doi: 10.3325/cmj.2010.51.181

Role of Primary Health Care in Ensuring Access to Medicines

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To examine ways of ensuring access to health services within the framework of primary health care (PHC), since the goal of PHC to make universal health care available to all people has become increasingly neglected amid emerging themes of globalization, trade, and foreign policy. From a public health point of view, we argue that the premise of PHC can unlock barriers to health care services and contribute greatly to determining collective health through the promotion of universal basic health services. PHC has the most sophisticated and organized infrastructure, theories, and political principles, with which it can deal adequately with the issues of inequity, inequality, and social injustice which emerge from negative economic externalities and neo-liberal economic policies. Addressing these issues, especially the complex social and political influences that restrict access to medicines, may require the integration of different health initiatives into PHC. Based on current systems, PHC remains the only conventional health delivery service that can deal with resilient public health problems adequately. However, to strengthen its ability to do so, we propose the revitalization of PHC to incorporate scholarship that promotes human rights, partnerships, research and development, advocacy, and national drug policies. The concept of PHC can improve access; however, this will require the urgent interplay among theoretical, practical, political, and sociological influences arising from the economic, social, and political determinants of ill health in an era of globalization.

Received: January 21, 2010.

Accepted: June 7, 2010.

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In her inaugural address to the World Health Assembly, Dr Margaret Chan, Director- General of the World Health Organization, outlined the objective of the primary health care (PHC) system in improving access to health services (1). In her speech in November 2006, Dr Chan advocated "the return to primary health care as an approach for strengthening health systems in order to ensure adequate access to health services." Clearly, Dr Chan's commitment to strengthen the ability of PHC to provide the fundamental prerequisites for health – sufficient food, safe water, shelter, and access to essential health care and medicines – provides an impetus for national and local efforts. Nevertheless, her leadership does not provide clear directions for exact approaches to increasing such access using the concept of PHC. It is important to address PHC concerns if this enterprise is to be legitimate and exert increasing influence on access to medicines.

To reassure ourselves of what PHC can do, it is useful to consider some evidence that PHC works not only to influence policies on access to medicines, but also to reexamine health and illness, which form an intrinsic part of human life. In order to show the practicality of PHC, it is vital to substantiate Dr Chan's arguments on PHC reforms with verifiable facts, since such claims by themselves are inadequate as a justification for policy or reforms. The efficiency of PHC reforms is not just a matter of undergoing change, but achieving a reformation that maps out clear approaches, is supported by specific evidence, and finds legitimate solutions within its own context, while being supported by political and social structures.

This article explains ways of increasing access to essential medicines and begins by presenting an overview of PHC strategy in improving access to health services. The roles of PHC in improving access, and the challenges that the PHC model face in this regard, are explored within emerging themes of globalization, such as global markets, diffusion of information, and new global governance of research and development. The remainder of the article provides a critical assessment of how access to medicines can be improved through existing PHC components and structures. The issue of human rights and its relationship with PHC is highlighted. We consider the relationship between PHC and human rights as the foundation on which advocacy movements for access to health services can be based. Finally, we shift attention to discussing the building blocks that constitute PHC, and how these can be used to improve access to medicines.

WHY PHC FOR IMPROVING ACCESS TO MEDICINES AND INNOVATING HEALTH CARE?

It is necessary to examine why PHC is an appropriate tool for increasing access to medicines. First, at the heart of PHC are theoretical and practical constructs that give rise to numerous technical issues and their solutions. Second, PHC remains a useful concept and scientific discipline of public health (2) that focuses not only on national health services, but also on basic health services. PHC is the cornerstone upon which most health delivery systems are built. Ideally, PHC drives much of the strategy behind health systems that customize the needs of health and well-being to individuals, communities and populations. Third, PHC is highly supportive of fundamental human rights. The legal provisions and entities incorporating human rights are clearly embedded in the Alma Ata Declaration of the International Conference on Primary Health Care (2), and the influence of this document confirms the mandate of PHC to override barriers to health services.

Significant barriers such as trade-related intellectual property rights (TRIPS) may often jeopardize access to health services (3). Nevertheless, the operational perspectives of PHC, and its doctrine of the right to the highest attainable standard of health, provide a framework through which access to human basic needs can be lobbied and reached (4). The Universal Declaration of Human Rights of 1948 (5) is explicitly embedded in the PHC model and, if used appropriately, can challenge inequities affecting access.

WHY REVAMP THE ROLES OF PHC?

Access to medicines remains a public health problem for the majority of the world's population, with ever-growing concerns for disparities and inequalities (6). The role of PHC in mainstreaming public health problems has become increasingly neglected as a result of controversial issues such as globalization and health reforms (7). For example, the globalization of trade and health technology, although important to increase access to medicines and necessary for functional public health systems, can also severely restrict access (8). Health innovation and global trade rules, such as TRIPS and neo-liberal economic policies, affect direct access to and supply of medicines. Unless the roles and fundamentals of PHC are overhauled, poor access to medicines in the health service will remain problematic in years to come, consistent with concerns expressed by the World Health Organization.

Strengthening and reforming the role of PHC is a vital tenet of public health activity for facing the current problems encountered when seeking access to medicines. Despite the fact that access to medicines is vital to promote and protect public health, the process of PHC is often marred with inconsistencies. While alternative solutions to this problem are available, the traditional PHC model is undoubtedly a practical and direct solution to bridging access of essential medicines with a network of health needs. Revamping the role of PHC will serve not only to optimize access; it will also ensure a stable and reliable way of dealing with the resilient underlying causes of inadequate access to medicines (for example, health innovation and economic challenges). Critical examination of the role of PHC demonstrates its ability as a primary care model that offer leverage and ensure fair, affordable, and sustainable access to essential medicines across populations.

THE CONTEXT OF A PHC-BASED STRATEGY ON ACCESS TO MEDICINES

The 1978 Alma Ata Declaration by the WHO led to the birth of primary health care (2). The concept of PHC was based on the urgent need to protect and promote public health interests. In this declaration, PHC is defined as:

"…essential health care on practical, scientifically sound and socially acceptable methods, and technology made universally accessible to individuals and families in the community through their full participation, and at a cost that the community or country could afford to maintain at every stage of their development, in the spirit of self-reliance and self-determination." (2)

The fundamental focus and commitment of PHC is to provide a first level of care within the community through a set of activities described in Table 1 (9).

TABLE 1. Basic elements of primary health care*

Health education
Identifying and controlling prevailing health problems
Food supply and proper nutrition
Provision of safe water and basic sanitation
Maternal and child health care, including family planning
Immunization
Prevention and control of endemic disease
Appropriate treatment of common diseases and injuries
Promotion of mental health
Provision of essential drugs

*According to Tarimo and Webster (9).

In addition to achieving the desired level of care, which involves both a philosophy and organizational structure for an efficient health care service, PHC is responsible for solutions in health care, including the provision of solutions for the social and psychological problems of individuals and communities. In short, PHC forms the taproot for better health; without its infrastructure, delivery of health services such as medicines will be difficult to achieve. For example, donated medicines will have no benefit without an infrastructure for their delivery, and untrained staff will not deliver adequate care to patients.

The structural asymmetries in PHC give rise to new methods of dealing with the complexities of population health. The PHC system accelerates health care initiatives such as the training of staff and building their capacity in the prevention and surveillance of, and response to, diseases across the population. PHC is, then, a unique source for strengthening health systems. While PHC focuses on health promotion and disease prevention, it also emphasizes healthy lifestyles and other priority settings that give health systems the power to attain the best results for health. The operational strategy of providing comprehensive health coverage aims to cope and deal with the proliferation of booming economies and the ever-increasing demands in health. The PHC system finds the right balance, for example, between the protection of intellectual property rights and access to affordable essential medicines.

Today, just as 30 years ago, the PHC approach can be viewed as an important strategy for achieving health for all (10,11). PHC interventions and insights form the cornerstone of the advancement of health and well-being, and attempt to address unequal access, poor uptake, and discriminatory services. Evidence suggests that since the introduction of PHC, its practice has led to increased health gains, not least the right to health characterized by transparency, participation, equity, and equality (12). These achievements have been made possible due to the organization of PHC, its timely efforts, and investment in health-related targets from government agencies in the strategy. In the early 1990s, evidence for the impact of these efforts could be seen in global figures, which showed the increase in life expectancy that accompanied improvements in the accessibility of health care services (13). Global child mortality declined by a quarter between 1990 and 2006 (14), while the prevalence of communicable diseases, such as poliomyelitis, diphtheria, measles, and smallpox, declined remarkably, with some even being eradicated. These successes are undoubtedly a result of PHC,

particularly in the PHC areas of immunization coverage and health education (15).

Considering what PHC can achieve (16,17), we argue that this model would be effective for current health challenges, especially if a comprehensive PHC approach is followed. The term comprehensive primary health care refers to primary medical care for the individual, coupled to a more holistic approach, which includes prevention and support services like staffing, management, and infrastructure, and supports outside health services, such as education (18). Selective primary health care, on the other hand, is simply an interim strategy that focuses on curative care for specific diseases; its participation has limited engagement, is based on the opinions of outside experts, and tends to be sporadic (19). A recent study assessing the progress of PHC systems in 30 developing countries, using either selective or comprehensive approaches of PHC, showed that implementing comprehensive PHC increased life expectancy and reduced child mortality rates more than selective PHC (20). In contrast, a WHO report showed that the Global Alliance for Vaccines and Immunization (GAVI Alliance) had greatly expanded the reach of selective approaches in developing countries (21). Nevertheless, the authors of that study admitted that results could be vastly improved if operational plans were drawn based on proven strategies (ie, comprehensive PHC), the services of which reach everyone and provide a continuum of prevention to treat more health conditions.

THE PHC STRATEGY: A COMPREHENSIVE APPROACH TO STRENGTHENING HEALTH SYSTEMS

The dominance of PHC strategy has never been complete. Three decades ago, it took the form of large-scale interventions to improve public health through measures that ameliorated access to medicines and health conditions. During the late 1990s, as communicable diseases gave way to non-communicable diseases and disability, and the escalating costs of scientific medicine became increasingly apparent, there was growing criticism of this massive-scale PHC that led to deployment of low-cost packages of technical interventions to tackle the main disease problems causing specific death in poor countries. Recent critics recognize that insufficient attention has been paid to PHC because the context of health and illness portrays people as private, consequently seeing illness as principally an illness of an individual. This approach inevitably raises numerous issues concerning population health, technical capacity, as well as challenges regarding how to improve quality of life and sensitivity to patient's individual rights.

PHC should be understood with verifiable facts, amenable to objective technical and normative issues. Clearly, comprehensive PHC is not immune to critique, but discursive analysis of this model suggests that the concept can foster good public health policies that deal with public health constraints and the multiple causes of poor health (15).

Generally, PHC is concerned with the comprehensiveness of meeting all networks of health needs. For example, in Thailand, where comprehensive PHC is utilized intensively, a great deal of progress has been achieved toward equitable health and human development (20). The Government of Thailand has made a tremendous effort to achieve overall success in their health system by ensuring that poor people are protected from unaffordable health costs and exempting the poorest families from paying for health services.

While there is demonstrable evidence of achievement within comprehensive PHC, its themes and the focus of PHC continue to be complicated, varying in the context of ongoing relationships among donors, scholars, and agencies. Supporters of comprehensive PHC argue that poor countries carry an enormous and disproportionate burden of ill health and premature death, yet international donors such as UNICEF target disease-oriented interventions demanded by the socio-political ambitions of their foreign policy. The move from primary prevention of disease to curative medicine has been nearly absolute. The role of comprehensive PHC to challenge the broad determinants of health has become neglected in contemporary medicine because of its costs and other factors, such as the perceptions that PHC is too broad and idealistic and that it has an unrealistic timetable targeting "Health for All by 2000".

Comprehensive approaches are indeed costly but worth mitigating multilateral complexities that give rise to a multitude of disease. For example, treating HIV/AIDS, tuberculosis (TB), and malaria ought to accompany preventive measures that avoid drug resistance and re-occurrence of these diseases. In the comprehensive PHC model, preventive measures can be implemented by integrating education into the range of health services, and the provision of an accessible infrastructure that covers general health services. The PHC model works to identify sustainable health-related services and facilities, including access to medicines, essential foods to ensure freedom from hunger

and adequate sanitation to ensure access to clean water. Comprehensive PHC, based on its theoretical and political meaning, transcends not only political and social interests of health; it can also satisfy growing demands for reforms within the health sector.

EMERGENCE OF SELECTIVE APPROACHES OF PHC

As observed earlier, the traditional PHC strategy has shifted and is now more focused on selective approaches of tackling health problems. The Global Fund for AIDS, TB, and malaria, Expanded Programs on Immunization and Safe Motherhood Programs are just a few examples of vertical (selective) approaches that dominate the comprehensive PHC approach in Table 1. Many more vertical programs and initiatives have emerged that entirely replace the comprehensive PHC strategy. The problem with the vertical delivery of health services is that they forego – and, in many cases, ignore – the interconnectedness of social, environmental, educational, and economic determinants of ill health. Selective PHC is concerned solely with the causal relationships behind ill health. This restricted form of health delivery leads to the neglect of equally important health problems that fall outside its mandate (22,23). Selective strategies attempt to respond to specific health outcomes, such as HIV, TB, and malaria, and cannot encompass all the determinants that cause ill health, including those affecting access to medicines. A review of the literature shows that, despite the large sums invested in HIV/AIDS, malaria, and TB, these programs have yet to achieve their intended goals (6).

The coverage of medicines to treat these diseases is limited further by the introduction of International Monetary Fund and World Bank loan schemes, popularly known as Structural Adjustment Programs (SAP) (24), which have led to technical and allocation inefficiencies in PHC (25). The terms and conditions of SAP contravene the need, purpose, and practice of PHC. In SAPs, low-income countries are urged to borrow yet are unable to pay back what they owe. As a result, indebted governments cut expenditure in health and education in an effort to repay debts, thus undermining the essential funding criteria in the PHC model.

THE PRESENT SITUATION ON ACCESS TO ESSENTIAL MEDICINES IN DIFFERENT REGIONS

Lack of access to essential medicines is concentrated mainly in developing countries. Although not universally accepted, one definition of access includes the notion of equity: "Equal access to health care according to need" (26). Similarly, adequate access is now widely affirmed as an essential element for mainstreaming public health problems (27). Yet the low procurement levels of essential medicines in Africa and India provide overwhelming evidence of the failure of these principles (22). Thus, the core obligation of health systems, as defined by PHC, is to provide access to essential drugs and ensure that the health of the population is not neglected or compromised. This endeavor is, nevertheless, important because health-related services and provision of medicines do save lives and improve quality of life. Tables 2 and 3 (22) illustrate access trends for medicines within different regions in 1999, the results of which were published in 2004 and show trends which remain similar today. A policy paper in 2005 from the UK Department for International Development also estimates that one third of the world's population still lacks access to the medicines they need (28).

In the "African" region alone, 37 out of 45 countries barely have access to essential medicines. It is approximated that 267 million people – half the total population of Africa – lack regular access to essential medicines (22). These estimates are based on the WHO world medicines surveys.

TABLE 2. Range of access to essential medicines by World Health Organization (WHO) region, 1999*

	No. of countries with regular access to essential medicines (percentage of population)				
WHO region	very low access (<50)	low to medium access (50-80)	medium to high access (81-95)	very high access(<95)	Total countries
Africa	14	23	5	3	45
Americas	7	14	7	7	35
Eastern Mediterranean	2	7	5	8	22
Europe	3	12	6	25	46
South-East Asia	2	4	3	0	9
Western Pacific	1	8	8	9	26
Total countries	29	68	34	52	183

*According to: World Health Organization Medicines Strategy: countries at the core 2004-2007 (20).

TABLE 3. Number of people without access to essential medicines, by World Health Organization (WHO) region 1999*

WHO region	No. of countries	Total population in millions (% of total)	Population without regular access to essential medicines (range)		
			population in millions	percentage of WHO regional population	percentage of world population
Africa	45	566 (10)	267 (200-334)	47 (35-59)	15 (11-19)
Americas	35	813 (14)	179 (134-224)	22 (16-27)	10 (8-12)
East Mediterranean	22	485 (8)	143 (107-179)	29 (22-36)	8 (6-10)
Europe	46	832 (14)	114 (85-142)	14 (10-17)	7 (5-9)
South-East Asia	9	486 (8)	127 (95-159)	26 (19-32)	7 (5-9)
India	1	998 (17)	649 (487-811)	65 (49-81)	38 (28-47)
West Pacific	26	380 (7)	55 (41-69)	14 (10-17)	3 (2-4)
China	1	1274 (22)	191 (143-239)	15 (11-19)	11 (8-14)
Total all countries	183	5834 (100)	1725 (1294-2156)	30 (22-37)	100

*According to: World Health Organization Medicines Strategy: countries at the core 2004-2007 (20).

For these surveys, experts from each country estimate the percentage of the population with access to a minimum of 20 essential medicines on a regular basis and within an hour's walk (22).

THE NEED FOR ACCESS TO ESSENTIAL MEDICINES IN DEVELOPING COUNTRIES

Access to essential medicines allows people to obtain treatment for health conditions, both immediate and chronic. Since access to essential medicines improves quality of life, the challenge is to make affordable medicines available to all people who need them. The current number of people who lack access to HIV/AIDS medicines is now estimated at 6.5 million (29,30), and only 20% of infected people who may require anti-retroviral therapy have access to it (30). Access to other essential drug packages falls far below this percentage, which causes high mortality rates from treatable illnesses. The lack of new TB and malaria drugs has resulted in millions of deaths each year because of drug resistance and the neglect of new technology in developing tropical medicine (31).

FACILITATING GOOD PROCESSES IN PHC: ACTIONS TO IMPROVE ACCESS TO MEDICINES

PHC is a key element of national strategies to increase access to essential medicines. Market prices of basic essential medicines and trade rules on medicines limit the practice of PHC; and where medicines are available, drug distribution to points of consumption is greatly affected by poor quality standards within the health care system. People can lack access to medicines not because new medicines are patented or sold at exorbitant prices, but because of poor communication strategies and transport logistics. To ensure that health services reach poor areas a strong infrastructure is needed, such as outreach clinics, accessible road networks, and reliable vehicles to transport medicines and patients. Furthermore, supportive systems of drug procurement ought to decentralize to several medical stores in order to minimize distribution delays. While this may have implications for the security of medical resources, it is nevertheless necessary in order to improve medicine supply systems directly to local health services, in turn increasing access and improving prescription (32).

BUILDING BLOCKS OF PHC THAT CAN FACILITATE ACCESS TO MEDICINES

The building blocks of a comprehensive PHC system include health workforce; the financing systems; the health information systems; leadership; governance; and systems to provide access to medical products, vaccines, and technologies. PHC identifies policy areas essential for strengthening health systems. First, it identifies human rights as essential for dealing with health inequities by extending coverage to all people. Second, national policies and regulations are identified for multi-sectoral action for ensuring quality health services. Third, research and development inform policy development and provide networks for people and ideas to come together. Finally, education, partnership networks, and similar organizations in public works, transport, food industry, and pharmacy allow the necessary growth of the health sector, its leadership and governance. This may not, however, be a complete list; the blocks can be narrowed down to the basic elements of PHC shown in Table 1.

THE ROLE OF HUMAN RIGHTS WITHIN PHC TO INCREASE ACCESS TO MEDICINES

As with ethics, human rights are not optional. The right to the highest attainable standard of health is fundamental to PHC, underpinned by the universal recognition of moral values and reinforced by legal obligations. The broader goals of "human rights" generates conflict in the provision of health care: on the one hand, the human right to health care drives PHC to seek effective solutions to the problem of accessibility; on the other hand, the human right to freedom of thought means protecting extreme ideologies, such as intellectual property rights, that might destroy the health system, in particular PHC. Human rights are insufficiently understood to be applied in an operational, systematic, and sustained manner within the PHC system. For example, the human rights component of PHC is misconceived and misinterpreted, and often narrowed down to specific obligations, undermining the broader domains of health.

Considerable constraints on the capacity to solve public health problems exist, which continually undermine the power inherent in human rights principles, as originally articulated in PHC. This is possibly due to competing orthodoxies of rights; for example, the right of patents against the right to health. The role of human rights is detailed in the Universal Declaration of Human Rights (UDHR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR), but often downplayed by patent rights. Patent rights do not necessarily recognize human rights (33), despite the ICESCR Article 15.1 (c) clearly stipulating that everyone has the right to benefit from the protection of moral and material benefits of scientific and artistic production (4).

Drawing upon the relationship among PHC, UDHR, and ICESCR, practical solutions have emerged to allow international health institutions to collaborate to establish effective, integrated, and accessible health systems. The link of PHC, UDHR, and the ICESCR translates into legally binding instruments within human rights that recognize the right of everyone to enjoy the benefits of scientific progress. Human rights affirmed in PHC can increase access. However, we propose that experts and governments managing health systems should be familiar with the numerous technical issues embedded in PHC and start to explore what the "right to the highest attainable standards of health" means and how it can be put into practice. The courts, civil society, academics, and experts in PHC have an indispensable role to play in addressing and advocating human rights. The training of professionals in health and other related disciplines requires compulsory training in health and human rights.

DRUG POLICIES AND REGULATIONS TO HELP PHC IMPROVE ACCESS TO MEDICINES

National drug policies are essential to ensure the constant availability, safety, and affordability of drugs (34). Article 8 of the Alma Ata Declaration (2) requires all governments to form national policies, strategies, and plans of action to sustain national health systems. The formation of a national drug policy governed by an independent body is recommended for drug procurement and for addressing the clinical need, dosage requirements, and economic viability of medicines effectively. The co-ordination of this important task requires a responsible and independent commission outside the Ministries of Health to oversee targets and guide implementation, not least in speeding up access to medicines that may be urgently required. This approach in Kenya, Ghana, and Uganda has achieved a great deal of success in improving access to medicines (35). Health Action International in Africa initiated these programs in Kenya, Ghana, Uganda, and 17 other countries in Sub-Saharan Africa, promoting access to essential medicines through the essential medicines concept and the rational use of modern and traditional medicines. The governments of Kenya, Ghana, and Uganda in particular have established pharmacy and poisons' boards to ensure that quality medicines are made available.

Those countries that have established independent commissions and national laws on medicines, should do more to ensure access to medicines. Often, these initiatives reach a certain level of progress and then plateau because national laws on medicines are rarely reviewed against standards such as those proposed in the WHO drug code (34). The absence of reviews on drug codes often results in shortages of drugs on the Essential Drug List, a model list for enforcing controlled drug purchase. Absence of national drug reviews on the drug markets can also lead to the introduction of counterfeit, unsafe and ineffective drugs, often associated with the build-up of drug-resistant immune systems, making access to the correct medicines even more difficult, resulting in new treatments and new patented medicines.

National drug policies become instrumental when it comes to dealing with problems of access, includ-

ing those of WTO TRIPS (9). For example, the legal stipulations in TRIPS require all countries to establish standard written laws that incorporate and comply with the TRIPS provisions. Building these necessary but complex legal entities within national policies can overcome the administrative barriers which hinder the creation of compulsory licensing, an element included in most national policies as a remedy for unfair competition on patents. Compulsory licensing provides for the use of generic medicines in those instances when they will be used for public health (36). Governments considering the implementation of compulsory licensing must act with caution, since the compulsory licensing regime must be compatible with the strong comprehensive entitlements that are provided under TRIPS.

THE ROLE OF PHC IN IMPROVING ACCESS TO MEDICINES USING THE PUBLIC-PRIVATE PARTNERSHIP

The framework of PHC supports structural co-operation within the health sector. This role is established in the Alma Ata Declaration, Articles 7 and 9 (2). It is, therefore, important to establish working relationships with key sectors in education, agriculture, housing, the food and pharmaceutical industries, public works, transport and many others, as exemplified in PHC. The requirement of partnership at the global level is clearly mentioned in PHC as an important aspect of the concept. PHC calls for countries to "cooperate in a spirit of partnership and service to ensure primary health care for all people since the attainment of health by people in any one country directly concerns and benefits every other country" (2).

Although PHC emphasizes coordinated policy at the global level, no particular types of relationship are outlined in the organization of PHC. As a result, various forms of local and international partnerships have arisen. Most of these emerging partnerships, although important, have their own problems in PHC, but can be seen as an opportunity for supporting health services through their capacity to lobby effectively on issues of access (37). Extreme care should, however, be taken when engaging in partnerships since many models of partnerships have different aims and objectives that may not necessarily reflect on attaining health.

Public-private partnerships can be useful ways of dealing credibly with large pharmaceutical industries and addressing price barriers that hinder access to medicines. For example, in Malawi, co-corporation between the Ministry of Health and the Village Reach Project has improved drug policy and delivery of health services, thereby strengthening the overall goals of the health system at the regional and village levels (38). The Network on Equity in Health in Southern Africa (EQINET) is similarly improving health through interagency cooperation (39). Engaging partnerships with the educational sector and research institutes, including pharmaceutical industries, may play an important role in providing more comprehensive information to ensure access to health services.

Collaboration and negotiation between government agencies and the big pharmaceutical companies in the development of new drugs and opportunities for access has increasingly been demonstrated to improve supply of medicines. One example is the drug company Lilly, which transferred its manufacturing of multi-drug-resistant-TB medicines to countries such as South Africa, China, and India, thereby increasing the global supply of capreomycin and cycloserine at a reduced cost for those countries (40).

Thus, coalitions involving donor-funded organizations and multinational drug companies are essential to address the current problems inherent in the health care systems of developing countries. It is, however, important to recognize that such relationships are politically supported; hence, the interplay of the existing PHC system and international and local non-governmental organizations is required.

THE ROLE OF PHC IN IMPROVING ACCESS TO MEDICINES IN CONTEXT OF RESEARCH AND DEVELOPMENT

New knowledge in PHC is useful in order to direct and address adequate and appropriate financing mechanisms, community participation, health information systems, multidisciplinary practice and vision of PHC leadership. These related but powerful interlinked themes are stipulated in paragraph 1, article 7 of Alma-Ata (2). According to Fenton et al, health service research pioneered within PHC is a central strategy for new planning to achieve attainable health (41). PHC, as suggested earlier, is primarily a hub of the health sector, providing contact between patients and networks in the research and development process. The fact that the general principles of PHC evolve around economic conditions and socio-cultural and political characteristics makes research and development an important branch of PHC. Research and development embedded in PHC not only seeks research questions and finds solutions in medicines, it also fosters the research and de-

velopment of new methodologies to sustain health care infrastructure.

In poor countries, research and development is neglected because of limited resources and macro-economic factors (42), and also due to limitations in trained researchers, infrastructures, and technology. For the most part, these problems in research and development limit the functionality of the health system. The available health information on new medical products, health care financing, stewardship, and the expertise of health personnel can be provided only if experts in PHC are fully engaged in scientific inquiry while being supported by training in research and development, especially in science and biomedicine, including pharmacy.

These organized efforts are obtainable not only in research, but also through partnerships. For example, in Africa the Southern Africa Development Community can merge expertise, infrastructure, and relevant resources to spearhead independent research for the development of essential medicines in the region. In addition, the fact that 90% of new drugs are made from raw materials located in these poor countries (43) offers a good opportunity for research and development, albeit one that requires the involvement of local expertise in order to be realized fully.

CONCLUSION

Based on the current systems, PHC remains the only conventional health delivery service that can deal with resilient public health problems adequately. However, to strengthen this approach, we propose the revitalization of PHC while incorporating scholarship that promotes human rights, partnerships, research and development, advocacy, and national drug policies. The concept of PHC can improve access; however, it requires the urgent interplay of theoretical, practical, political, and sociological influences that arise from the economic, social, and political determinants of ill health in an era of globalization.

Acknowledgment

The authors are grateful to Michael Ngoasong for his assistance in reviewing the manuscript. We also thank Laura Jussab and Nicola Healey for proofreading the manuscript.

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