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SELECTIVE PRIMARY HEALTH CARE REVISITED:
WATER SUPPLY AND HEALTH IN DEVELOPING COUNTRIES*

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Primary Health Care (PHC) and Selective Primary Health Care (SPHC)

In the health delivery systems of most developing countries the bulk of available resources are devoted to curative services delivered from urban hospitals (Ref. 1). With the exception of a few vertical programs, such as certain specific endemic disease control and maternal and child health/family planning programs, health services have remained largely curative and largely unavailable to poor urban and especially rural people (Ref. 2). However, there have been some dramatic exceptions to this general pattern. Of particular importance is the health care delivery system developed in the world's most populous country, the People's Republic of China (Ref. 3), but equally striking successes have been achieved in Sri Lanka, Kerala State, Vietnam, and Cuba (Refs. 2, 4, 5, 6).

In the light of the failure of most countries to deliver health services to the majority of their people, and the success of other countries with similar resource bases to reach this goal, WHO, UNICEF, and other international agencies embarked on an ambitious effort to encourage more countries to adopt the principles which had proved so successful in the above-mentioned countries.

At the Alma Ata Conference in 1978 the characteristics of successful systems were analyzed, and the concept of Primary Health Care defined and endorsed by all participating countries. Of particular importance in this definition is the explicit recognition given to the multiple causes of poverty with the strategy therefore being defined as a multi-factorial approach rather than simply a set of medical activities. In particular, Primary Health Care (PHC) was to include:

"education concerning prevailing health problems and the methods for preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases, prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs" (Ref. 7).

Shortly after Alma Ata two biomedical scientists, Walsh and Warren (Ref. 8), published a critique of this PHC concept in the New England Journal of Medicine. This critique and the alternative "Selective Primary Health Care" (SPHC) concept advocated by Walsh and Warren have received widespread and generally favorable attention in the scientific and development communities.

The reasoning behind the concept of Selective Primary Health Care is simple. While its adherents profess sympathy to the concept of comprehensive PHC as expressed in the Alma Ata Declaration, they are acutely aware of limitations on resources of developing countries for implementing Primary Health Care programs and argue that insufficient resources are available for implementation of all components of the original PHC program. It follows, then, that one must examine each possible component of the overall program individually, determine what the costs of implementing that component are, and what the effectiveness of the program is in reaching any particular objective such

as reducing infant mortality. The components are then ranked in terms of cost-effectiveness, and a "Selective Primary Health Care" (SPHC) program designed to include the most cost-effective components within the overall budgetary constraints pertaining in any particular circumstances. In the article a hypothetical Sahelian African country was used as a model. The approach is thus presented as simply a minor modification of the original concept expressed in the Alma Ata declaration, a modification which adheres to the principles of Alma Ata but attempts to make the concept of primary health care operational and implementable.

The SPHC package emerging from the cost-effectiveness calculations takes an almost exclusively medical approach, including measles and diphtheria/pertussis/tetanus vaccinations, treatment for febrile malaria, oral rehydration for diarrhea in children, and tetanus toxoid in mothers. Biomedical research for the development of vaccines and therapies for major tropical diseases, too, are considered "cost-effective." More systemic non-medical activities such as community water supply and sanitation and nutrition supplementation are rejected as being "non cost-effective".

The rationale of the SPHC approach has been widely accepted by both the scientific community (a computer search turned up dozens of references to the original article, with virtually all the articles accepting the premises of the SPHC approach in toto) and by policy makers in many international agencies, with the recent USAID health sector policy (Ref. 9) serving as an outstanding example of the application of these principles.

The purpose of this paper is to examine the details and approach used by Walsh and Warren by examining one particular component of PHC, viz. community water supply. First, it is demonstrated that there are problems with the details of the cost-effectiveness calculations for this particular component. Second, it is shown that, these detailed problems aside, there are much more serious problems relating both to the measures of effectiveness chosen by Walsh and Warren and the methodology followed in comparing activities which fulfill different objectives. The rationale behind SPHC is also examined in terms of the light which this rationale can shed on the experience of both successful and unsuccessful national and pilot projects. The paper concludes with a consideration of the programmatic and political consequences of SPHC vis-a-vis PHC.

The Details of the Cost-Effectiveness Calculations as they relate to Water Supply and Sanitation

As indicated earlier, a computer search was carried out to identify references in the scientific literature to the original Walsh and Warren article. Many refer to the original article only to reinforce a contention that a particular field of enquiry was important, but some of the articles criticize the details of the cost-effectiveness calculations pertaining to a particular sector, usually arguing that the ranking of the specialty of the particular author should have been higher than indicated by Walsh and Warren.

In this same spirit, a critique of the numbers used by Walsh and Warren in assessing the cost-effectiveness of investments in water supply and sanitation is presented in this section.

The data used by Walsh and Warren for the capital costs of water supply and sanitation programs are based on recent and widely-verified World Bank data, and aside from noting that in certain circumstances (such as tubewells in rural Bangladesh (Ref. 10) and latrines in Zimbabwe (Ref. 11)) the per capita costs may be an order of magnitude less than the costs used by Walsh and Warren, there is no basis for disagreement with the cost data used.

What is apparently not appreciated by Walsh and Warren, however, is that whether or not there are additional investments in water supplies, people in many Third World settings (particularly in urban areas) pay substantial amounts of money for poor-quality water supplies. A well-documented but by no means unique case is that of poor people in Lima, Peru (Ref. 12), the results of which are summarized on Table 1 below.

Table 1:

The Quantities of Water Used and Expenditures on Water in Lima, Peru

Quality-of-Service	<u>Quantities Used</u> (lit./cap/day)	<u>Monthly Household Expenditures</u> on Water (soles)
Poor (vendors)	23	105
Medium (standpipe)	78	22
Good (house connection)	152	35

Table 1 shows that improvements in the quality of water supply service in urban areas may be associated not with an increase but a reduction in the monetary costs of the supply, a finding by no means unique to Lima. One of the most experienced water supply engineers in the world has found this phenomenon to be virtually universal in developing countries and has concluded that "if daily expenditures made to a water carrier were invested instead in a proper piped supply, far more economical and better water service could be provided" (Ref. 13).

In terms of a cost-effectiveness analysis of the sort used by Walsh and Warren, then, the economic cost of such water supply improvements may be much smaller than the overall cost of the project, since much, or often all, of the costs can be covered by expenditures which are already being made by the population for an inferior water supply service. Since the Third World is rapidly becoming as much an urban as a rural world, similar willingness-to-pay is often demonstrated by rural inhabitants. (Ref. 14).

Ironically those inhabitants, both urban and rural, who have the highest incidences of water- and hygiene-related diseases also pay high costs for water of inferior quality. In economic terms then given the savings that would

result, improved water supplies could have a major impact on health status of these populations for a relatively small investment of outside resources. As simple as the logic of this relationship may seem, it does not necessarily follow that these poor urban residents and their needs are recognized as legitimate or deserving by their governments, and since the organizational and managerial implications of the changes suggested are by no means trivial, a key issue, then, is political will and program management themes to which attention is directed later in this paper.

Turning to the denominator in the cost-effectiveness factor, an assessment of the likely impact of water supply and sanitation programs on health is far more problematic than the assessment of the effects of other PHC programs which influence more directly the causes of disease. Thus while it is a relatively straightforward (although not trivial) task to calculate the effects of a tetanus or measles vaccine on death rates, a similar assessment of the effects of a water supply and sanitation program is fraught with problems, for the intervening steps linking the program inputs to health outputs are far more numerous and the necessary behavioral changes are more complex. In particular, the assumption that the water supply produces the quantity and quality of water for which it was designed is frequently incorrect, as is the assumption that the water supply is being used appropriately by the classes or age groups most affected by water-related diseases (Ref. 15).

In light of these problems it is appropriate to proceed with caution in attempting to assign a "typical value" to the effect of water supply and sanitation programs on health (Ref. 16). In their analysis, Walsh and Warren drew on only a small sample of the large number of available studies and drew universal conclusions which are not supported by a more comprehensive assessment. For instance, Walsh and Warren concluded that while water piped into the home might result in substantial reductions in diarrheal diseases, water supplied through public standpipes would effect only a very small reduction (about 5 percent) in the incidence of diarrheal diseases. While this was certainly the conclusion to be drawn from the few studies examined by Walsh and Warren, fundamental doubts have been raised about the results of one of the studies (Ref. 17) and a more complete analysis of methodologically-sound available studies (Ref. 18) indicates that where improved quantities of water of improved quality became available through standpipes, the expected reductions in diarrheal diseases would be an order of magnitude greater than the 5 percent assumed by Walsh and Warren. This is indicated in Table 2 which is abstracted from this recent analysis of the effects of water supply and sanitation programs on diarrheal morbidity.

Table 2:

The Effect of Water Supply and Sanitation Programs
in Non-Intervention Studies*

<u>Parameter Affected</u>	<u>Number of Studies</u>	<u>Reduction in Percentage Diarrheal Diseases (median)</u>
Water quality	6	30%
Water availability (mostly through standpipes)	11	34%
Quality and availability	4	40%
Excreta disposal	8	40%

* Source: Ref. 18

There are reasons, then, to believe that the figures used by Walsh and Warren in both the denominator and numerator of the cost-effectiveness calculations for water supply and sanitation programs are seriously in error. Furthermore, since the approach taken by Walsh and Warren is one in which the cost-effectiveness of different components of PHC are compared, it is pertinent to note that there are also serious problems with the costs and effectivenesses used by Walsh and Warren for the more traditional medical components, which their analysis suggested were most appropriate in a "selective" approach. Specifically, in the examination of several small non-governmental health projects (Ref. 19) which served as a basic source of data for the Walsh and Warren analysis, "costs generally did not include expenditures beyond primary level of health care, or the value of expatriate and volunteer labor" (Ref. 20). In scaling up these projects to a national level, the costs would be substantially greater and the effectiveness of the programs substantially less because of "political and administrative problems". Indeed, the general application of these findings has been questioned by many (including the Director General of the WHO--Ref. 21), with the comments on the Indian project being typical: "It was the dedication of the team leaders, their total involvement in the community programs, and their special organizational abilities which made the program successful" (Ref. 22).

Criteria for Assessing the Effectiveness of Health Programs: Objectives and Decision-Makers

Health is a multi-faceted concept. At the most elementary level it is possible to distinguish between severity of effect (infection, disease, disability, and death) and age group affected (infant, child, or adult). A fundamental difficulty in comparing different health programs is that usually different programs affect different facets of health. One program, for instance, may affect infant mortality only, while another might affect infection, disease, disability, and mortality in all age groups.

Decision theory offers only some simple concepts in suggesting how to analyze trade-offs between programs which affect different facets of health in this way. In particular, with reference to Figure 1, decision theory tells us only

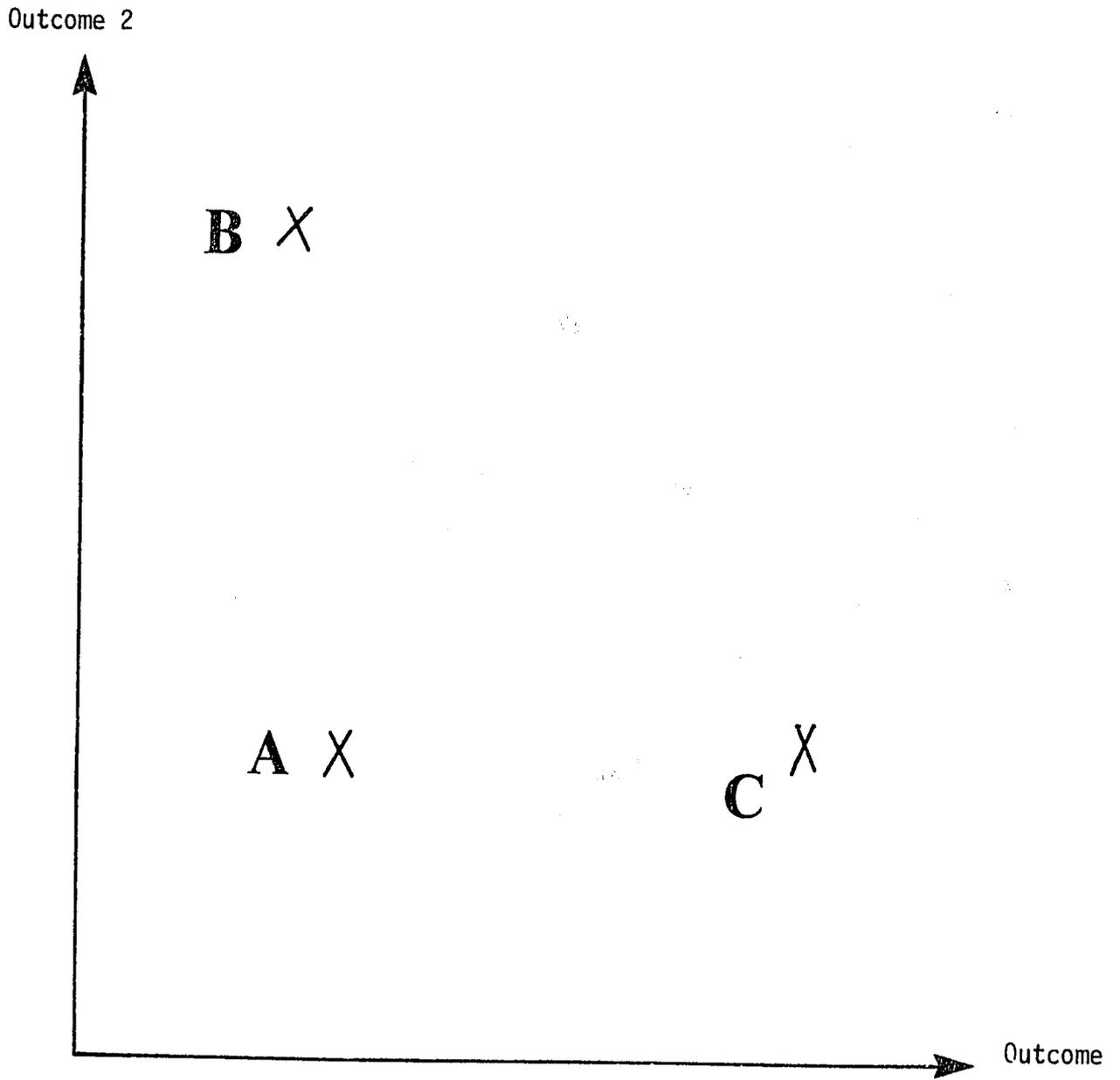


Figure 1: Decision Theory applied to program options

that, if outcome 1 and outcome 2 are both desirable, and if the costs of the programs represented on the diagram are equal, then program B is always preferable to program A and program C is always preferable to program A (a concept known as "Pareto optimality"). Decision theory tells us explicitly that, if we are unable to reduce output 1 and output 2 to a common measure (such as dollars) then the only way of resolving whether program B is preferable to program C is to submit the choice to decision makers and have them tell us which program is preferable.

It is immediately apparent, then, that two questions are of fundamental importance in attempting to compare different health programs, namely:

- (a) What are the health outcomes which will be considered; and
- (b) Who will be the judges of the trade-offs between these outcomes?

A first concern with the procedure followed by Walsh and Warren is their choice of criteria and the consistency (or lack thereof) in applying these to the components of PHC which they analyze. For the most part Walsh and Warren consider reductions in infant mortality to be the unique criterion of interest thus comparing, for instance, the cost per infant death averted through water supply and sanitation programs, expanded immunization, and oral rehydration therapy programs. This lands them in a bind, of course, for such a procedure means that all programs which do not result primarily in reductions in infant mortality (one of these considered by Walsh and Warren is an onchocerciasis control program) will be automatically rejected. Walsh and Warren then write that onchocerciasis control programs "prevent few infant deaths", leaving the reader to assume, reasonably, that onchocerciasis control programs may be justified on grounds other than reductions in infant deaths.

So far so good. With respect to the example which is followed through the present analysis--water supply and sanitation--Walsh and Warren follow a quite different procedure. Since it is never argued that the only effect of a water supply and sanitation program is a reduction in infant mortality, the only consistent procedure would be to repeat the procedure followed in the onchocerciasis control program and make no comparison between a water supply and sanitation program with a program the unique effect of which is to reduce infant mortality. This Walsh and Warren do not do. Instead they compare water supply and sanitation programs with programs aimed specifically at reducing infant mortality (such as oral rehydration therapy programs) and conclude, not surprisingly, that the programs which affect infant mortality only are more effective in this than a program which has multiple effects on several manifestations of disease in all age groups. If we imagine that "outcome 1" in Figure 1 represents reductions in infant mortality and outcome 2 some other desirable outcome (such as reduction in adult morbidity) then Walsh and Warren's procedure is equivalent to claiming that program B is superior to program C simply because B gives us more of outcome 2 than C (ignoring the fact that C gives us more of desirable outcome 1 than B). This procedure is obviously unsatisfactory.

As indicated earlier, trade-offs between different outcomes cannot be considered in isolation from the decision as to who will make such trade-offs. While Walsh and Warren could almost certainly defend their choice of reduction

in infant mortality as an important criterion, other scientists would claim that other criteria (such as morbidity in the adult population--Ref. 23) are important, too. Where different criteria are used, of course, the cost-effectiveness of different programs will be quite different. For example, in the case of cholera, whereas oral rehydration therapy has been shown to be less costly and more effective in saving lives than immunizations, if morbidity reduction becomes the objective the results of a cost-effectiveness analysis would be reversed (Ref. 23).

In the spirit of John Grant, however, who argued that primary health care and other development programs should follow "the principle of inherent need and interest", in which "projects in a village should grow out of its own needs and interest, and not be superimposed by some idealists", (Ref. 24) we would argue that the trade-offs between the outputs of PHC programs be done in light of the expressed needs of the communities involved. From an examination of the actual health and nutrition practices of families in the developing world, it is clear that their de facto priorities do not agree with the assumption of Walsh and Warren that reductions in infant mortality are of unique concern. In particular, throughout the developing world the welfare of families is highly dependent upon the economic production of adults, (Ref. 23) giving rise in subsistence settings, for example, to discrimination in feeding among household members to protect the actual or potential breadwinner in subsistence settings (Ref. 25).

In assessing actual practices, however, attention has to be given to the fact that families, like villages, are not division-free entities, and it is necessary to go one step further and ask whose interests within the family should be given greater weight. From a variety of perspectives it seems clear that the group whose needs are most important in terms of the health of the community in general and young children in particular are women. First, virtually all components of PHC programs are based on the assumption that mothers will be the most important front-line providers of health care to children (Ref. 26). Second, of all the correlates of infant health, none is as strong or as consistent as mother's education, (Ref. 27) implying that there are few better investments in health than those which meet the needs of women, and, particularly, those which alleviate the constraints limiting the education of girls and women. Later in this paper it is argued that a particularly important constraint faced by women in undertaking, to use James Grant's term (Ref. 28) "discretionary activities" such as education and child care, is the enormous demand made on women for performing time-consuming repetitive tasks. Investments which relieve mothers of a part of this burden will have an effect on child health, a statement which although difficult to prove is doubtless true (Ref. 16).

Indeed, many experienced investigators of the determinants of health in the Third World would concur with Latham (Ref. 29) who has argued that "attention to women's rights and the emancipation of women may ultimately have more impact on nutrition and infection in developing countries than any of the (conventional nutrition and health) interventions."

Women as the Front-Line Health Care workers: Some Constraints

It is noteworthy that nearly all the Primary Health Care interventions cited by Walsh and Warren as fitting the criteria for inclusion in SPHC depend for

their execution to a large extent on the active cooperation and participation of women. It was therefore with great reason that the Director General of WHO urged that women become the subject and not the object of health programs.

In fact a concept central to all PHC programs is that no lasting advances in child health can be made unless the mother is involved in these programs. Thus most of the elements of the proposed SPHC programs--such as immunizations for mothers and infants, malaria treatment and rehydration therapy as well as the core elements of all PHC programs, breastfeeding, supplementary feeding, oral rehydration therapy, and household hygiene--involve the mother as the front-line health worker. Indeed, the objective of PHC programs may be described as the improvement of "mothering, the poorly-defined but crucial interactions between mother and child that form the principle determinants of health, growth and development" (Ref. 30).

To carry out the complex and demanding task being set her by Primary Health Care programs, the mother faces four principal constraints, namely technology, knowledge, resources, and time. One way of conceiving of PHC programs would be to aim them at relieving the mother of one or more of these constraints so that she may provide more effective child care.

In their analysis of "Selective Primary Health Care", Walsh and Warren focus their attention almost exclusively on the first of these four constraints, technology, an approach common to the policy formulations of some development agencies as well. While there is no doubt that technological advances, such as improved and expanded immunization programs and oral rehydration therapy, open new vistas in terms of the potential for child health in developing countries, the provision of improved technology alone is insufficient, for usually the effective implementation of such technology requires simultaneous inputs of knowledge, resources, and time on the part of the mother. Let us consider a few examples.

Expanded Immunization Programs for Infants (Diphtheria/Pertussis/Tetanus)

All three immunizations require at least two and preferably three injections at intervals of four to eight weeks after the second month of life. Even if the problems of the cold chain of transport and of availability of trained personnel could be solved and if mothers could be adequately informed of the advantages and availability of vaccines, mothers' time would still impose a considerable constraint on vaccine coverage. Two or three trips to a health center with a young infant could well require a commitment of a day for each one, given the distances to cover. In areas of world (especially Africa) where overall utilization of health centers seldom surpasses 20 percent, few women can be expected to have the time or the financial resources to participate. Mobile vaccination teams or village level delivery of vaccine may be necessary to overcome this constraint, raising both capital and operational costs.

Tetanus Toxoid for Pregnant Women

Virtually the same time constraints exist for this intervention, requiring again at least two and preferably three injections during pregnancy at 4-6 week intervals.

Treatment for Febrile Malaria

Practically the only successes obtained in these programs have occurred when health personnel were sufficiently trained and supplied and in sufficient numbers to carry diagnostic techniques and chemotherapeutic agents to the population. Short of this solution, malaria mortality will continue to be high among young children simply because of the time and money required of a mother to get the child to a fixed health facility that could be more than 10 km. away (true for 80 percent of rural Africans). This constraint says nothing of the time needed to continue therapy correctly through the course of the illness, nor of the financial resources needed to purchase the drug if the health center has none.

Oral Rehydration Therapy: ORT technology undoubtedly opens entirely new possibilities for the reduction of mortality in young children in developing countries. As in all other cases, however, the provision of the technology alone will have little impact unless the constraints faced by the mother in using the technology are addressed simultaneously. The constraints are many: In many areas of the world, the cost of rehydration packages is too great for poor families; (Ref. 32) in almost all situations traditional understanding of food and liquid withdrawal during diarrhea have to be changed (Ref. 33) and thus the ORT technology has to be accompanied by education and information. Finally, since "continually giving a sick infant large volumes of liquid by spoon or cup is time-consuming, tiring and inconvenient, for an overburdened mother with other children plus household and farm work to do, ORT may require the commitment of more time and energy than she can easily provide" (Ref. 34).

Breastfeeding: Primary Health Care programs provide both information to the mother on the fundamental importance of breastfeeding for the health of her infant and technology in the form of programs designed to monitor the growth of her child. While such programs are essential, equally essential is the availability of time for the women to breastfeed their babies. Studies throughout the world have shown that where women work outside the home, they do not have the time available to breastfeed their babies, with the result that the inputs of knowledge and technology provided by the PHC program cannot be translated into improved child-rearing practices. (A typical finding is that in Malaysia, where women who were recently employed breastfed their children 33 percent less time than women in a control group who had not recently been employed) (Ref. 31).

Clinic-based Supplementary Feeding and Other Programs: Perhaps the simplest of all programs, in principle, is one in which the mother comes to the clinic or the distribution center to collect food for her child, to weigh her child, to have her child immunized. Yet many studies as mentioned above have shown that attendance at a clinic drops off dramatically as the distance to a clinic increases (Ref. 35) and that women in the labor force are frequently unable to avail themselves of such services because of the constraints on their time (Ref. 36).

Food Preparation and Storage: Recent longitudinal studies in Bangladesh (Ref. 37) and the Gambia (Ref. 38) have documented the vital role of food contamination on the transmission of diarrheal diseases, an effect which becomes particularly marked when great demands are made on the time of the mother. In the Gambia, for instance, at the peak diarrheal transmission season "feeding

of small children is particularly haphazard...infants may be left in the compound in the care of young nursemaids with a supply of porridge or gruel for the next 8 or 9 hours, and food for the evening meal is sometimes stored overnight" (Ref. 38).

In sum, the great demands placed on the time of Third World mothers constitute a serious barrier to the implementation of either SPHC or PHC, with these constraints often being particularly acute at those times of the year when children have most need of additional health care (Ref. 39) and in low-income families where the incidence of illness is greatest (Ref. 40).

Given the above factors, then, although improved water supply and sanitation conditions affect PHC in several ways--by reducing the disease load (see Table 2) and thus the need for child care; by increasing available income through reducing payments for water (see Table 1); by releasing the calories used in carrying water (12 percent of a woman's caloric intake in East Africa) (Ref. 42)--most important of all effects may be increasing the time available to mothers for carrying out child-care and other "discretionary activities."

Time Required for Water Collection

The impact of the installation of a convenient village water supply system on the time spent by women and children in carrying water has been documented throughout the world (Ref. 16). To give just a few of many examples, in the lowlands of Lesotho, 30 percent of families spend over 160 minutes per day collecting water (Ref. 43); as a result of improved water supplies in the Zaina scheme in Kenya about 100 minutes per household per day are saved from the water-collecting activity (Ref. 44); in East Africa rural families spend up to 264 minutes per day carrying water (Ref. 42); in East Nigeria families spend up to 300 minutes per day collecting water (Ref. 43). Studies in Asia, e.g., the Philippines (Ref. 41) and Thailand (Ref. 14) too, have documented the substantial amount of time spent in collecting water in many areas.

Felt Needs of Low-Income Women

A major constraint on women's "discretionary activities" (including child care) in many developing countries appears to be the enormous demand made on their time of repetitive, time-consuming tasks. It has further been documented that in many rural communities the fetching and carrying of water is one of the most important of these tedious tasks. What do the low-income women of the Third World have to say about this when they are asked directly, when they are treated, as Halfdan Mahler would have, as subjects and not just as objects in the development process?

In looking for answers to this question it bears repeating that societies in general and societies in developing countries in particular are typically sharply divided along class and sex lines. Earlier in this paper it has been argued that particular attention should be paid to the concerns of poor women, yet determining the concerns of this largely disenfranchised group is not simple, for two main reasons. First, the sexual division of labor is universal with the time-consuming tasks performed by women and seldom if ever being performed by men, and, second, "the decision-makers or leaders in the agencies and in the target communities are usually men and they communicate with other men and not with the women" (Ref. 46).

Where surveys of community needs have taken into account such factors, water supply has ranked high on the list of expressed priorities throughout the developing world (Refs. 14 and 45). In a recent review of the findings of surveys of low-income women in developing countries, water supply improvements were found to "rank right alongside the most basic human need (Adequate food) in many (such) surveys" (Ref. 40).

Cost Effectiveness Revisited

Returning to the decision model outlined earlier, it is thus apparent that if, first, outcomes of programs were not arbitrarily restricted solely to reductions in infant mortality and, second, the trade-offs among outcomes were made by poor Third World women and not scientists, water supply programs would routinely constitute an integral part of PHC programs in those (large) areas of the developing world where the provision of adequate water supplies is a difficult and time consuming task.

It is thus not surprising that in all countries in which PHC has been successful improvements in water supply and sanitation conditions have been an integral part of strategies for both improving health and improving the status of women (Refs. 47, 48).

Summary and Conclusions

Six years after Alma Ata, what is the prospect for the PHC philosophy as outlined in the Alma Ata Declaration? On the one hand the concept is clearly a viable one which has been implemented successfully in a number of large low-income developing countries and with considerable, if only temporary, success in a number of pilot projects in developing countries which have had little impact at the national level (Ref. 19). The overwhelming reality, however, is that in those countries which had made little progress before Alma Ata, little progress in implementing PHC programs has been made since (Ref. 27). Simplifying a complex debate, there have been two main contending theses explaining this failure. On the one hand, many have seen the failure of PHC programs in most developing countries as a predictable consequence of a "lack of political will," while others have focused on technical factors such as the scarcity of resources for implementing PHC programs and the necessity for making cost-effectiveness choices on components to be included in an overall PHC program.

For those who favor the technical interpretation of this experience, the "Selective Primary Health Care" approach of Walsh and Warren is an insightful and pragmatic tool to be used in making choices, in the light of the "resource scarcity", about which interventions are "cost effective." Their analysis, however, as has been shown in this paper, is fundamentally flawed. If the problem is a problem of "resource scarcity," how is it that several low-income countries have implemented strikingly successful PHC programs while many other countries with higher GNP's per capita have failed completely? If the problem is the comprehensive nature of the Alma Ata formulation of PHC, then how is it that all of the successful national programs have taken such a comprehensive approach? And if water supply and sanitation programs are not "cost-effective," why is it that all of the countries in which PHC has been effective have made improvements in water supply and sanitation a cornerstone to their PHC approach? In summary, although the approach taken by Walsh and Warren and used as a basis for sector strategies by some international development

agencies has a certain appeal to fundamental notions of rational planning, the approach fails totally to account for the experience which has been accumulated with PHC programs throughout the world. This being the case, then, there are several critical questions: is there an alternative interpretation which explains the experience with PHC programs more satisfactorily? If so, what are the implications of this alternative interpretation for policy? And, finally, why has the obviously-flawed "Selective PHC" approach proved to be so compelling and attractive to some development agencies?

Even the technically-focused analyses of the SPHC sort usually mention in passing the "importance of political will and management" in the implementation of PHC programs. An alternative explanation for the success of some national PHC programs and the failure of others, considers this factor of political will to be fundamental rather than incidental. The importance of this commitment is evident from both longitudinal and cross-sectional observations. Thus, first, history shows that prior to World War II cogent blueprints for appropriate health services were drawn up for both China and India (in the form of the Bhoire Commission Recommendations of 1943). To John Grant, who played a major role in this process in both countries and who recognized that "the use of medical knowledge...depends chiefly upon social organization" (Ref. 24), subsequent developments could have been no surprise. Where the government made a fundamental commitment to meeting the health (and other) needs of all people, as in China, enormous progress was made in developing an appropriate health delivery system. Where no such commitment was made, as in India, health services changed little over the intervening 40 years (Ref. 49). Similarly, a contemporary cross-sectional comparison of countries which have made marked progress in the development of health services for all, with those countries in which adequate services have been developed for only a small minority, shows that progress has been rapid only where "health and health care became a political goal and eventually came under political control as a part of overall development" (Ref. 2).

To the proponents of this alternative interpretation, the experience of the successful non-governmental PHC health projects which are the object of so much attention in the cost-effectiveness analyses, is also consistent with this theory regarding the centrality of political commitment. For what distinguishes these successful small projects from the unsuccessful national projects in the same countries is not the resources available nor the choice of technology but that through dedication and management these programs have managed to overcome the problem of the lack of political will characterizing the national programs in these countries (Refs. 21, 22, 27).

Thus the concerns of the technical analysts with "resource constraints" and the use of "non-cost-effective technologies" appear to be either false or second-order problems. The problem of "resource scarcity" is a problem wrongly named, for it is clear that this problem arises not because there are insufficient resources for the health sector but because the vast majority of these resources, both public and private, are devoted to an existing urban, hospital-based, capital-intensive health care system serviced by and meeting the needs of an elite urban minority (Ref. 1). The problem of appropriate technology is a real one, and there is no doubt that where political commitment exists PHC programs will become more effective through the use of ORT, expanded immunization programs, improved low-cost sanitation technologies and other technological improvements. This does not imply, however, that an

enormous amount cannot be done with existing technologies. The successful experiences in China, Sri Lanka, Cuba, Vietnam, and Kerala all demonstrate the progress that can be made without the technological advances which some international development agencies suggest to be the major impediment to improving health in developing countries. Indeed, what the experience of the successful national PHC programs shows is that the issue of appropriate technology is intimately related to the issue of political commitment, as is evident in the development and widespread use of innovative "appropriate" solutions to the problem of sanitation technology in both China (Ref. 50) and Vietnam (Ref. 51) and the imaginative incorporation of traditional medicine into a modern health care delivery system in China (Ref. 27).

Given these manifest shortcomings of the Walsh and Warren type of approach, why has it proved to be so attractive to certain development agencies and many developing country governments?

First, the only reasonable conclusion from the evidence is that credit for the success, or blame for the failure, of national PHC programs lies squarely with the government of the country concerned. Where PHC programs have failed it is because the commitment of the government to "health for all" its people is, for whatever reasons, little more than empty rhetoric.

The implication for development agencies with a genuine concern for the health of all people has been stated by one of the pioneers of the PHC movement: "Where support is available, let it be selectively directed to those countries which already have, or are taking steps to develop, a form of decision-making and implementation which is likely to be effective" (Ref. 2). Since the support of some development agencies for certain countries has more to do with political imperatives than a true concern for the health of the people of that country, such agencies use analyses such as that presented by Walsh and Warren to deflect responsibility for death and illness from its true source, namely the home governments and their international supporters, and to assign responsibility for such suffering to "neutral" causes such as "resource shortages" and "the limitations of technology." In short, "Selective Primary Health Care" is not, as the authors would suggest, a practical modification of the PHC concept but rather a negation of much that was positive in the PHC approach formulated at Alma Ata.

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