

A STRATEGY FOR HEALTH CARE IN WEST AFRICA

by

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Discussion Papers are preliminary materials circulated to stimulate discussion and critical comment. References in publications to Discussion Papers should be cleared with the author to protect the tentative character of these papers.

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ABSTRACT

This paper discusses major issues in health strategy in West Africa, particularly in the seven countries covered by the Onchocerciasis Control Program: Benin, Ghana, Ivory Coast, Mali, Niger, Togo, and Upper Volta. After surveying health status and resources in the region, problems and deficiencies in the health systems are analyzed: limited coverage and impact; inefficient resource use (weak planning and management, unbalanced budget mix, undeveloped referral systems); underutilization of private energies and foreign aid. These deficiencies are explained by lack of tested alternative models, shortages of money, manpower and administration, lacks in available technology, and inadequate understanding about how the health care market works. Elements of a recommended health strategy are set out, including: strengthening the existing infrastructure, reducing costs, using private resources and incentives better, and gradually expanding rural health systems.

RÉSUMÉ

Cette discussion porte sur des questions majeures concernant la politique sanitaire dans l'Afrique occidentale, surtout dans les sept pays où l'on a lancé le Programme de lutte contre l'onchocercose: le Bénin, le Ghana, la Côte d'Ivoire, le Mali, le Niger, le Togo, et la Haute Volta. Après avoir examiné les ressources disponibles et l'état sanitaire dans la région concernée, on abordera l'analyse des problèmes et insuffisances du programme sanitaire actuel: impact et mise-en-pratique limités; exploitation inefficace des ressources (planification et gestion mal élaborées, manque d'équilibre des affectations budgétaires, réseaux de **consultation** peu développés); utilisation insuffisante des ressources privées et de l'aide provenant de l'étranger. On attribue ces difficultés aux phénomènes suivants: manque de modèles d'alternatives éprouvées, déficits monétaires, main d'oeuvre et administration insuffisantes, indisponibilité ou manque d'intrants technologiques, et une compréhension défectueuse de la démarche de l'entreprise sanitaire. On recommande une politique sanitaire qui consiste à: renforcer l'infrastructure actuelle, réduire les coûts, exploiter les ressources et avantages privés d'une manière plus efficace, et réaliser l'expansion progressive des programmes sanitaires dans les zones rurales.

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I. INTRODUCTION

This report is a companion to an earlier study on donor health policies prepared at The University of Michigan's Center for Research on Economic Development for the Onchocerciasis Control Program.¹ The present report treats in a general way major issues in health strategies in the OCP countries. Its purpose is to stimulate reflection and debate about the direction of health policy in these countries. The study was designed to be a background paper for discussions at a seminar of health officials from these countries. It is not meant to be comprehensive and certainly not encyclopaedic. Nor is it entirely balanced in its arguments and properly appreciative of differences in the countries of the OCP area and of the many achievements of health programs in these countries. The study is long on criticism, which is natural in a diagnostic paper of this kind, and useful in a paper designed to provoke discussion.

The paper has four sections. An introductory part surveys health status in the OCP countries, and recent progress in public health. The second part summarizes the problems or deficiencies of the health systems of the region. Explanations for these shortcomings and the basic constraints which impinge on health policy are examined in the third section. The fourth and final section of the report sets down some elements of a health strategy appropriate for these countries in the decade ahead.

¹Elliot Berg, "Intergovernmental Health Assistance in Francophone West Africa," CRED Discussion Paper No. 93, June 1981.

II. HEALTH STATUS AND RESOURCES

The seven West African countries of the Onchocerciasis Control Program (OCP) area share many similarities in health status and patterns of disease.¹ Life expectancy for this group is as low as anywhere in Sub-Saharan Africa -- 46 years -- almost 30 years less than in industrialized countries and less than that for any other developing area (see Table 1). High mortality of infants and children is the major factor contributing to short life expectancy. In many areas of the OCP zone, one-third to one-half of all children die before their fifth birthday. Infant mortality averages 160 deaths per thousand live births, and in the poorest, most remote areas, approaches 250 per thousand.² Infant mortality rates in industrialized countries, by comparison, are below fifteen per thousand. The child death rate in the OCP countries (27 per thousand) is over 25 times greater than it is in industrialized countries.³

The OCP countries experience similar disease problems, all of which are typical of regions where poverty, illiteracy, and poor sanitation prevail. Diarrhea, respiratory infections, childhood illnesses, malaria, and underlying chronic malnutrition contribute heavily to infant and child mortality (see Table 2). Measles alone kills some half million West African children each year. Intestinal parasites, vector-borne diseases such as malaria, schistosomiasis and onchocerciasis, and gastrointestinal illnesses afflict young and old alike. These conditions are not only debilitating in themselves, but often exist in combination, substantially increasing susceptibility to more acute illnesses.

Despite these common problems, the seven countries present a great deal of diversity in their populations, climate, and resources -- all of which must naturally affect the health strategy adopted by each. OCP countries are as small as Togo (57,000 km²) and as large as Niger (1,267,000 km²), as densely populated as Ghana (47 persons/km²) and as sparsely populated as Mali (5 persons/km²), as overwhelmingly rural as Upper Volta (less than 10% urban)

¹OCP members are Benin, Ghana, Ivory Coast, Mali, Niger, Togo, and Upper Volta.

²The infant mortality rate is the number of deaths of infants under one year of age per thousand live births per year.

³The child death rate is the number of deaths of children age 1-4 years per thousand children in the same age group in that year.

TABLE 1
HEALTH STATUS INDICATORS

	Life expectancy		Child death rate		Infant mortality rate ^a
	1960	1979	1960	1979	
Benin	37	47	41	25	149
Ghana	40	49	36	22	115
Ivory Coast	37	47	41	25	154
Mali	37	43	41	31	190
Niger	37	43	41	31	200
Togo	38	47	41	25	163
Upper Volta	37	43	41	31	182
OCP Countries	38w ^b	46w	40w	27w	159w
Sub-Saharan Africa ^c	39w	47w	38w	25w	149w
Industrialized Countries ^c	70w	74w	1w	1w	12w

NOTES: ^a Rates generally pertain to 1977 or 1978 or latest available estimates.

^b In Tables throughout this paper, summary measures for groups of countries are indicated as follows: w = average weighted by 1979 country population; t = total; and m = median.

^c Sub-Saharan Africa includes the 39 developing countries of greater than 0.5 million population listed in the Annex to the World Bank's Accelerated Development in Sub-Saharan Africa: An Agenda for Action (1981).

Industrialized Countries are those listed in the World Bank's World Development Report 1981 as "industrialized market economies": Australia, Austria, Belgium, Canada, Denmark, Finland, Federal Republic of Germany, France, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States.

SOURCES: World Bank, World Development Report 1981 (New York: Oxford University Press, 1981), Annex Table 21 and Population Reference Bureau, Inc., "1980 World Population Data Sheet."

TABLE 2
FIVE MOST FREQUENTLY REPORTED INFECTIOUS
DISEASES, OCP COUNTRIES, 1977^a

Benin	Malaria Measles Bacillary Dysentery Schistosomiasis Amoebiasis	Niger	Malaria Diarrheal Disease Measles Chicken Pox Whooping Cough
Ghana	Measles Chicken Pox Whooping Cough Infectious Hepatitis Cholera	Togo	Malaria Diarrheal Disease Measles Ankylostomiasis Amoebiasis
Mali	Malaria Influenza Measles Amoebiasis Schistosomiasis	Upper Volta	Malaria Measles Gonococcal Infections Chicken Pox Whooping Cough

NOTE: ^aInformation for the Ivory Coast was not available.

SOURCE: World Health Organization, World Health Statistics Annual, 1979;
Infectious Diseases: Cases.

and as urbanized as Ivory Coast and Ghana (almost 40% urban). Three OCP members are landlocked, semiarid Sahelian countries with low, highly variable rainfall and sizeable nomadic groups (Mali, Niger, Upper Volta); four are coastal countries benefitting from greater geographic accessibility, higher precipitation and a less variable climate. Two OCP countries -- Ghana and Ivory Coast -- with GNP per capita of \$400 and \$1040 are classified in World Bank statistics as "middle income". The five remaining members are "low income" countries with per capita GNP ranging from \$140 (Mali) to \$350 (Togo). Annual public expenditure on health is therefore as high as \$9-10 per person in Ghana and Ivory Coast, and as low as \$1 in Niger and Upper Volta. Endowments in health manpower are also unequal: the number of physicians relative to population differs among the countries by a factor of 5 and the number of nurses by a factor of 7 (see Table 3).

OCP countries have made notable progress in improving the health and well-being of their populations since independence. Life expectancy has increased by 8 years (from 38 to 46) and the child death rate has dropped by thirteen per thousand (from 40 to 27). And despite high levels of population growth -- 2.7% per year in the 1960s and 3.2% in the 1970s -- the number of physicians and nurses relative to population has doubled.

But health care has always claimed a smaller share of public resources than many other sectors. In 1979, for example, education represented 14-36% of public expenditure in the OCP countries, compared with 6-8% for health (see Table 4). And, according to numerous sources, the relative importance of health in national budgets has fallen, particularly over the last decade (see Table 5).¹ Rapid population growth and inflation have worn away real per capita health expenditures, which for most countries have been constant or declining.

At least as important from the health perspective is the fact that agricultural production has stagnated or declined in the past decade in most of the OCP countries. The vast majority of the population derives its

¹See for example: Bilan diagnostique du ministère de la santé publique et de la population 1976-78, Abidjan, 1979; Richard G. Brooks, "Ghana's Health Expenditures, 1966-1980: A Commentary", Strathclyde Discussion Papers in Economics, University of Strathclyde (Glasgow), July 1981; and Françoise André, Financement extérieur et dépenses de santé en Afrique, Mémoire de D.E.A., Faculté des Sciences Economiques, Université de Clermont-Ferrand, 1979.

TABLE 3
HEALTH RESOURCES

	Population per ^a				
	Physician		Nursing Person		Hospital Bed
	1960	1977	1960	1977	1977
Benin	23,030	26,880	..	3,040	780
Ghana	21,600	9,920	5,430*	860*	600
Ivory Coast	29,190*	15,220*	2,920	2,370*	660
Mali	67,050	25,150	4,980*	3,230*	1,350
Niger	82,170*	42,720	8,450*	6,270*	1,200
Togo	35,760*	17,980	5,340*	2,000	680
Upper Volta	81,650	49,810*	4,090	4,510*	1,170
OCP Countries	42,270w	24,325w	5,098w	2,893w	896w
Sub-Saharan Africa	50,096w	24,616w	6,533w	3,331w	1,025w
Industrialized Countries	830w	620w	450w	220w	117w

NOTE: ^a Figures followed by an asterisk are for years other than those specified.

SOURCES: World Bank, World Development Report 1981 (New York: Oxford University Press, 1981), Annex Table 22 and World Bank, Health Sector Policy Paper (Washington, D.C., February 1980), Annex 4.

TABLE 4
FUNCTIONAL DISTRIBUTION OF GOVERNMENT EXPENDITURE, 1977

	Percentage share of expenditure on		
	Health	Education	Defense
Benin	..	..	..
Ghana	7.5	15.6	5.3
Ivory Coast	7.8	35.7	7.2
Mali	6.2	21.6	18.6
Niger	6.0	23.3	6.1
Togo	5.8	13.7	9.6
Upper Volta	5.5	15.6	21.8
OCP Countries	6.1m	18.6m	8.4m

SOURCE: World Bank, Accelerated Development in Sub-Saharan Africa: An Agenda for Action (Washington, D.C. 1981), Annex Table 41.

TABLE 5
HEALTH EXPENDITURES

	GNP per capita 1979 (US dollars)	Public expenditure on health per capita (year) (US dollars)	Public expenditure on health as a percent of total government expenditure				
			1973	1974	1975	1976	1977
Benin	250	3 (1976)	..	..	..	..	..
Ghana	400	10 (1973)	7.9	8.8	8.3	8.0	7.5
Ivory Coast	1,040	9 (1976)	..	..	..	..	7.8
Mali	140	2 (1976)	..	..	..	6.9	6.2
Niger	270	1 (1976)	..	..	..	6.7	6.0
Togo	350	3 (1976)	..	..	..	..	5.8
Upper Volta	180	1 (1973)	8.2	..	6.6	6.5	5.5
OCP Countries	422w	5w					
Sub-Saharan Africa	411w	3w					
Industrialized Countries	9,440w	247w					

SOURCES: World Bank, World Development Report 1981 (New York: Oxford University Press, 1981) Annex Table 1; Health Sector Policy Paper (Washington, D.C., February 1980), Annex 3; IMF, Government Finance Statistics Yearbook, 1980.

livelihood in the agricultural sector, so this stagnation has direct and indirect impact on health -- in terms of food availability and nutritional effects of income changes. As Table 6 shows, food production per person declined in six of the seven OCP countries.

TABLE 6

FOOD AND NUTRITION DATA

	Average index of food production per capita 1977-79 (1969-71 = 100)	Daily calorie supply per capita, 1977	
		Total	As a percent of 'requirement'
Benin	97	2,249	98
Ghana	82	1,983	86
Ivory Coast	102	2,517	105
Mali	88	2,117	90
Niger	89	2,139	91
Togo	81	2,069	90
Upper Volta	93	1,875	79
OCP Countries	90w	2,137w	91w
Sub-Saharan Africa	91w	2,065w	89w

SOURCE: World Bank, Accelerated Growth in Sub-Saharan Africa: An Agenda for Action (Washington, D.C., 1981), Annex Tables 1, 25 and 37.

III. PROBLEMS AND DEFICIENCIES IN HEALTH SYSTEMS

Despite formidable efforts and many achievements, there is much that is not right with present health policies in the OCP countries. Such deficiencies are hardly unique to these countries, and some of the problems considered below do not exist with the same degree of severity in all the countries of the OCP area. Moreover, they are hardly unknown to the health officials of the countries in question who are, in fact, moving to deal with many of them.

The weaknesses of prevailing health care systems can be summarized under three general headings: limited coverage and impact; inefficient use of the meager public resources that are available; and inadequate use of private energies and external aid.

A. Limited Coverage and Impact

Present systems of health care in the OCP countries -- as in many other LDCs -- touch relatively few people, and address only marginally the major health problems afflicting these societies. The prevailing system is urban-oriented; the mass of the population, which is rural, has limited access to its services. Medical care relies on high cost, hospital-oriented technology and on highly skilled manpower which, because of financial constraints, can only be provided to a small proportion of the population located in urban areas. As recently as 1978, 60% of all physicians, 50% of all dentists and 66% of all pharmacists in the Ivory Coast were practicing in the capital, Abidjan.¹ One-third of Upper Volta's physicians were located in Ouagadougou, home to only 3% of its population.² The population per health establishment in Upper Volta varies widely between regions, from one per 8000 persons in Hauts Bassins to one per 21,000 in Centre Est.³ In Ghana in the early 1970s, there were 300 persons for every hospital bed in Greater Accra, compared with 1600 persons per bed in the Brong-Ahafo Region.⁴ And in most

¹ République de Côte d'Ivoire, Ministère de la Santé Publique et de la Population, Annuaire Statistique de 1978, Tableau 13.

² Haute-Volta, Ministère de la Santé Publique, Profil Sanitaire du Pays, Ouagadougou, 1978.

³ Ibid.

⁴ U.S. Department of Health, Education, and Welfare, Office of International Health, Background Paper for Developing a U.S. Health Strategy for Sub-Saharan Africa, July 31, 1971, Vol. I, p. 85.

OCP countries, well over half of health budget allocations in the 1970s was spent in urban areas.

Moreover, the primary focus of this system is on curative services; relatively small shares of available health resources (people and money) go into preventive activities. Yet many of the diseases which cause the most human misery and economic damage -- infectious diseases such as malaria, measles, diarrhea and schistosomiasis, and those associated with childbirth and weaning -- can be more effectively attacked on a broad scale through preventive, public health measures. Existing, primarily curative, health programs have had relatively little impact on the incidence of these diseases.

B. Inefficient Use of Resources

The public sector is given a necessarily large role in all these health care systems. It is not only starved for resources, however, but inefficiently uses those it has.

1. Planning and Management are Seriously Inadequate.

Detailed analyses of the resources and problems of the health sector are rarely available. Basic statistical data are sparse and irregular. Project-focussed studies, and policy and program analysis are rarely conducted by ministries of health or other agencies. Thus the information base for making sound health sector decisions is usually not at hand. "Planning" too often involves a quite mechanical application of so-called "norms" -- so many medical staff per person, so many hospital beds per district, etc. It too rarely involves definition and ordering of priorities, sorting out of alternative approaches, or measurement of program costs and benefits.

Actual program decisions in the health sector of the OCP countries are often influenced by the actions and philosophies of foreign aid donors. Health systems have been strongly shaped by "gifts" of hospitals, medical schools, or equipment, or by the type of projects promoted by international aid agencies (which often reflect fashionable development theories).

With respect to management, health sector entities share problems common to public sector organizations in general -- for example, low pay and consequently weak incentives to work harder; limited supervisory staff and technical support capacities; uncertain budgetary systems; and generalized scarcity of skilled and experienced people. Understaffed facilities place overwhelming demands on those people who are available. Senior medical staff are often

absorbed in administrative tasks, reducing significantly the supply of available professional skill. Drug distribution networks, so critical to the public health care system, are plagued with problems: drugs are seldom available at peripheral health facilities; refrigerators break down, spoiling heat-sensitive vaccines and medicines; due to poor inventory control and distribution planning, many drugs which do arrive at their point of distribution have lost their potency.

2. Unbalanced Budget Mix

A large and growing share of recurrent budget resources are consumed by salaries -- 50-85% in the OCP countries. As a consequence, facilities are starved for drugs, maintenance, equipment, and transport. Total budgetary allotments for drugs are often exhausted early in the fiscal year. Vehicles essential for outreach activities, supervision, and distribution of supplies sit unused (and quickly become unusable) for want of money for repair or spare parts. Those which function are frequently constrained by lack of budget for fuel.

3. Inadequate Referral Systems

Referral systems, which are supposed to provide the basic structure of these health care systems, work imperfectly. In theory, local health centers, regional and provincial hospitals and the national medical centers are integrated, with basic care provided at local dispensaries and health centers, and more serious or complex cases being referred upward. In practice, people often go directly to the top of the medical pyramid, because of the absence of drugs at the periphery and for other reasons. This frequently means provision of capital- and skill-intensive services for people who may not need them.

C. Inadequate Utilization of Private Energies and Foreign Aid

Most of the mobilization and management of health resources in the OCP countries is in government hands, which is understandable. But the role allocated to private and foreign sources could be enlarged, and better use could be made of the energies and resources available there. In many countries of the region, private purveyors of medical services are outlawed. Drug distribution is highly regulated, and in many instances private trade in drugs is illegal. Church and other private organizations are in many cases no longer encouraged, or work under regulations which limit their operations.

With respect to foreign assistance, much effort in recent years has gone into the financing of primary health care projects, while assistance for traditional health infrastructure (hospitals and equipment) and for medical education, has fallen off. Scholarship programs for training in industrial country medical facilities and hospitals have also fallen into disfavor. But the industrial countries have little experience with primary health care. So we now have a kind of distortion of comparative advantage in health assistance, with the industrial countries concentrating on programs of assistance in primary care -- which they have no experience with -- and reducing those forms of assistance which they do best.

IV. EXPLANATIONS AND CONSTRAINTS

The factors explaining most of these deficiencies are no secret to anyone, least of all the health authorities in the OCP countries.

A. Lack of Tested Alternative Models

The urban, curative, physician-based medical care system which is still dominant in these countries is, or at least was until very recently, the only model we knew. It was thus not only the prevailing system; it was more or less the only system.

Over the last decade, however, a new model of health care has come to the attention of the international community: Primary Health Care (PHC). This approach advocates universal access to a minimum level of health care through a decentralized, community-based system. The lynchpin of PHC is the locally-recruited and supported, minimally-trained village health worker (VHW), who performs basic first aid and health education and refers complicated medical cases to facilities higher in the pyramidal health system. Primary health care is supposed to address the most important community health problems through "promotive, preventive, curative and rehabilitative services", of which eight were specified in the 1978 Alma Ata Declaration on Primary Health Care: health education; nutrition education and adequate food supply; safe water and basic sanitation; maternal and child health care, including family planning services; immunizations; endemic disease prevention and control; treatment of injuries and diseases; and essential drug supplies.¹

While surely indicating the right direction for change, experience with PHC-type projects to date raises serious doubts about the appropriateness and feasibility in countries like those in the OCP region.

First, PHC requires inputs already in short supply: recurrent funds for salaries, drugs, and transport; management skills at all levels; and coordinating capacity. PHC projects thus encounter many of the same difficulties as current health systems: poor transport, slow and infrequent

¹WHO, UNICEF, Primary Health Care: Report of the International Conference on Primary Health Care, Alma Ata, USSR, September 6-12, 1978 (Geneva, WHO, 1978).

communications, and problems of management, supervision, finance, and morale. In fact, the emphasis of PHC on serving rural areas makes it even more transport-intensive than existing systems, and more demanding of good supervisory and coordinating institutions.

PHC presents a host of unsolved financial and organizational problems not encountered in existing systems due to its emphasis on village mobilization and service to remote areas. VHW attrition is a pervasive problem in PHC projects. Evaluators of the Sine Saloum project in Senegal, for example, found that one-third of all village "health huts" had closed down within 9 months of the project's inception due to the absence of drugs and quitting of VHWs, and that most remaining huts were threatened with bankruptcy due to the insufficiency of village funds both to remunerate VHWs and to replenish medicine stocks.¹ Recruitment strategies remain uncertain. On the one hand, literate VHWs are more easily trained, can be taught more tasks, and should be able to keep better records, but they are also likely to leave the village for better jobs elsewhere. Illiterate VHWs, on the other hand, are more likely to remain in the village but have great difficulty in recordkeeping, particularly with respect to reordering drugs. Maintaining VHW credibility with the village depends on reliable and timely resupply of drugs, and frequent supervisory visits by health staff, all of which is extremely difficult with bad roads and scarce transport. Implementation of a PHC project in Mali, for example, has been hindered by the fact that large portions of project areas have been cut off from lines of supervision and supply during the wet season.² Other difficulties typically encountered in PHC projects include problems with the payment of VHWs; nonfunctioning village committees which are supposed to oversee the handling of funds; poor record-keeping of patient complaints, revenue, and drug supplies; and overloading VHWs with too many tasks.

¹See Richard Weber, Graham Kerr, Herbert Smith, and Matt Seymour, The Sine Saloum Rural Health Care Project in Senegal: Project Impact Evaluation, U.S. Agency for International Development, April 1980.

²Derick Brinkerhoff, Realities in Implementing Decentralization, Coordination, and Participation: The Case of the Mali Rural Health Project, Harvard Institute for International Development, Development Discussion Paper No. 105, Nov. 1980.

Finally, the success of a PHC network depends most of all on the existence of a well-functioning system of referral, supervision, management, and drug supply. PHC also requires well-structured budget and accounting systems, and the availability of resources for new recurrent costs. As we have seen, however, the existing health systems in OCP countries have serious inadequacies in these respects. These are indeed general problems everywhere in the LDCs, which largely explains why there exist few examples of successful implementation and financing of PHC schemes on a regional or national scale, anywhere in the less developed world.

In brief, then, rapid extension of PHC would not seem to be a presently viable strategy for the OCP countries in the short term. The necessary resources are not available, and probably will become available over the next decade. The strategy itself is beset with unresolved human and organizational problems. And the existing health systems in OCP countries are not yet strong enough to support primary health care at the periphery.

B. Shortages of Money, Manpower and Administration

Shortages of money and trained people continue to constrain health policy. It is not possible, even with the best organization in the world, to do much with \$2-3 per capita; and, as noted earlier, budgetary allocations fell during the 1970s in real terms -- i.e., after taking account of inflation.

Nor is it likely that financial resources for the health sector will increase significantly in real terms in the 1980s. This will depend mainly on rates of economic growth and consequent fiscal performance, and in this respect it is not clear that the 1980s will see faster economic growth than the 1970s. In the 1970s, per capita income stagnated -- the average growth for the region was actually 0.2% a year.¹ Export growth also lagged; five countries registered substantially lower rates of growth of exports in the last decade than in the previous one, and three countries experienced negative export growth. The cumulative current account deficit of the OCP countries

¹IBRD, Accelerated Development in Sub-Saharan Africa, (1981), Table I, Statistical Annex. In the 1960s, income per capita in the OCP countries increased by 1.3% annually.

rose from \$71 million in 1970 to \$812 million in 1979. Their debt service as a percentage of export receipts climbed from 5.7 to 12.0%. The 1970s also saw rising rates of inflation due to oil price hikes and rising general levels of world prices.¹

Projections for the 1980s foresee a continuation of these economic trends. In such circumstances, fast revenue growth is not likely, which will surely restrain general increases in budget allocations for health. Given the pressing needs in all sectors, it would be unrealistic to expect much enlargement of the health sector's share of budget resources or significant increases in real per capita expenditure on health. The high likelihood of continuing fiscal austerity must condition all thinking about health strategy in the decade ahead.

On top of money shortages, scarcities of trained people affect the health system as they do other sectors and this will continue to be the case in the decade ahead. The scarcity in the OCP countries includes not only doctors and nurses but middle-level paramedical staff as well. Nor, in thinking about policy, can administrative capacities be ignored. The OCP country administrative systems are heavily burdened, and as a result operate at modest levels of efficiency. Many elements enter: personnel systems which do not always hire the best people and promote them over others; budgets which are short of uncommitted recurrent funds and budget systems which often involve delays and uncertainties; and auditing and accounting systems which are stretched very thin.

C. Technological Limitations

Technological limitations have prevented effective attack on many of the major illnesses in the region. Heat-stable vaccines have been slow in coming; the need to keep vaccines cold poses immense administrative difficulties. Vector-borne diseases are hard to control. The most important -- malaria -- is on the rise again in parts of the world where it once seemed contained.² Even limited control of onchocerciasis requires an expensive capital-intensive approach;

¹Domestic inflation rose from an average (median) of 2.1% a year in the 1960s to 10.3% in the 1970s.

²See M.A. Farid, "The Malaria Programme: From Euphoria to Anarchy" and comments in World Health Forum I (1,2) 1980, pp. 8-33.

and chemotherapy for treatment of the disease is poorly developed. No good technology has been developed for control of schistosomiasis. A sanitation and water supply technology well adapted to rural West African needs is not yet at hand.

D. Misunderstandings about the Health Care Market

The governments of the OCP countries, like most LDC governments, generally adhere to the principle of "free" medical care; fees for services are low or nonexistent. But "free" medical care, or very low charges, means that these services can be provided only in limited volume, for lack of resources. Many people who would like to buy more or better medical care are unable to do so, and the distribution of available services is frequently arbitrary or unjust: people living far away from health facilities have limited access, and overuse by some of those living near the facilities limits access by others who are in more urgent need of care.

Thus, there has been widespread misunderstanding of how the provision of "free" medical care limits its availability. The potential uses of the price system in enlarging the volume of health services and rationalizing their use have been largely overlooked. There has been a similar misunderstanding about the potentially positive role to be played by private agents, for example those now selling pharmaceuticals, generally illegally, throughout the region.

The financial, administrative, and technological factors described above will persist as basic constraints to health policy in the next decade. Scarcity of trained and experienced people, weaknesses in personnel and incentive systems, difficulties of communication and coordination, and fiscal pressures which will make budgets even more salary-heavy than at present -- all of these will continue in the 1980s to restrict the effectiveness of health agencies, as of most public sector entities. And despite some promising technological developments in matters of major concern to the OCP countries (for example, development of heat-stable vaccines), manageable and affordable technologies will be scarce -- notably in the critical areas of immunization, rural water supply, and sanitation.

V. ELEMENTS OF A HEALTH STRATEGY

A. Strengthening Health Systems

Given limited funds and the poor performance of existing health systems, priority should be placed on making them work better. Future extension of health services to rural areas, whether in the form of primary health care or some other model, must necessarily rest on functional systems of referral and support.¹

In many countries, the physical infrastructure of the health system at all levels has fallen into disrepair and requires major rehabilitation. Regional hospitals, health centers, maternities, health posts, rural clinics and other facilities at the periphery are in particular need of overhaul. This will, in most cases, require small outlays of capital investment for repairs, furniture, equipment, and small scale construction (of storage rooms or vehicle repair shops, for example), as well as greater recurrent allotments for routine maintenance of facilities and transport.

Strengthening health systems will also require consolidation and rehabilitation of health personnel. Existing facilities are often staffed at levels far below what is minimally required. Administrative and managerial cadres are in particularly short supply; physicians and other highly skilled personnel are often diverted from medical tasks to perform routine administration and management. Staffing patterns at all levels must be "filled in" so that existing institutions can perform the basic functions they have been designed to perform. A certain degree of rehabilitation of personnel may also be necessary in some cases; many health workers have served long periods at their posts without any additional in-service training to bring them up-to-date with new techniques, procedures, and policies. It may be desirable, for example, to provide short "refresher" courses for staff on clinical symptoms of common diseases, the pharmacology of basic drugs, or standard referral and reporting procedures.

¹"The support of a minimal level of relatively expensive service is justified because of the need to utilize the current infrastructure in the development and support of a village-based strategy . . . and to create an appropriate referral structure." See Stephen Joseph and Stan Scheyer, U.S. Agency for International Development, Strategy for Health as a Component of the Sahel Development Programme, 1977, p.42.

Another critical need is to develop more fully and simplify those mechanisms which tie the entire health system together: procedures for upward and downward communication (reporting and supervision), referral, drug distribution and resupply. As was noted earlier, health systems are particularly weak in this regard; erratic drug availability and the absence of guidelines for treatment and referral lead to less than optimal utilization patterns, wastage of precious drugs, and lack of confidence in local health facilities. More than anything else, successful extension of the health system into currently unserved or poorly served areas will be dependent on the reliability of these mechanisms. Channels of logistic and technical support and supervision must be strengthened. Standardized and reliable systems of pharmaceutical distribution must be developed to guarantee that drugs reach peripheral health units in adequate quantity and in a timely manner before their expiration dates. In many cases it will be necessary to establish minimum criteria for diagnosing specific diseases, prescribing treatment, and referring cases to more specialized concerns. All of this will require much stronger capacity in planning and analysis, more and better information, and stronger overall management in the Ministry of Health. In fact, growth of analytic and managerial capacity is essential if most of the proposals put forward here are to be implemented.

B. Reducing Costs

Health systems in the OCP countries are likely to be confronted with more stringent budgetary constraints in the 1980s than in prior years. Limitations on the amount of the recurrent cost burden which can be financed out of central government revenue will force these systems to economize in their operations.

There are a number of areas in which governments can realize substantial savings. Drugs and pharmaceutical supplies, for example, are often the second largest recurrent expenditure item, after salaries, in the health budget. In some cases, expensive brand name drugs are currently purchased, while procurement of generic drugs through international bidding can be much cheaper. Malian drug prices, for example, are higher than those of UNICEF and higher than prices in neighboring Sahelian countries. This is due in part to the purchase of higher cost brand name drugs in France. Thus, the delivered price of 1,000 10 mg. tablets of chloroquine is \$7.67 from

UNICEF and \$40 in Mali.¹ Generic penicillin purchased from the cheapest source of supply costs one-fifth as much as the French brand name product, and generic aspirin one-third as much.² Other economies can be realized by drawing up minimum lists of essential drugs at all levels of the health system, as has been done in Niger.³ Such lists simplify inventory, reduce training requirements for personnel, force substitution of low cost substitutes for high cost name brand drugs, and eliminate the various storage, handling, and inventory costs associated with keeping highly specialized, little-used drugs in stock. Bulk purchase of drugs which are then packaged or tableted locally may also help to lower costs.⁴

C. Better Use of Private Resources and Incentives

1. Cost Recovery

OCP governments should make more extensive use of cost recovery measures in their health systems. While increased efficiency and consequent cost reduction can ease the recurrent financial burden somewhat, central government outlays and foreign aid inputs are currently insufficient to adequately cover recurrent funding requirements and will almost surely not be adequate to support larger and better health systems in the future. To expand the volume of resources available, and to induce more rational use of health services, cost recovery measures are imperative.

¹P. Huet, A. Mansoor, D. Rossington, and K. Yoshinari, User Charges for Public Services in the Countries of the Sahel (preliminary draft), Harvard Institute for International Development (HIID), May 1981, p. 147. See also: Clive Gray and Nouhoum Sankare, Notes Toward an Economic Analysis of the Mali Rural Health Project (draft), HIID, June 1981.

²Huet et al., op. cit. p. 160.

³Basic lists of 275 drugs for hospitals, and 86 for dispensaries and medical centers have been implemented in Niger.

⁴Again in the case of Niger, the Office National des Produits Pharmaceutiques et Chimiques (ONPPC) produces solutions, aspirin, and chloroquine tablets from imported raw materials.

Many services and supplies are currently provided free of charge on two assumptions: that people have a "right" to free care and/or that the majority of people simply do not have the money to pay. But in poor countries, provision of "free" care in fact means that services can be provided for relatively few people. And we know that 60-80% of the people in many countries do not participate in the conventional health system, relying instead on traditional healers and birth attendants, who are paid for by the household. Although care in the formal system may be technically free, users often end up paying for drugs when public sector institutions are out of stock, paying for care in mission facilities, and spending considerable amounts for transport to health centers, and for feeding and lodging patients and accompanying family members. Thus, in most cases, the ability to pay modest user fees exists. Gradual widespread adoption of nominal fees for consultations, boarding facilities, drugs, and immunizations, for example, would improve financial viability, provide resources for expansion, and encourage more efficient utilization patterns.

It is important to note that introduction of user fees is not easy. As was noted earlier, all of the countries concerned have weak administrative and managerial capacity, and user charges place heavy burdens on administration, particularly accounting, auditing and budgeting systems. If not properly implemented and if numerous "leakages" occur, collection of user fees could simply become an additional burden on an already overly-taxed system, and a source of revenues which is difficult to control. Therefore, governments should give urgent attention to developing the necessary skills for innovative systems which are not administration-intensive, and to managing such cost recovery mechanisms. Research can help by addressing issues such as the appropriate level of charges for different services and by devising appropriate institutional arrangements.¹

2. Mobilizing the Private Sector

Given the social importance of better health, and the large private demand for health services relative to what governments in these low-income countries can provide, it is essential to utilize more fully nongovernmental financial resources, skills and energies. These are widely available and, with proper policies, can make major contributions to improved health and well-being.

¹It is generally acknowledged that something less than the full marginal cost of service should be charged. For a summary of user charges in six health projects in the Sahel, see P. Huet et. al., op. cit., pp. 137-177.

Private nongovernmental organizations -- particularly charitable or religious groups -- now provide a significant share of total medical services in many African countries, as they have in the past. Their activities are especially significant in rural areas.¹ An open-door policy, tax relief for imports of drugs and equipment, even direct subsidies -- will enlarge and diversify the available stock of health facilities and improve the flow of services, particularly to rural areas, where public health institutions are weakest. It would be a mistake to impose on these organizations regulations and requirements which render their work more difficult, or even impossible.²

In some of the OCP countries there exist large-scale private enterprises which provide good medical services for their own workers and their families. In some cases, these enterprises are located in rural areas (e.g., Ivory Coast). More intensive use could be made of their facilities, opening them up to local communities, at relatively low additional cost. Governments can encourage this kind of enlargement of health services by tax rebates or subsidies.

A wide variety of indigenous traditional practitioners still provide most of the medical services the people of the OCP area receive. The WHO and others have estimated that only 10-20% of illness incidents find their way into the "modern" system. The remaining 80-90% of illness is self-treated or treated with the help of traditional healers.³ It should be possible to do more than has been done to shape and improve this source of care. Traditional birth attendants (TBAs), for example, are already culturally accepted, have greater access to households (particularly women) than the modern health sector, and are more

¹Church medical services provided 45% of total health services in Tanzania in the late 1960s, 40% in Malawi, 34% in Cameroon, and 29% in Ghana. In Kenya during this period, 28% of all hospital beds were church-sponsored. Charles Hartwig, "Church-State Relations in Kenya: Health Issues", Social Science and Medicine, Vol. 13C (1979), pp. 121-127.

²In the late 1960s, for example, the Kenya government issued new regulations stipulating that church health posts, even in remote areas, had to employ only professionally trained personnel. But because of the high cost to missions of employing these people and because people with the requisite training could do better in urban areas, many mission health centers had to close down (*ibid.*, p. 124).

³UNICEF/WHO, Joint Committee on Health Policy, Study on Alternative Approaches to Meeting Basic Health Needs of Populations in Developing Countries. Report on the Twentieth Session, Geneva (February 1975).

likely to remain in their home communities than literate, highly skilled manpower. Improved training of TBAs could bring about substantial improvements in maternal and child health in rural areas where morbidity and mortality are highest. In Sudan, for example, illiterate traditional midwives are provided with 9 months of theoretical and practical training which leads to a "Midwifery Certificate" from the Ministry of Health. They basically remain in the private sector but with substantially sharpened skills and only minimal support from the public sector:

"To motivate their work in rural areas, village midwives are given free supplies of drugs and equipment by the Ministry of Health and a nominal salary by the Local Government Council. But on the whole they act as private practitioners and the main part of their income is acquired from their clients who pay according to their means."¹

Less respectable but at least as important to the functioning of health systems is the illicit private purveyor of pharmaceutical advice and other medical services. He takes many forms. Throughout rural West Africa he is mainly a seller of pharmaceuticals -- an illegal seller, since almost everywhere either the public sector or licenced pharmacies monopolize the legal drug market. In Liberia he is called a "black bagger".² One writer, relying heavily on Nigerian experience describes this "Quasi-modern System":

It consists of private clinics or other medical practice purportedly run by modern-trained physicians, but which in fact are not run by modern-trained physicians. Types of quasi-modern practices include:

- (a) Clinics or private practices run by a matron, nurse, laboratory technician, other paramedical, or layman, who present themselves either directly or by implication as physicians.
- (b) Clinics or private practices registered in the name of a licensed physician who purportedly runs the facility but who in fact is seldom or never there, the facility being run by some other delegated person who is not a physician.

¹Ahmed Bayoumi, "The Training and Activity of Village Midwives in the Sudan," Tropical Doctor, Vol. 6, No. 6, July 1976, p. 121.

²One observer has written as follows: "In striking contrast to the compatibility of the traditional and modern Lofa county health providers stands the 'black bagger' a pervasive force in the rural setting who although untrained and illegally operative has presented a direct challenge to Lofa County facilities in many areas in attracting patients. A key element in the success of this provider has been his reliability in providing drugs." (Karen Lashman, An Evaluation of the Lofa County Rural Health Project, Liberia, Office of International Health, U.S. Dept. of Health, Education and Welfare, Washington, Feb. 1979).

- (c) Many of the chemist shops (the pharmacies or corner drug stores of Africa) which purport to give most full medical services other than surgery.

The number and scope of these facilities, fees charged, and so forth are difficult to determine because they are illegal, or at best quasi-legal. They abound in the larger cities and particularly in the peripheral or in-migrant areas far removed from legitimate hospitals and clinics. Usually their existence is known more by word of mouth than by any conspicuous sign outside the premises, and unless one is told about such a facility or is specifically looking for facilities of this type, one is not likely to know about them.

Two reports to this writer give an indication of the extent of these facilities. The Medical Officer of Health in Ibadan has told the writer he knows of one physician who has licensed (i.e., given his name to) thirty-four such facilities in Ibadan alone. Another report comes from a qualified physician in private practice in a town of about 100,000 persons in eastern Nigeria who was responding to the question: "Why do all private practitioners in this area present themselves as surgeons? Are you all trained primarily as surgeons?" His reply was, "Do you want us to starve? I have to do surgery to make any money. If a patient comes in and I prescribe antibiotics or some other medication and he takes a prescription to the chemist, the chemist says, "Why did you go to the doctor? All he did was send you to me. You could have come to me in the first place and saved yourself the doctor's fee. I have to do surgery. It's the only thing I do that the chemist doesn't do."

The quasi-modern facilities not only charge high consulting fees, but also sell their own drugs. From the point of view of any projected basic health program in Africa, the importance of these facilities is that they indicate a much larger demand for modern medicine than many researchers may realize. Given the extreme and almost prohibitive limitations of the legitimate modern medical system, persons turn to these quasi-modern facilities because they are looking for an alternative to traditional medicine.¹

As in other areas of nonpublic sector health activity, little thought and few programs have concentrated on tapping the potentials these activities present. As already noted, a strong case can be made for legalizing private trade in pharmaceuticals, since much of the demand for drugs is now met in the parallel market anyway -- i.e., in the illegal market. A legalization of drug sales would certainly result in lower prices and steadier, more widely dispensed supplies -- although it would entail some risks.

¹Robert W. Morgan, "Basic Health Needs in Africa", Working Paper No. 29, African Studies Center, Boston University, 1980, pp. 17-19 (mimeo). The writer notes that the professional literature is virtually silent on this phenomenon.

This example is only indicative of what could be done to mobilize private energies. Governments willing to experiment can undoubtedly find new and different ways to direct individual skills and energies toward the meeting of social goals. It is presently the case, for example, that the school systems prepare people mainly for further schooling and ultimate entry into modern sector paid employment; also, law and custom decide that many services can be provided only by licensed individuals, usually only through the public sector. Thus, for example, there is usually no way a young school leaver can obtain formal training in, let us say, nursing, outside of schools designed to train nurses for government service; nor can he legally offer nursing services on his own. Similarly there is no formal way this school leaver, or any villager, can learn to repair pumps, nor is there any encouragement for him to start a business of selling and/or repairing pumps for tubewells.

There is no reason why governments could not offer formal (and/or other) training in socially-needed skills such as these, and encourage individuals to pursue careers as "paraprofessionals" or technicians offering private service for sale. The examples may seem trivial. But once the legitimacy of the idea is accepted, the administrative and other implications are far-reaching. For example, the training of paraprofessionals in health and sanitation, and encouraging them to set up on their own, would require government only to train, certify and supervise. Trained rural health workers could then establish themselves in rural towns, or circulate, and provide services for fees.

The main point is that the constraints on more and better health care cannot readily be removed in West Africa without drawing more fully on private sector energies. The administrative constraint on public sector-based primary health care problems, for example, is rooted in logistical and financial obstacles which derive from the need to organize, motivate and control people. More reliance on private actors reduces this need.

There is finally the question of private practice for government-employed physicians -- a vexing issue everywhere. The dilemma is well known. If publicly-employed physicians are allowed to conduct a parallel, private practice, the latter gradually monopolizes their energies. In the case that private practice is outlawed, the gap between public sector salaries and the income they could earn abroad is enormous, and the brain drain is stimulated.

No simple solution exists. However, assuming that private practice is legal, OCP countries could benefit greatly by encouraging the immigration of physicians and other specialists from abroad -- particularly other Third World countries. This would expand the total supply of medical services and should indirectly result in an increase of physician services for the poor.

D. Expansion of Health Systems

1. A Gradual Approach

The deficiencies of the OCP country health care systems outlined above clearly indicate the need for a more suitable system, one with a rural focus, resting on a less capital- and skill-intensive technology, and more preventive in approach. Yet, as noted earlier, viable and tested alternative models are not readily available.

Expansion of rural health systems and reorientation of basic approaches should for these reasons proceed on a gradual and selective basis. Health resources are already spread thin; too rapid an expansion along untested lines could overwhelm existing structures and fail to provide the extra coverage that is its aim. The process of developing health approaches suitable to West African conditions is still in its infancy; new program ideas should be tested carefully before large-scale implementation is attempted. Pilot schemes should aim at resolving the emerging issues, such as the appropriate rate of expansion of health post networks; recruitment policies for VHVs; alternative means of payment; suitable relationships between VHVs and regular Ministry of Health staff; approaches to the transport problem and supervision. And, as will be noted below, the PHC experiments should be well-targeted -- selective in their emphasis.

2. Selectivity in Interventions

As already suggested, greater efficiency and effectiveness in the use of available resources requires concentration on making existing activities work better, on consolidation, on avoiding the overburdening of existing capacities -- all of which implies greater selectivity -- a more deliberate focussing on the highest priority interventions.

One step in this direction is a careful marshalling of the available knowledge on health and systematic analysis of the problems, resources and constraints in the health sector -- a sector analysis. This kind of study would not involve basic research, though it might indicate particularly critical research needs; its analysis would rest on present knowledge.

Careful assessment of needs and constraints provides the basis for a "selective attack on the most severe public health problems facing a region", the criteria being prevalence, severity (morbidity and mortality) and feasibility of control.¹

Diseases with high prevalence, high morbidity and potential for effective control are much the same in the OCP area as in other LDCs: diarrhea, measles, malaria, whooping cough, schistosomiasis, and neonatal tetanus.² These illnesses (except schisto) affect infants and young children more than adults. A selective primary health care approach, then, might aim at children under 3 and women in childbearing years. Typical interventions would be: DPT immunization for children; tetanus immunization for all women of childbearing age;³ education on the importance of breast feeding; chloroquine for fever in children under 3 in malarial areas; and oral rehydration packets for fixed health posts or for circulatory mobile teams.

¹Julia Walsh and Kenneth Warren, "Selective Primary Health Care: An Interim Strategy for Disease Control in Developing Countries", New England Journal of Medicine, Vol. 301, No. 18 (Nov. 1979), p. 967.

²Walsh and Warren give "medium" priority to the following diseases, for reasons indicated in the parentheses: respiratory infections (no effective control); polio (low mortality); tuberculosis (difficult to control); onchocerciasis (low mortality, difficult to control); meningitis (difficult to control); typhoid (difficult to control); hookworm (difficult to control and low mortality); malnutrition (complexity of control).

³See Warren L. Berggren, "Control of Neonatal Tetanus in Rural Haiti Through the Utilization of Medical Auxiliaries", Medical Auxiliaries, PAHO Sc. Pub. 278, 1973, pp. 40-45, and Berggren et al., "Reduction of Mortality in Rural Haiti Through a Primary Health Care Program", New England Journal of Medicine, May 1981, pp. 1324-1330.

The essence, as Walsh and Warren put it, is "to concentrate on a minimum number of severe problems that affect large numbers of people and for which interventions of established efficacy can be provided at low cost".¹

3. Water Supply and Sanitation

It is well known that clean water and improved sanitation bring immense health and welfare benefits. According to the World Health Organization, as many as half of all infant deaths in developing countries can be linked to contaminated water and poor sanitation.² In addition, women throughout the developing world must devote substantial time to the collection of water for consumption and household use. Because of the key role of water and excreta disposal in the transmission of disease, the provision of potable water and excreta disposal facilities is believed by many to be the intervention with potentially the single most important impact on health status. It is no surprise that the United Nations Water Conference (Mar del Plata, 1977) targeted 1981-1990 as the International Drinking Water Supply and Sanitation Decade.³ Yet only a small proportion of people in the OCP countries have access to safe water and to excreta disposal (see Table 7).

Implementing an effective and broad program in water supply and sanitation involves highly intractable problems:

¹Walsh and Warren, op. cit., p. 970. These writers omit reference to measles, which in West Africa is particularly severe. In many of the OCP countries, a selective approach might also include measles immunization.

²Infant diarrhea, a major source of morbidity and mortality, is strongly associated with contaminated water, the absence of properly maintained excreta disposal facilities, and poor hygiene. Other such illnesses include water-borne diseases (cholera, typhoid, amoebiasis), water-washed diseases (scabies, yaws, leprosy, trachoma, conjunctivitis, hookworm), and water-based diseases (schistosomiasis and guinea worm). See R.J. Saunders and J. Warford, Village Water Supply (Baltimore: John Hopkins University Press, 1976), pp. 32-35.

³U.N. Water Conference, Report on Community Water Supplies, 1977.

TABLE 7

WATER SUPPLY AND SANITATION

	Percentage of population with access to ^a	
	Safe water 1975	Excreta disposal 1975
Benin	21*	14*
Ghana	35	56
Ivory Coast	19	25
Mali	9	8*
Niger	27	7
Togo	16	15
Upper Volta	25	4
OCP Countries	21w	24w
Sub-Saharan Africa	25w	..

NOTES: ^aFigures followed by an asterisk are for 1970.

SOURCES: World Bank, World Development Report 1981 (New York: Oxford University Press, 1981), Annex Table 22 and World Bank, "Social Indicator Data Sheets," April 1980.

First of all, water and sanitation facilities are expensive relative to average levels of income and to public sector resource availability. Thus, in one West African country (Togo), wells are being drilled at a cost of \$25,000 each, and maintenance costs are estimated to be \$500 a year, assuming well-qualified maintenance technicians are available.

Second, it is not clear that an appropriate water and sanitation technology exists, particularly one suited to the special constraints of rural areas. Problems of pump maintenance and repair are enormous: in Upper Volta, one survey concluded that over 90% of the existing rural tubewells were inoperative because of pump failure. Sanitation improvement, especially excreta disposal, requires careful siting, engineering, etc. Carelessly constructed pit latrines can do more harm than good, by polluting drinking water. Maintenance of sanitation facilities is difficult.

This is partly a fiscal matter: money for maintenance and purchase of spare parts is scarce. It is also an institutional problem, a result of the diffuse responsibility for the proper functioning and repair of pumps, limited availability of spare parts and delivery difficulties in remote areas, and poorly developed maintenance organizations in responsible agencies.¹

Third, provision of wells and latrines does not by itself appear to bring substantial improvement in health even where the maintenance and repair problems have been overcome. In part this is a measurement problem. Despite the seemingly direct link between poor water and sanitation, and the transmission of disease, "the health benefits of improved water supply and waste disposal are difficult to isolate and impossible to measure".² But it is also true that provision of clean water alone is not sufficient to bring about improved health, as numerous other sources of contamination exist:

¹The pump problem is not made easier by the presence of great diversity in pump types in the OCP countries, a consequence of participation by diverse donors. The difficulty of keeping a spare parts inventory is much magnified as a result. See U.S. Agency for International Development, Policy Directions for Rural Water Supply in Developing Countries (Washington, April 1979).

²Yves Rovani, "The Problem of Water Supply and Waste Disposal", Finance and Development, March 1979. See also Richard Feacham et al., Water, Health and Development (London: Tri-med Books Ltd., 1978) where it is reported that in Lesotho "village water supplies . . . have not led to reduction in disease" (pp. 178-79).

soiled water containers; poor personal and food hygiene;¹ continued bathing and laundering in streams; continued use of unimproved water sources or failure to utilize excreta disposal facilities. Thus, the success of water and sanitation projects as a health intervention often depends not only on the provision of water supply and waste disposal but on changing individual behavior (personal, household and food hygiene, and excreta disposal habits) -- a difficult and slow process in most cases.²

In light of these considerations and the constraints discussed earlier, a water and sanitation strategy must also be selective.

Urban water supply should receive priority attention. In urban areas, the health status of large numbers of people, including poor people, can be improved at relatively low cost. Potential pollution is greater in urban than in rural areas because of the heavier concentration of people, and frequent interruptions of water service enhance the danger of contamination of urban water systems.³ Thus without close attention, water supplies may become intermittent; if so, "wastewater seepage could turn a water distribution system into a vehicle for transmission of disease."⁴

¹Poor personal and food hygiene may be the most important vehicle for transmission of sanitation-related diseases for children under 2 years of age. See "Manque de conscience de l'hygiene" in EEC, Evaluation (Ex-post) Sectorielle des Projets d'Approvisionnement en Eau (Bruxelles, Août 1978) p. 66.

²See Richard Feacham et al., op. cit., pp. 178-179.

³Rapid expansion of water systems in urban areas during the 1970s was unfortunately associated with a decline in water quality: daily hours of service were reduced in many LDCs from 8-10 and 2-3, each interruption endangering water safety from wastewater seepage. See: World Bank, Water Supply and Waste Disposal, Poverty and Basic Needs Series, September 1980, p.4.

⁴Sanders and Warford, Village Water Supply, p. 197.

For rural areas, access to clean water supplies and improved sanitation should be gradually expanded, with priority to larger villages and deprived regions.¹ OCP health planners should give close attention to evolving technologies in rural water supply. For example, new projects are under way in Kenya and Malawi, using relatively simple, low cost inputs, such as locally-made plastic well screens and handpumps. The results of pit latrine programs in Botswana and Lesotho also may yield transferable experience. Foreign aid donors should be asked to assist in the search for appropriate technologies for rural water and sanitation.

Finally, attention should be given to development of decentralized institutional capacity, on which durable solutions in rural areas will ultimately depend. Small private contractors can be encouraged to undertake well-digging and pit latrine construction; this is already happening elsewhere (India, Bangladesh, Tanzania). Training can be provided for local "plumbers", who could do maintenance of both wells and latrines.

E. Better Use of Donor Resources

OCP governments have access to relatively large flows of assistance from abroad. In the health field they should seek more appropriate forms of aid.

- The industrial countries know how to build hospital facilities, small and large, how to staff and equip them, how to maintain them in reasonable condition. This is certainly one area -- a "traditional" area -- in which they could be asked to do more, and certainly they can do it better than other programs currently in vogue.

- Even the most rural-based, mass-oriented system will require some physicians and other highly-trained specialists. Industrial countries are good at training doctors. They should keep training more African doctors, despite the seriousness of (and in another sense, because of) physician brain drain. Donor countries can raise the number of scholarships they provide; they can help in constructing and staffing modest medical school capacity; and they can be asked to pay larger shares of the total cost of medical technical assistance.

¹"A strategy of assigning the highest priority for improved water supply and sanitation to the smaller, poorer and least educated rural village is a high-cost and extremely risky venture". Sanders and Warford, op. cit., p. 196.

Finally, West Africa, like similar low-income regions, has special needs in health technology. OCP area countries should urge donors to support research in the laboratories of the developed world aimed at these special problems.¹ A recent World Bank study of Africa singled out research on immunization technology and control of vector-borne diseases as particularly important areas for donor assistance.²

Many existing vaccines are unstable, must be kept chilled during all stages of transport and distribution, and often require that the immunized person return for one or more boosters. These problems increase the difficulties of carrying out immunization campaigns in tropical rural areas. Technology for the six diseases targeted for the Expanded Programme of Immunisation (EPI) -- measles, diphtheria, tetanus, whooping cough, polio, and tuberculosis -- could be substantially improved. A better measles vaccine would be particularly beneficial, as this disease is more severe in Africa than elsewhere in the world; it affects more people than do the other EPI diseases, and delivery problems are especially constraining. In addition, millions of Africans suffer from afflictions for which no vaccine exists, above all malaria, schistosomiasis, and onchocerciasis; development of vaccines for these conditions is of particular interest to Africa.

Until vaccines are discovered, research on control of the major vector-borne diseases should receive more attention -- malaria, schistosomiasis, onchocerciasis, and trypanosomiasis, in particular. Present technology for the control of these diseases is expensive and requires complicated large-scale administrative and managerial structures. Research on methods of treatment, including chemotherapy, should also have high priority

These elements of a changed health strategy more tailored to the conditions of West Africa in the 1980s are of course not meant to be a blueprint for any of the OCP countries, much less for all of them. Some of the proposals put forward will be applicable and acceptable to some countries, others will not. The hope is that many of them will be of some interest to those concerned with health policy in the region.

¹See "Pharmaceutical Innovation and the Needs of Developing Countries", National Academy of Sciences, June 1979 (mimeo).

²IBRD, Accelerated Development in Sub-Saharan Africa: An Agenda for Action (Washington, 1981), p. 88.

DISCUSSION PAPERS

CRED normally publishes 6-8 discussion papers annually, which provide preliminary reports on the research (institutional or personal) of its senior staff. In many cases, revised versions of these papers are later published in academic journals or elsewhere. Individual discussion papers can be purchased for \$3.00 each; an annual subscription (based on a July 1-June 30 subscription year) is available for \$15.00. Subscriptions are also available on an exchange basis for publications from other institutions.

1. Berg, Elliot J. "Wage Structure in Less-Developed Countries," January 1968. 51 p. (Republished in Wage Policy Issues in Economic Development, edited by Anthony D. Smith, International Institute for Labour Studies, Geneva, 1969.)

2. Eckstein, Peter C. "Accounting Prices as a Tool of Development Planning," February 1968. 84 p.

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