	21	NIL	525

Source: GOP 1982 *Report on Health Care and Employment of Doctors,* page 37; and Pakistan's *Fifth Five-Year Plan 1978–83* (Part II).

Health-manpower planning, production and management in Pakistan have been the functions of the federal health ministry and the provincial health departments since independence. They control all the training institutions. The universities are merely the degree-awarding bodies which hold examinations on behalf of the Medical and Dental Council. Medical education is governed by the rules and regulations laid down by that council.

In 1979, of the then 15 medical colleges in Pakistan, seven were in the Punjab. Total admission capacity was 4,205 per year, of which the Punjab accounted for 1,887, or about 45 percent. The five medical colleges in Sind had 1,764 admissions,

Pakistan: Growth in the National Stock of Health Personnel

Category	1947	1948	1958	1968	1978	1983
Doctors	1,200	1,048*	5,034*	12,369*	12,924	16,501
Dentists	14				1,047	1,100
Nurses	106	204	2,021	3,813	4,300	5,530
Lady Health Visitors	20	37			3,250	3,473
Paramedics and all other Auxiliaries	NA	NA	346**	970**	24,428	23,866

Source: Ministry of Health and Social Welfare, Islamabad.
Note: *Doctors and Dentists.
**includes (LHVs).

so these two provinces contained some 87 percent or 5/6ths of all medical students. Furthermore, of the 12,750 students enrolled in 1977, only 24 percent came from rural areas, and of these 3,058 rural students easily 5/6ths (84 percent) were male. In contrast, one-third of the 9,692 students of urban origin were women (3,126).

In 1978, there were 18 facilities for training hakims and homoeopaths in the indigenous systems of medicine. Out of these, only one institute at Bahawalpur in the Punjab province was recognized by the government. Nonetheless most institutions offer four-year graduate training courses [28, p. 3]. Of the 12 institutions to train hakims, nine are in the Punjab; and all the six for homoeopaths are also in the Punjab. Karachi's Hamdard Medical College for Eastern Medicine was founded in 1958 and claims to be the foremost institution with permanent branch clinics functioning in Lahore, Islamabad, Peshawar and Rawalpindi as well [46, p. 12]. In 1977, enrolments were 1,446 hakims all over the country and 1,195 homoeopaths. Altogether, the number of registered practitioners of Eastern medicine in Pakistan, including Unani, Ayurveda and homoeopathy, were approximately 47,000. Their activities are supposedly regulated and monitored by the Pakistan Council of Tibb, but the organization is grossly ineffective and seems regularly consumed by internal squabbles [59, p. 3]. The All Pakistan Unani and Ayurvedic Practitioners Association charges government health authorities with an unfair bias toward allopathic (Western) medicine, a charge sustained by patterns of public funding for both training and clinical practice.

Economic Support

Fiscal years in Pakistan extend from July 1 to June 30, which coincide broadly with the crop and trade years. All budgets are divided into two main accounts. The revenue account deals with receipts and recurrent expenditures; the capital account is designed to create material assets which add to the economic potential of the

country. Sometimes these accounts are designated 'non-development' and 'development', respectively.

Pakistan: Broad Financial Picture (Current Rs Millions)

	1959-60	1969-70	1977-78	1979-80	1981-82	1983-84
Pakistan GDP			173,665	237,297	322,871	417,776
Govt. Revenues	1,977	8,598	27,128	39,350	51,930	73,167
Govt. Expenditures	1,846	7,048	44,355	64,233	80,138	114,537
(Current Account)			(28,005)	(39,459)	(51,478)	(80,337)
(Capital Account)			(16,350)	(24,774)	(28,660)	(34,200)

Source: [76, pp. 127 & 157].

In terms of current factor costs, Pakistan's GDP increased 2.5 times from 1960 to 1971 while health expenditures rose 3.2 times. Compared to the base-year 1960-61, the GDP then increased 9.5 times by 1977-78 and doubled to 18.2 times by

Pakistan: Budgets for Public Health-Care

	1960-61	1970-71	1977-78	1981-82
GDP (Current Rs Millions)	18,349	45,603	173,665	332,871
Total Government Health Budget	66	213	1,243	2,890
Current Health Expenditures	57	152	559	1,612
Capital Health Expenditures	9	62	684	1,278
Percent Total Health/GDP	0.36%	0.47%	0.72%	0.87%

Source: Planning and Development Division, Government of Pakistan.

1981-82. During the same periods, health expenditures increased 18.8 times and 43.8 times respectively, indicating a steady increase in relative resources. Even if recalculated at constant factor costs (in terms of 1960 rupees) in order to allow for inflation, the comparable finances look as follows.

The rate of growth in health expenditures steadily outpaced the growth in GDP. From 1960 to 1978, the latter increased 165 percent (9.2% per year) whereas the former increased 429 percent (23.8% per year). However, while recurrent expenditures increased only 174 percent (9.7% per year), development expenditures – mainly capital construction – grew a whopping 2,099 percent, or, on average, more than 100 percent per year.

	1960-61	1970-71	1977-78
GDP (Constant Rupees Millions)	18,349	32,368	48,557
Total Government Health Budget	66	152	348
Recurrent Health Expenditures	57	108	156
Development Health Expenditures	9	44	191

Somewhat more sobering are the effects of population growth on these budget for the health sector. From 1960-61 to 1977-78, the population grew 70 percent s when the constant-factor costs are weighted by population increases, total healt expenditures is found to have increased only 211 percent against the GDP growth c 142 percent. Therefore, health expenditure per capita had increased about 1 percent per year. In more recent years, the ratio between current and capital ex penditures within the health sector has been diminishing. Although recurren expenditures are always larger, this diminution indicates a policy trend towar construction of physical infrastructure ('bricks and mortar').

Government expenditures on the health sector rarely exceed one percent c either the Gross National Product or the Gross Domestic Product. As the followin tables from different sources indicate, there are considerable difficulties in assemb ling a satisfactory time-series on health expenditures because different assumption and/or definitions are used by reporting agencies at various points in time. Thes need to be reconciled, but the relative trend-lines are fairly clear.

Pakistan: Health Expenditures (Excluding Population Planning)

Year	Total Rupees (millions)	Percent GDP	Current Rupees per capita
1971-72	199	0.41	3.13
1974-75	587	0.57	8.48
1977-78	1,242	0.76	16.18
1981-82	2,890	0.86	33.95

Source: Planning Commission, Government of Pakistan.

As the tables suggest, development expenditures grew at a much faster rat than allocations for recurrent expenditures during the 1970s (basically the Bhutt period). At first, recurrent costs absorbed most of the expenditures; but by 1974-7 capital development expenditures began to account for more than one-third of al health expenditures. By the end of the Fifth Plan, nearly two-fifths (39% and 40%

Pakistan: Health Expenditures, FY'61 – FY'78

Year	Current Prices (Million Rupees)				
	Non-development Account	Development Account	Total	Percent GDP	Non-development: Development Ratio
1960-61	57	9	66	0.4	6.33
1961-62	69	21	90	0.5	3.29
1962-63	78	34	112	0.6	2.29
1963-64	80	35	115	0.5	2.29
1964-65	78	75	153	0.6	1.04
1965-66	84	46	130	0.5	1.83
1966-67	86	35	121	0.4	2.46
1967-68	92	71	163	0.5	1.30
1968-69	99	60	159	0.4	1.65
1969-70	128	68	196	0.5	1.88
1970-71	152	62	213	0.5	2.45
1971-72	141	58	199	0.4	2.43
1972-73	172	96	267	0.4	1.79
1973-74	210	158	368	0.5	1.33
1974-75	278	309	587	0.6	0.90
1975-76	361	629	990	0.8	0.57
1976-77	439	540	979	0.7	0.81
1977-78	559	684	1,243	0.8	0.82

Source: Pakistan Economic Survey, 1977-78, Table 105 (page 130).

Pakistan: Health Expenditures, FY '71 – FY '82

Year	At Current Prices Expenditure				Percent GNP	Current Capital Ratio	At Constant Prices of 1969-70			
	Current Account (Million Rupees)	Capital Account (Million Rupees)	Total Expenditure (Million Rupees)	Expenditure per capita (Rs)			Current Account (Million Rupees)	Capital Account (Million Rupees)	Total Expenditure (Million Rupees)	Expenditure per capita (Rs)
1970-71	390		390	6.34	0.8		369		369	6.00
1971-72	371		371	5.86	0.7		335		335	5.30
1972-73	407	96	503	7.71	0.7	4.24	335	79	414	6.31
1973-74	427	176	603	8.97	0.7	2.42	271	112	383	5.67
1974-75	569	363	932	13.45	0.8	1.57	285	182	467	6.73
1975-76	1,166	629	1,795	25.17	1.4	1.85	522	282	804	‡1.25
1976-77	1,095	540	1,635	22.26	1.0	2.03	449	221	670	9.11
1977-78	1,178	512	1,690	22.34	0.9	2.31	452	196	648	8.59
1978-79	1,336	569	1,905	24.44	0.9	2.35	473	201	674	8.69
1979-80	1,208	717	1,925	23.98	0.8	1.68	387	230	617	7.67
1980-81	1,460	942	2,402	29.06	0.8	1.55	411	265	676	8.21
1981-82	1,612	1,076	2,688	31.61	0.8	1.49	407	272	679	8.00

Source: [74; Statistical Annex, pp. 52-53].

of health expenditures were being disbursed for "bricks and mortar" and similar capital investments.

The mixture of development expenditures has displayed different weightings over the decades. Programmes for disease prevention have received a major share but, surprisingly, rural health has been under-emphasized despite the basically rural nature of the Pakistani population. Capital development expenditures on medical education have risen only slightly.

Within the government budget itself (provincial plus federal), health expenditures remain a small share of total expenditures. Calculated in current rupees, the figures are as follows:

Pakistan: Breakdown of Health Development Expenditures

(Percent)

Programme	1960–65	1965–70	1970–78	1978–82
Preventive	35.5	56.6	41.5	17.4
Rural Health	11.2	4.2	17.9	29.5
Hospital Beds	31.5	20.7	20.0	NA
Medical Education	16.0	14.4	18.1	NA
Miscellaneous	5.8	4.1	3.5	NA
	100.0	100.0	100.0	100.0

Pakistan: Budgetary Share for Health
(Current Million Rs)

Year	Government Total Budget	Health Expenditures	Health Expenditures as % of Total Budget
1971-72	10,530	199	1.89
1974-75	29,561	587	1.99
1977-78	48,063	1,243	2.59
1981-82	80,138	2,890	3.61

Source: Planning and Development Division, Government of Pakistan.

Private Sector

Considerable health services in Pakistan are supplied by private clinics on payment of fees for service. As one report put it, "There is no limit on charging the sick and the patients get treatment from these healers depending upon their purse, faith, seriousness and convenience" [40]. Two types of private practitioners provide health care in Pakistan: traditional healers and Western-style (so-called allopathic) doctors. In 1980 the number of doctors in private practice was estimated at 4,600 with an annual increment of 15 percent [50, p. 15]. Today there should be approximately 9,000 physicians in totally non-government practice. Private doctors tend to concentrate in the cities; their presence in rural areas is minimal – although some government-salaried doctors engage in private practice after official working hours. Private clinics and hospitals account for about 9,000 beds, or about 20 percent of the total stock of in-patient beds in the country. Traditional healers number around 47,000, of whom about 34,000 practise Eastern medicine (Unani hakims and Ayurvedic vaids) with the balance as homoeopathic practitioners. Coverage of rural areas by traditional healers is said to be much better than by allopathic doctors.

Investment in the private health-sector is approximately Rs 30 million. The private sector is financed on the basis of a fee for service paid entirely by the individual. Health insurance is non-existent in Pakistan, except in selected government services. While reliable figures about expenditures on health in the private sector are not readily available, some estimates can be made on the following assumptions (based on the prices in the late '70s):

*Rs 60 = average daily cost to maintain a hospital bed;
*Rs 4,000 = average monthly income of a doctor; and
*Rs 1,000 = average monthly income of a traditional healer.

Also, about half of all drugs (both imported and locally manufactured) are assumed to be consumed by the private sector. In 1975, total sale of such drugs was estimated at Rs 1,180 million. Therefore, in the mid-'70s the annual private sector expenditure on health was slightly more than the annual public expenditures on health (Rs 1,622 versus Rs 1,242 million).

Estimates of Private Health-sector Expenditures (mid-1970s)

Hospital Beds	Rs 197 Million
Doctors in Private Practice	Rs 216 Million
Traditional Healers	Rs 569 Million
Drugs and Medicines	Rs 590 Million
Laboratory Services	Rs 50 Million
Total	Rs 1,622 Million

Sources for Financing the Pakistani Health Sector, FY'82

	Current Expenditure		Capital Expenditure		Total Expenditure	
	Absolute (million Rs)	Relative (%)	Absolute (million Rs)	Relative (%)	Absolute (million Rs)	Relative (%)
Government	1,612	17.6	1,278	68.9	2,890	26.2
(Federal)	(202)	(2.2)	(424)	(24.0)	(626)	(5.7)
(Provincial)	(786)	(8.6)	(512)	(28.3)	(1,298)	(11.8)
(Local)	(624)	(6.8)	(342)	(16.6)	(966)	(8.7)
Employers	800	8.8			800	7.2
Social Security	124	1.4			124	1.1
Voluntary Bodies	100	1.1	500	24.3	600	5.4
Private Sector	6,500	71.1			6,500	58.8
(Pharmacies)	(2,300)	(25.2)			(2,300)	(20.8)
(MDs/Hospitals)	(4,200)	(46.0)			(4,200)	(38.0)
Foreign Aid			140	6.8	140	1.3
Total	**9,136**	**100.0**	**1,918**	**100.0**	**11,054**	**100.0**

Source: [74; Statistical Annex, p. 50].

By the end of the Fifth Plan, the role of the private sector in Pakistan's health system was even more clear. As the following table for sources of financing health-care in Fiscal Year 1982 indicates, the private sector (broadly defined) accounted for 71 percent of recurrent expenditures and some 59 percent overall. The contributions of the private sector to capital investment and development expenditure were, and are, negligible. Drugs and medicine constitute a sizeable percentage of the pivate-sector expenditure because private practitioners make part of their profits by dispensing drugs and medicines. They also sometimes manufacture them. In addition, chemists (pharmacists) advise their clients about patent remedies and a number of people engage in self-medication.

Despite governmental assumption of responsibility for health care, Pakistan's system of health services owes much to the private sector. While it is difficult to

ascertain exactly who pays how much to whom, the private sector provides well over one-half and perhaps two-thirds of the total. Once again, however, the data are deficient and/or highly suspect. Indeed, different sources provide different financial information so that one does not know how much actually is spent on what. Therefore, the trend lines are derived from guesswork and estimates rather than from an adequate system of national accounts.

5. CONCLUDING OBSERVATIONS

In Myrdal's theory of circular causation, each aspect of development reinforces every other aspect. Economic progress leads to improved nutrition, which in turn improves health, which in turn leads to higher output, better use of education, and the capacity to secure still further improvements in health by changes in the environment and changes in behaviour. Investment in the health of mothers and children, for example, is an investment in the labour force of the future by preventing the wasted physical, mental and social potential of stunted growth. High levels of morbidity and poor nutrition lead to physical and mental lethargy, inability to sustain hard work, limited ability to respond to problems and challenges, and poor motivation for improvement and learning. It is hard to imagine how economic improvement can be possible without a health initiative that ensures human-capital formation.

Strong political commitment to economic and social reform is essential to push development towards meeting basic needs [44]. For such changes to be adopted and not just promised, the rural sector may well need to achieve a political weight more commensurate with its numbers. Community organizations can help to introduce and to sustain such change. Thus, participation in planning local development may be required not only to see that priority needs are met first and to secure full co-operation with development plans once they have been agreed upon but also to ensure that agreed policies are consistently and persistently implemented. Further, "if men and women learn that they can control such apparently intractable and exogenous factors as diseases (in themselves and in their children), they will become more confident that they can intervene in the features that affect other aspects of their lives" [19].

Decisions about health services also confront the political problem of selectivity versus universality. Simply put, should services favour any particular age or sex group or should they apply equally to all? Some services need to reach everyone if they are to have maximum effect. Such is the case with many immunization programmes. But the incidence of many other diseases is concentrated in particular age groups. Services, such as health education, which attempt to change the pattern of behaviour, may need to concentrate on opinion leaders in the first instance, and these may often be the village elders in rural areas. In so far as the aim is to change

the running of the household or to introduce family planning, the ultimate target group may be women rather than men. But, in some cultures, women will not introduce change without the knowledge and support of their menfolk. Thus, men must be approached first – at least until there is an improvement in the status of women.

There is a particularly strong case to be made for special concentration on the promotion and protection of the health of mothers and children. At present, very few women receive some type of pre-natal care, and the use of untrained birth attendants is still very common [67]. The combination of malnutrition and debilitating disease causes the highest death rate in infants and children under the age of five. It also causes permanently stunted development. Although safe and highly effective vaccines are available and have brought startling decreases in the prevalence of such diseases as poliomyelitis, pertussis, measles, diphtheria, tetanus and tuberculosis in the more affluent countries, little use has so far been made of them in the rural areas of developing countries. The Expanded Programme of Immunization (EPI) is an attempt to fill this gap as is the United Nations' Project IMPACT. But these programmes generally encounter logistical problems of organization, of transport, and especially of ensuring that vaccines are held at the appropriate low temperature at central and regional levels as well as in the field. The establishment of primary health-care services throughout the rural areas would go a considerable way in helping to resolve these problems.

However, rhetoric notwithstanding, the health-service system of Pakistan is fraught with fragmentation and underfunding; its fragmentary features cannot sustain the systematic formation of human capital, although a few local (mainly urban) exceptions to this rule exist. As a very brief review, basic health indices in Pakistan remain poor. Life expectancy in the early 1970s remained less than 50 years. It is now barely 51 or 52. At any one time, at least a third of the population suffers from intestinal disorders and worm infestations. Provision of piped drinking water, sanitation facilities and proper drainage is negligible. Even today, to cite a government document, "the health situation in Pakistan is characterized by high infant mortality, high mortality in pre-school children, malnutrition, high morbidity due to communicable diseases and wasteful fertility patterns" [55, pp. 37-38].

The social sectors have fared badly as a result of resource constraints. Spending on health and population (as well as education) has traditionally accounted for a small share of total public expenditures. Such underfinancing is not unique to Pakistan, for, as Mahbub ul Haq observed, between 1972 and 1982 expenditures on health and education in the developing countries collectively went down from 21 percent to nine percent of their budgets [48, p. 4]. But Pakistan ranks near the very bottom of the league by allocating proportionately only one-fifth of what other low-income developing countries have been spending on health care [17, p. 7;

47, p. 4]. This neglect is clearly reflected in Pakistan's social indicators which lag seriously behind those of other LDCs at comparable rates of development: low literacy and low school-enrolment rates; high infant-mortality and low life-expectancy; poor nutrition; and a rapid rate of population growth. All these point to a weak social base. It is difficult to see how Pakistan can sustain high economic growth and achieve a better distribution of economic benefits without substantially strengthening its social base. Placing greater emphasis on the social sectors, to which the Government of Pakistan is formally committed, will require considerably increased financial allocations for development as well as for recurrent expenditures [76, p. 38].

Ironically, Pakistan has indeed managed to expand its production of physicians but with little impact on rural-sector services. Instead, there is growing unemployment among trained doctors, almost all of whom want to practise in urban areas where financial returns are likely to be much greater. When these doctors don't get jobs or must work under unfavourable conditions, they protest, they demonstrate, they sometimes go on strike [18, p. 9]. The individual doctor cannot be blamed personally for such unprofessional activities because he/she has been socialized in medical school to expect a type of job at a certain level of pay for delivering types of health services which are inappropriate, are expensive, and probably ought not to exist. The fault lies with the medical system, particularly its medical schools, and the government plans behind them. Unfortunately, medicine is a quintessentially middle-class profession as well as an excellent ladder for social mobility. As long as parents (particulary influential parents) prefer the well-being of their offspring to the general well-being of the society – a preference which seems highly likely for the foreseeable future – the production of yet more physicians, no matter how well-trained, can only exacerbate an already unfortunate maldistribution of health resources.

The rural health-sector remains the problem – and the key. Any scheme which depends mainly on doctors to extend health services to rural areas is bound to run into serious difficulties. Contrary to the popular belief as well as received opinion among many policy-makers, the physician/population ratio is not the crucial variable on which all else hinges. A better alternative would use multi-purpose auxiliaries who are more extensively trained than the existing paramedicals but less than allopathic doctors. Such a medical auxiliary would be the mainstay of skilled frontline health care. Under this system, physicians would necessarily remain in relatively small numbers in management, training and supervisory roles. But health care and health maintenance would occur where most needed and most effective: at the doorstep or hutment threshold.

In short, what people need most to improve their health – whether they live in urban slums or in rural areas – are six simple resources: more food, better-balanced diets, immunizations, safe-water supplies, efficient disposal of human waste,

and family-planning services. Enormous improvements in health could be attained without any use of costly high-technology health services. Major progress in health does not depend on the extensive use of highly educated manpower, or on taxable capacity, or on imported materials; it depends to a large extent on what people can do for themselves. It does not, however, follow that because the main changes required are basically simple they can be simply secured. What does follow is that there should be no major economic obstacles to attaining them. Pakistan provides ample evidence of the magnitude of these challenges in the health sector.

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Comments on "Health Policies and Human Capital: The Case of Pakistan"

As someone with an interest in the economic aspects of health care, I was especially pleased to be asked to comment on Professor Bjorkman's paper. Rather than focusing narrowly on particular points that he makes, I will make my comments and criticisms fairly broad and general, and take the opportunity to raise some additional issues concerning Pakistan's health policy that I think are important and might suggest interesting directions for future work in this area.

I will organize my comments around three themes or issues that appear central in Professor Bjorkman's paper: (i) the relative importance of curative medicine as a determinant of health in Pakistan; (ii) the question of the allocation of resources between different types of goods and services within the health-care system; and (iii) the issue of the link between health and economic development, and the way economists have viewed this link.

With respect to the first issue, the theme that runs through Professor Bjorkman's paper is that *curative medicine is a relatively unimportant factor* influencing the health status of the average Pakistani. Of those factors that are important, several are unrelated to the provision of health-care services proper. The evidence is now overwhelming that unsafe drinking water (and the associated problem of unsatisfactory methods of disposing of human and animal wastes) is the most significant contributor to ill health, at least in rural areas. Another significant factor is malnutrition. This is a relatively ill-defined concept, since it relates not only to an adequate supply of calories, but also to the question whether the average diet or the diets of poor people are deficient in certain components that are important for health (such as protein). Because the concept is ill-defined, the importance of mlanutrition in contributing to ill health cannot be measured precisely. But there is little doubt that a low nutritional standard among the poor is a significant factor in lowering resistance to various kinds of diseases, and generally retarding or stunting human development.

Compared with unsafe drinking-water and inadequate nutrition, other "life-style" factors, which are often thought of as being responsible for a great deal of ill

health in Western countries, are less important in Pakistan. But in absolute terms, factors such as motor-vehicle accidents and smoking must be major contributors to ill health in Pakistan as well. And in some areas (such as the NWFP and Karachi), drug addiction is apparently becoming a very significant problem. All of these are factors that have a great deal of impact on health; and none of them are significantly related to the provision of health-care services.

Within the health-service system proper, a big issue is what relative emphasis should be put on preventive (rather than curative) services. In most Western countries, preventive services account for only a comparatively small share of the total health-service budget. In a country like Pakistan, on the other hand, one gets the impression that the payoff to a relatively large effort on the preventive side could be high. For example, making sure that all children, in both rural and urban areas, are immunized against the common contagious childhood diseases would appear to be a sensible priority, as would a greater emphasis on programmes of maternal and child health.

Thus, if one thinks of a hypothetical budget which would be used for spending on all factors that could contribute to better health, the message would appear to be that only a relatively small portion of such a budget should go to the provision of curative health services: most of it should go to the provision of safe drinking-water, to programmes that would promote better nutrition, especially among the poor, and to the provision of preventive health-care services such as mass immunization. And it is important to note in this context that not all of this budget need come from public funds. As Professor Bjorkman stresses, the government may be most productive in a facilitating role: "Helping people to find solutions to their own health problems is likely to be more effective than to provide services to solve the problems for them."

The second theme in the paper that I would like to comment on relates to the question of what is an efficient mix of resources within the area of curative care. One major issue in this context has to do with the relative importance of physicians (trained in Western medicine) and hospitals (mostly in urban areas) on the one hand, and other resources such as rural health centres, Basic Health Units, and non-physician manpower such as nurses, health visitors, midwives, druggists, and even traditional healers, on the other hand.

From Professor Bjorkman's paper, I get the impression that he believes there has been too much emphasis on training physicians and building hospitals, at the expense of building simpler rural health facilities and training non-physician manpower such as nurses and various kinds of paramedics. While I find it easy to believe that he is right, I am wondering whether there are ways of gathering systematic evidence on this issue, and what research would be needed for this. A question that I find interesting in this context (and which may reflect my ignorance as much as anything else) is whether there would be any merit to the idea of trying to provide better

health care in rural areas by upgrading the training facilities for traditional "healers", to enable them to function in part as distributors of simpler forms of Western medicine, including common drugs.

Finally, the third major theme in Professor Bjorkman's paper that I would like to say something about concerns the role and usefulness of economic analysis in the discussion of health policy. On the one hand, he claims that economists have neglected, or misinterpreted, the role of health in economic development. On the other hand, he argues that health care is a special case which cannot and should not be subject to the same sort of economic evaluation as other private or public goods and services. You will not be surprised to learn that here I disagree with much of what he says.

The claim that economists have neglected or underemphasized the importance of spending on health care and other forms of human capital, I simply cannot see the basis for. It seems to me that for at least the last 15 years, the concept of human capital has been at the very centre of the economic analysis of growth and development. In fact, I will argue later at this conference that economists contributed substantially to the increased willingness of policy-makers and aid agencies to expand educational spending in the 1960s and 1970s in many parts of the world, when they drew a parallel between investment in physical capital and investment in human beings through education. In general, Proressor Bjorkman's criticism of economists in this respect appears to me to be some two decades out of date.

When it comes to the linkages of health and economic development, I find myself in agreement with much of what Professor Bjorkman has to say. He is right when he says that the benefits of better health should not just be thought of in terms of increased production. I also agree with him when he criticises those who argue that health should be a low priority because better health may mean a higher rate of population growth and this may retard the rate of growth of per capita income. Any sensible person realizes that better health is valuable because it contributes directly to human welfare, which is the same reason why increased consumption of material goods also is valuable. To forgo any improvement in health and life expectancy which reduces per capita consumption of material goods is obviously an absurd strategy; if there are economists who advocate such a strategy, they are absurd economists.

But while I agree with Professor Bjorkman on these points, I strongly object to the conclusion he draws from them, namely that health-care spending must be assessed using "non-economic" criteria. To repeat, the objective of using resources to produce health services is to improve human welfare. But the resources spent in the health-care sector could also have been used to produce other goods and services which also raise human welfare. The relevant question for policy is clearly which

use of resources raises human welfare the most, at the margin. If Professor Bjorkman agrees that this is a sensible way to look at the problem, then he does in fact agree that we should be using the standard economic criterion to assess health policy. One alternative "non-economic" criterion that he suggests is that health services should be provided if they "meet a felt need." I have always had great difficulty attaching any meaning at all to that phrase.

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Comments on "Health Policies and Human Capital: The Case of Pakistan"

Dr Bjorkman must be congratulated on producing this comprehensive and lucidly written document. The paper is an excellent chronology of the various stages of health development in Pakistan. It also highlights the inconsistency of health planners in experimenting with more than one health policies, thereby causing severe inertia in our health-delivery system's development.

Good and optimistic as it may be, the fact remains that the paper presented by Dr Bjorkman retains the essential features of a too pragmatic, abstract and detached approach – the hallmark of economic planners. But it must be realized that health of all the sectors cannot be evaluated just as a physical denominator. Rather it must be realized that humans have a certain degree of altruism as an inherent instinct which makes them harbour a need to help their fellow beings and the health planners must take this into consideration. Otherwise any health policy devoid of this component would fail to realise its overoptimistic but mechanical goals.

Prof. Bjorkman also fails to emphasize the importance of promoting principles of behaviour-modification which determine the attitude, expectations and participation of the community for the health-care delivery system and thereby its subsequent utilization by the population.

The Bjorkman report also has not enlightened us about certain priority health problems which, if not confronted now, will assume hazardous proportions in future. Drug addiction and family planning are examples of such problems.

Finally, the Bjorkman study has not emphasized the significance of indigenous methods and its deductions and assumptions are to a degree alien to the Pakistani character and context.

The provocative, exciting presentation has raised so many questions which are in search of an answer. These are the questions for every one – those who plan and make policy, those who finance it, those who govern, those who implement. These questions are of varied nature and I am sure will provide all of us with food for thought. I will make a humble attempt to indicate some of the most important issues needing our most urgent attention.

As has been highlighted by the Bjorkman study, any effort to devise a plan is severely hindered by lack of statistics and epidemiological data. It is imperative that before we start offering any solutions, we must have a fundamental and correct epidemiological data about the relative incidence of our major health problems.

The explicitly academic approach of economic planners towards the health policy, viewing it as a market commodity, has gradually given way to the concept of health care as an essential social service and a fundamental right of every individual. Health care cannot be separated from education, social services and allied measures that promote the quality of human resources, viz. water and sanitation, housing, population growth and eliminating or reducing harsh social inqualities which can have considerable impact on the incidence of disease and illness.

An uncritical application of the modes and concepts of health care in the developed countries to our developing system without giving consideration to our national and regional needs and requirements and almost with utter disregard of the way our people would view, utilize and benefit from the health-delivery structure will result in our already meagre health infrastructure being under-utilized or misutilized.

It must be realised that a health policy in any given country should reflect or conform to the general political, economic and religious ideology and it should be reflected also in the structure and functions of the local branches or units. Health care should be community-based, seeking active involvement of the public.

Furthermore, while devising the policy greater significance should be attached to the cost-effective, active and preventive approach than to promoting an impractical and expensive curative programme.

While developing the health-care delivery system, due consideration should be given to the established norms and values of the local population, and the "traditional" but highly urgent concepts and customs should be exploited thoroughly to extract active participation of the community, viz. mosque and clergy, joint family system, etc. I was delighted indeed to read the explicit remarks furnished by Prof. Bjorkman in his concluding observations that "The rural health sector remains the problem – and the key. Any scheme which depends mainly on doctors to extend health services to rural areas is bound to run into difficulties. An alternative would use MPHWs."

The conclusion by Prof. Bjorkman, I strongly feel, is the most important and essential statement about our health planning. In view of the shortage of willing doctors to serve in rural areas, there is no other alternative if we have to achieve health for all by 2000. WHO Expert Committee 1975 also highlights this view in the following words:

> "In the developing countries, trained health professionals are very scarce indeed. Clearly, if proper health care is to be brought within reach of the mass of the population, this will have to be done by non-specialized health workers at all levels from the

> primary health worker to the nurse or doctor – working in collaboration with and supported by more specialized personnel. This will require changes in the roles and training of both general health workers and professionals" (WHO Technical Report No. 564, 1975, p. 33).

This strategy calls for adoption of an integrated multidisciplinary approach encouraging a partnership between health and social scientists, integration of services and use of health-care teams using people without formal training at the gross roots and door step through MPHWs and other trained health personnel.

In a nutshell, it must be conceded that Bjorkman's study is an excellent historical documentary of the health-care system in its various evolutionary levels but it fails to adequately highlight aspects of the health delivery system and only mildly proposes the remedial measures from an angle which does not incorporate the political, economic, cultural and religious constituents of our psych.

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