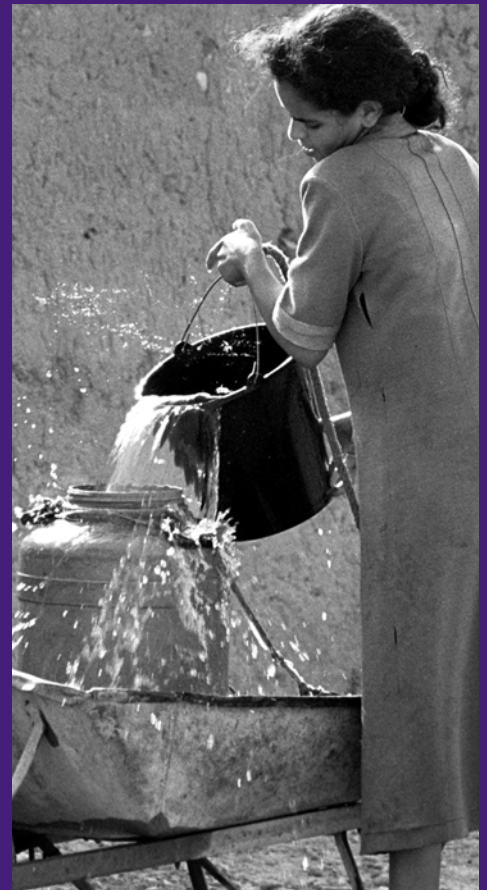


# Public Health in the Middle East and North Africa

## MEETING THE CHALLENGES OF THE TWENTY-FIRST CENTURY



Edited by  
Anne Maryse Pierre-Louis  
Francisca Ayodeji Akala  
Hadia Samaha Karam





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Public Health in the  
Middle East and North Africa  
*Meeting the Challenges of the Twenty-first Century*

Edited by  
**Anne Maryse Pierre-Louis**  
**Francisca Ayodeji Akala**  
**Hadia Samaha Karam**

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## *Foreword*

In September 2000, leaders of the international community embraced eight Millennium Development Goals as the basis for a new global development agenda at the turn of the twenty-first century. Three of the goals reflect the importance of health for sustainable human development, calling for actions to reduce child mortality, improve maternal health, and combat HIV/AIDS, malaria, and other diseases.

These health issues are of vital importance in the broad region comprising the Middle East, North Africa, and the Eastern Mediterranean (MENA/EM). But they are by no means the only ones. An ongoing epidemiological transition in the region is changing patterns of mortality and morbidity, so that chronic and noncommunicable diseases and injuries now account for a growing share of the overall burden of ill health. These emerging health problems must be dealt with, even as the region's countries strive to complete the unfinished agenda of protecting mothers and children and fighting communicable diseases.

This dual health challenge was the central theme of a regional conference held in Beirut, Lebanon, from June 16 to 21, 2002, entitled "Meeting the Public Health Challenges of the 21st Century in the MENA/EM Region." The first of its kind in the region, the conference was organized by the World Bank and the World Health Organization (through its Geneva headquarters and Eastern Mediterranean Regional Office), in collaboration with the U.S. Centers for Disease Control and Prevention, the National Institutes of Health, the World Bank Institute, and the American University of Beirut. It was attended by 119 delegates and organizational representatives from 22 countries of the region: Afghanistan, Algeria, Arab Republic of Egypt, Bahrain, Cyprus, Djibouti, Iraq, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Pakistan, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Republic of Yemen. Representatives of international organizations such as the European Union, GTZ, Ford Foundation, and Saudi Fund for Development also participated.

Conferees discussed intersectoral strategies to enhance disease prevention and health promotion in areas ranging from HIV/AIDS to maternal and child health to road safety. Emphasis was placed on strengthening public health functions and infrastructures as part of health sector reform programs underway in many countries of the region. Case studies, lessons learned, and experiences from various countries were presented to encourage cross-fertilization of ideas and knowledge transfer. Those attending included national ministers of health, planning, and finance, who considered ways to engage their ministries and others in intersectoral action on public health. The involvement of multiple entities in organizing the conference was also an attempt to improve cooperation and coordination among international development agencies in responding to the public health needs of the MENA/EM region.

Seven of the papers presented at the Beirut conference, highlighting some of the key issues discussed, have been edited for inclusion in this volume. They are preceded by an overview drawing on a broader range of presentations at the conference. By disseminating the conference

proceedings, the World Bank and its partners aim to help build the knowledge base necessary for the development of sustainable policies and programs addressing public health issues in the MENA/EM region—an effort that the Bank and its development partners stand ready to assist. The gathering in Beirut planted the seeds for renewed and constructive dialogue. It is our hope that this book will continue that exchange and stimulate stronger action to address the urgent public health challenges of the region.

Frannie A. Léautier  
Vice President  
World Bank Institute



## *Acknowledgments*

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The following experts and speakers contributed to the success of the conference: Ala' Din Alwan, Hoda Atta, Fatimah Al Awa, Abdel Aziz Saleh, Rafael Bengoa, Mariam Claeson, Joy de Beyer, Andrew Downing, Taky Gaafar, Hussein E. Gezairy, Ghada Hafez, Zuhaier Hallaj, Wadih Hanna, Carol Jenkins, Ilona Kickbusch, Jaouad Mahjour, Philip Musgrove, Peter Piot, Salman Rawaf, David Robalino, Belgazem Sabir, Bijan Sadrizadeh, Sameh El Saharty, George Schieber, Akihiro Seita, Oussama Tawil, Jihane Tawilah, Ed Wagner, Douglas Weed, Derek Yach, Debrework Zewdie, and Huda Zurayk. We also thank the peer reviewers of all the presentations and the conference proceedings for their professional support. Valuable assistance in the preparation and delivery of the conference was provided by Julia Blau, Marie-Lily Delion, Henriette Folquet, Peggy Hanna, Karen Kazandjian, Mona Khouri, Sonia Miskjan, Hoda Omera, Sima Ramadan, Nisrine Salhab, Andrew Stewart, and Juliana Yartey. Ultimately, however, our deepest gratitude goes to the participants at the conference, who grappled with complex public health issues, contributed to lively debate, and suggested ways to improve health outcomes in the MENA/EM region. This publication is the result of their efforts.

Anne Maryse Pierre-Louis  
Francisca Ayodeji Akala  
Hadia Samaha Karam



## *Acronyms and Abbreviations*

AIDS	Acquired immune deficiency syndrome
ART	Antiretroviral therapy
BCG	Tuberculosis vaccine
CDC	U.S. Centers for Disease Control and Prevention
DALY	Disability-adjusted life year
DOTS	Directly observed treatment, short-course (for tuberculosis)
DPT	Diphtheria, pertussis, and tetanus vaccine
EM	Eastern Mediterranean
EPI	Expanded Program on Immunization
FSW	Female sex worker
GCC	Gulf Cooperation Council
GDP	Gross domestic product
GNP	Gross national product
GRSP	Global Road Safety Partnership
GTZ	German Technical Cooperation Agency
HepB	Hepatitis B vaccine
HIV	Human immunodeficiency virus
Hib	Hemophilus influenzae type B
ICD	International Classification of Diseases
IDU	Injecting drug user
IMCI	Integrated management of childhood illness
IMR	Infant mortality rate
kph	Kilometers per hour
KSI	Killed or seriously injured
MDGs	Millennium Development Goals
MENA	Middle East and North Africa
MENA/EM	Middle East and North Africa/Eastern Mediterranean
MMR	Maternal mortality rate
MSM	Men who have sex with men
MTCT	Mother-to-child transmission

NAP	National AIDS program
NCD	Noncommunicable disease
NGO	Nongovernmental organization
NIH	National Institutes of Health
OPV	Oral polio vaccine
PHC	Primary health care
STD	Sexually transmitted disease
SWAP	Sector-wide approach
TB	Tuberculosis
U5MR	Under-5 mortality rate
UNAIDS	Joint United Nations Programme on HIV / AIDS
UNICEF	United Nations Children's Fund
VCT	Voluntary counseling and testing
WHO	World Health Organization
WHO/EMRO	World Health Organization, Eastern Mediterranean Regional Office

# 1

## *Overview*

Nisrine Salhab and Juliana Yartey

In June 2002, government officials and health experts from across the Middle East, North Africa, and the Eastern Mediterranean (MENA/EM) gathered in Beirut for a broad look at public health issues in the region and strategies for coping with them. There was a sense of urgency to their task. Rapid urbanization and changing lifestyles in the region have resulted in a dual burden of disease: noncommunicable diseases and injuries are increasing, while infectious diseases remain high in most countries. These emerging public health trends demand different and stronger public health systems. However, epidemiological shifts are currently outpacing the rate at which health systems are adapting. Migration, political instability, rising unemployment, and low economic growth—concerns common to all the region's countries—impact the health of populations and undermine efforts to strengthen public health systems.

Improving public health in the region requires both national and regional action. Globalization has increased inequality among and within countries, and it has helped to spread health problems across national borders and across social and economic lines. Moreover, failure of the health system in one country affects the health systems of neighboring countries. Opening the conference, Jean-Louis Sarbib, vice president for the Middle East and North Africa Region at the World Bank, emphasized that effective regional action will depend on transfer of knowledge, exchange of information, political will, and commitment. Such action must happen without delay. Failure to address current public health challenges in a timely and cost-effective manner will lead to high costs for health systems.

This chapter briefly reviews the principal issues examined at the June 2002 conference in Beirut, drawing on the presentations of conference participants and on other relevant research. It concludes by touching on some of the next steps being undertaken or planned with the assistance of the World Bank, the World Health Organization, and other international partners.

### **A Diverse and Changing Region**

The MENA/EM region is heterogeneous in terms of both culture and socioeconomic development. The region encompasses the oil-rich states of the Gulf Cooperation Council—among the wealthiest countries in the world—alongside struggling countries that rank among the world's poorest. Per capita income ranges from \$350 in the Republic of Yemen to more than \$14,623 in Kuwait.<sup>1</sup> Countries of the region can be broadly grouped in three categories:

- Low-income: for example, Djibouti and Republic of Yemen
- Lower-middle-income: for example, Algeria, Arab Republic of Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Morocco, Syrian Arab Republic, Tunisia, West Bank/Gaza
- Upper-middle-income/high-income: for example, Bahrain, Kuwait, Oman, Saudi Arabia, United Arab Emirates.

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Nisrine Salhab, a freelance journalist in Lebanon, and Dr. Juliana Yartey, a public health specialist, are consultants to the World Bank.

1. All dollar amounts in this book are current U.S. dollars unless otherwise noted.

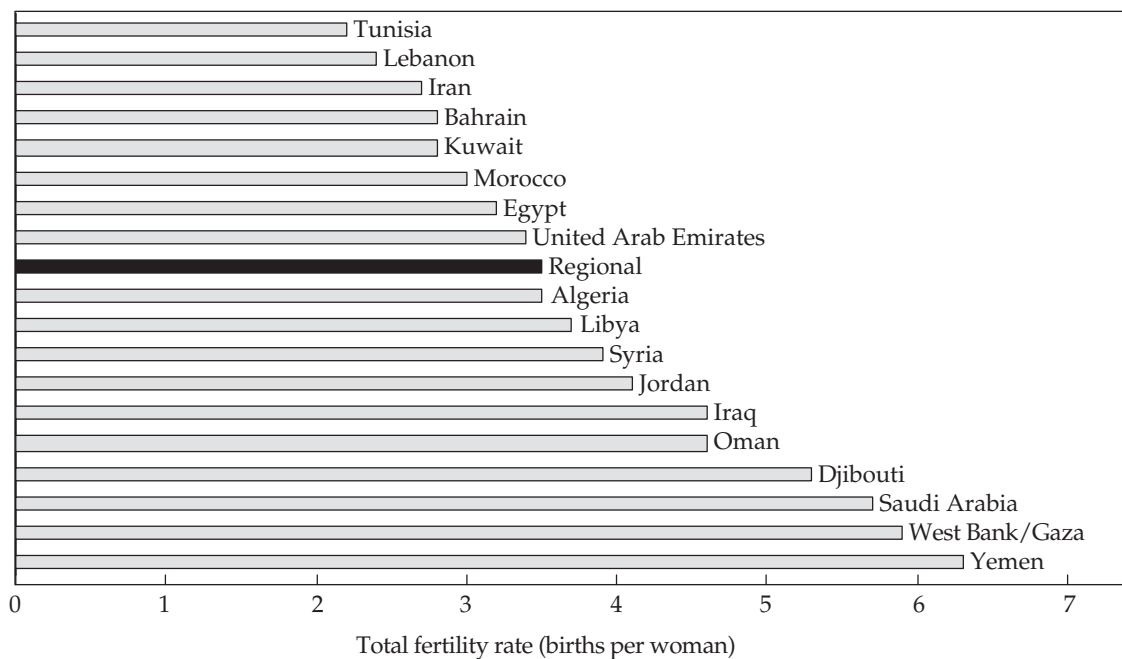
It is important to note, however, that the wealthier countries of the region do not necessarily have healthier populations or better health services delivery than the less-affluent ones. Nor are they necessarily in the advanced (fourth) stage of the epidemiological transition. While income matters, most of the progress in health is due not to higher incomes but to specific actions taken to improve the public health situation.

For example, Oman, an upper-middle-income country, has a strong health system, but its levels of child malnutrition, low birthweight, and maternal anemia are comparable to the levels found in Egypt or Morocco, both lower-middle-income countries. The situation in Oman illustrates the fact that improving health outcomes cannot be achieved through economic growth alone, but depends on increased access to and use of effective preventive and curative services. Although Oman and Saudi Arabia are considered upper-middle- to high-income countries, they have not yet reached the fourth stage of the demographic transition, unlike the other countries of that income group. In both Oman and Saudi Arabia, birth rates are still very high even though mortality rates are low.

### *Demographic and epidemiological transitions*

In general, countries in the MENA/EM region are going through transitions characterized by reductions in fertility and mortality, declining incidence of communicable diseases, and increases in chronic diseases and injuries. Despite recent fertility declines in certain countries, however, fertility rates in the region are still generally high (see figure 1.1), and population growth rates vary from 1.1 percent per year in Kuwait to 4.4 percent in Jordan. Because of population momentum, many countries will likely continue to have relatively high population growth rates over the next 20 years. It is estimated that by 2015, the number of adults in the region will increase by 140 percent. This represents the highest adult population growth in the world after Sub-Saharan Africa (World Bank 2002).

**Figure 1.1** *Fertility Rates in the MENA/EM Region*



Source: World Bank, *World Development Indicators* 2000.

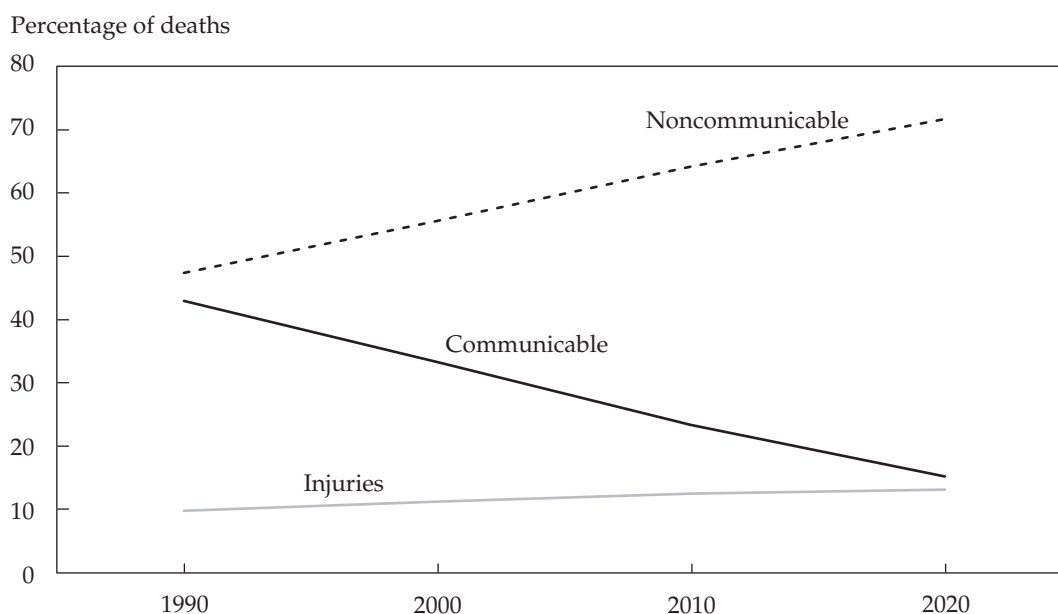
At present, countries in the region have reached different stages of demographic transition, and can be divided into four groups. The first group consists of countries such as Afghanistan, Djibouti, Pakistan, Somalia, Sudan, and Republic of Yemen that are in the *early transition* stage, with high birth and death rates. The second group is countries in *mid-transition*, with declining death rates but continuing high birth rates, including Egypt, Islamic Republic of Iran, Iraq, and Morocco. Countries in the third group are *well advanced* in the transition, with declining birth and death rates: they include Jordan, Lebanon, Oman, Saudi Arabia, Syria, and Tunisia. In the fourth group of countries, the transition is considered *essentially completed*, with low birth and death rates: countries in this group are Bahrain, Cyprus, Kuwait, Qatar, and United Arab Emirates. Hence, all stages of the demographic transition are represented in the MENA/EM region, reflecting the diverse sociocultural and economic circumstances.

Notwithstanding these variations, across the region increasing life expectancy and reductions in fertility are spurring concern about the specific health services needs of an aging population. Problems associated with these trends are becoming evident in some of the high-income Gulf states. In general, demand for health services is increasing, in terms of both quantity (due to population growth in almost all countries), and quality (due to the increasing health knowledge of the population). Moreover, the changing age structure of the population is resulting in a high incidence of chronic degenerative diseases associated with aging. Advances in medical care mean that chronically ill patients are living longer with these diseases, resulting in mounting demand for costly long-term care.

In addition to demographic factors, the increased prevalence of chronic conditions can be traced to lifestyle changes such as smoking, a less healthy diet, and decreasing physical activity, together with growing environmental risks such as air pollution. Both lifestyle and environmental changes are associated with socioeconomic development accompanied by rapid urbanization.

Noncommunicable diseases are rising as a cause of mortality, while communicable diseases are responsible for a declining share of deaths across the region (see figure 1.2). Nonetheless, infectious diseases, among them malaria and tuberculosis, remain widespread. As a result, most

**Figure 1.2** Trends in Deaths, by Cause, in the MENA/EM Region



Source: World Bank estimates.

countries in the region are experiencing a *double burden* of communicable and noncommunicable diseases. This is stretching health resources as never before.

The disparities among countries of the region can be exploited to enable poor countries to benefit from the experiences of rich countries, and countries in early stages of the transition to benefit from the experiences of the advanced countries. Given the public health challenges confronting the region at the start of this century, regional collaboration and exchange of ideas and best practices are crucial. Equally critical is the provision of adequate resources—human, technical, and financial.

## **Strengthening Public Health Functions and Infrastructures**

The World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Public health, as a field of action and knowledge, is concerned with collective or social actions aimed at ensuring conditions in which people can be healthy. It is the sum total of all the activities that are undertaken to protect, promote, and restore the health of a community or population.

The public health system is a network of public, private, and voluntary entities that contribute to the health and well-being of a community. This definition highlights the collaboration among different entities that is integral to the system, and the importance of a multisectoral approach in which the government exerts strong leadership. In chapter 2 Dr. Salman Rawaf, a public health administrator, reviews the current state of public health systems in the MENA/EM region. He calls for well-planned and integrated efforts at the national, regional, and international levels to strengthen public health functions and infrastructures and overcome the substantial obstacles to improving public health in the region.

A number of cross-cutting issues have a significant impact on such efforts and must be addressed. They include the implications of health sector reform; collaboration and the role of governments; financing and choosing public health activities; the importance of health promotion; data and surveillance systems; and training a public health workforce.

### ***Implications of health sector reform***

According to the WHO’s deputy regional director for the Middle East, Dr. Abdel Aziz Saleh, health systems in the region are generally weak. MENA/EM countries need to pay more attention to their public health policies in the context of overall health sector reforms, and develop a more dynamic process for the planning, implementation, and evaluation of these policies. Yet as Dr. Sameh El-Saharty, a World Bank public health specialist, points out, many health reforms have focused mainly on the financing and organizational aspects of health systems at the macro level, and as a result public health has been marginalized. Moreover, these reforms have, in many cases, accentuated inadequacies in the health system by adding to the complexities of implementing effective public health systems. Public health should be restructured in a framework that integrates public health functions into health sector reforms and fosters linkages between the two. Saudi Arabia’s experience is an interesting case study of a comprehensive framework for addressing public health challenges (see box 1.1).

While public health offers valuable lessons for implementing health sector reform activities, health sector reform offers a considerable opportunity to strengthen, integrate, and sustain public health functions, services, and infrastructures. Dr. Wadih Hanna of the U.S. Centers for Disease Control and Prevention (CDC) maintains that strengthening public health systems is crucial, because the standards we set today and the capacity of public health infrastructure that we build



### ***Box 1.1 Comprehensive Reforms in Saudi Arabia***

Going beyond the partial reforms of the past, the Kingdom of Saudi Arabia has adopted a comprehensive framework for addressing public health challenges and has extended the scope of public health activities beyond those of physicians. The government has acknowledged that one of the main reasons that its public health programs failed in the past was the weakness of public health structures. It concluded, accordingly, that attention should be paid to health outcomes, and not only to programs. The Health System Act approved in 2002 uses a comprehensive definition of health, as stated in the constitution of the World Health Organization, and adopts the concept of primary health care services. The Saudi government also committed itself to strategies aimed at health prevention and promotion in areas such as clean water and sanitation, disease control, actions to combat drug abuse, health literacy, maternity and child health, and care of the elderly.

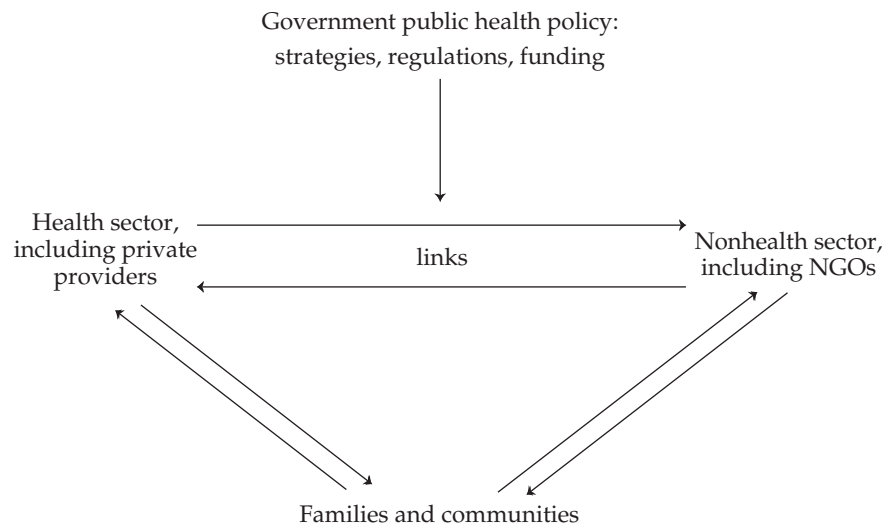
to support those standards will influence how well public health systems can respond to the many threats they face in the future. Assessing public health functions and infrastructure is therefore critical in determining the performance of health systems.

### ***Collaboration and the role of governments***

The health status of a population is influenced by many activities outside the health sector. Although many public health interventions are intrinsic to the health system and are delivered through the health sector, others extend beyond the health sector and are best implemented through a variety of public and private actors. Provision of safe drinking water and sanitation services, for example, requires action by government public works agencies. A strategy to prevent iodine deficiency disease by generalizing the use of iodized salt necessarily involves cooperation with salt manufacturers. An effective public health strategy, therefore, requires a comprehensive approach that includes government policymakers; the health sector (including public and private providers and NGOs); other sectors of government (such as transport, labor, and economic development); the private sector; nongovernmental organizations; and families and communities.

The government has an important stewardship role. This does not necessarily imply that it has to implement all the interventions directly, but government is still responsible for ensuring that the interventions are financed and implemented effectively through an array of partners. The ultimate determinant of public health outcomes is the behavior of individuals and families at the household and community levels. The government must ensure that they have access to the necessary services and resources that will shape their behavior and, consequently, public health outcomes. Government public health policy is designed to ensure access to these services and resources: it includes the development of core strategies, regulation, and allocation of resources through implementing organizations and ministries. A model of these relationships is shown in figure 1.3.

In addition to assigning specific responsibilities to stakeholders outside government, some governments are experimenting with decentralization of certain public health functions. Morocco, for example, has sought to shift more decisionmaking power to the regions for a better resolution of local problems. The Ministry of Health has invested a great deal in deconcentrating its activities and has given its peripheral structures more responsibilities. For instance, in order to improve epidemiological surveillance, the ministry set up observatories in charge of managing epidemiological information at the regional level. This has enabled better collation and interpretation of epidemiological data and a faster reaction to epidemic outbreaks.

**Figure 1.3** *A Multisectoral Approach to Public Health Issues****Financing and choosing public health activities***

In general, public health activities in the region are not financed by insurance or the private sector. Public or social insurance accounts for one-fourth or more of total public spending on health in Algeria, Cyprus, Egypt, Islamic Republic of Iran, Lebanon, Pakistan, and Tunisia. Private insurance is negligible everywhere in the region except in Lebanon and Morocco. Clearly, public health services cannot simply be left to private provision. It is difficult to judge whether spending on public health services is adequate, however, since overall data on such spending are not readily available. More work needs to be done at the country level to put together national health accounts that include information on public health spending.

In chapter 3, World Bank economist Dr. Philip Musgrove emphasizes that “public health has a first claim on public resources” and that governments should invest as much as possible in public health activities. He contends that cost-effectiveness is an adequate guide to setting priorities among public health services, though not the only criterion. There is an urgent need for more specific regional training on health economics and financing to help policymakers and managers set priorities and allocate resources more effectively.

Achieving a balance of contributive and solidarity mechanisms is very challenging in countries where populations barely have the minimum resources and cannot afford to pay for insurance. Therefore, payment systems must be adapted to every country’s specific context, and more work is needed to address these issues at the country level. In Morocco, the state budget pays for all basic health interventions such as immunization, family planning, and HIV/AIDS control, in an interesting “proactive policy” based on prevention. This enables the Moroccan government to optimize the use of its resources. Morocco’s basic medical coverage project is an interesting mix of private and public financing. The Tunisian government faced problems in choosing among provider payment options and eventually devised a hybrid system (see box 1.2).

It is often assumed that governments and international development agencies know what to do to improve public health and how to do it right. However, a recent review of the World Bank’s health and nutrition programs revealed that only about a third of projects investing in basic services for the poor are investing in interventions that are likely to be effective in improving the

**Box 1.2** *Innovative Financing Mechanisms in Morocco and Tunisia*

Health financing is a major component of the health sector reform program currently being implemented by the Moroccan government with assistance from the World Bank and the European Union. The project aims to put in place a system based on community solidarity, with the goals of improving equity in the health system and ensuring stable and sustainable financing. This project is built around two principles: the obligation of every person who has an income to subscribe to a health insurance scheme (contributive system), and the need to subsidize those who are economically weak by creating a medical assistance mechanism. In the long term, the health finance reform should allow greater collective financing of health services and thus reduce out-of-pocket payments by households, which constitute an important aspect of inequity.

Tunisia decided to implement a mandatory insurance scheme that would cover health services provided by the private sector. International experts helped identify the mechanism for payment of private providers, and capitation was applied for outpatient services. But this payment method was not accepted by either citizens or physicians, and led to negative outcomes in the quality of health services provided. Hence, after consultations with all stakeholders, the government decided to apply capitation for public providers and fee-for-service for private providers for a package of services in order to ensure the budget is maintained.

health status of the population. For example, of projects focused on safe motherhood, only a third seek to ensure a continuum of care from the household to the referral level, with the full set of interventions that can significantly impact maternal and newborn health (Claeson, Mawji, and Walker 2000).

For greatest impact, governments need to choose interventions that are likely to affect the key health outcomes, and to identify delivery strategies that are most efficient in reaching the poor. This means choosing interventions that are most affordable, cost-effective, culturally appropriate, and feasible to implement—sometimes described as “best buys.” These criteria provide an effective tool for choosing effective preventive and curative services, and for setting priorities in situations of limited resources, such as exist in most countries. In chapter 4, Dr. Mariam Claeson, a senior public health specialist at the World Bank, identifies some public health “best buys” for the MENA/EM region.

**Importance of health promotion**

In its Ottawa Charter of 1986, the World Health Organization defined health promotion as “the process of enabling people to increase control over and to improve their health.” In chapter 5, Dr. Ilona Kickbusch of the Yale University School of Public Health argues that health promotion is an essential component of a modern approach to public health, and needs to be firmly established within the public health infrastructure of the region. A key objective of health promotion is to reduce people’s level of exposure to the risk factors of today, which are the diseases of tomorrow.

Health promotion rests on an array of interventions that help people to be healthy, and also implies a “politics of health”—that is, the creation of healthy environments in cities, villages, workplaces, and schools. Sound economic policies contribute to health, and health in turn contributes to economic and social development. Health promotion is therefore one of the competencies that should be developed in health professionals, through both academic and skills-based training programs for practitioners at different levels.

Health promotion can use media and entertainment approaches to reach populations and to discourage unhealthy lifestyles. For instance, India has created soap operas with health-related messages directed specifically at young people. In Egypt some radio and TV channels disseminate primary health care information. Schools can also play the role of health promoters: for example, many schools give children health messages to take home to their parents. Some school officials monitor the foods that shops in the vicinity sell to children, with an eye to nutrition, and also implement road-traffic safety measures on school premises.

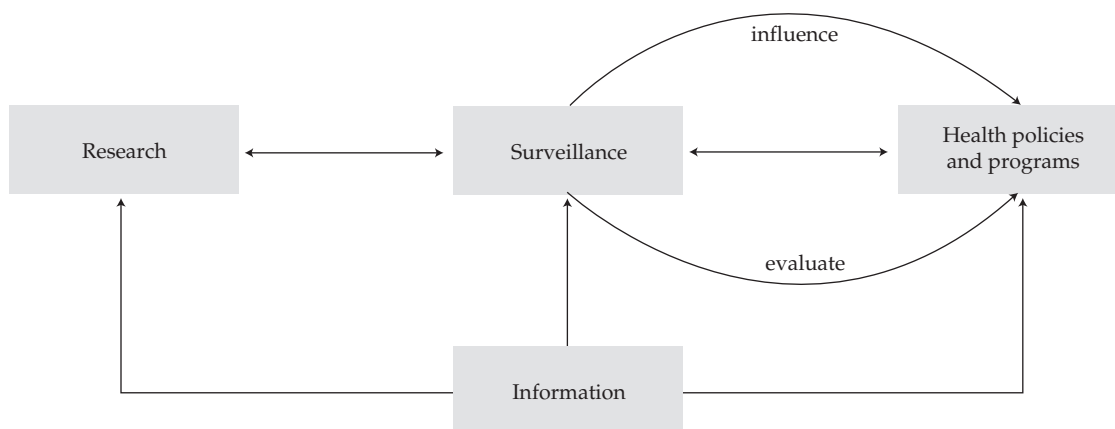
### *Data and surveillance systems*

In the past few years the MENA/EM region has been hit by several outbreaks of communicable diseases, which triggered panic and economic loss. These outbreaks have made clear that the region is not adequately prepared to confront and manage such situations, in part because of the weakness of its surveillance systems. Surveillance is a key instrument for monitoring communicable and noncommunicable diseases, as policies to address these diseases cannot be based simply on projections. Surveillance systems allow forecasting, which includes predicting future events, outbreaks, incidence, and mortality, and determining the cost-effectiveness of strategies (see figure 1.4).

The prerequisites for forecasting are data and proper understanding of past changes, which allow the development of mathematical models. Key sources of data include both those within the health sector, such as disease registries, and those outside the sector, such as population surveys and studies of economic activity (see table 1.1).

In the last five years, the World Health Organization's Eastern Mediterranean Regional Office (WHO/EMRO) has reviewed surveillance systems in the region and found that they are mostly inadequate. Principal reasons for this weakness include inadequate commitment to these systems, lack of practical guidelines, overwhelming reporting requirements with too much data requested, weak involvement of the private sector, lack of transparency, shortage of trained personnel, and inability to analyze the data. Usually no budget lines are allocated to MENA country surveillance systems, reflecting the dearth of public support. A related problem is the lack of interest and attention given to epidemiological surveillance in medical school curricula in the region. Structured courses on surveillance are needed and universities should participate in this effort. Operational aspects of implementing surveillance should be a key feature of such courses.

**Figure 1.4** *Characteristics of a Surveillance System*



Source: Bonita and others 2001.

**Table 1.1** *Information Sources for Surveillance Purposes*

<i>Source</i>	<i>Information</i>
Surveys	Population-based data
Disease registries	Incidence and case fatality
Hospital activity data	Morbidity and health service use indicators
Administrative data	Births, deaths, insurance claims, medication use, health systems performance, hospital audits
Aggregate consumption data	Per capita consumption
Economic activity data	Economic indicators

*Source:* Bonita and others 2001.

The marked weakness of communication systems worsens the situation, as sometimes the national level does not receive timely information about a local outbreak. There are exceptions, however. The Islamic Republic of Iran has developed an efficient communication system in which data are transmitted through health network information software (see chapter 8).

Attitudes toward disclosure of information appear to be a serious issue in the region. Not only is it considered damaging to a country's pride to reveal an outbreak of disease, but countries may also fear potential economic embargoes. As a result, authorities sometimes attempt to cover up disease situations.

### ***Training***

The task of strengthening public health infrastructures requires a strong public health workforce. There is an urgent need to train more public health professionals, both medical and nonmedical, with content that addresses both current and emerging health challenges in the region. Poorly qualified health personnel are a widely recognized problem. In particular, health personnel generally are not well equipped to deal with chronic diseases.

Medical school curricula in most countries are currently oriented more toward treatment than toward prevention. At the national level, medical school curricula need to be reassessed and modified to reflect the public health situation and the developing public health infrastructure and systems. If possible, training should be conducted as part of a regional program to encourage collaboration and sharing of experiences.

The Islamic Republic of Iran seems a step ahead in addressing this issue. In its third five-year National Development Plan (2000–04), the government decided to consolidate the 1985 initiative of integrating the Universities of Medical Science into the Ministry of Health, in order to reorient the training of health personnel to the realities of the health care system and the health needs of the country. Oman also makes the link between academic medical training and public health practice with its program of “community health adoptions.” Medical students adopt a village, focus on one of its major public health problems, and help to address the problem over the seven-year duration of their medical studies.

### **New and Emerging Public Health Challenges**

By the year 2020, according to WHO estimates, chronic diseases will account for 60 percent of the disease burden and 72 percent of deaths in the MENA/EM region. This represents a dramatic increase from 45 percent of the disease burden and 56 percent of deaths today. The burden of injuries is also expected to rise sharply, from 15.4 percent in 2000 to 20 percent in 2020 (Murray

and Lopez 1996). But little attention has been paid to the increasing burden of chronic diseases and injuries, and health systems in the region are evolving only slowly in their efforts to adapt to these changes. Governments need to intensify their efforts to prevent and control chronic diseases and injuries before they reach epidemic proportions. Delays in responding can be costly.

Four major emerging issues threaten the public health situation in the MENA/EM region: HIV/AIDS; tobacco use; chronic and noncommunicable conditions; and road traffic accidents.

### **HIV/AIDS**

Even though regional and national prevalence rates are still relatively low, based on the limited available data, HIV/AIDS is casting a shadow over the MENA/EM region. Dr. Peter Piot, director of the Joint United Nations Programme on HIV/AIDS (UNAIDS), emphasizes that low prevalence does not mean low risk. An estimated 550,000 people in the region were living with HIV/AIDS in 2002, with 83,000 new infections occurring in that year. In some countries risky behaviors are on the rise and prevalence rates are increasing. In Djibouti, for example, which has the highest HIV/AIDS rate in the region, about 2.8 percent of the adult population is already living with the disease. AIDS deaths in the region have increased almost sixfold since the early 1990s, and the adult HIV prevalence rate almost tripled to 0.3 percent by the end of 2002, with about 55 percent of infections occurring among women. Because of the need for long-term care associated with HIV/AIDS, the disease has the potential to contribute significantly to the chronic disease burden as prevalence increases. Intervening while prevalence is still low is more cost-effective than waiting for the epidemic to take off. The time to act is now.

Admitting the looming risk of a full-scale epidemic in countries of the region is a crucial first step. No society is immune from the epidemic, as HIV/AIDS respects no boundaries. Therefore it is important to break the silence and bring the dialogue on HIV/AIDS into the open in the region. Governments need to involve key actors in the society that can act as agents of change, such as religious bodies and youth groups. They must invest in programs to educate the population on HIV/AIDS, and take steps to intervene among high-risk groups such as injecting drug users, sex workers, and the sexual partners of people in these groups.

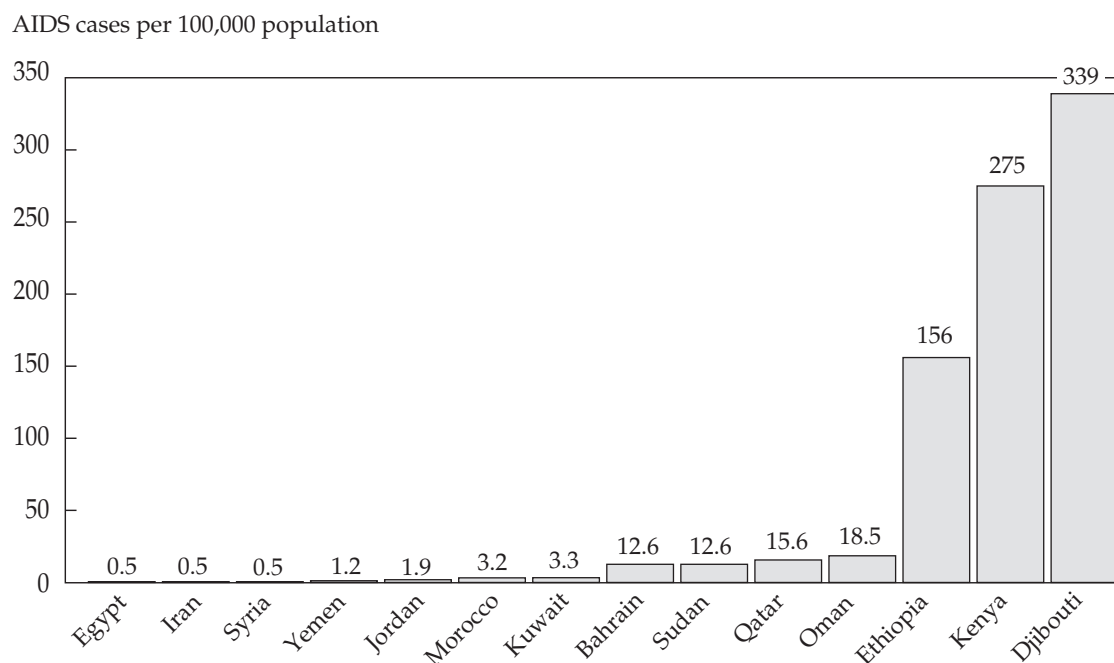
All these actions require strong political commitment and leadership, matched by resources. Examples are available, inside and outside the region, of the difference that leadership can make. In Djibouti, for instance, discussion of HIV/AIDS is no longer taboo. Figures on the epidemic provided by UNAIDS hit national conscience, and in September 2001 the country's president broke the silence on HIV/AIDS; the government initiated a program called "Zero Prevalence" in 2002. And in Uganda, strong personal commitment by that country's president was a key element in gaining effective control of HIV/AIDS and reducing prevalence rates.

A major obstacle to HIV/AIDS control programs in the region is the lack of reliable data on the situation of the disease. The regionwide adult prevalence rate of 0.3 percent hides wide disparities among the countries: estimated levels range from 0.01 percent in Syria up to about 2.8 percent in Djibouti. Reported AIDS cases per 100,000 population in 2002 range from a low of 0.5 in Egypt, Islamic Republic of Iran, and Syria, to a high of 339 in Djibouti (see figure 1.5). In chapter 6, Dr. Carol Jenkins and Dr. David Robalino draw on research by UNAIDS, the WHO, and national AIDS programs to present an overview of the situation of the disease in the MENA/EM region, including profiles of the epidemic in individual countries.

All the risk factors for the spread of HIV/AIDS exist in the region. Socioeconomic disparities, political instability, population mobility, and lifestyle changes such as increasing drug use are all clearly prevalent. At the beginning of the global HIV/AIDS epidemic, experts predicted that the rates of HIV prevalence could not go beyond 20 percent in any country. But in Lesotho, for instance, the population prevalence rate is already as high as 50 percent. This epidemic has no limit.



**Figure 1.5** Total Reported AIDS Cases per 100,000 Population in Selected Countries in the MENA/EM Region, with East African Comparisons



Source: Jenkins and Robalino 2002.

Missing the epidemic in the early stages is easy, when it may spread among hidden populations and hard-to-reach groups in remote areas, especially when countries do not have adequate surveillance systems. It is not enough to reach only women receiving antenatal services; surveillance of high-risk groups is essential in tracking behavioral risk factors. To date, only Djibouti, Somalia, and Sudan carry out such surveillance. Morocco, Djibouti, Algeria, and Sudan have conducted national reviews and have adopted strategic plans to respond to the HIV/AIDS situation.

Worldwide, countries that have shown the best results in the fight against HIV/AIDS, such as Senegal, Uganda, and Thailand, are ones that adopted early prevention programs. Their leaders chose to act while prevalence was still low. These case studies show that intervening at an early stage of the epidemic prevents the spread of the disease and associated high costs of treatment in the future. Hence, an effective policy against HIV/AIDS requires global response, early political commitment, a multisectoral approach, and advocacy. Voluntary counseling and testing should be provided, as well as treatment and care for those who are already infected.

Mr. Marwan Hamadeh, chairman of the AIDS Regional Advisory Group for the Eastern Mediterranean, notes that the absence of political commitment and transparency is one of the main obstacles to addressing HIV/AIDS in the region. There is a common feeling throughout the region that admitting to weakness on the health situation is shameful. As a result, some countries refuse to acknowledge the risk of HIV/AIDS and are thus exposing their population and the populations of surrounding countries to the epidemic by their inaction. Huge financial and technical resources exist in the region—provided by the Islamic Conference, the Arab League, the Islamic Bank, and other regional organizations—but they are not being used.

Religious teachings can help efforts to contain the disease, but they can also impose taboos that obstruct these efforts. For instance, when Lebanon wanted to launch a media campaign promoting the use of condoms, it first had to lobby the country's religious leaders, who were strongly opposed. By contrast, Morocco has undertaken an active campaign to prevent the spread of HIV through increased condom use. First, the price of condoms was lowered and they were made available in primary health care centers and stores, enabling people to buy them without having to answer questions about their identity or marital status. Second, condoms were distributed to vulnerable groups by peers. And finally, condoms were advertised, explaining their benefits and mode of use. Media campaigns to promote condom use need to be adapted to specific situations in order not to offend MENA/EM populations. One suggestion is to pass laws that would require the media to carry public information on HIV/AIDS. Another is to involve schools and community groups directly in raising awareness.

Access to and cost of treatment are important problems associated with HIV/AIDS control. UNAIDS and the WHO have been working on lowering the price of antiretroviral drugs, and the WHO recently added generic antiretrovirals to its essential drugs list. But the cost of these life-saving medicines is still high. This should further incite countries to invest in prevention, since it is by far cheaper and more cost-effective than treatment. In the long term, the social and economic root causes of the HIV/AIDS epidemic must be addressed.

Raising public awareness on HIV/AIDS requires joint efforts at the national, regional, and international levels. The AIDS Regional Advisory Group for the Eastern Mediterranean, which held its first meeting in April 2002, is working to improve the visibility of HIV programs and to convince national decisionmakers in health and other sectors to take serious action. The advisory group is also attempting to help generate resources for activities at different levels, with particular emphasis on the heavily burdened countries.

### ***Tobacco***

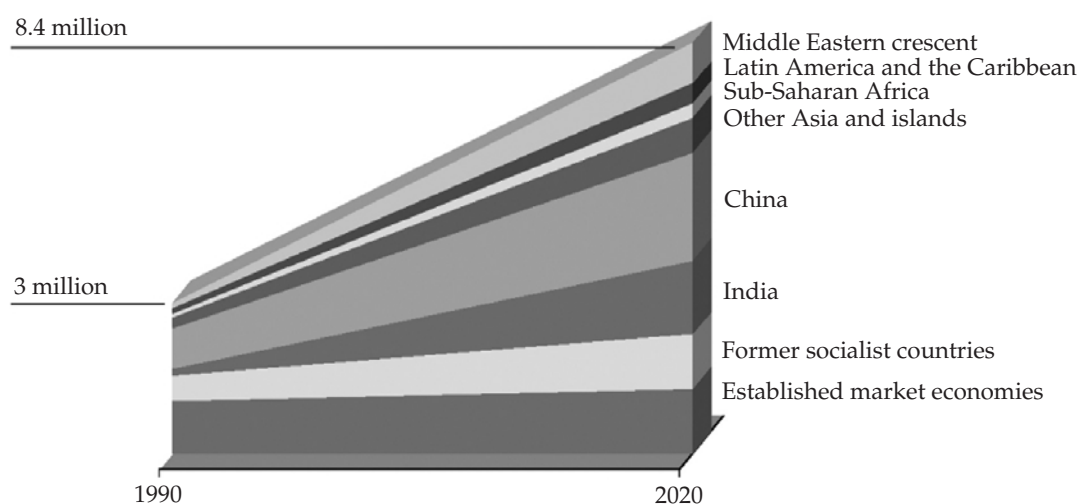
Tobacco use is a major risk factor for chronic diseases and a significant threat to health in the twenty-first century. Worldwide deaths from tobacco-related causes are projected to rise from 3 million annually in 1990 to 8.4 million in 2020. The greatest increases will come in the developing regions of the world, including the Middle East (see figure 1.6). The percentage of deaths attributable to tobacco use in the region is projected to rise from 2.4 percent in 1990 to 9.5 percent in 2020—almost one in 10 deaths (see figure 1.7). By 2020, 12 percent of all tobacco-related deaths could be in the MENA/EM region, according to Dr. Fatimah Al Awa of WHO/EMRO.

Prevalence of tobacco use is very high in the region: as much as 70 percent among men, 25 percent among women, and 10 percent among youth. With a regional smoking prevalence rate of 44 percent, Murray and Lopez (1996) suggest that countries in the region are in stage two of the tobacco epidemic. This stage is characterized by increases in smoking prevalence to about 50 percent; an early increase in smoking prevalence among women; and rising death rates from lung cancer among men. Encouraging current smokers to stop is crucial in order to see a change in the near future in the trend of fast-rising premature deaths from strokes, heart attacks, cancers, respiratory diseases, and other illnesses attributable to tobacco use.

The increasing rate of smoking among young people is especially troubling, as a person's risk of developing tobacco-related disease is determined more by the duration of smoking than by the number of cigarettes smoked daily. Data from the United Arab Emirates, for example, show that 20 percent of young students smoke or have smoked, and that the number of very young smokers is increasing. Therefore, preventing tobacco addiction among youth is very important in shaping future health outcomes.



**Figure 1.6** Annual Tobacco-Related Deaths, by Region, 1990 and 2020 Estimates



Source: Murray and Lopez 1996.

Three main strategies can be used to fight tobacco: (a) higher taxes on cigarettes; (b) nonprice measures, including large clear warning labels, comprehensive bans on cigarette advertising and promotion, and restrictions on smoking in the workplace and other public places; and (c) actions that help current smokers to quit. Most effective is to implement a comprehensive set of measures that reinforce each other.

Most MENA/EM countries have adopted national tobacco programs. Health warnings on cigarette packs are mandatory in all countries. Smoking is banned in public facilities in more than 85 percent of the countries; tobacco advertisements are banned in about 80 percent of the countries;

**Figure 1.7** Tobacco-Related Deaths as a Percentage of All Deaths, by Region, 1990 and 2020 Estimates



Source: Murray and Lopez 1996.

and the tar and nicotine content of cigarettes is regulated in more than 70 percent of the countries, according to Dr. Al Awa. However, many countries need to do much more to strengthen and enforce such policies. In particular, stronger actions are needed to encourage and help addicted tobacco users to quit.

None of these measures is foolproof. Restrictions and bans on smoking in the workplace and other public places sometimes simply cause smokers to shift to smoking elsewhere. In Oman, for instance, the city of Masqat forbade smoking of *shisha* in coffee shops, but this led to increased *shisha* consumption in the streets and public gardens. Even in places that have imposed a comprehensive ban on cigarette advertising, there is still the need to curb indirect advertising, especially through movies that glamorize smoking. Such images especially impact the young, and some experts believe it has a powerful effect when a child sees an actor smoking. Smoking is becoming a social norm, partly as a result of such alluring publicity. Hence it is essential to convince the mass media not to show people smoking.

The question of raising cigarette taxes is controversial. Some government officials believe that heavy smokers will continue to smoke no matter the cost and that raising taxes will cause them to spend more of their income on cigarettes, leaving less money for essential household expenditures. They suggest as well that higher taxes will push the poor to smoke bad-quality cigarettes, which are more noxious than ordinary cigarettes, or to shift to smoking other substances such as *shisha* and *narguileh*.

However, there is strong evidence that price increases are the single most effective way to reduce tobacco consumption. Studies have shown that low-income smokers—a group that includes most young smokers—do respond to increased cigarette taxes, which make smoking unaffordable for them. This is a win/win strategy: a win for public health, because some people quit, and a win for the state budget, because higher taxes generate more revenue. Another argument against raising tobacco taxes is that it encourages cigarette smuggling, but research shows that smuggling does not necessarily increase when taxes rise. Other factors appear to be at least as important in determining the level of smuggling, including the general level of corruption in a country and the supply of cigarettes to the black market.

Two things are clear. First, greater political commitment is needed if the region is to win the fight against tobacco. Even in countries where national tobacco programs exist, stiff resistance is typically encountered, and political will is essential in pushing ahead with an effective tobacco control program. Second, there is a need for a comprehensive plan against tobacco at the regional level as well as within countries (see box 1.3). The problem crosses borders: while one country may ban tobacco-related advertising, for example, its population can still be exposed to such publicity through cable television.

### *Chronic and noncommunicable conditions*

Chronic conditions include noncommunicable diseases (such as cardiovascular diseases, diabetes, and cancer), certain mental disorders (such as depression and schizophrenia), persistent communicable diseases (such as HIV/AIDS), and ongoing impairment in structure (such as joint disorders and blindness). All require continuous management over years or decades by health providers, families, and patients themselves. The burden of chronic conditions is increasing in the MENA/EM region. Cardiovascular diseases and cancer are already major causes of premature death, accounting for 60–65 percent of deaths among people aged 45–60. In 1998, cardiovascular diseases were the leading cause of death in both high- and low-income countries of the region. These conditions impact the economies of countries, not only because of the cost of treatment but also because they cause deaths and disability in economically productive age groups.

### **Box 1.3** *A Comprehensive Plan against Tobacco*

The six-member Gulf Cooperation Council (GCC), headquartered in Riyadh, includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The GCC has decided to implement a comprehensive plan against tobacco that includes the following measures:

1. Raise taxes on tobacco and its derivatives, beginning in 2000. All the GCC countries implemented the decision, so smuggling was avoided.
2. Impose low levels of tar and nicotine in cigarettes.
3. Ban *shisha* in some of the Emirates.
4. Implement, with the WHO, a program called Quit and Win, which awarded prizes to smokers who quit for at least a month.
5. Organize 10 free clinics to help smokers quit. These clinics provide analysis and counseling, and one year of follow-up. They are popular and smokers receive certificates for participation.
6. Organize a national control and prevention week once a year.
7. Organize an anti-smoking campaign in schools once a year.
8. Conduct studies on the prevalence rates of smoking in schools.

Major risk factors known to be responsible for chronic conditions include tobacco consumption, unhealthy diet, physical inactivity, and alcohol consumption. Since large reductions in morbidity and mortality often result from disease prevention—even more than from treatment—it is important to take steps toward long-term reduction of these risk factors in the population. This requires collaboration across sectors, including with the private sector. For instance, in Ispahan, Islamic Republic of Iran, cardiologists worked with bakeries to reduce the amount of salt in bread in order to lower the incidence of cardiovascular diseases.

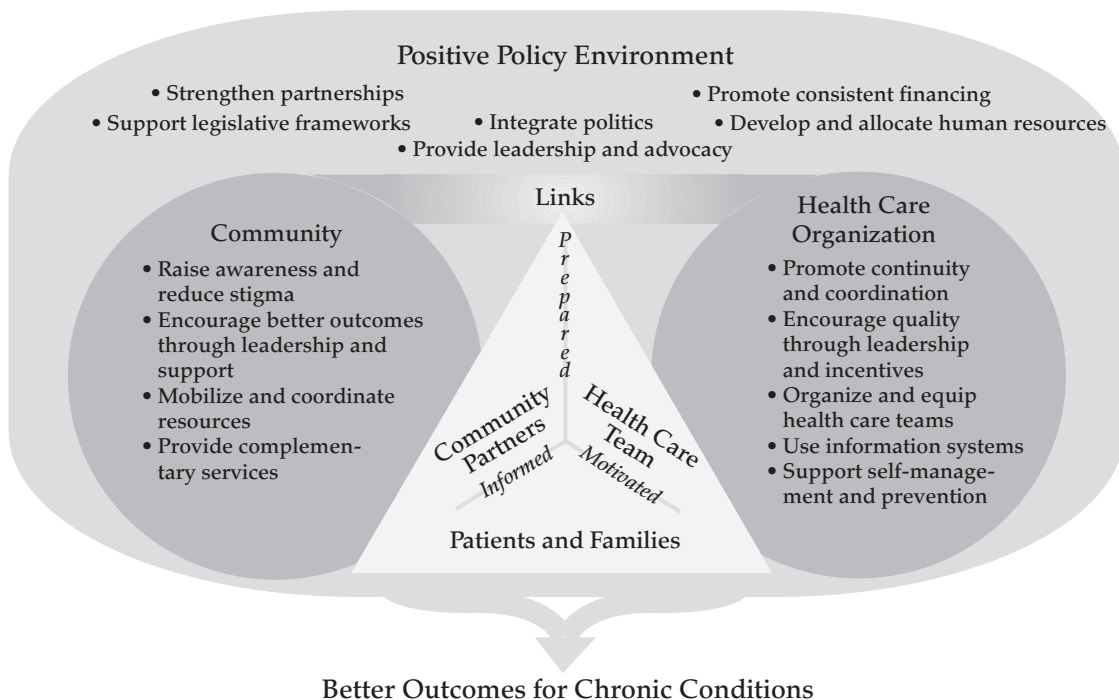
As chronic diseases assume greater prominence, countries need to make sure that public health services are geared toward these emerging epidemiological trends. According to Dr. Derek Yach of the WHO, a study conducted in 180 countries showed that national capacity for prevention and control of chronic diseases is insufficient because of limited resources, fragmented and uncoordinated approaches to chronic care, low commitment to prevention, lack of surveillance systems, absence of clear policies and strategies, and inadequate treatment guidelines. In the MENA/EM region, the inadequate capacity of national health systems to manage chronic conditions is widely recognized.

Current health care systems are geared toward acute care, making it easy for chronic cases to “fall off the radar screen.” Typically, a patient shows up at a health facility, is treated and discharged, and receives sporadic follow-up—if any. As a consequence, adherence to prescribed treatment falls to 50 percent and the patient’s role in the management of his or her disease is not emphasized, according to Dr. Rafael Bengoa, director of management of noncommunicable diseases at the WHO. Although highly effective biomedical and behavioral interventions exist to prevent and treat chronic ailments, patients still receive fragmented and suboptimal care.

Chronic conditions require an evolution of health care from an acute care model toward a coordinated, comprehensive system that integrates acute and chronic care effectively. Some steps are being taken in this direction; for example, Morocco has developed a long-term care strategy for people with diabetes (see box 1.4). The key to meeting the increasing demand for chronic disease care in the twenty-first century will be to link public health to health care, and to provide individual care in a manner that impacts population health. Such care requires innovation (see figure 1.8).

**Box 1.4** *Diabetes Management in Morocco*

Morocco's interest in chronic conditions emerged after a study conducted four years ago revealed that 6.5 percent of the country's population over age 20 had diabetes, and that in half of all cases the condition was ignored. As a result, a multidisciplinary team developed a strategy to address diabetes. A team specialized in dealing with diabetes complications attends to diabetics with the possibility of referral to a tertiary facility. Self-management with the help of NGOs is also an option (there are 48 NGOs specializing in diabetes, associated in a national confederation). Each patient receives an individual treatment card, with a copy kept in the diabetes clinic. These cards are used to track the regularity of treatment, and they provide all necessary information. Treatment guidelines are furnished to physicians, and most diabetes medications are not taxed. But there is a lack of financial resources and a shortage of qualified personnel.

**Figure 1.8** *Innovative Care for Chronic Conditions Framework*

Source: WHO 2002.

**Road safety**

Road traffic accidents are one of the major causes of premature mortality in the MENA/EM region. Yet in the region, as in most developing countries, road safety does not get the attention it deserves because of other equally important problems and competing priorities. There is a need to raise awareness among decisionmakers about the importance of road safety issues.

Deaths due to road crashes increased by 20 percent in the MENA/EM region between 1980 and 1995, and this trend has continued, with sharp increases in the last five years. The WHO estimates more than 70,000 road crash deaths per year in the region. The region has a greater

share of global road crash deaths than would be expected from its share of vehicles or population. Pedestrians are particularly vulnerable, even more so than in the highly motorized countries. Indeed, in the MENA/EM region pedestrians account for a higher percentage of road crash fatalities than in any other region.

In chapter 7, Mr. Andrew Downing of the Global Road Safety Partnership contends that road safety can be improved and these trends reversed—without spending huge sums of money. But it is not enough to conceive a strategic plan; it must be achievable and have measurable targets. Four core elements are information systems, road safety plans, financing, and advocacy. Financing road safety activities has been made possible in the region either through international support (Jordan, Morocco), or, more recently, through local efforts using parking fees and fines to manage a city traffic safety program (Beirut).

Advocacy necessitates partnerships between government, the private sector, and civil society, along with community participation. For example, programs that seek to make school environments safer have proven very efficient in decreasing accident injuries. NGOs and the media also play essential roles. In Lebanon, for example, the Youth Association for Social Awareness has advocated safer roads through campaigns in schools and the media. However, the multisectoral approach needed to address road safety issues often requires a coordinating committee of all key stakeholders to ensure its success.

## **The Unfinished Agenda: Communicable Diseases and Maternal and Child Health**

Governments in the MENA/EM region have made great strides in improving the health of their populations in recent years through socioeconomic development, upgrading of health services delivery, and public health programs. Health for All programs in the region have benefited all levels of the population. According to WHO/EMRO, the infant mortality rate has declined from 54 deaths per 1,000 live births in 1995 to a current estimate of 45 deaths per 1,000 live births. (By comparison, the estimated level in 1970 was 135 deaths per 1,000 live births.) Life expectancy at birth has increased from about 52 years in 1970 to a current regional average of 68 years.

Many of these accomplishments have come as a result of progress in improving maternal and child health and fighting long-entrenched communicable diseases. The Expanded Program on Immunization is a notable example of how simple, easy-to-implement programs can bring dramatic improvements in health outcomes. Still, the prevalence of infectious diseases remains high in most countries of the region. And much remains to be done to integrate maternal and child health and reproductive health services into primary health care systems at the national level.

### *Communicable diseases*

Most countries in the region have achieved high rates of immunization coverage (80 to 100 percent) for all vaccine-preventable diseases through implementation of the Expanded Program on Immunization (EPI), supported by WHO/UNICEF and the World Bank. The program has contributed greatly to the decrease in childhood mortality due to vaccine-preventable diseases, thus improving child survival and child health in the region. However, although the intervention is cost-effective and relatively easy to administer with minimal resources, immunization coverage in the MENA/EM region is not uniform. Indeed it remains dismal in certain countries. Djibouti, Republic of Yemen, Afghanistan, Sudan, and Somalia did not achieve regional average coverage rates in 2000 for BCG, OPV3/DPT3, and measles.<sup>2</sup> Outbreaks of tetanus still occur in some countries of the region.

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2. BCG is the tuberculosis vaccine; OPV is the oral polio vaccine; and DPT protects against diphtheria, pertussis, and tetanus.

Problems with immunization include barriers to access; low utilization of available services; low public awareness of the value of immunization and its availability; mistaken beliefs about contraindications; concern about adverse effects of multiple injections and other false concepts; poor quality of services such as overcrowded immunization sessions and improper behavior of health personnel; high cost of new vaccines and lack of resources for acceleration; and logistics, especially shortages of vaccines, syringes, needles, and other supplies.

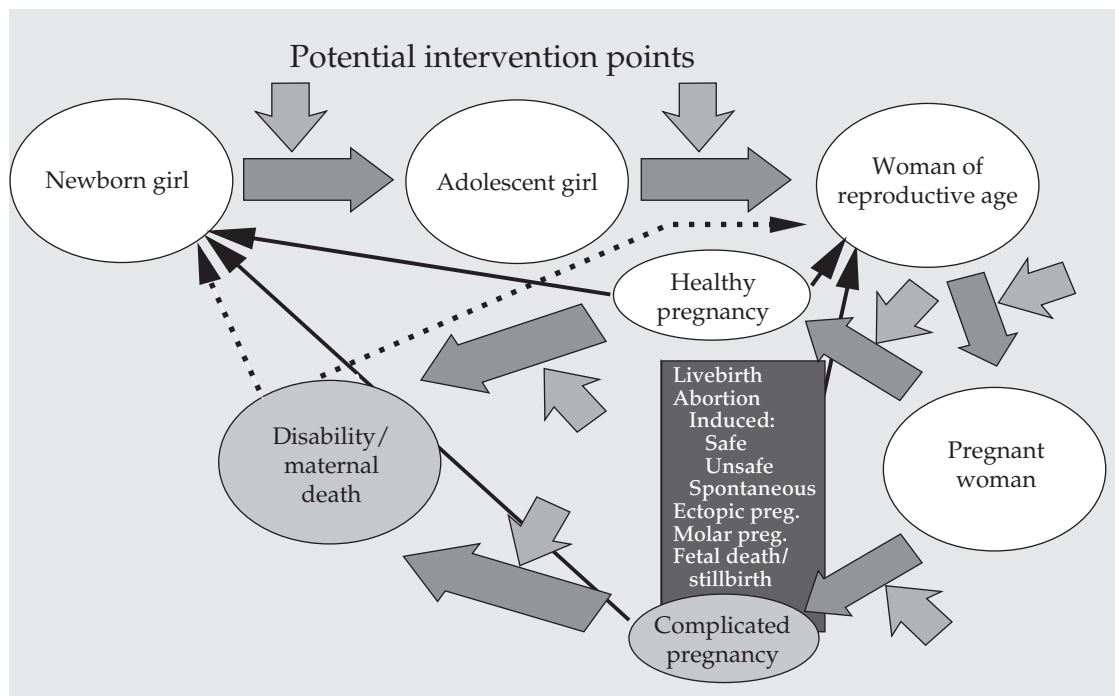
### *Maternal and child health and reproductive health*

Like other public health issues, maternal and child health issues are associated with the problem of poverty, which is a core challenge to development in the region. In addition, international and civil conflicts affect the health and survival of mothers and children, and this is especially so in the MENA/EM region. In Iraq, according to Dr. Ghada Hafez of WHO/EMRO, maternal mortality rose from 68 to 294 per 100,000 live births between 1989 and 1999. Infant mortality meanwhile increased from 47 per 1,000 live births in 1984–89 to 131 per 1,000 in 1994–99. In the West Bank and Gaza, incidence of low birthweight has increased by 22 percent since the upsurge of fighting in September 2000.

Malaria is a major child health issue, and remains the leading cause of child mortality in five countries of the region. According to Dr. Hoda Atta, medical officer at WHO/EMRO, there is a severe malaria problem in Afghanistan, Djibouti, Republic of Yemen, Sudan, and Somalia. The effects of malaria are also severe during pregnancy, resulting in low birthweight, anemia, and maternal and neonatal deaths. “Roll Back Malaria” efforts focus on providing early treatment and promoting the use of insecticide-treated bednets.

Dr. Hafez stresses the importance of addressing reproductive health through a life-cycle conceptual framework (see figure 1.9). Reviewing the risks at different stages of the life cycle can

**Figure 1.9** *Life-Cycle Intervention Points*



Source: Dr. Ghada Hafez.



help to identify factors in one stage that will make a difference at another stage. For example, young women's nutritional status is a critical risk factor for low birthweight babies. Intervention to improve health outcomes is possible at multiple points in the life cycle.

Because problems affecting maternal and child health and reproductive health are interconnected, failure to provide integrated services at the primary health care level is a major concern. In many countries family planning, maternal health, and child health programs are still provided as vertical programs. There is a need to integrate these services and to integrate reproductive health policies and strategies with social policies. Sector-wide approaches (SWAPs) may provide an effective mechanism for introducing reproductive health into national health policy. But SWAPs can go only so far, as there are many health issues competing for attention in a limited-resource situation. Certain complex or sensitive issues may not be viewed as priorities for public spending, such as adolescent reproductive health, HIV/AIDS, sexually transmitted infections, and menopausal conditions.

One interesting experience in providing integrated services is that of the Islamic Republic of Iran. Since 1985, the Iranian government has given high priority to the development of primary health care services, including expansion of immunization and of programs to prevent and control diarrheal diseases, iodine deficiency disease, and respiratory infections. These have brought about sharp declines in morbidity and mortality rates and the control of major endemic communicable diseases. In chapter 8, Dr. Bijan Sadrizadeh of the Iranian Ministry of Health details the efforts to extend primary health care services throughout the country.

### **Summary: Priority Areas for Action**

Based on the discussions at the Beirut conference, which are elaborated in the chapters to follow, it is possible to identify six priority issues and interventions for policymakers and public health professionals in the MENA/EM region. These are summarized briefly below.

#### ***One: Leadership and political will***

Strong leadership and commitment at both the national and regional levels is critical in defining and acting on priority public health issues. Although there is ample information on what needs to be done, little will happen without the political will to make use of this information. In particular, courageous leadership is required to take drastic measures in the fight against tobacco-related diseases, as powerful interest groups may oppose such measures as raising tobacco taxes or prohibiting tobacco-related publicity. So, too, strong leadership will be critical in preempting an incipient epidemic of HIV/AIDS in the region.

#### ***Two: A new view of public health***

Public health infrastructure should not be an adjunct to curative health systems. Rather, it should be part and parcel of a comprehensive health system that blurs the boundaries between curative and public health services. Health sector reform provides an opportunity to strengthen the public health agenda. But public health professionals need to be actively engaged in the design and implementation of reforms and to continually assess their effects on public health functions and infrastructures.

Countries should undertake assessments of their public health functions and capacity in the near future. Toward this end, steps should be taken to build capacity and broaden the scope of public health beyond the activities of physicians.

It is important to recognize health promotion as a key public health function and to establish it firmly within the infrastructure. There must be greater multisectoral commitment to

healthy public policies; this can be accomplished by developing objectives and targets for healthy populations and lifestyles, including the necessary laws and regulations. Developing community-based health promotion programs can be an effective way to increase the health literacy of communities.

### *Three: Data and surveillance*

Policymakers and health professionals need information to diagnose and act on public health problems in the region. As noted above, information and communication systems, including disease surveillance systems, are often inadequate, and forecasting and planning suffer as a result. Behavioral surveillance, for example, is essential for the control of HIV/AIDS, and chronic disease surveillance systems are necessary for combating chronic disease trends. Absent such surveillance, governments cannot target interventions effectively nor monitor changes in knowledge, behaviors, and disease trends in the population. And without adequate data, countries will have difficulties determining the financial resources needed to respond to public health challenges.

### *Four: Partnerships and collaboration*

Improving the public health situation requires many actions beyond the health sector. Collaboration among different sectors of society and among different sectors and levels of government is therefore key to achieving public health goals.

Governments have a critical role to play in coordinating funding from various donors and ensuring that funds are spent in support of national health priorities and programs. In particular, national governments should take full responsibility for the financing and provision of primary health programs. Although primary health care is not equivalent to public health, it is an integral part of public health.

Given the resource constraints on some governments, partnerships are becoming more important than ever. Specific responsibilities should be assigned to other stakeholders. It should be noted, though, that cooperation among different sectors requires coordination, such as by a coordinating committee. Experience in Tunisia has illustrated some of the difficulties of putting such a committee in place and making it work.

### *Five: Emerging health problems*

While moving ahead on the unfinished agenda of curbing communicable diseases and improving maternal and child health, countries need to act promptly to respond to looming problems that threaten the future health of the region's populations.

Admitting the risk of a full-scale HIV/AIDS epidemic in the region is a critical first step. Limiting the spread of the disease requires taking strong action while prevalence rates are still low, and this in turn requires political commitment, matched by resources. More research is needed to improve data on the disease in the region. In particular, second-generation surveillance is important in tracking behavioral risks and monitoring the epidemic. While countries with high HIV/AIDS prevalence need urgent assistance, funding should also be allocated to low-prevalence countries that are ready to address the epidemic.

With the high prevalence of tobacco use in the region, it is critical to prevent youths from starting to smoke, and public health professionals should use the media and entertainment industry to convey this message. Tobacco control is more effective when a comprehensive set of measures that reinforce each other are implemented together. More studies are needed on the potential effects of increasing cigarette taxes, especially the impact on the poor.



As the region's population ages, chronic and noncommunicable conditions account for an ever-growing proportion of the burden of ill health. But current health care systems are geared to acute rather than chronic care. In identifying appropriate infrastructure to deal with chronic conditions, it is important to cross boundaries between noncommunicable and communicable diseases in order to learn from the experiences of both. Interventions on chronic conditions should be across the disease (risk) continuum and should bridge the gap between community and individual care. Many health systems in the region have instituted a few components of a chronic care model, but more comprehensive and integrated approaches are needed.

With so many competing priorities, the issue of road traffic accidents has received short shrift in the public health agenda. Raising awareness of this important cause of premature death and disability is critical, and the media and schools have major roles to play.

### ***Six: Public health “best buys”***

Finally, in choosing and financing public health services, governments should concentrate on identifying and funding “best buys” that are most cost-effective, feasible, and appropriate for their countries. However, the lack of data on public health spending in the region makes it difficult to judge the adequacy or efficiency of such spending. Using the life-cycle approach to consider efficiency, costs, sustainability, and equity of public health services could be an effective way to set priorities while also considering the cost-effectiveness of services. There is a need for more specific training on health economics and financing as way to help officials set public health priorities, allocate resources, and reduce administrative costs.

## **Resources and the Role of International Agencies**

The long-term strengthening of public health systems in the region requires resources. In addition, countries dealing with special emergency situations need more support from aid agencies in the form of grants and soft loans for rehabilitation and development of their public health systems.

The World Health Organization has designed the Framework Convention on Tobacco Control as a global response to the global scourge of smoking. The WHO also launched during the conference, in collaboration with the World Bank, the Innovative Care for Chronic Conditions initiative, which seeks new approaches to comprehensively address the emerging public health challenge of chronic diseases.

UNAIDS is already channeling resources to countries in the region for HIV/AIDS control. It has initiated the Accelerated Access to Care program, and is negotiating with pharmaceutical companies to lower the price of drugs for treatment. It has adopted a “country by country” counseling program, and officials of the agency suggest the need for a regional conference on HIV/AIDS. On the technical level, many programs have been implemented or are being developed.

The World Bank has prepared several regional technical papers, some of them in collaboration with other agencies. These include a public health situational analysis; a regional HIV/AIDS overview (in collaboration with WHO/EMRO and UNAIDS); a study of tobacco use; a nutrition strategy paper aimed at reducing stunting and obesity (which is a growing concern in the MENA/EM region); and a reproductive health paper.

In partnership with other institutions and development agencies over the next five years, the World Bank is ready to work with governments to:

- Support the development and strengthening of disease and behavioral surveillance systems throughout the region

- Help establish public health training programs and support the training of public health professionals, leading to a cadre of skilled public health personnel and leadership
- Support research on critical issues, which will provide new information needed to improve the effectiveness of public health programs and policies
- Support the assessment and strengthening of public health infrastructures in the region in collaboration with CDC and WHO/EMRO
- In collaboration with WHO/Geneva, support governments' efforts to adapt their health systems to the epidemiological transition with its host of chronic conditions, including HIV/AIDS
- Support the consolidation of basic health services and the development of HIV/AIDS action plans and programs
- Support the implementation of reproductive health programs.

The World Bank can play an important role by supporting the integration of key public health functions and strategies in the various reform activities it is financing in the region. This has been identified as a weak area in the Bank's past activities, one that needs to be addressed. Toward this end, the Bank is actively seeking to initiate policy dialogue and support the development of public health infrastructures. The Bank will continue to make efforts to engage participating countries within the context of ongoing and future operational activities and sector work.

The World Bank is also willing to assist in coordinating and mobilizing the technical and financial resources of other agencies and institutions. Finally, through its macroeconomic dialogue with countries, and making use of its access to a great variety of functional ministries, the Bank can promote synergistic policies that link investments in different sectors to achieve optimal impact on health.

## Next Steps

At the end of the conference, WHO/EMRO, WHO/Geneva, UNAIDS, and the World Bank formally pledged to assist countries in three specific initiatives:

- Assessing the performance of their public health systems
- Implementing the Innovative Care for Chronic Conditions framework that was presented during the conference
- Developing strategic HIV/AIDS action plans at the country level.

Partnerships were established during the conference, in collaboration with the World Bank and the WHO, by Algeria, Djibouti, Egypt, Islamic Republic of Iran, Jordan, and Morocco to finance and develop national programs.

Countries with low HIV/AIDS prevalence requested that the World Bank help them gain access to the Global Fund to Fight AIDS, Tuberculosis, and Malaria. While the fund currently appears to target countries with high HIV prevalence, it should be noted that Morocco was among the first countries in the region approved for assistance from the global fund.

As a result of expressions of interest by countries during the conference, several noteworthy activities have already been initiated.

A joint World Bank/WHO mission visited Morocco in February 2003 to carry out a situational analysis of the health system's management of chronic conditions. Along with a consultant on quality improvement in health care, the mission met with Ministry of Health officials, health care providers at all levels, community-based NGOs, and patients, in order to analyze the current systems in relation to the Innovative Care for Chronic Conditions framework. A detailed report

of the findings will include recommendations for improving the quality of the health care system for chronic conditions. As a follow-up, a health care improvement project focusing on integrated prevention and management of cardiovascular diseases and diabetes may be piloted in a selected community in the country. This project could test and develop a robust package for improvement of chronic care management based on the innovative framework, which could then be scaled up to the regional and national levels.

In Lebanon, the World Bank and UNAIDS are supporting a national HIV/AIDS strategic planning exercise. The National AIDS Control Program, in charge of the exercise, is currently working on situational and response analyses of HIV/AIDS in the country with UNAIDS support. The third phase of this process will consist of a national consensus workshop where representatives of key stakeholders formulate a national strategic plan based on information from the situational and response analyses. The World Bank is arranging for an international HIV/AIDS specialist to support the efforts of the national control program in conducting the workshop and finalizing the strategic plan.

In Oman, discussions are being held on the World Bank's assistance in dealing with chronic conditions and improving HIV/AIDS management. As more resources become available and countries express interest, similar efforts in other parts of the region can be expected.

The MENA/EM public health conference covered a great deal of ground and helped raise the profile of critical public health challenges in the region. Determined follow-up at the country and regional levels, backed by regional and international resources, will be crucial. The following chapters are intended to promote the exchange of ideas and best practices that must inform this effort if the health challenges of the twenty-first century are to be met.

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# 2

## *Public Health Functions and Infrastructures in the MENA/EM Region*

Salman Rawaf

Today's world is characterized by high-speed communications and information access, rising expectations and demands, rapid technological advance and innovation, and large demographic changes and population movements. All of these, along with other political, economic, and behavioral factors, have direct and indirect impacts on people's health and on health systems. In particular, the shifting population structure and resulting changes in patterns of disease and disability are changing the health care needs of populations and the demand for care to meet those needs.

The region of the Middle East and North Africa/Eastern Mediterranean (MENA/EM) is one of the most diverse in its political, social, economic, and health indicators. Across the region, however, certain trends pose daunting challenges to health practitioners, notably rapid urbanization, demographic shifts with an associated epidemiological transition, and inequalities in health status. These circumstances demand ever-growing technical and professional expertise at all strategic and operational levels of health systems.

The MENA/EM population is burdened with many diseases and health problems that can be most effectively addressed using a public health approach. Public health is fundamental, and should not be seen as a mere adjunct to the curative system. It is part and parcel of a good health care system in which the boundaries of curative and public health medicine are blurred. Health care systems in the MENA/EM region are facing grave issues today (see box 2.1), and public health can provide some of the critical tools to meet these challenges.

Unfortunately, none of the region's countries presently has sufficient public health resources or capabilities to carry out a public health agenda appropriate to the twenty-first century. Without well-planned and integrated efforts at the individual country level, collectively at the regional level, and internationally, the people of the MENA/EM region will continue to be disadvantaged. The World Health Organization's Eastern Mediterranean Regional Office (WHO/EMRO) is leading a commendable agenda of strengthening national capabilities in public health medicine, also known as community medicine, across member states. This has been matched by limited initiatives on the part of governments and institutions within MENA/EM countries.

This chapter reviews the current state of public health functions and infrastructures in the region, looks at some regional and local initiatives to strengthen capabilities, and outlines some of the obstacles to be overcome. It discusses models and strategies for developing human resources in public health and explores potential collaboration between countries and with international partners that can make effective use of limited available resources.

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**Box 2.1** *Public Health Tools for Today's Health Care Issues*

In many countries around the world, and in the MENA/EM region in particular, the following issues pose major challenges to health care planners and providers. All, without exception, require public health skills and tools to be addressed effectively.

**1. Pressure on health services.**

Ever-increasing demands due to demographic changes, technological advances, and rising public expectations are placing tremendous pressure on all aspects of health systems. Emergency situations (natural and human-made) and, in some countries, economic sanctions have stretched resources beyond the systems' ability to cope. Quality has suffered, and indeed many services could be defined as "below standard."

*Public health tools:* Health needs assessment; impact assessment; demand management; risk assessment and management; clinical pathways; evaluation.

**2. The legacy of health services reforms.**

Most countries of the MENA/EM region are in the process of reforming their health care systems. Most of these reforms are based on U.S. or European models, and in many cases they are financially motivated rather than need-driven. This has led, in many countries, to rapid and unregulated expansion of medical services offered by the private sector; the main focus of this expansion is on curative medicine, with little or no attention to preventive medicine or to a wider public health agenda. The effect has been to further squeeze the limited resources available to badly needed public health programs.

*Public health tools:* Impact assessment; risk assessment and management; evaluation; health services management; health system expertise.

**3. Inefficiency and misuse of resources.**

Lack of planning and lack of control in many countries has led to an unregulated market in which certain areas have expanded at the expense of others, without striking the right balance of integrated health and social care to meet the population's health needs. This has led to increasing pressure on limited financial and human resources. Lack of good management has hurt productivity and led to ineffective use of these limited resources. In some countries, political instability, financial difficulties, and migration of expertise (brain drain) have aggravated the situation further.

*Public health tools:* Health economics; health information; epidemiology.

**The Wider Determinants of Health in the Region**

Despite tremendous improvements in the health of their populations over the last quarter century, the 24 countries of MENA/EM, with a combined population of around 480 million, are beset by epidemiological and demographic transitions, political instability, wars, and natural disasters, against a backdrop of wide variations in social and economic development.<sup>1</sup>

Local epidemiological studies have shown that the dual disease burden—of communicable and noncommunicable diseases—exists almost in all the MENA/EM countries, irrespective of

1. In the literature, the number of countries in the MENA/EM region is variously given as 22, 23, or 24, depending on how the region is defined.

#### 4. Inequalities in health status.

There are wide variations in population health status among the MENA/EM countries, and inequalities within countries can be very wide as well. There are many reasons, the most obvious being the inequitable distribution of resources, the different socioeconomic levels of the population, and the lack of a plan to target the most disadvantaged sections of the population. Addressing these variations requires good information and information analysis, expertise in planning, and highly skilled management of the health services. These must be supported by political decisions at the highest level in each country.

*Public health tools:* Epidemiology; health services management; needs assessment.

#### 5. Variations in clinical standards.

Reviews of health services in various countries by international experts have revealed wide variations in clinical standards, even within the same specialty in a single country. Differences have been observed between teaching and nonteaching hospitals, between the public and private sectors, and between urban and rural areas. These variations must be addressed because high standards of quality are no longer a luxury. They are an essential part of good medical practice and must be ensured for all who need health care at any age and anywhere in their countries.

*Public health tools:* Setting, applying, and monitoring clinical standards; clinical guidelines; performance management; clinical appraisal.

#### 6. Lack of data.

The shortage of valid and reliable data on the performance of health systems is another crucial constraint on public health. We should be aware of the magnitude and the impact of data gaps, systems incompatibility, and the withholding of information.

*Public health tools:* Epidemiology; health information.

#### 7. Lack of vision and direction.

Few health care systems within the MENA/EM region have clear vision and direction to meet the needs of their population. For many policymakers, health service equates to illness service. The prevailing approach is reactive in nature and pays little attention to public health policies that include health promotion and disease prevention.

*Public health tools:* Policy development; health needs assessment; health promotion; disease prevention; surveillance systems.

their level of socioeconomic development. The magnitude of this burden and the balance between the two types of diseases varies among countries, of course, depending upon their level of development and on the availability of public health programs and the responsiveness of health care systems. While they have declined in relative importance, communicable diseases remain widespread. The picture is further complicated by the emergence of new diseases such as HIV/AIDS and the resurgence of established diseases such as tuberculosis.

In many countries of the region, especially the low-income and lower-middle-income countries, the demographic transition shows a complex picture of a relatively high fertility rate together with a decline in the mortality rate. Therefore, while the countries of the region continue to have a large share of their populations under the age of 18 (and children under age 5 account for as much as 10–40 percent), in most countries more than 5 percent of the population are over the



age of 65. Such a demographic transition has led to dual challenges of infectious diseases and malnutrition among children and mothers together with a substantial rise in chronic diseases, injuries, and disabilities associated with aging. Indeed, it is estimated that by 2020 chronic diseases will account for 60 percent of the disease burden and 70 percent of deaths. This will be associated with a decline in the burden of communicable diseases to 20 percent for the same year. A considerable proportion of these chronic diseases and associated risk factors are preventable.

While more than half of the countries in the MENA/EM region are blessed with abundant natural resources, mainly oil, fluctuation in oil prices has hampered efforts to stabilize socioeconomic development and carry out ambitious programs of health service development. Furthermore, at least three countries in the region are or have been under international sanctions, with devastating impacts on the health of their populations. This is particularly true in Iraq: although it is a relatively wealthy country, its public services, including health, which used to be among the best in the region, suffered immensely under 13 years of sanctions and many years of dictatorship. The effects on vulnerable groups, especially children, women, and the elderly, have been catastrophic.<sup>2</sup>

Population movements are another major determinant of health in some MENA/EM countries. Conflicts, wars, natural disasters, political instability, and repression have led to displacement, forced migration, and outflows of refugees. In addition, prosperity and rapid development in some upper-middle-income countries (such as Saudi Arabia, United Arab Emirates, Oman, and Qatar) have attracted workers from low-income MENA/EM countries (such as Sudan, Arab Republic of Egypt, and Syrian Arab Republic) and also from outside the region. A high percentage of these workers are single men with no local family support or network. These migrants have their own health and social problems, which in most cases mirror problems in their country of origin.

Urbanization in many countries has been rapid and extensive. On average, almost 60 percent of MENA/EM populations live in urban areas, ranging from 24 percent in the Republic of Yemen to 97 percent in Kuwait. Such rapid urbanization has led in some countries to major socioeconomic problems—poverty, crime, poor housing, drug abuse, and social tensions, to name just a few—with extensive health impacts.

## Public Health Functions

Public health is defined as the “science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society.” These efforts address policy and operational issues at the population level, and tackle the roots of ill health as well as ensuring the provision of effective health services to meet the population’s needs. In other words, public health is about collective actions to ensure that people have the right conditions to live in a healthy way.

Public health practitioners (doctors, dentists, pharmacists, nurses, scientists and others) apply their expertise to improve health and enhance the quality of life. Public health core functions include:

- Assessing population health needs (community diagnosis)
- Identifying health priorities

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2. Since the removal of the Saddam regime in May 2003, intense efforts are being undertaken by the Iraqis to reverse this sad story, with international support from the World Health Organization, the World Bank, UNICEF, the European Union, the U.S. Agency for International Development, the U.K. Department for International Development, and many others. Public health targets have been set up to improve the health status of the Iraqi population, including targets for the reduction of infant, child, and maternal mortality. The development of infrastructure and reorganization of the health system is the subject of a four-year plan with international financial and technical support.



- Developing appropriate and relevant policies
- Implementing programs (while striving for equity, access, quality, and cost-effectiveness)
- Monitoring and evaluation of services.

Public health specific functions include:

- Health protection (control and surveillance of communicable diseases and environmental hazards, including accidental and deliberate chemical and biological incidents)
- Disease prevention (actions to increase awareness, establish immunity, identify and tackle risk factors, prevent injuries and disabilities)
- Promotion of early action to save lives and reduce the pressure on health systems
- Promotion of healthy behaviors (health promotion, information, empowerment)
- Development of partnerships with communities, businesses, and other organizations outside the health services
- Response to emergencies and disasters (natural and human-made)
- Provision of high-quality and accessible health services to those who need them
- Health impact assessments (estimation of the overall effects of specific actions, and of social, economic, organizational, and political developments, on the health of a population).

Table 2.1 compares the 10 key areas for public health function in the United Kingdom with the 10 essential public health services in the United States, as defined by public health authorities in the respective countries.

**Table 2.1** *Essential Public Health Functions*

<i>United Kingdom: 10 key areas</i>	<i>United States: 10 essential services</i>
1. Surveillance and assessment of the population's health and well-being (including managing, analyzing, and interpreting information, knowledge, and statistics)	1. Monitor health status to identify community health problems
2. Promoting and protecting the population's health and well-being	2. Diagnose and investigate health problems and health hazards in the community
3. Developing quality and risk management within an evaluative culture	3. Inform, educate, and empower people about health issues
4. Collaborative working for health	4. Mobilize community partnerships to identify and solve health problems
5. Developing health programs and services and reducing inequalities	5. Develop policies and plans that support individual and community health efforts
6. Policy and strategy development and implementation	6. Enforce laws and regulations that protect health and ensure safety
7. Working with and for communities	7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable
8. Strategic leadership for health	8. Assure a competent public health and personal health care workforce
9. Research and development	9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services
10. Ethically managing self, people, and resources (including education and continuing professional development).	10. Research for new insights and innovative solutions to health problems.

Source: Faculty of Public Health Medicine of the Royal Colleges of Physicians of the United Kingdom.

Source: Public Health Functions Steering Committee, U.S. Public Health Service, U.S. Department of Health and Human Services.

In looking at the overall health improvements in many countries around the world and especially in the highly developed countries, one can easily conclude that these have been achieved mainly through public health measures. Politicians and health policymakers in these countries, therefore, are keen to ensure that their public health services are well resourced through a highly skilled workforce and appropriate funding. Indeed, evidence is accumulating that improved public health function, including health promotion and disease prevention, can have a significant impact on health status and ultimately on the demand for health services and the resulting costs. One example is road safety. Recent evidence from the WHO shows that more people die on the roads than from malaria; however, many road crash injuries are preventable with appropriate public health measures.

As mentioned above, chronic diseases will account for almost three-quarters of all deaths in the MENA/EM region by 2020. We now have abundant evidence that environment and lifestyle are important underlying risk factors for most of these chronic diseases, and that changing the level and pattern of morbidity will require fundamental changes in these risk factors. The most important include smoking, poverty and inequality, improper diet, unsafe sex, physical inactivity, alcohol consumption, and pollution. Tackling them requires appropriate public health policies at the national and local levels and adequate public health resources, including appropriate skills and expertise. Also required is political commitment at the highest level of government to ensure appropriate legislative, fiscal, and enforcement policies.

This commitment must extend beyond the health sector to cut across many governmental departments and institutions in society. Efforts to address the wider determinants of health and extend public health functions can benefit greatly from the establishment of partnerships with organizations outside the health services, such as business, local authorities, and voluntary groups. Such partnerships and interactions give the opportunity to share scarce public health skills and knowledge in addressing poverty, employment, housing, and the environment, all of which have an impact on health.

Despite improvements in life expectancy in nearly all the MENA/EM countries, health inequalities between the rich and the poor are still widening, in terms of both health status and access to health care. Most major killers (cancer, coronary heart disease, stroke) and their associated risk factors are linked to socioeconomic deprivation. Various studies have suggested that around one-third of the potential years of life lost as a result of coronary heart disease, stroke, and cancer amenable to medical intervention are due to key risk factors such as smoking and obesity, which in turn are often linked to socioeconomic status. Governments must take urgent steps to develop specific public health interventions to reduce health inequalities.

## **Public Health Infrastructure**

The overall aim of any public health team anywhere is to improve the health of the population and reduce inequalities. The performance of public health functions, therefore, requires a strong and effective public health infrastructure at the national, regional, and local levels. A modern public health delivery system is vital, given the major health challenges, inequalities, and high levels of premature death, chronic diseases, and disabilities in the MENA/EM region. Equally important is collaborative work and interaction among government agencies, the private sector, voluntary organizations, and the public.

### ***Levels of public health delivery***

At the *national level*, government departments (health, environment, transport, education, treasury, and so on) require good public health advice and support from a central source to ensure

coordination across departments. This could be a public health department within the ministry of health, headed by a senior public health physician (the chief medical officer or surgeon general). Its role is to advise ministers on all health matters and on the wider determinants of health. A public health department will also:

- Provide public health leadership
- Assess the impact on health of any governmental policy
- Provide an overall picture of the country's health status
- Determine the public health tasks that need to be undertaken at the local level
- Meet human resource and training needs
- Coordinate public health activities through the local infrastructures
- Coordinate health protection functions across the country
- Coordinate responses to any national or major local crisis
- Identify and advise on funding priorities for public health research
- Develop a culture of improvement, innovation, and the spread of best practices
- Coordinate inputs to international health
- Respond to inquiries from ministers on public health policies and issues
- Publish an annual report on the state of public health in the country.

Such a department should have a critical mass of people with multidisciplinary expertise in public health (community) medicine.

At the *local level* each health district or governorate should have its service department of public health, headed by a director of public health.<sup>3</sup> The local service department of public health will:

- Develop a good system of health intelligence to collect and analyze information and data on the health of the local population
- Assess the health and health care needs of the population it serves
- Identify priorities and develop health policies appropriate to the needs and available resources
- Ensure that services are effective, accessible, and of high quality
- Develop a good monitoring system that includes participation by patients and the public
- Develop partnerships with communities, the public sector, and businesses to tackle the wider determinants of health
- Develop and provide effective health protection services (which include the surveillance and control of communicable diseases, chemical and biological incidents, environmental health, and so forth)
- Develop a surveillance system and control plans for noncommunicable diseases
- Provide effective health promotion and preventive services including immunization, screening, and well-child care
- Publish an annual independent report on the state of population health in the locality, district, or governorate.

These local departments of public health will also take the lead in planning services, from prevention to care, that match the needs of local populations. A balance between national and

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3. In some MENA/EM countries the health director heads all medical and public health services. There are substantial added benefits if such directors are trained and qualified in public health medicine.

local priorities should be determined at the local level and should encourage partnerships and interaction to address the wider determinants of health and specific risk factors for ill health. Public health functions and infrastructure must be consistent across the country.

At both the national and local levels, these departments should carry out two important additional functions. One is the collection, analysis, and interpretation of data on the population and on health systems. Without data, such departments cannot provide appropriate assessments of needs, risk factors, and the impact of government and social policies on health, nor can they measure outcomes. The other function is the collection and presentation of scientific evidence to policymakers, other health professionals, and the public. To be credible, public health policies, advice, and social marketing messages must be evidence-based.

The above service infrastructures should be backed up by good academic departments of public health medicine in universities that provide both research and teaching of public health at the undergraduate and postgraduate levels. Also needed are one or more central public health laboratories, depending on the size of the country; a national center for statistics; and a national epidemiological center for cancer and cancer registration. Finally, every country should have a national body responsible for training and accreditation of public health practitioners, both physicians and specialists.

### *Academic public health*

Academic public health plays an important role in teaching and research, as well as in supporting service departments of public health at the national and local levels. It must be made quite clear that an academic department is not in any way a substitute for a service department of public health. Rather, the two complement each other: an academic-service continuum is essential to provide high-quality public health delivery for the nation.

Some public health practitioners (both service and academic) could specialize in epidemiology, health information, child public health, mental public health, communicable disease control, and so forth. In these subspecializations, as in general public health practice, multidisciplinary teamwork is essential for success.

### *The public health workforce*

There are various ways to calculate the number of public health physicians and practitioners needed by a specific country. As a general rule, one public health doctor per 100,000 population is recommended. Such a figure will give a critical mass of doctors, who of course must be supported by other public health practitioners, technicians, and administrative staff. For health protection (including communicable disease control and environmental health) there should be, in addition, one physician per 250,000 population. Another method of calculation is based on the percentage of medical graduates who enter the public health field. Taking all graduates, the balance of 50 percent hospital medicine, 40 percent general practice (primary care), and 10 percent public health is probably a fair one.

Getting the number of practitioners and support staff right is one thing, and giving them the status and the rewards they deserve is something else. Consultants in public health medicine, for example, should have the same terms and conditions and salary as other clinical consultants such as those in surgery, general medicine, and so on.

## **Current Situation in the MENA/EM Region**

There are huge variations among countries in the MENA/EM region with regard to their public health infrastructures and capabilities. None of these countries could be described as having a

well-developed public health delivery system. They are at different stages of developing such capabilities; however, reviews show little effort being made to address the inadequate organizational capacity and insufficient resources allocated to public health in comparison to acute services—despite the major public health challenges outlined above. Table 2.2 summarizes variations among countries with regard to the service or academic orientation of their public health infrastructure, the level of function, funding for public health, higher medical training for public health practitioners, and status of practitioners in the field.

### *Service or academic orientation*

Countries differ in terms of whether their current public health infrastructure is mainly service-oriented, mainly academic, or a mixture. Broadly speaking, countries can be classified as follows:

- Service and academic public health: Bahrain, Egypt, Islamic Republic of Iran, Iraq, Jordan, Morocco, Pakistan, Saudi Arabia, Tunisia, West Bank/Gaza, Republic of Yemen
- Mainly service public health: Cyprus, Djibouti, Kuwait, Oman, Qatar, United Arab Emirates
- Mainly academic public health: Lebanon, Libya, Sudan, Syria
- Developing further service function: Oman, Pakistan, Qatar, Syria.

### *Funding the public health function*

There is no doubt that public health function is an essential and integral part of the health system of any country irrespective of the general funding of that system (public, private, or a mix). It is, therefore, the responsibility of government to fund the public health function at the national and local levels. In the MENA/EM region, funding of the public health service varies. In some countries, notably Bahrain, Sudan, and Syria, it is part of the general allocation to health and cannot be defined separately. Only a few countries publish separate figures on the funding of their public health function (see table 2.2).

Furthermore, epidemiological (including etiological) research and public health research are almost nonexistent in most countries because of a lack of research funds. This weakens the ability of both academic and service departments to address the nation's health problems and find the best solutions based on evidence.

One obvious conclusion is that current efforts by national governments to strengthen public health functions and capabilities are not sufficient. This unquestionably has left huge gaps in the current health care systems of these countries, undermining badly needed efforts toward health protection, health promotion, and disease prevention, as well as the efficient organization and delivery of health care. Furthermore, the lack of structured training programs for public health doctors and specialists is hampering efforts to address the situation. Advice and support from international organizations will be of great help, but without the political will, commitments at the highest level, and financial support, progress will be limited.

### *Higher medical training for public health practitioners*

In many Western countries the specialty of public health medicine is part of the higher medical training program. For example, in the United Kingdom the higher training for public health medicine is a four-year program of Specialist Registrar (SpR) for medical graduates who have completed at least three years of additional training in other clinical specialties. During these four years the SpRs obtain knowledge, skills, and practical experiences that culminate in a professional qualification known as Membership of the Faculty of Public Health Medicine. Higher academic degrees (M.P.H., M.D., Ph.D.) are not substitutes for the professional qualification, but

**Table 2.2** *Public Health Infrastructure and Function in MENA/EM Countries*

Country	Infrastructure	Function	Funding	Training	Status
Afghanistan	?	Weak	Not known	?	?
Algeria	No information available				
Bahrain	Academic + service	Medium +	Not well defined	Arab Board	Medium
Cyprus	Service	Strong	Defined	—	High
Djibouti	Service	Weak	Not known	—	Low
Egypt, Arab Rep. of	Academic + service	Relatively strong	Generally not well defined; (stronger academic) some services funded separately	1. Academic diplomas 2. Plan for Egyptian National Board 3. Arab Board (selected specialties, but no Community Medicine)	Low
Iran, Islamic Rep. of	Academic + service	Strong	Defined	Academic diplomas, master's, Ph.D.	High
Iraq	Service + academic	Relatively strong	Some public health services defined separately	1. Arab Board 2. Iraqi National Board 3. Academic diplomas, master's, Ph.D.	Low/Medium
Jordan	Academic + service	Weak	Not well defined	1. Arab Board 2. Jordanian National Board 3. Academic diplomas, master's, Ph.D.	Low
Kuwait	Service	Strong	Defined	1. Arab Board 2. Academic	High
Lebanon	Academic	Weak	Not well defined	1. Arab Board 2. Academic diplomas, master's, Ph.D.	Low
Libya	Academic	Weak	Not well defined	Arab Board	Low
Morocco	Academic + service	Medium	Defined	Specializations diploma	—
Oman	Service	Developing	Defined	Arab Board	High
Pakistan	Academic + service	Weak	Not known	1. College of Physicians and Surgeons Pakistan Fellowship 2. Academic diplomas, master's, Ph.D.	Medium
Qatar	Service	Developing	Defined	Arab Board (but no Community Medicine as yet)	Medium/High
Saudi Arabia	Service + academic	Medium/strong	Defined	1. Arab Board 2. Saudi National Board	Medium
Somalia	No information available				
Sudan	Academic	Weak/limited	Not well defined	1. Arab Board (but no Community Medicine as yet) 2. Academic diplomas	Low
Syrian Arab Rep.	Academic (in the process of developing service public health)	Weak	Not well defined	1. Arab Board 2. Low professional diploma 3. Academic diplomas	Low
Tunisia	Academic + service + research	Strong	Defined	1. Tunisian National Board 2. Academic diplomas, master's, Ph.D.	High
United Arab Emirates	Service	Strong	Well defined	Arab Board	High
West Bank/ Gaza	Academic + service	Developing	Not well defined	1. Academic diplomas 2. Some trainees were offered places on the Arab Board in other Arab countries.	Medium
Yemen, Rep. of	Academic + service	Not known	Not known	1. Arab Board 2. Academic diplomas, master's	Low



additional academic qualifications. Most recently, nonmedical graduates with a background in public health can enter the same training program leading to the same professional qualification in a multidisciplinary public health training program.

In the MENA/EM region, development of the Arab Board of Medical Specializations is one of the most significant and positive efforts to establish, apply, maintain, and monitor high standards for the various medical specializations. Started in the 1970s by the Arab ministers of health, the Arab Board is a residency program of training in nearly all medical and surgical specialties, including community (public health) medicine. This development is expected to have a very positive impact on medical human resources in the region, freeing the medical market and enabling the workforce to move across countries without professional restrictions or questions raised about possible variations in standards.

Currently, at least 14 of 24 MENA/EM countries participate in the Arab Board training and residency program (see table 2.2). Some of the countries that are not part of the Arab Board are running their own national board systems, and though these may be in line with the Arab Board they do not necessarily have the same critical mass or capacity to maintain standards. Furthermore, many countries are running different (additional) systems of postgraduate medical education and training, each granting different types of credentials. Countries outside the Arab Board have no structured training program for public health. Egypt, for example, is one of the largest Arab countries and a major exporter of medical manpower, including public health specialists. Although it has its own national board and is a member of the Arab Board in some specialties, Egypt has no proper structured training program for community (public health) medicine, and relies solely on academic postgraduate education leading to D.P.H., M.P.H., or Dr.P.H. degrees.

### *Obstacles to improving public health function*

In seeking to build their public health capabilities, countries face many obstacles that need to be addressed by policymakers and professionals. Several merit special mention.

First, public health initiatives are necessarily long-term, and many politicians and policymakers are more interested in a quick fix and immediate returns. Hospitals and acute medicine provide such a quick fix and “good news” that can translate into political gain. Very few health ministers fully understand the essential role of public health and how effective it can be in improving health and the quality of life. Consequently, funding of public health is not seen as a priority when the demands for acute services are increasing.

The second obstacle is a lack of national and regional strategies for identifying and dealing with risk factors, disease prevention, and promotion of healthy lifestyles and behaviors. For example, in many MENA/EM countries there is inadequate appreciation of the role of clinicians outside public health in tackling risk factors and taking early action to prevent disease in healthy people, such as by reducing high cholesterol, high blood pressure, obesity, and smoking. Specialties such as preventive cardiology, community pediatrics, and community gynecology are popular and successful marriages between clinical and public health medicine in many Western countries.

Third, in countries where academic public health dominates, there is little understanding of the service function of public health and of the obstacles created by elitism within academic departments. At the same time, there is a lack of structured training programs and of a continuum of undergraduate and postgraduate education and training.

Fourth, the status of public health practitioners is a significant problem. One of the main challenges facing public health in the MENA/EM region is the recruitment and retention of appropriate skills and expertise, in terms of both quality and quantity. The four reasons commonly identified by practitioners from these countries are: (a) inadequate status and income; (b) undeveloped public health capabilities and infrastructures; (c) lack of structured training

and career development opportunities; and (d) lack of data and skills of data collection and interpretation.

In most countries of the MENA/EM region (with the exception of a few such as Kuwait and Oman), public health practitioners and especially public health physicians have low status with low income, at least in comparison to other medical and surgical specialists. These problems stem from the low status of public health, the deficient infrastructure for its training, and the lack of a defined career track. There is, accordingly, an urgent need to define the academic and service career structure of public health to encourage newcomers to enter the field. The presence of a structured training program (the Arab Board or national boards) tends to have a positive influence on practitioners' status.

Finally, the lack of reliable data on population, lifestyles, behaviors, risk factors, and the activities and performance of the health system is frustrating to public health practitioners in many countries of the region. Indeed, on many occasions the lack of accurate data has caused the credibility of public health practitioners to be called into question. Even in countries that are investing in improvement of their information technology, lack of expertise in collection, interpretation, and presentation of data continues to be a problem. In addition to data gaps, incompatibility of systems and the deliberate withholding of data are obstacles to providing relevant and timely information on people and health.

### **Regional and Country Initiatives to Strengthen Public Health**

The World Health Organization, the World Bank, the Arab Board, and other international and national bodies have undertaken reviews of public health in specific MENA/EM countries and have supported initiatives to strengthen the public health function. It is difficult to provide a comprehensive picture of these efforts across the region, but some of the more notable include the following:

1. WHO initiative to improve teaching of public health medicine in the undergraduate medical curriculum (Amman, Jordan, November 1994). An expert group reviewed the quality and quantity of teaching about public health in medical schools across the region. Some of its recommendations highlighted the need for a continuum of training from undergraduate through postgraduate education, culminating with professional qualification(s) in public health medicine.
2. WHO review of public health in the Eastern Mediterranean region in the twenty-first century (Amman, Jordan, November 1994). This expert group meeting analyzed the modern function of public health and looked at the experience of the developed countries, especially the United Kingdom and the United States. It also listed the challenges facing public health and called for strategies to be prepared by individual countries and collectively through the work of WHO/EMRO to address these challenges. The imbalance between preventive and curative medicine was identified as a major issue. Also emphasized was the lack of any meaningful initiatives to address the wider determinants of public health, a shortcoming that reflects lack of interest among policymakers who prefer a short-term fix to long-term public health programs. The expert group also pointed to the lack of appropriate infrastructure and public health expertise to deliver much-needed public health services in the region.
3. WHO intercountry and expert group meeting on "Strengthening National Capabilities in Community Medicine and Establishing a Network of Community Medicine Specialists" (Alexandria, Egypt, 1998). This meeting produced a publication with the same title, in which the WHO recommended that each country review its current public health function



and capabilities and prepare a plan of action to address service deficiencies. The report stressed the need to train a multidisciplinary public health workforce, and called for setting up a network of public health specialists to exchange information and expertise. It also urged collaboration among member states and partnerships with a broad array of stakeholders to address the wider determinants of health and encourage public health advocacy.

4. Visit by experts from the Faculty of Public Health Medicine in the United Kingdom to WHO/EMRO (Cairo and the United Arab Emirates, January 2001). This led to publication of a report entitled "Strengthening Public Health Function in the United Arab Emirates and Eastern Mediterranean Region of the WHO." It offered specific recommendations on training, funding, joint work, and collaboration with the United Kingdom and the establishment of a WHO collaborative center for public health practice.
5. World Bank situation analysis on the state of public health in the Middle East and North Africa (February 2002).
6. A review of literature on the state of public health in selected countries of the region. However, these tend to be personal accounts with no framework for service development.

### **Developing Models and Strategies for Strengthening the Public Health Function**

It is clear from various reviews that current public health functions in the MENA/EM region face massive problems. In sum, these functions are severely underdeveloped and lack well-defined funding, appropriate status, and necessary organizational, training, and career development structures. They do not address the most pressing problems facing the region, especially meeting the needs of an aging population, changing unhealthy styles of living and disease patterns, and, in some countries, coping with problems associated with rapid economic development.

In developing any model for strengthening public health functions, the following principles should be taken into account. First, functions must fit the purpose: that is, they must respond to a country's specific health and social needs. Second, there should be a clear system of service delivery at the national and local levels. Third, the public health system needs a critical mass of multidisciplinary practitioners. Practitioners should have completed a well-defined and structured training program, and should have status equivalent to that of health practitioners in other clinical disciplines. And finally, public health should be at the heart of government policy decisionmaking.

How rapidly this can be accomplished depends on many factors, in addition to the baseline status of public health function in the country. A key factor is political commitment. Also critical is a good training program, offering a continuum of undergraduate education and postgraduate training, and an academic-service nexus. The Arab Board is a good example of a high-quality, residency-based training program. Finally, little can happen without proper funding and integrated interdisciplinary teamwork among professionals in public health, other clinical fields, and outside the health services.

I believe that an incremental model may work in one or two countries, such as Saudi Arabia, Iraq, or Oman. But most countries of the MENA/EM region need a radical review of their public health function and the development of a costed plan with a clear timeline for implementation. Such a development plan needs to clearly address:

- Functions at the national and local levels
- Key health priorities
- Accountability of the public health services and their relationship to other services
- Funding

- Training and continuing professional development
- Public accountability and the involvement of patients and the public
- Partnership and interaction between various governmental agencies.

There are three key building blocks for developing strategies for strengthening public health.

First, each country, with the support of the WHO and the World Bank, needs to assess its current capacity and capabilities in public health. Such a baseline assessment should cover the formal training system for the public health workforce, including doctors and specialists; the surveillance system for communicable and noncommunicable diseases; and all other public health infrastructure.

Second, each country should prepare a plan for public health development. This plan should cover human resources and capacity development, including the status of public health doctors; envision delivery mechanisms through national and local infrastructures and the mechanism for managing performance of public health functions at the national and local levels; and specify a percentage of the national health budget to be devoted to public health functions. Finally, the plan should encompass a training program for public health doctors and specialists (along the lines of the Arab Board or Membership of the Faculty of Public Health Medicine), and provisions for continuing professional development.

As the third strategic pillar, each country should identify possibilities for partnerships and external support. This includes partnerships within the MENA/EM region, in which countries share expertise, resources, and educational programs. Countries should identify the expertise they need from international organizations such as the WHO, the World Bank, and others that can provide skills, learning experiences and exchange of expertise. And they should seek to develop, individually or jointly, collaborative programs of training and exchange of expertise with countries that have advanced public health systems.

For their part, the World Health Organization and the World Bank need to provide support and assistance in several areas. They can play a key role in helping to review the current status of public health function in each member state. They can provide additional financial assistance to strengthen the public health services and develop the public health infrastructure, along with needed international technical expertise. Finally, they can coordinate regional collaboration in training, manpower development, networking of public health bodies and specialists, exchange of expertise, and development of regional services. One example of such collaboration would be a regional public health surveillance system, also known as a public health observatory.

With the work of highly trained and respected practitioners, defined internal and external funding sources, broad social partnerships, and political commitment at the highest level, countries of the MENA/EM region can move ahead to successfully confront the public health challenges of the decades to come.

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# 3

## *The Economics of Choosing and Financing Public Health Services*

Philip Musgrove

In situations of limited resources—a reality for every country—public health specialists and policymakers face wrenching choices. Once the burden of a disease and its risk factors are understood, authorities must consider interventions that could be effective against it, all the while estimating costs and weighing these costs against the expected health benefits. Difficult questions arise: What should be done? Who should do it, or ensure that it is done? And not least important: Who should pay for it, and how?

### **Public Health and the Public Role**

Economic theory recognizes what are called “public goods”—that is, goods (or services) for which one person’s consumption does not limit another’s use of the same good, and from which people cannot be excluded because the good is provided not to individual consumers but to whole populations, at least locally. Since everyone can benefit from such goods without paying for them, no one will pay for them, and private markets cannot deliver the goods or services. They have to be financed collectively, usually by governments, if they are to be provided; the only nonmarket alternative is charitable provision. These services constitute the core of public health. They are not very numerous: the “public” in public goods describes a much smaller sphere than the “public” in public health.<sup>1</sup> Nonetheless they can be crucially important to health, and historically a few public goods have probably done more to prolong and improve life than a much larger number of individual medical services. They include, particularly, measures of hygiene and sanitation, food safety, and provision of potable water. Where market alternatives exist, such as purchasing safe water from a truck, or controlling disease vectors only in one’s own dwelling, they are likely to be more costly or less effective than collective solutions (Musgrove 1996).

A larger sphere of semi-public goods is also included in public health. These are services with significant externalities, or benefits to nonconsumers. Private markets can provide such goods, but demand is likely to be inadequate to generate the full benefit possible to society. This is a milder instance of “market failure.” Immunization is a good example; so is treatment for many communicable diseases. Here the role of government is less essential, but public subsidy or promotion is still justified to expand consumption toward a social optimum. Figure 3.1 shows how

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The opinions expressed here are the author’s, and do not necessarily reflect the views of the World Bank, its executive directors, or the countries they represent. I am grateful to several colleagues, particularly Anne Maryse Pierre-Louis, Jacques Baudouy, and George Schieber, for suggestions on this topic.

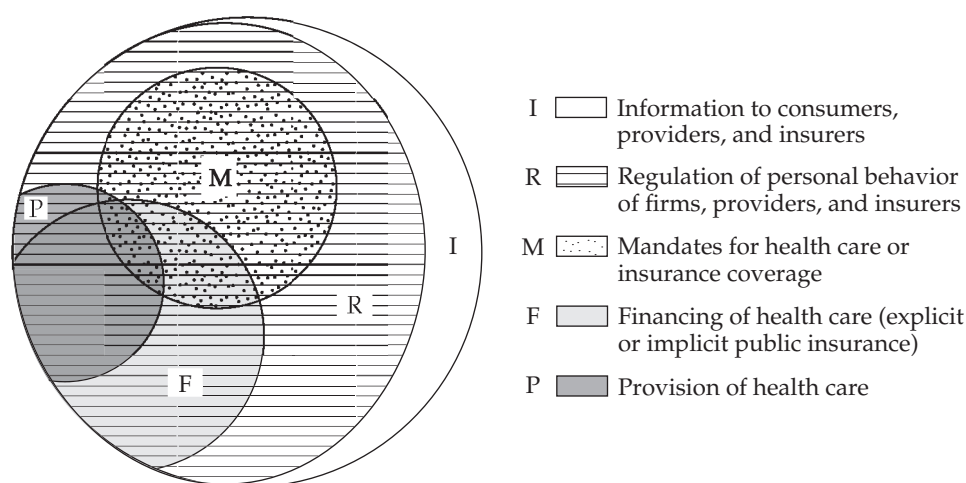
1. This sometimes leads to unfortunate misunderstanding about what “public” means, or who owns the word. The relation is actually simple: any public good in health belongs in public health, but a service included in public health is not necessarily a public good.

**Figure 3.1** What to Include in Public Health: Services Considered as a Nested Set

the sphere of public health expands outward from pure public goods toward (almost) purely private goods, for which demand is inadequate because of poverty or ignorance and which therefore also generate a public responsibility.

Public and semi-public goods can be *interventions* against specific diseases or conditions, including those that are usually classified as health care. They can also be services that are not health care at all, but rather *functions* such as policy formation, evaluation, regulation, surveillance, and the generation and provision of health-related information. In economic terms, the crucial distinction is not how far a component of public health is directed against a specific health problem; it is whether private markets can be relied on to deliver the service, or to do so efficiently and equitably. In general, the government's responsibility is considerably greater for public health than for individual clinical care. For the latter, market failure is chiefly a financial problem—the failure of competitive insurance markets to work as well as they do for nonhealth assets—and the solution is public finance or regulation of private insurance with subsidy for those unable to afford it. The need for government to pay for health services does not always imply the need for public provision, however. Especially for clinical care, private provision with public finance may be as good or better. Even some public health measures can be provided privately, under public finance and regulation. What cannot be delegated or contracted out are those functions known collectively as “stewardship” (WHO 2000), which are particularly important for public health. Figure 3.2 suggests a slightly different way of classifying public functions, or the appropriate role of the state, in health: the largest sphere is that of information, and the smallest is that of provision, with regulating, mandating, and financing at intermediate scales.<sup>2</sup>

2. The functions of financing and provision in this scheme coincide with the same functions as classified by the WHO. What the WHO calls “stewardship” includes the functions related to informing, mandating, and regulating in figure 3.2. The function the WHO calls investment or “resource generation” is not separately identified in the figure, but can be included in both finance and provision: that is, these two functions can refer both to health services and to the inputs required for their production.

**Figure 3.2** *Appropriate Use of the Instruments of Public Intervention in Health*

Source: Musgrove 1996.

### The Crucial Choice: Spending Public Money

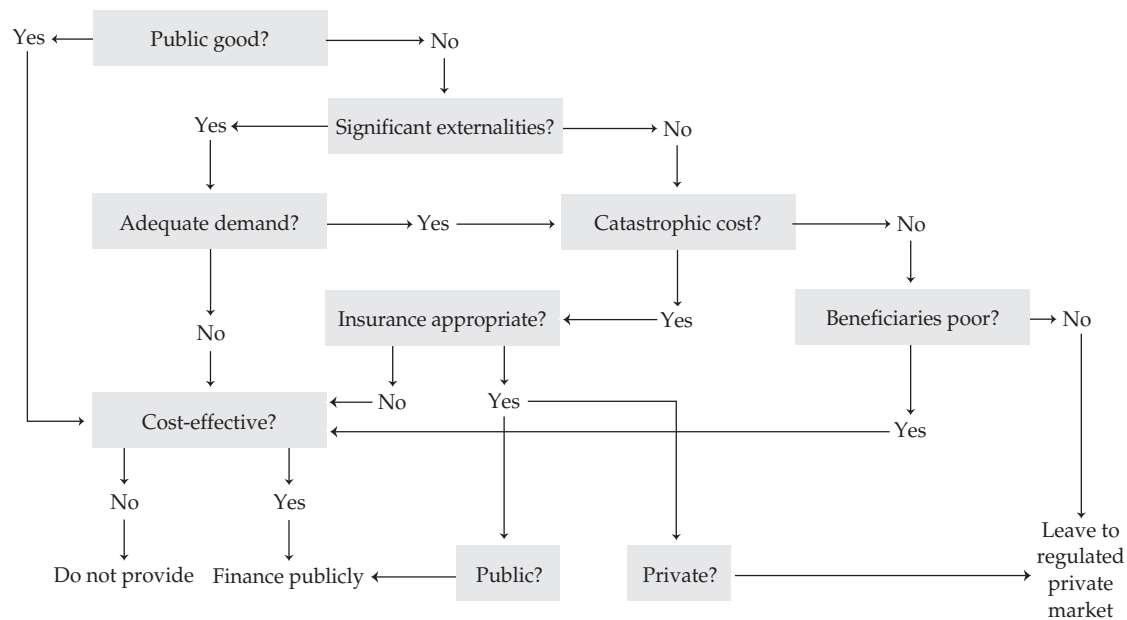
If public finance is essential to public health, the crucial question then becomes what to spend public resources on. For health interventions in general, there are at least nine relevant criteria to take into account, including those of public goods and externalities just discussed (Musgrove 1999). Figure 3.3 proposes a simplified decision tree for thinking about the allocation of public funds, taking into account various characteristics of an intervention or of the beneficiary population. Economic factors enter via four questions:

- Whether the goods themselves are public or semi-public
- Whether they are cost-effective—that is, whether they provide good value for money or can be considered “best buys”
- Whether the goods or services are costly enough to represent a serious burden for individuals buying them out-of-pocket, perhaps raising the threat of impoverishment, and
- Whether the people who would benefit from the intervention are, or include, the poor.

The object of answering these and other questions is to determine whether an intervention should be publicly financed, wholly or in part. The existence of a health problem does not by itself determine that money should be spent on it, still less that the money should be public.

What makes these decisions complicated is not simply the number of criteria, but the fact that they are sometimes in conflict. This happens most readily when one criterion refers to efficiency and another to equity. For example, cost-effectiveness need not coincide with either horizontal or vertical equity; poor people do not necessarily need only inexpensive health care; and so on. The scheme also does not show how to determine whether insurance is an appropriate way to finance an intervention, and if it is, whether it is preferable for that insurance to be public or private. Health systems differ greatly from one country to another in terms of how much is financed through insurance, and of what kind(s). Among the countries of the Middle East and North Africa/Eastern Mediterranean (MENA/EM) region, public or social insurance accounts for one-fourth or more of *public* spending on health only in Algeria, Cyprus, Arab Republic of Egypt, Islamic Republic of Iran, Lebanon, Pakistan, and Tunisia. It is a considerably



**Figure 3.3** Questions to Ask in Deciding Which Interventions to Finance

Source: WHO 2000 (adapted from Musgrove 1999).

smaller fraction of *total* health spending. Private insurance is negligible everywhere except in Lebanon and Morocco.

Obviously all the economic issues, except that of the public character of a good, are related to a country's income and its distribution and to the government's ability to raise revenues that can be used for health. These affect the level below which someone is considered to be poor; the cost above which a health service is regarded as too expensive to buy out-of-pocket; and the ratio of cost to results beyond which an intervention is judged not to be cost-effective. These three parameters have to be consistent with what the government, and individuals and households, think they can afford. For that reason, it is not possible to spell out uniformly which interventions should be bought, or by whom, except perhaps when defining a very low cost package of essential interventions (World Bank 1993). Even that may be beyond the economic reach of the poorest countries such as Afghanistan, Pakistan, Somalia, Sudan, and Republic of Yemen.

### *Some helpful simplifications for public health*

Fortunately, the problem of applying economic reasoning to the choice of interventions becomes simpler when only public health is considered. That is partly because the services that make up public health are concentrated among those of a public or semi-public character, for which private financing is impossible or would be inadequate even apart from the poverty of many potential beneficiaries. It is also simpler because many of the interventions are applied for the benefit of the entire population or sizeable subpopulations, so that the distinctions among rich and poor matter less than they do for much individual health care—if they matter at all. Only the left-hand side of figure 3.3 needs to be considered where most of public health is concerned. This means that cost-effectiveness, in particular, can be regarded as the most important, or even the only relevant, criterion for some decisions. That in turn means that the notion of “best buys,” determined simply by the ratio of cost to health effects from an intervention, is



more readily applied in public health than for health care in general.<sup>3</sup> The cost of an intervention is still important, of course, but it is no longer the cost to the individual that counts but rather the cost to the government.

Sometimes an even greater simplification is possible: that occurs when a preventive measure would yield results as good as or better than those of curative or palliative interventions that the government is already financing. Eradicating polio in the Western Hemisphere by complete immunization coverage proved to be cheaper than continuing to treat victims, even if only a small fraction of those who suffered paralytic polio received care (Musgrove 1988). This may also be the case for public health actions to reduce smoking, traffic accidents, or the transmission of HIV/AIDS. Clearly the first priority should be to undertake interventions that—quite apart from the reduction in pain and suffering—can ensure that health is protected and money is saved at the same time. The situation is more complicated only if the government is not already paying for the curative alternative; then the public health measure must be justified in comparison to other uses of the same resources, whether for public health or clinical interventions. As the health damage from sources such as road crashes increases, and governments are obliged to spend more on transportation and medical treatment for trauma victims, the justification for preventive actions necessarily becomes stronger. A good public health policy, however, will not wait for those expenses to become burdensome but will promote prevention as soon as its potential savings are apparent.

### *How large an effort?*

So long as total resources are limited—and they always are—one cannot settle the question of *what* to buy without also considering *how much* of any intervention to buy. How far should government go in spending on any particular desirable service? The standard answer from economic theory, to spend until the marginal social benefit equals the marginal social cost, is not very helpful unless there are good estimates of both benefits and costs, as a function of the scale of the intervention. Where an intervention is being implemented, but seems to be reaching many fewer people than could benefit from it, there has been much interest lately in the desirability, feasibility, and cost of “scaling up interventions” or “going to scale.” This concept has been central to Working Group 5 of the Commission on Macroeconomics and Health, which was asked to estimate the costs of expanding various disease-control efforts (CMH 2001). When “coverage” can be defined and measured to lie between zero and 100 percent, as it often can for health interventions, it is natural to interpret “scaling up” as achieving “full scale” or (close to) 100 percent coverage. However, perfect coverage may be impossible to achieve, or may cost so much that it would be preferable to settle for something less, leaving resources free for other uses. Hence there is uncertainty about when an expanded effort can be said to have achieved “scale.”

It may help to back away from notions of percentage coverage, and think about this concept in the way it is usually thought of in manufacturing, where there is no ceiling at 100 percent and so “coverage” is not relevant. Full-scale operation in manufacturing is defined technologically and economically by two criteria:

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3. This is strictly true only if (a) the only significant benefits from the intervention are health benefits, and (b) it can be assumed that all the potential beneficiaries would value the health benefits equally. If either of these suppositions does not hold, then choices among interventions should ideally be determined by cost-benefit rather than cost-effectiveness analysis, and the notion of a “best buy” becomes more complicated.

- The process of fabrication is not an experimental, pilot, artisan, or laboratory process, but one that can be applied to a whole factory or plant. Some processes can be scaled up in this sense; others cannot. It is the shift from a process that cannot be expanded by an order of magnitude, to one that can, that defines scaling up.
- There is a range, usually a substantial one, over which marginal cost is not only much lower than with the pilot or experimental process, but is approximately constant. In consequence, total cost is roughly proportional to output. This range or interval comes to an end when some capacity constraint is reached, and marginal cost begins to rise rapidly.

What has all this to do with scaling up health interventions? There is more connection than might appear. First, getting to 100 percent coverage may be physically (almost) impossible, or so costly as not to be worth it. (Where a disease can be eradicated, even very high marginal costs may be worth paying, but that is not a common situation.) But marginal costs may be roughly constant over a sizeable range, and one can scale up as far as that condition holds. Whether the cost curve starts to climb steeply at 50 percent or stays steady out to 80 percent, say, is an empirical matter that depends on the intervention itself and characteristics of the target population, such as geographic dispersion and differences in cultural acceptance of the intervention.

Second, there may be a real shift from a “pilot” process to an “industrial” or “mass-production” process for delivering the intervention. Anything that implies high marginal cost and faces great constraints to expansion qualifies as “pilot” in this sense. That may be because it depends on donor funding, which could not be obtained for the whole country; because it is applied only in a few very favorable districts; or because it requires much more intensive techniques, such as face-to-face delivery of health and behavioral messages, instead of relying on the mass media. This is especially important for interventions designed to change behavior, where one approach may be more effective but also more expensive than another. Going to scale then means changing the mode of production so that it doesn’t require so much of those scarce inputs, and can be delivered much more cheaply. That is the time to worry about whether quality or effectiveness will fall off as the intervention is expanded. Particularly if the intervention requires individual screening procedures (as for cervical or prostate cancer), the cost-effectiveness may worsen dramatically as lower-risk people are included in the screening (Barnum and Greenberg 1993).

These are quite simple ideas, but they might help to keep the concept of scaling up in health clearly related to costs, and away from thinking only in coverage terms. Coverage is always related to costs, of course, but the shape of the cost curve, and particularly the point at which marginal cost starts to climb steeply, can be very different for different interventions. Pushing one intervention to very large scale at the expense of others may not only be inefficient; it will look inequitable if it means giving undue priority to a particular problem or population group. However, if an intervention has very high fixed costs, it may be sensible to expand it a great deal compared to others that do not exhibit such economies of scale. There is no presumption that all justifiable public health measures need to be extended to the same scale.

### *Spending on public health functions*

The concept of *functions* in public health is relatively new, and still less developed than that of *interventions*. Not surprisingly, we therefore know still less about what it costs to carry out those functions, or even how to determine when they have been adequately performed. Definition and evaluation are, at this early stage, almost necessarily subjective. Almost the only things we do know are that (a) it costs something to maintain disease surveillance, ensure quality in medical care, regulate providers and insurers, and carry out all the other tasks that can be classified as “essential public health functions”; and (b) if those functions are not performed, or

not performed well, public health and also clinical medicine will suffer in quality, effectiveness, cost, and timeliness.

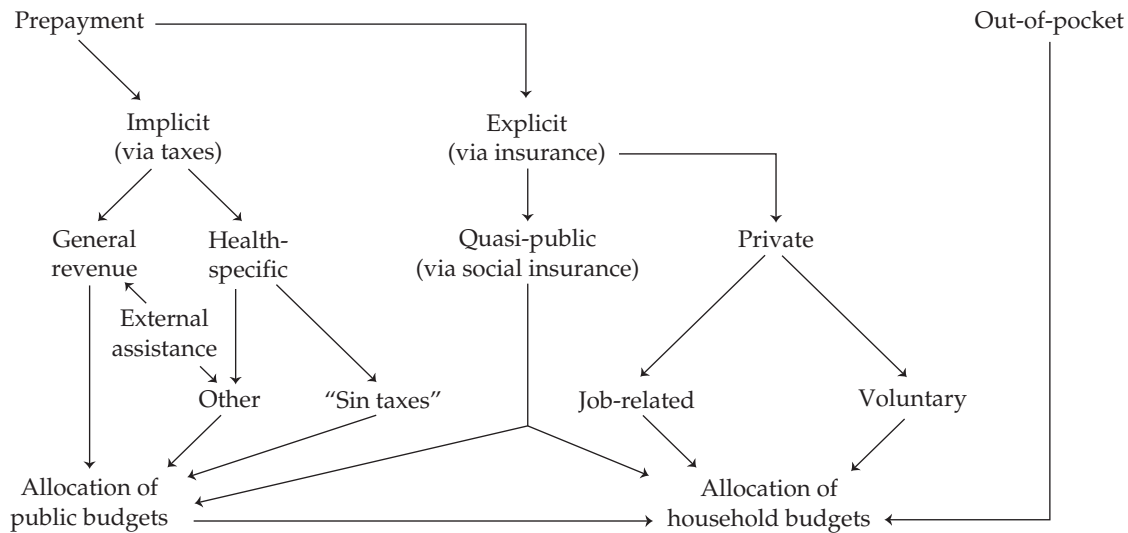
In these circumstances, the first step is to begin to form some judgment about how adequately these functions are being carried out. Recent experience in Latin America and the Caribbean may be a very useful guide. The consultative, opinion-forming process that the Pan American Health Organization has sponsored will not yield any absolute numbers or performance grades, but it can indicate which functions are *relatively* well or badly conducted, and thereby direct attention to failings needing correction (PAHO 2001). This may appear to be in marked contrast to the ranking of interventions according to estimated cost-effectiveness ratios, and implementing those that appear to be best buys. In fact, despite the existence of absolute numbers for dollars per disability-adjusted life year (DALY) gained, or other measures, it is still the relative ranking that matters most in such an exercise—because there is no objectively correct threshold beyond which interventions are not cost-effective enough to be worth buying. As with interventions, it is also important to form estimates of how much is being spent on the performance of public health functions, and if possible, to judge the cost of conducting them better. What is not at all clear yet is how to compare those costs to measures of output or results, even for a single function. So we are far from being able to compare the performance of one function with that of another. However, if they are all really *essential*, then there is no question of choosing among them and deciding not to undertake some of them: the only issue is how best to allocate effort and money among them. In contrast to those health interventions that are not public goods, there is no option of leaving any of these functions to the private market.

Looking into the costs and results of public health functions may show that some of them are being conducted on too small a scale, and need to be expanded. This may particularly be true of disease control efforts. We may guess, however, that often the issue will not be one of scaling up, but of policy and organization, including clear responsibilities for particular functions and ways of continuously evaluating them. The best buys in this area have not been identified yet.

### Sources of Finance: Paying for Public Health

After the questions of what to buy comes the question of how to pay for it. The different sources of finance for health can be classified along several dimensions—prepayment versus out-of-pocket spending, implicit versus explicit prepayment, and so on. Figure 3.4 illustrates these choices and reminds us that they affect both public and private decisions and budgets. Many public health interventions cannot be financed adequately, if at all, by the market, because they are at least partly public goods. Even those goods that are mostly private, such as immunization, are likely to be underfinanced privately. The poor often can scarcely afford them, and even the nonpoor may not be willing to pay for them. The external benefits that come from high levels of coverage then will not be gained. Quasi-public financing, through social security, can provide some public health interventions, but the political pressure will be to limit benefits to members, so that source also cannot easily pay for goods that are largely public. That means that the surest source of finance for public health, the one that has to be responsible for all or nearly all spending on those interventions, is general government revenues.

We do not know much about what is currently being spent by MENA/EM governments on public health, so it is impossible to say whether that expenditure is adequate. There are now at least rough estimates, and sometimes fairly exact calculations, of what countries spend overall on health care (WHO 2000; Poullier and others 2002). These estimates distinguish among the four major sources: tax-financed public spending, social insurance, private voluntary insurance, and out-of-pocket expenditure by individuals. They sometimes also say how much is spent on different kinds of inputs, such as personnel, drugs, and other supplies, and through different kinds of

**Figure 3.4** Decision Flow Chart: Sources of Health Financing

Source: Musgrove 2001.

organizations. But when it comes to public health, there are not even comparable estimates of total spending. It is true that most if not all public health expenditure is itself public, which should greatly simplify the problem since private expenditure is harder to classify and estimate. It is also true that some components of ministry of health budgets may correspond exactly to public health services, for example expenditures on immunization. But for the most part, there is no good match between budget categories and public health services. Even recent papers devoted to the Middle East and North Africa do not tell us anything about spending on public health (World Bank 1998, 2002; WHO 1999). These problems of classification are additional to the difficulty of defining what is and what is not public health, since many activities relevant to public health are not represented in health sector budgets. Traffic safety measures, provision of safe water, and disposal of household and industrial wastes are examples that show up in public budgets but are not systematically consolidated or comparable.

Table 3.1 shows estimates for 1997 of public expenditure on health as a share of total health expenditure and also as a share of total general government spending, as well as the share of public spending on health that is financed from general revenues. The corresponding absolute amounts in international dollars are also shown. Except in Algeria, Cyprus, Egypt, Pakistan, and Tunisia, most public spending on health comes from general revenues, all of which are potentially available for public health uses. We may suppose, however, that public health spending is usually only a fraction of general revenue spending on health; and we can see that the latter is extremely variable among countries, and often very low. In five countries, general revenue spending on health is estimated to be \$10 per capita or less. Such low expenditures would probably not be adequate for basic public health measures even if the latter absorbed the whole amount: a very limited package of “essential” interventions—including treatment for HIV/AIDS—is estimated to cost about \$34 per person per year (CMH 2001). There appears to be no evidence as to whether public health gets greater priority, as is clearly desirable, when total spending is low. Income, far more than health needs or the characteristics either of interventions or of populations, accounts for the numbers in the table.

**Table 3.1** *Estimates of Health Spending in MENA/EM Countries, 1997*

Country	Percentage shares			International dollars per capita		
	PHE/GGE	PHE/THE	GRE/PHE	THE	PHE	GRE
Afghanistan <sup>a</sup>	3.6	52.6	92.5	7	4	4
Algeria	11.3	79.8	33.3	195	155	52
Bahrain	8.7	58.5	100.0	706	413	413
Cyprus <sup>a</sup>	6.3	36.3	19.1	1,085	394	75
Djibouti	5.7	44.4	96.7	62	27	26
Egypt, Arab. Rep. of	4.5	31.8	56.1	123	39	22
Iran, Islamic Rep. of	10.4	46.4	74.3	275	128	95
Iraq	12.5	58.9	100.0	136	80	80
Jordan	13.4	70.3	97.8	285	200	196
Kuwait	8.4	87.4	100.0	628	549	549
Lebanon	6.8	29.6	72.6	501	148	107
Libya	2.6	47.6	100.0	260	124	124
Morocco	3.9	28.6	89.8	142	41	37
Oman	6.9	82.1	100.0	319	262	262
Pakistan <sup>a</sup>	2.9	22.9	42.0	66	15	6
Qatar	7.6	57.5	100.0	1,433	824	824
Saudi Arabia	9.4	80.2	100.0	444	356	356
Somalia <sup>a</sup>	5.6	62.5	92.6	11	7	6
Sudan <sup>a</sup>	3.4	20.9	100.0	46	10	10
Syrian Arab Rep.	2.9	33.6	99.5	74	25	25
Tunisia	6.7	40.4	57.2	281	114	65
United Arab Emirates	26.9	79.3	100.0	771	611	611
Yemen, Rep. of	3.3	37.9	90.1	22	8	7

Note: GGE = general government expenditure; PHE = public health expenditure; THE = total health expenditure; GRE = general revenue (tax) expenditure on health.

a. Included in EM but not in MENA.

Sources: Columns 1–5: WHO 2000, annex table 8. Column 6: author's calculations, from columns 3 and 5.

If spending on public health measures is too low, in most countries the only ways to increase it are to expand general revenue spending overall, or to increase the share of those revenues devoted to public health. In countries with a substantial public alternative to general revenue spending—the five mentioned above, and to a lesser extent the Islamic Republic of Iran and Lebanon—those alternatives probably do not provide much support for public health. The public health share in general revenues ought, therefore, to be higher than in countries where there are no such alternatives, and could perhaps be expanded by pushing more of clinical care onto the other sources. But it may be hard to make that happen, if social security or other sources finance care for a predominantly nonpoor population, leaving the ministry of health with responsibility both for public health and for care of the poor.

Compared to the issue of obtaining enough general revenue support for public health, the question of the composition of those revenues is secondary. More generally, the combination of taxes that is most efficient and equitable depends very little, if at all, on the end uses of the money. If one of the financial objectives of a tax system is to produce equity or fairness among the people who pay into it, then selecting whichever taxes score best on this criterion and allocating them to health would appear to further that objective. There are nonetheless two important limitations to this approach. One is that the largest contribution to inequity in health finance is almost sure to

come from out-of-pocket payments, unless they are quite a small share of total funding. Even an “unfair” tax is likely to constitute an improvement to overall financing if it displaces out-of-pocket spending, particularly for large expenses. The other limitation is that subsidies need to flow not only from the healthy to the sick but from the rich to the poor, and that objective may best be attained by paying for health from taxes that are more progressive, even more “unfair,” than the average of all taxes. Trying to choose a tax for supporting health care without taking account of all the sources of funding is generally not advisable, and it is difficult to see which characteristics of a tax, taken in isolation, actually contribute most to meeting the objectives of the system. A good tax *system* will incidentally be a good way to finance health through taxation, as well as to finance other public responsibilities (Musgrove 2001). What is true of health finance in general is true *a fortiori* of financing public health. MENA/EM countries differ greatly in the extent to which they derive income from petroleum, so the composition of their general revenues must also differ considerably. Those differences may also matter for the stability and equity of public finance, but they have no clear or systematic connection to public health: revenues derived from oil are neither particularly appropriate nor inappropriate for financing public health.

### *General revenues versus health-specific taxes*

General revenues seem the principal if not the only source for most spending on public health. But those activities might also be paid for by taxes that are earmarked and do not go into the general budget. The standard presumption in public finance is that ex-ante dedicated taxes are to be avoided in favor of general revenues that can be shifted from one use to another in the public budget as needed. If all taxes were hypothecated there would be no flexibility whatever in public spending, which would surely be inefficient because the government could not respond easily to changed circumstances; legislation would be required instead of simply a change in the budget. One might ask, nonetheless, whether there is any reason to take a different view of dedicated taxes in health than in other sectors: Could they be a bad idea in general and still be acceptable for health, or for public health in particular?

The standard answer is no, because the revenue from an earmarked tax can always be offset by reductions in the general revenue allocated to health, unless the specific tax by itself provides more revenue than is needed. For a ministry of health, the exclusive right to a particular *source* of money does not equal the right to a particular *amount* of resources. But what if people know a certain tax is dedicated to health (or to something else they regard as a worthy cause): Will they more readily pay the tax, or not try so hard to evade or avoid it? To think that they will is to say that taxes have something in common with charitable contributions: people decide, at least partly, how much to contribute on the basis of their approval of the end use of the funds. Evidence that such an effect exists would have to come from changes in the allocation of a tax that actually led to more collection of the health-dedicated tax—with no other changes in economic conditions, and offsetting changes in the allocation of one or more other taxes so as to leave public revenues for public health at the same level. Dedicated taxes do not seem, in general, to offer a solution to the financing of public health.

### *“Sin taxes” versus other dedicated taxes*

If this is so, it may still be asked whether it matters if the taxes are “sin taxes” such as those collected on alcoholic beverages, tobacco, or legalized gambling. Governments routinely levy such taxes, in part because they are easier to collect than some others and the relevant demand elasticities are low enough to permit tax rates higher than those on most commodities or activities.



And it is very common for government lottery revenues, which might also be considered a kind of sin tax,<sup>4</sup> to be dedicated in part to health.

If the “sinful” activity is definitely bad for one’s health—tobacco being the prime example among legal activities—there is no doubt that it makes sense to tax it as one way of deterring consumption (Jha and Chaloupka 2000). (Alcohol taxation is a more complex matter, since moderate consumption apparently can be good for one’s health. Besides, much of the health damage associated with alcohol arises from behavioral consequences—drunken driving, getting into fights—which may be partly, and better, controlled by other measures. And where consumption is very low or illegal, as is typical in MENA/EM countries, taxes would make little or no difference.) Whether it makes equal sense to use the resulting revenue for financing health turns on two issues. One is the political acceptability of the tax; this is the same issue as for health-specific taxes in general, only it is sharpened if people believe not only in supporting health but also in curbing the taxed consumption. The logic here amounts to: “It’s bad for people to do this, but at least if they do it, they help pay for a good cause.” Politicians may believe that the public supports this view, and they may be right, but that does not mean that revenues are any larger than they would be if the tax were *not* used to pay for health.<sup>5</sup>

The other issue is the risk of government health financing being dependent on behavior that is contrary to good health and which, apart from financial considerations, the ministry of health presumably wants to reduce. This applies to tobacco particularly. The argument that smokers should pay for the extra health damage they cause—an argument for which empirical evidence is still somewhat equivocal—can be turned around to ask: Should the government want people to keep smoking so that it can obtain extra revenue from them? If smokers were to quit, they would probably spend the freed resources on other goods and services that can also be taxed. Sin taxes can make a difference, then, only if they apply higher rates to the sinful activity than to other consumption items. And they can be valuable for health funding only if they generate revenues in excess of whatever extra health costs result from the taxed activity. Finally, sin taxes would help public health only if the general revenue budget were reallocated to favor interventions that did not draw on dedicated revenues, since it is not possible to design a specific source corresponding to each kind of public health need. What sort of tax would be ideal for supporting efforts against HIV / AIDS—or in favor of immunization?

### *Stability and relation to economic cycles*

Government revenues are generally pro-cyclical, expanding and contracting faster than overall income. This is good for economic stability, but bad for health, because the need for public spending on health increases in hard times. Reduced incomes increase the likelihood of illness and injury, and therefore the need for medical care. This poses a problem even if (nearly) all health spending is public, and coverage is universal, because there are fewer resources with which to meet the increased needs. At the same time, some people become less able to pay for their care out-of-pocket, and they may be forced to give up insurance coverage because they cannot afford it any more or because they lose the jobs that provided that coverage. In mixed systems where much spending is private—it is more than half the total in 12 out of the 23 MENA/EM countries—these effects mean that more demand is necessarily thrown onto the public sector, just when it is least able to respond.

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4. A lottery is sometimes described as a tax on the inability to do arithmetic.

5. If a government were to announce that from now on lottery revenues would no longer be used to pay for health, would the public buy fewer lottery tickets?



In consequence, public spending on health really should be counter-cyclical (Musgrove 1997). Spending on public health probably does not need to be equally counter-cyclical, because the private effects of income reduction and insurance loss are not so significant. However, the danger is that if total public expenditure does not increase in bad economic circumstances, the public health budget will be cut so as to free resources for the additional clinical care demanded. Whether this tends to happen in MENA/EM countries can only be judged from more detailed expenditure information over a number of years. Where preventive interventions are concerned, cutting back on public health could have very serious consequences, leading to still greater need for curative care shortly thereafter. Relaxing in the struggle against vector-borne diseases is a clear example; this is part of the reason why the post-World War II campaign to eradicate or control malaria failed, and currently it is an important contributor to the resurgence of dengue fever in Brazil. Thus the financing of public health, whatever the sources, needs at a minimum to be protected against cyclical fluctuations.

### Unanswered Questions and Suggestions for Policy

This brief discussion of the economics of public health is not more than indicative; unfortunately, it does not lead directly to conclusions about the resources to spend on public health, the interventions and functions to finance, or the best way to raise the necessary revenues. That is partly because the answers to many questions require more detailed information about current spending and its effects, as well as estimates of the likely benefit from expanding some public health measures or introducing others. Getting good estimates of actual and potential costs and gains should therefore have high priority. The same is true for more subjective evaluations of how well public health functions are being performed, and what needs to be done to make them more effective. A review of this sort should also consider how health, and particularly public health, is currently being financed, and what the options are for ensuring an adequate and stable or even counter-cyclical resource base of general public revenues.

Despite the limited knowledge and considerable uncertainties characterizing these issues, even a cursory view suggests that governments can and should try hard to ensure that (a) public health measures are funded to the point where they contribute as much health gain per dollar spent as publicly funded clinical care; (b) they are implemented in every case where they can actually save money compared to such care; and (c) they are undertaken early enough to head off as much as possible the damage from those threats that are growing in the MENA/EM countries, and that will only become more costly to deal with if prevention and health promotion are too little or too late. Private markets are unlikely to accomplish this, so public health has a first claim on public resources.

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# 4

## *Public Health “Best Buys” in the MENA/EM Region*

Mariam Claeson

The demographic and epidemiological transition underway in the region of the Middle East and North Africa/Eastern Mediterranean (MENA/EM) is leading to increasing rates of noncommunicable diseases at a time when the region is still dealing with an unfinished agenda of protecting maternal and child health and combating communicable diseases. Accompanying these epidemiological changes is a nutrition transition, in which shifts in physical activity and diet are resulting in high prevalence of obesity and chronic and degenerative diseases—all characteristics of the later stage of the epidemiological transition.

In view of these transitions and changing disease pattern, how relevant for the region are the Millennium Development Goals (MDGs), which call for eradicating extreme poverty and hunger, reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria, and other communicable diseases? Although most countries in the MENA/EM region have made great progress toward achievement of the MDGs, and almost all countries are on track for most indicators, analysis of the major health outcomes and their determinants shows large differences in health and nutrition outcomes between income groups and inequitable distribution and access to quality preventive and curative services. To achieve the MDGs for all population groups within the region, the gap in health, nutrition, and population outcomes has to be reduced between the higher income quintiles and the poor. Recent analysis shows that improving health outcomes cannot be achieved by economic growth alone, but depends on policy and institutional changes that result in increased access to and use of effective public health and clinical services.

This chapter reviews “best buys” in quality preventive and curative services for the major conditions and diseases in the region. Best buys are here defined as those services that deal with a large part of the disease burden and that are among the most affordable, cost-effective, feasible, and culturally appropriate interventions to reduce the dual burden of illness and disability in countries of the region. It is hoped that this chapter will contribute to a discussion about priority setting and strategic options for rapidly scaling up the coverage of these interventions.

Although this chapter focuses on the identification of best buys, clearly, for many health policymakers, the main challenges are not only defining and prioritizing effective public health and clinical services, but also determining how to reduce the current inefficiencies in the delivery of those services. A common health reform goal in many countries of the MENA/EM region is to rationalize health services, reduce waste and inefficiencies, and improve access to and use of quality services.

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## Defining Best Buys

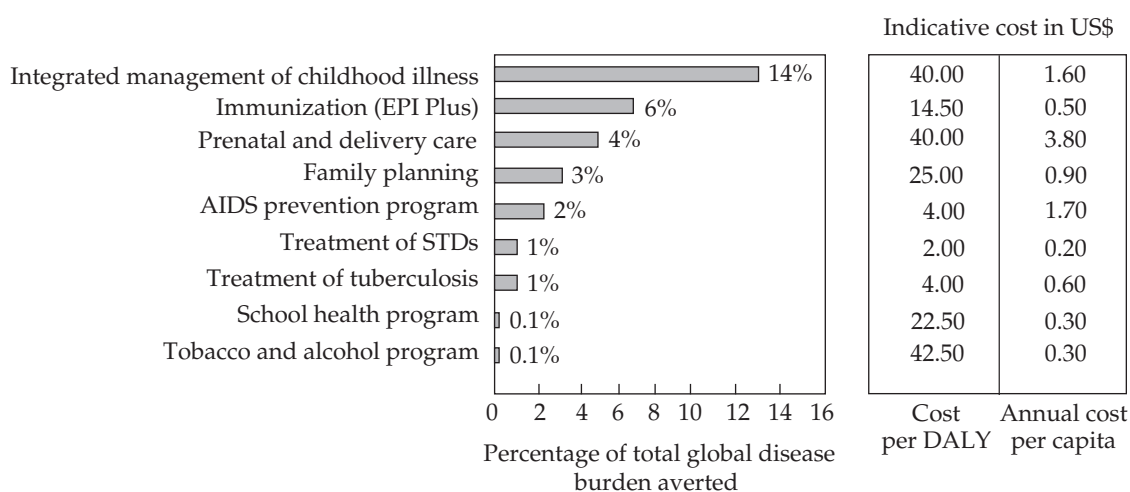
It is often assumed that we know *what* to do and that we now need to shift our focus to *how* to do it right. However, a recent review of all the World Bank's health, nutrition, and population projects from 1993 to 1998 revealed that only about a third of projects investing in basic services for the poor were investing in interventions likely to be effective and to impact the health status of the population (Claeson, Mawji, and Walker 2000). For example, of projects focused on safe motherhood, only a third sought to ensure a continuum of care from the household to the referral levels, and to provide the full set of interventions that would significantly influence maternal mortality. There is a need to review investments in basic services and to choose those interventions that are most likely to impact the key health outcomes—that is, those that are among the most affordable, cost-effective, culturally appropriate, and feasible to implement on scale. It is also critical to identify delivery strategies that are most efficient in reaching the poor.

*World Development Report 1993: Investing in Health* estimated the cost-effectiveness of a set of potential interventions for low-income countries (see figure 4.1). Since then, further cost-effectiveness analysis and evaluation of implementation of these public health and clinical services has been conducted to validate the earlier estimates. These studies have highlighted constraints to scaling up.

Table 4.1 shows a list of potential best buys for countries of the MENA/EM region, with the core interventions defined for each major public health and clinical service based on current data and information. In addition to the best buys identified in *World Development Report 1993*, the list includes other core interventions related to noncommunicable diseases, including cardiovascular diseases and diabetes type 2; mental health; nutrition; and risk factors other than tobacco, such as road safety. Information and data on cost per disability-adjusted life year (DALY) exist for some countries in the region, but are not reviewed here.

Some specific advances and challenges in the three main areas—maternal and child health and nutrition, communicable diseases, and noncommunicable diseases—are briefly reviewed below.

**Figure 4.1** Cost-Effective and Affordable Public Health and Clinical Services



Source: Adapted from World Bank 1993.

**Table 4.1** Best Buys in Public Health and Essential Clinical Services in the MENA/EM Region, Low- and Middle-Income Settings

Public health or clinical service	Core interventions
<i>Maternal and child health and nutrition</i>	
1. Reproductive health and childbirth	Family planning; prenatal care; clean/safe delivery by skilled birth attendant; postpartum care; emergency obstetric care
2. Family planning	Information and education; availability and correct use of contraceptives
3. Integrated management of childhood illness	Case management of acute respiratory infections, diarrhea, malaria, measles, and malnutrition, with referral; immunization; micronutrient and iron supplementation; feeding/breastfeeding counseling; anti-helminthic treatment
4. School health	Health-related school policies; provision of safe water and adequate sanitation in schools; skills-based health education; health and nutrition interventions such as deworming and micronutrient supply
5. Immunization	BCG at birth; oral polio vaccine at birth, 6,10, 14 weeks; diphtheria at 6, 10, 14 weeks; hepatitis B at birth, 6, 9 months (optional); measles at 9 months; tetanus toxoid for women of childbearing age; vitamin A supplementation; Hib
6. Nutrition	Promotion of maternal nutrition; infant feeding, promotion of optimal growth, and malnutrition reduction in children; vitamin A and iron supplementation and fortification; universal salt iodization
<i>Communicable diseases</i>	
7. HIV/AIDS prevention	Education on safe behavior; condom promotion; management of sexually transmitted infections; safe blood supply; prevention of mother-to-child transmission
8. Treatment of sexually transmitted diseases	Case management using syndromic diagnosis and standard treatment algorithm
9. Malaria treatment and prevention	Case management (early assessment and prompt treatment); selected preventive measures (including insecticide-treated bednets)
10. Tuberculosis detection and treatment	DOTS strategy; early case detection by sputum smear microscopy among symptomatic patients; standardized treatment regimen of six to eight months; directly observed treatment for at least initial two months
<i>Noncommunicable diseases</i>	
11. Cardiovascular diseases prevention (hypertension, coronary heart disease, cerebrovascular disease, heart failure)	Risk behavior modification (smoking cessation, diet and exercise); secondary prevention with drugs (aspirin, beta-blockers, antihypertensives, and lipid-lowering drugs) <sup>a</sup>
12. Diabetes (type 2) prevention	Lifestyle changes, including diet and exercise (school-based physical education, community campaigns, and individual health behavior change programs); case management (including hypoglycemic agents) <sup>b</sup>
13. Tobacco control	Tobacco tax increases; public information on health risks and benefits of quitting; warning on cigarette packs; counseling and support to quit; ban on smoking in enclosed public spaces
14. Road safety	Education and behavior change; regulation and enforcement of traffic laws; engineering and technology to improve hazardous roads
15. Cancer prevention and control (for example, cancers of the breast, lung, cervix uteri, bladder, and liver)	Tobacco prevention and control; hepatitis B vaccination; early detection/screening of breast and cervix <sup>c</sup> ; management of sexually transmitted diseases; schistosomiasis control where prevalent
16. Mental health	Case management for epilepsy, depression, and psychotic disorders in primary health care setting, including information, education, and communication for early recognition and care seeking <sup>a</sup>

a. Further research is needed to confirm affordability, cost-effectiveness, feasibility, and requirements in low-income settings.

b. Case management strongly recommended when affordable.

c. Early detection/screening for breast and cervical cancers, and also colorectal, skin, and oral cancers, only recommended if treatment is readily available.

Source: World Bank 2002a.

### ***Maternal and child health and nutrition***

Countries in the MENA/EM region have made significant progress in maternal and child health programs, including introducing and expanding integrated management of childhood illness and comprehensive reproductive health services. But great inequities and gaps remain in access to the full range of quality services that make up the best buys.

Some countries are still struggling with underweight, stunting, wasting, and acute protein energy malnutrition (for example, Somalia, Sudan, and Iraq), and vitamin A deficiency and iron deficiency anemia remain common problems. Among poor populations, moderate malnutrition is still frequent. Meanwhile, countries throughout the MENA/EM region are experiencing rapid increases in malnutrition in the form of obesity, with its risk for noncommunicable disease (NCD). For example, in Morocco there has been a shift toward an energy-dense diet, resulting in an increased level of obesity that is inversely associated with education and positively associated with income. Although females are disproportionately affected, nutrition is also a problem among men. Similarly, in the Arab Republic of Egypt the high levels of overweight are bringing about high rates of hypertension, diabetes, and other obesity-related problems. Interestingly, overconsumption linked to obesity exists even in the absence of sustained economic growth, for example in rural areas of the Islamic Republic of Iran. These trends, resulting in diabetes and other associated health problems, are significant public health challenges. Therefore, nutrition strategies in many countries have to combine the best buys for severe and moderately malnourished children with the prevention and control of obesity and diet-related NCDs.

The integrated management of childhood illness (IMCI) provides an example of the role that an intervention with well-defined algorithm- and evidence-based protocols can play in health reform. Twelve countries have been implementing IMCI since its introduction in the MENA/EM region in 1996. Health sector reform is underway in some of these countries, with the objectives of improving efficiencies, equity, quality of care, effectiveness, and financial sustainability of health services. As part of this reform effort, an essential package of health services is often defined. In the case of childhood illness and nutrition, IMCI provides a cost-effective strategy that helps improve efficiency through a more rational use of drugs, reduction in missed opportunities, and reduced duplication in structure, organization, and management of separate childhood disease control programs. IMCI provides a holistic approach to the individual child. The strategy also provides tools for decentralized training, supervision, monitoring, drug management, and organization of the workplace. The standard IMCI protocols for common pediatric conditions in children under age 5 also provide indicators that can help in monitoring quality performance, and in establishing criteria for accreditation. In sum, IMCI is not only a useful approach for low-income countries with high mortality levels, but can also assist in setting standards and rationalizing services at all income levels and in all resource scenarios.

The MENA/EM region also took early steps to introduce the mother-baby package based on the pillars of antenatal care, obstetric care, postpartum and neonatal care, and family planning. However, reductions in maternal and neonatal deaths lag behind other indicators, and all countries in the region need to focus on improving the quality of interventions and on reaching the poor with the best buys for maternal mortality reduction and reproductive health.

### ***Communicable diseases***

The best buys for the major communicable diseases are shown in table 4.1. The region overall is doing well with the introduction of DOTS (directly observed treatment, short-course) as the standard for tuberculosis (TB) control. By the end of 2000, 18 of 23 countries in the region had achieved DOTS expansion and paved the way for establishing effective TB control. Consequently, different approaches are needed for the countries that have achieved DOTS expansion and for those where expansion is lagging. In malaria control, the most vulnerable population groups are children and



pregnant women. Malaria is still the leading cause of child mortality in five countries of the region where Roll Back Malaria efforts are trying to expand coverage of the best buys, namely, early treatment and sleeping under insecticide-treated nets. HIV/AIDS is already beyond the early stage of the epidemic curve in Djibouti, Somalia, and Sudan, and the rates of new cases are rising steadily in all countries. Injecting drug users are at particular risk for HIV transmission.

The region is also doing well with the Expanded Program on Immunization. At the end of 2002, two of the seven remaining polio-endemic countries in the region were Egypt and Somalia. The goal is to stop transmission globally by the end of 2004. It is recommended that immunization programs for countries in the MENA/EM region include both Hib and HepB, given the endemicity of *Hemophilus influenzae* and hepatitis B, the cost per dose, and cost-effectiveness data.

### *Noncommunicable diseases*

Noncommunicable diseases, including cardiovascular diseases, diabetes, and renal disorders, are major contributors to the regional burden of disease. One of the most important risk factors is tobacco use. Where public health and clinical infrastructure and human resources are in place and fully developed, case management of cardiovascular diseases and diabetes should be a priority strategy, including secondary prevention and treatment with hypoglycemic agents, aspirin, antihypertensive drugs, and renal protective and lipid-lowering drugs. However, controlled trials, cost-effectiveness, and feasibility studies are needed to assess the public health application of simple and relatively cheap drugs (such as hydrochlorthiazides or reserpine to control blood pressure) in outpatient primary care. Although hypertension has been identified as a major risk factor globally, and many countries already include prevention and treatment of hypertension in their basic services, there is need for evidence-based standard case management protocols and treatment algorithms for low-income and resource-constrained settings, to complement preventive population-based strategies. What we do know is that preventive diet, exercise, and lifestyle changes—especially quitting smoking—are among the best-buy options. However, these interventions also need more operations research to identify optimal implementation strategies.

In cancer control, the best-buy bids from different sources<sup>1</sup> include comprehensive cancer prevention and control approaches—screening, early detection, and follow-up for breast, colon, skin, and oral cancers, and occupational health programs—as well as targeting of selected major risk factors. Some sources advocate early detection based on signs and symptoms, while others argue that diagnosis based on signs and symptoms results in belated interventions. There seems to be consensus, however, that measures to screen or diagnose cancer should be used only if the disease can be effectively treated and/or palliative care and support can be provided. As in the case of other NCDs, best buys to date include actions aimed at reducing critical risk factors and incorporating cancer prevention in ongoing programs (reproductive health, case management of sexually transmitted diseases, immunization, tobacco control, and so on).

Although more information is needed on the epidemiological burden of mental disorders, available statistics suggest that suicide and alcohol abuse are not major issues in the region (WHO 1999a, 1999b). However, the median age of the population is less than 20 years in many MENA/EM countries, and youth are especially vulnerable to the consequences of urbanization, breakdown of family structures, unemployment, and other social disruptions. These factors may influence psychosocial and mental health, with related morbidity and premature mortality.

Available data show that mental health policies exist in 68 percent of the countries in the region; substance abuse policies have been developed in 81 percent; mental health programs are in place in 86 percent; there is a mental health component of primary health care in 77 percent;

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1. Such as the World Health Organization, the U.S. Centers for Disease Control and Prevention, and professional associations.

treatment for severe mental disorders is provided at the primary care level in 50 percent; and a community mental health program exists in 55 percent. Drugs seem to be widely available, including phenobarbitone, phenytoin, amitriptyline, chlorpromazine, fluphenazine, and haloperidol (WHO 2001c, 2001d). Taking into account the recommendations made by the World Health Organization's *World Health Report 2001*, the key actions for middle-income countries are to strengthen the treatment of mental disorders in primary health care, educate the public, and strengthen human resources by training more specialists as well as primary care workers to recognize and deal with mental disorders. Since it is difficult to find data on the epidemiological burden of mental disorders in the region, it may be worthwhile to invest in monitoring community mental health, either by including mental disorders in the basic health information systems and/or by instituting surveillance for specific disorders such as depression and epilepsy. A focus on epilepsy, depression, and psychotic disorders, and on how to deal with them in primary care settings, is a priority for the region. Although alcohol abuse is not a priority problem, the abuse of other substances, notably intravenous drug abuse among populations involved in illicit drug trade, is a rising concern in some places.

### **Lessons Learned from the MENA/EM Region**

Experiences in Egypt and Jordan offer some useful insights into the challenges and opportunities for identifying best-buy health services in the region.

#### *The Egypt basic benefits package*

The health sector reform process underway in Egypt offers useful lessons about how to define and prioritize interventions. It aims at universal coverage of a basic level of care, including preventive, curative, and rehabilitative services. The emphasis is on cost-effective interventions to maximize well-being, address important community health problems, and reduce significantly mortality and morbidity.

A key step in launching the reform process was to define the broader public health programs that would complement, at the community level, the provision of individual basic services through the network of primary care facilities. The reform agenda was developed based on analysis of the demographic and epidemiological transition and the geographical and socioeconomic differentials in the country. A two-pronged strategy was developed that seeks to (a) provide universal coverage of basic preventive and curative services, and (b) strengthen the coordination, management, and implementation of broad-based public health programs. The objectives are to make significant progress toward the MDGs for maternal and child health—that is, to reduce the infant mortality rate (IMR), the under-5 mortality rate (U5MR), and the maternal mortality rate (MMR) over the next 10 years—as well as to reduce population growth and address the major causes of adult and overall mortality and morbidity.

Strategic decisions were made in support of a significant reduction in IMR among all population groups. For example, it was considered critical to address both maternal and child health by sustaining achievements in child survival and moving toward more integrated approaches; addressing maternal determinants, including expansion of reproductive health services; and dealing specifically with the determinants of the neonatal period, which would require capacity to handle obstetric emergencies and essential newborn care.

It was agreed that core quality services would be covered by such financing instruments as a proposed insurance scheme, and that a focus on “basic services” would not exclude the continuation of other services—although those other services would not be covered by the insurance scheme for the basic benefits package. It was also understood that the benefits of the basic package

would be largest among the rural and urban poor, where the disease burden is disproportionately large, while providing state-of-the-art coverage for all. The targeting would ideally be achieved through a gradual expansion of a family health system that would cover all families in the facility catchment area.

The cost of the benefits package was estimated at about 15–20 percent of the overall health budget. The basic services were defined by level of care, and for outpatient and inpatient services, to be adapted as needed (see table 4.2).

In addition to this basic benefits package, the other important element of the reform plan in Egypt was the proposed support to basic public health services aimed at both prevention and promotion. These were divided into five themes:

1. Healthy living, including substance abuse control, diet, stress reduction, and counseling
2. Injury prevention and control, focusing on traffic accidents, domestic injury and violence, and occupational hazards
3. Communicable diseases control, covering surveillance, community IMCI, immunization, and disease control
4. Environmental health, including indoor air quality, waste disposal, safe water, sanitation, and food safety
5. School health, focusing on healthy living, injury prevention, gender education, deworming, first aid, and screening and treatment of selected infections (schistosomiasis).

Among these topics, the World Bank with partners has supported one of the core public health functions: development of the surveillance system.

Since the inception and early stage of the reform process, what have been some of its innovative elements? First, to achieve increased coverage of basic services, innovative elements of the reform plans include the development of a new payment system (Family Health Fund); testing and refinement of a new care model (a family medicine model, with accompanying quality and accreditation standards); development of human resources (general practitioner and nurse

**Table 4.2** *Egypt Basic Primary Care Services*

<i>Population cluster</i>	<i>Health, nutrition, and population outcomes</i>	<i>Basic outpatient preventive and curative services</i>	<i>Basic inpatient services</i>
Women	Reduction in MMR Reduction in IMR Reduction in fertility rates	Family planning Prenatal and postnatal care Reproductive health services	Safe delivery Emergency obstetric care Neonatal services
Children	Reduction in U5MR Reduction in IMR	Immunization IMCI Nutrition interventions	Treatment of severely ill child
Adults	Reduction in adult morbidity and disease-specific mortality	Treatment of uncomplicated NCDs Treatment of schistosomiasis and other common endemic parasitic infections Treatment of TB and other common infectious diseases	
All age groups		Emergency management (acute illness, trauma)	Minor surgery Emergency management

training); and realignment of the public health program. Second, rationalization of the delivery system includes a master plan to translate the basic benefits package into service standards and guidelines, and planning for appropriate distribution of services, investments, and human resource development.

### *The Jordan health sector study*

A health sector study and subsequent analysis carried out in Jordan also provide some useful lessons (World Bank 1997). The burden of disease study and cost-effectiveness analysis identified TB treatment, safe deliveries, family planning, management of childhood illness, motor vehicle accident prevention and treatment, and prevention/control of hypertension and chronic obstructive pulmonary disease as priority public health and clinical interventions. The cost per DALY varied significantly for the range of interventions reviewed, from \$150 per DALY for TB treatment to \$10,500 per DALY for coronary bypass surgery.

One conclusion drawn from the sector study was that best buys should include maternal and child health to address the unfinished agenda. Another was that although adult noncommunicable diseases account for a large share of the burden of disease, tertiary-based interventions for adult health are not cost-effective. Instead, interventions such as antihypertensive treatment would be more cost-effective and efficient to deliver through outpatient prevention, detection, and treatment. Pharmaceutical reform was identified as central to health reform, including the development of treatment protocols for NCDs, such as for first-line diabetic drugs, for example.

The Jordan health sector study proposed adult health reform with six main elements:

- Outpatient treatment of hypertension, diabetes, and chronic obstructive pulmonary disease
- Major information, education, and communication effort to combat smoking and promote exercise and better nutrition, with creation of educational centers focusing on chronic disorders
- National cancer control strategy involving early cancer detection and action to combat smoking
- National road safety program
- Rational drug use program
- Monitoring of risk factors associated with adult mortality and morbidity and behavior research for effective health promotion.

### **Prioritization of Public Health and Clinical Services**

There are different approaches to prioritization of basic services. The best buys presented here have been identified based on assessment of the key determinants of the major health, nutrition, and population outcomes, including the MDGs, and on available evidence for efficacy and effectiveness of the different interventions that can influence these determinants. However, the effectiveness data are weaker for some of the proposed best buys than for others; a case in point is the weaker (but growing) evidence base for NCD interventions. Some interventions are both efficacious and effective, but not very efficient. The best examples of this in the region are the successful disease-specific programs that have been carried out in several countries, such as programs to control diarrheal diseases and acute respiratory infections, which have had impact on disease-specific mortality. However, the management of these parallel vertical programs—with disease-specific investments in training, drugs and supplies, and supervision and monitoring—is not efficient, and is difficult to sustain without significant external financial support. Shifting toward integrated approaches reduces such inefficiencies and can help achieve sustainability in service provision.

In addition, affordability of services plays an important role. Some interventions are cost-effective but not affordable in low-income and resource-constrained settings. For example, it will be important to bring down the cost of drugs for diabetes, hypertension, and other cardiovascular diseases. The estimated cost of the basic benefits package quadrupled when treatment of NCDs was included in the costing exercise conducted in Egypt. There are interventions that have been proven efficacious in case control studies, and effective when implemented on scale—but are not feasible programmatically. These include, for example, low-cost, efficacious, and effective vaccines that cannot be given as part of the routine immunization system but will require additional visits at different ages. Finally, some interventions meet all other criteria but still are not appropriate—and therefore not feasible—in a specific cultural context. Interventions related to feeding and foods, for example, need to take into account cultural practices to be feasible to implement.

A life-cycle approach can help decisionmakers identify, prioritize, and choose among the best buys. It proposes a risk assessment, starting with a review of risks—especially the risks to the poor—throughout the life cycle. These include risks during birth and the neonatal period; during childhood and the school-age years; and during adolescence and adulthood, especially during the reproductive period of women in adolescent and adult age groups. Such a risk assessment can draw attention to the often neglected periods of the life cycle and to underserved population groups in the region: neonates and adolescents, and increasingly, aging populations. Reviewing the risks at different stages of the life cycle helps us to identify factors at one stage of life that will make a difference at another stage. For example, young women’s nutritional status is a critical risk factor for giving birth to low birthweight infants, and the response to health and nutrition risks during early childhood helps to determine later school performance. Once risks have been identified, the next steps are to identify the corresponding interventions, the necessary policies, program inputs and outputs, and finally the indicators to measure progress in implementation.<sup>2</sup>

## Scaling Up

To increase coverage of priority interventions, close the gap in access between rich and poor, and make progress toward the MDGs and other major outcomes for all population groups in the region, what are some lessons learned that can help inform regional and country strategies for scaling up? Based on health reform processes in countries of the region to date—and on experiences elsewhere—policymakers should consider the following points.

- Both community-driven and facility-based approaches are needed to increase utilization of basic services and to achieve and sustain behavior change at the household and community levels.
- The best buys cover the continuum of prevention and treatment, from core family and community practices through the primary care and referral levels. This is critical for maternal and child health services and for communicable diseases control—and also for the prevention and control of noncommunicable diseases. One cannot choose between population-based prevention and facility-based treatment and counseling; they are interdependent and complementary strategies for achieving better health.
- Certain core public health functions are required for the delivery of all basic services, as shown in box 4.1. Investment in core public health functions and infrastructure is necessary for achieving sustained improvements in health.

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2. The life-cycle approach is further described in the chapter on health in the World Bank’s *Poverty Reduction Strategy Sourcebook* (Claeson and others 2001), and examples of applications of a life-cycle approach are found in *The Family Health Lifecycle: From Concept to Implementation* (Simon and others 2001).

**Box 4.1** *Core Public Health Functions***1. Policy development**

Public health regulation and enforcement\*  
 Evaluation and promotion of equitable access to necessary health services\*  
 Ensuring the quality of personal and population-based health services\*  
 Health policy formulation and planning  
 Financing and management of health services  
 Pharmaceutical policy, regulation, and enforcement

**2. Evidence for public health policies, strategies, and actions**

Health situation monitoring and analysis\*  
 Research, development, and implementation of innovative public health solutions\*  
 Provision of information to consumers, providers, policymakers, and financiers  
 Health information and management systems  
 Research and evaluation

**3. Prevention and control of disease**

Surveillance and control of risks and damages in public health\*  
 Management of communicable and noncommunicable diseases  
 Health promotion\*  
 Behavior change interventions for disease prevention and control  
 Social participation and empowerment of citizens in health\*  
 Reducing the impact of emergencies and disasters on health\*

**4. Intersectoral action for better health**

Environmental protection and health, including road safety, indoor air pollution, water and sanitation and vector control in infrastructure  
 Management of medical wastes  
 Tobacco legislation  
 School health/education

**5. Human resource development and capacity building for public health**

Development of policy, planning, and managerial capacity\*  
 Human resources development and training in public health\*  
 Community capacity building

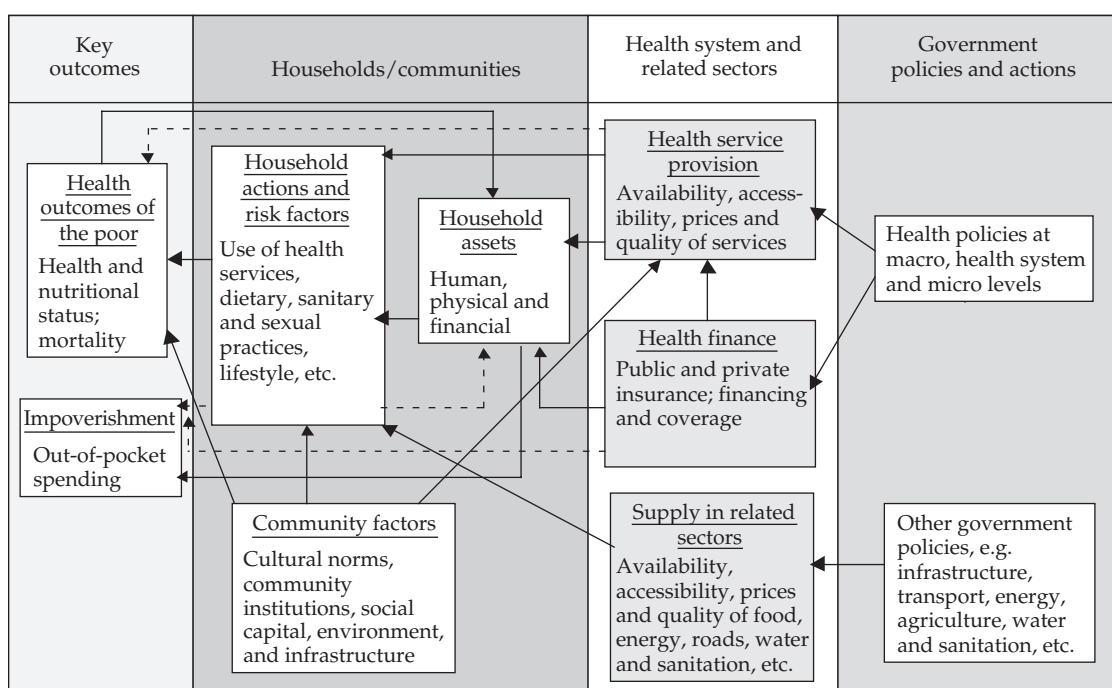
*Source:* World Bank.

\* Same as “essential” public health functions identified by the Pan American Health Organization, the U.S. Centers for Disease Control, and the World Health Organization.

- Most public health and clinical best buys require intersectoral collaboration: for example, road safety, tobacco taxation, school health, and HIV/AIDS prevention and control.
- The private sector plays an important role in the region. How to work with the private sector for public health is a major challenge—and an opportunity for improving health.
- Preventive and curative services have to reach the poor and be affordable to them. The practices and behaviors of households and the community at large are central to achieving improved health outcomes, as summarized in the last figure of the poverty reduction strategy framework (see figure 4.2).

Figure 4.2, from the health chapter in the World Bank’s *Poverty Reduction Strategy Sourcebook*, shows the major health outcomes on the left, the central role of households, the influencing factors



**Figure 4.2** *Determinants of Health Sector Outcomes*

Source: Claeson and others 2001.

intrinsic to health systems and related sectors, and the overall role of government actions and policies. Governments must define and prioritize best buys; the health system’s role is to make sure that those services are of good quality, easily accessible, and affordable through various financing mechanisms. The role of the household is to make use of these services as measured by increased utilization coverage. These coverage rates serve as useful intermediate indicators for achieving the major health, nutrition, and population outcomes, including the MDGs. Differential analysis helps determine whether the poor benefit from the best buys.

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# 5

## *Health Promotion: Key Public Health Strategy for the MENA/EM Region*

Ilona Kickbusch

Health promotion is defined by three strategic orientations that open new opportunities for public health action in the region of the Middle East and North Africa/Eastern Mediterranean (MENA/EM):

- Health is an *indispensable resource for societies* and a basis for both social and economic development of communities, countries, and regions.
- *Many sectors and actors contribute to health.* Health promotion strategies can and must be implemented throughout society, not only by the health sector.
- *People's participation* in their health is of central importance.

In its Ottawa Charter for Health Promotion of 1986, the World Health Organization (WHO) identified five key areas of health promotion action: develop healthy public policy, create supportive environments, strengthen community action, develop personal skills, and reorient health services. Experiences with health promotion around the world have shown that these three strategic orientations and five action areas constitute essential components of modern public health. A survey conducted by the WHO in 1998 showed health promotion to be one of the most critical of the new public health functions in the twenty-first century.

Like other countries in transition, many MENA/EM countries face the need to develop basic public health infrastructures and primary health care services at the same time as they are challenged to respond to the impact of global influences, rapid urbanization, changing lifestyles, a dramatic change in age structure, and a double burden of communicable and noncommunicable diseases. This calls for determined and targeted political action in many areas and resolute setting of priorities. The term “healthy public policy” tries to capture the challenge policymakers face in seeking to address the conditions under which people live. The goal is to ensure “secure, safe and adequate and sustainable livelihoods, lifestyles and environments, including housing, education, nutrition, information exchange, transportation and necessary community and personal health services” (Milio 1988).

The mounting evidence of the interface between healthy lifestyles and healthy living conditions (also called “social determinants of health”) points to healthy public policy as a necessary complement to, if not baseline strategy for, the wide range of public health interventions within the health sector, such as health protection, disease prevention, and primary health care. This is why it is crucial for MENA/EM countries to consider health promotion a central component of their public health strategy and infrastructure and not just “icing on the cake.” In particular, they must take steps to ensure the contributions of other sectors of government and of society to the structural and social determinants of health. In order to meet these challenges, the ministries of

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health and the health professions must exercise a new type of advocacy and leadership role. At the same time, other sectors must show a new accountability for the health consequences of their actions.

Toward this end, new financing mechanisms are needed that reach beyond the health budget and secure permanent funding for health promotion activities, so that health promotion and preventive action are not in continuous competition with the demands for treatment, cure, and care. There are strong economic, as well as humanitarian, arguments for increased investments in health. It is increasingly clear that an investment in health is an investment in poverty reduction and social development, an argument put forward by the recent report of the Commission on Macroeconomics and Health (CMH 2001). In considering funding mechanisms, it should be recognized that investments in other sectors—in education, for example—can constitute a significant investment in health.

Countries in the MENA/EM region are very heterogeneous, with per capita incomes ranging from \$350 to \$14,623. Yet many of the structural challenges facing policymakers in these countries are similar: political and social instability, growing populations, high levels of inequality in health, and double disease burdens.

There is an emerging consensus in the international arena on the types of strategic approaches that can help address the complex health patterns that are typical of many countries at the beginning of the twenty-first century. A major WHO health promotion conference in Jakarta, Indonesia in 1997 summarized them as follows:

- *Promote social responsibility for health* throughout society.
- *Increase investments for health development* and include health as an integral component of any national development plan that aims to increase human and economic resources.
- *Consolidate and expand partnerships for health* by working with other sectors and a wide array of partners, including the private sector, civil society, and religious groups.
- *Increase community capacity and empower the individual* to influence the determinants of health.
- *Secure an infrastructure for health promotion* that includes regulatory action, institutions, a broad range of associations and organizations, and an appropriate financial base.

These strategic approaches have come to dominate many recent global health initiatives on both infectious and chronic diseases, and indicate a major reorientation of what we consider to be health policy and the role of the health sector. They are explored in further detail below.

### **Promote Social Responsibility for Health**

There is increasing recognition that responsibility for health extends throughout society. The private sector, major foundations, religious groups, and civil society are involved in health initiatives at all levels as never before.

Many of the key components of social responsibility for health resonate with long-standing ethical principles and cultural traditions in the MENA/EM region. The World Health Organization's Eastern Mediterranean Regional Office (WHO/EMRO) has published a series of booklets on the relationship between health education and religion. Of particular interest is *Health Promotion through Islamic Lifestyles: The Amman Declaration*, which explores Islamic traditions in the light of new health challenges (WHO 1996). Recently the Islamic Global Health Network developed an Internet-based course that includes lectures on the topic of Islam and health and invites an interfaith dialogue. Religious leaders have been involved in a number of health initiatives in the region, notably the tobacco-free initiative. Experiences with health promotion around the world have shown that its basic principles allow it to be culturally sensitive and appropriate, particularly if its central tenet of community participation is adhered to. Indeed, to be effective,

health promotion must be responsive to local requirements and integrated into the texture of everyday life.

Yet it must also be said that some health promotion principles, policies, and strategies—such as the empowerment of women—do not always fit easily within established frames of reference in the region. This is especially true in the case of certain health challenges, in particular HIV/AIDS and female genital cutting. Many strategies to fight HIV/AIDS are not easily accepted within certain cultures, settings, and religions, but they may prove necessary in the face of major disease threats. Strategies to promote health by curbing tobacco use or improving conditions in the workplace can meet with resistance from powerful interest groups. As a consequence, health is linked to both economic development and political priority setting as never before. *This calls for courageous leadership in the political and social arena and an extensive debate and search for strategies within each regional context.*

There are also constraints linked to the health sector itself. Even well-trained and well-meaning health promoters find it difficult to adhere to the concepts and principles of health promotion because the overall approach within the health sector is based on a disease rather than a health paradigm, and on changing individual behavior rather than addressing the social determinants of health. Indeed, it has been difficult in many countries to find an appropriate “home” for health promotion activities within the health sector because of the fact that health promotion activities need to cut across issues, disciplines, and sectors, rather than working on a vertical disease-by-disease model.

There are ways in which these barriers can be overcome, and they lie both in the strength of the institutions that implement health promotion measures and in the competence of health promotion professionals. These professionals need a very special skill set in order to function well in such a multifaceted arena of dialogue and conflict. The health promoter must be an instigator, facilitator, and consultant for processes of health development that are managed within the policy arena, within organizations, and within the community itself. This implies a whole new range of competencies that should be part of the training and education of health promoters. They include leadership, motivation, team-building, and conflict resolution skills, among others. Many of these are closer to the fields of policy, law and regulation, communications, community development, and management than to the traditional skills expected in the public health sector. A priority, therefore, must be to establish training and capacity-building opportunities for health promotion professionals in MENA/EM countries.

### **Increase Investment in Health Development**

Investments in health promotion can provide significant health gains. We now know that great differences exist between the population health levels of countries with similar levels of gross national product (GNP), and that a small group of countries with low GNP per capita has achieved extraordinary results in relation to health and life expectancy. In light of this it is essential that the MENA/EM countries include a strong commitment to basic health investment, and especially to health promotion, in their development plans. The first question to be asked when developing healthy public policy is: Which investment will create the greatest health gains?

Improvements in health, however, are not the only benefit to be realized from investment in health promotion. Increasingly, the success of health promotion programs is measured not just in terms of their intrinsic value to health and human life through reduced morbidity and mortality, but also in terms of their contribution to a country's overall economic and social development. Health promotion must become an integral part of fighting poverty and inequality, building local capacity, empowering people, and creating wealth at the local level. This points to the need for a new mindset. Many policymakers—though not all—continue to see “health” in terms of medical care and health services only, and thus categorize the health budget as social expenditure rather than as social investment.

The three major trends affecting the MENA/EM region—intense economic transition, transition in the burden of disease, and global influences such as the spread of HIV/AIDS—bring with them a new interface of social and health challenges that health promotion strategies can address. For example, data from around the world show that accidents, injuries, violence, substance abuse, noncommunicable diseases, and a wide array of other health risks are disproportionately concentrated in poorer populations. The risk of road crash injury is greatest for the poor, and especially for young people. The most vulnerable groups on the road are young males and pedestrians and cyclists. Therefore the second key question in health policy must be: Does the policy measure help reduce the health gap? Which groups and sections of the population do policies need to focus on in particular?

### *Investing in the young generation*

Demographic data from 1996 indicate that children under 15 years of age continue to account for about 41 percent of the population in the MENA/EM region (WHO 1999). It therefore makes sense to focus healthy public policy development on strategies that address the needs of children and adolescents as a matter of urgency. International examples as well as examples from MENA/EM countries show that with sufficient political will, progress can be achieved. Despite lip service, however, most countries do not sufficiently address the needs of young people. They are automatically considered “healthy” because they are young, even though in many countries they bear the brunt of socioeconomic change and upheaval, sometimes as victims and sometimes as perpetrators.

A review of health challenges in the region suggests six key areas for healthy public policy action that can have a significant impact on the health of young people and on the future wealth of MENA/EM countries:

- Educate girls and increase their health literacy
- Introduce tobacco control measures
- Support improved nutrition
- Increase traffic safety
- Openly address issues of HIV/AIDS and sexually transmitted diseases
- Embark on a dialogue on all forms of violence.

Such a strategy could start with a “youth public health report” for each country, assessing young people’s lives along public health and economic dimensions. Topics could include, for example, rural poverty among youth; the lives of young people in refugee camps and war-torn areas; patterns of migration to the cities and to foreign countries; young people’s livelihoods (dangerous occupations, prostitution); social pressures on adolescents that lead to health-damaging patterns and behaviors; and adolescent mental health problems that can manifest themselves in socially disruptive behaviors. This should be complemented by an analysis of policies in different sectors and how they affect youth—an exercise in which young people themselves should participate.

WHO/EMRO has addressed many of these issues in a strategy on adolescent health and development, and has developed programmatic guidelines that have been field-tested in a number of MENA/EM countries. Research studies have been undertaken and a program has been developed to measure protective and risk factors. Many of these issues were raised in an “Arab Declaration” at the World Youth Forum held in Dakar in 2001, and they have been taken up by nongovernmental organizations (NGOs) such as the scouting movement. But they need a political commitment at the highest level to ensure follow-through and the development and coordination of policies. In short, they need to be turned into a consistent and sustainable policy effort.

If significant investments are made in youth health policies, the MENA/EM countries could benefit from what a recent World Bank analysis calls the “biggest demographic gift” in the region’s modern history: in the early twenty-first century the working-age population will grow by 2.45 percent while the dependent population will grow by only 0.25 percent (Yousef 2000). A healthy population can translate these favorable demographics into economic growth. Investment in youth health is, accordingly, a forward-looking strategy of great interest beyond health policy as such.

### *Girls*

A key area of investment in young people—investment in girls—is frequently hampered by cultural and religious restrictions. Gender acts as an important determinant of health inequalities, in part because of the generally lower educational attainment of girls. International studies have repeatedly shown that increasing the educational attainment of girls is the most sustainable health strategy any country can pursue: it results in better family health and lower infant mortality and morbidity. The schooling of girls is also perhaps the single most effective investment a developing country can make toward economic and social development.

Many examples exist of successful programs that recognize empowerment of girls and women as an important approach within Islamic societies. For example, the Family Planning Association of Pakistan embarked on a project that raised public awareness about discrimination against girls, and thereby promoted their value and status. Pakistani girls reported that the project made them aware of unequal food distribution within families, among other things. Projects such as these may have played a role in improving the health and survival of Pakistani women: until a few years ago female life expectancy was lower than that of men, but this has now been reversed.

In Bangladesh, projects that have focused on microcredit and education for women have contributed to significant drops in child mortality despite prevailing poverty and inadequate health services. Child mortality fell from roughly 20 per 1,000 in 1981 to 7 per 1,000 in 1996—a decline that was concomitant with a marked reduction in gender and socioeconomic disparities. An analysis of the reasons for this positive development shows a long-term political commitment to improving health care, reducing poverty, and improving women’s status; for example, women’s rights were defined in the 1973 Bangladesh constitution. While the country has no formal health policy, many other development policies have contributed: education, agriculture, nutrition, rural development, and social welfare.

### *Boys*

The important focus on girls must not lead to neglect of the health problems of boys. We do not have as much data on boys as we do on girls, but the health of young men is linked to social stability and economic development in a number of ways. Healthy public policies need to address:

- The increasing violence in countries of the region, including violence against girls and women
- The mounting toll from accidents and injuries, which are now the leading cause of death in the 15–44 age group
- The beginning of the spread of HIV/AIDS, which is now the third leading cause of morbidity in the most economically productive sectors of the population
- The increase in substance abuse.

In order to develop healthy public policies it is essential to understand what has been called the “youth trap.” The MENA/EM countries are experiencing rapid growth of both their economically active population and their dependent population, at a time when economies are lagging.



As a consequence, the young cannot support the old and the old cannot support the young. The pressure on the family system and the demographic bulge of young people left jobless by the prolonged economic crisis have led to problems of social integration in many MENA/EM societies, particularly in the urban centers. In contrast to the situation in some other developing countries, this includes large numbers of young men who are educated but cannot find employment. The high rates of youth unemployment and the shortage of affordable housing for young adults are two intertwined problems for the youth of the region, with potential political and social implications. A healthy public policy solution in this case might involve creating employment through housing programs.

### **Consolidate and Expand Partnerships through Setting Health Objectives**

The health sector must take the lead to involve other sectors and include them in the setting of health, social, and economic development objectives. Countries that have chosen to develop health objectives and targets have found that the process helps to engage other parts of government and society in the health debate. It also helps to create a new policy mindset so that all actors can approach contentious issues strategically and work toward a consensus on priority areas.

Many middle-income countries—particularly in the face of major epidemiological shifts—are finding it useful to introduce health objectives. Such policies usually recognize both health and social objectives, and address the interface of a reduction in mortality rates, an increase in life expectancy, and an improvement in the quality of life. Countries in the MENA/EM region have been exploring such an approach in the context of the Healthy Nations initiative under the auspices of WHO/EMRO. The Arab Republic of Egypt recently adopted a comprehensive programmatic approach to public health with a strong health promotion and equity focus, known as Healthy Egyptians 2010. The policy has three main objectives, which are clearly not just health but also social goals: it seeks to enable Egyptians to live longer, healthier lives; to ensure equity; and to ensure universality. Similar processes are underway in Latin America, Eastern Europe, and elsewhere.

It is important that the objectives and targets of such policies be drafted by committees or boards that involve a wide range of stakeholders: different ministries and sectors, parliamentarians, health professionals, academia. The results of this work should be circulated widely for comment at all levels of government and should become part of an inclusive national debate on health priorities. For example, a multisectoral working group defined the following priority areas for Egyptian policy: (a) control of unintentional injuries, (b) environmental health and control of pollution, (c) tobacco control, and (d) maternal and child health. It is important to recognize that these areas can only be effectively addressed through multisectoral mechanisms. The Egyptian Ministry of Health will take a leadership role and coordinate a consortium that includes NGOs; private health providers, health directorates, and districts; politicians and legislators; the ministries of education, transportation, interior, social affairs, and industry; the press; universities; and agencies concerned with the environment and communities.

This is similar to approaches in other countries, where boards have been established to monitor progress on achieving health objectives. The National Board of Health in Lithuania, for example, has 15 members: five representing municipal health boards, five from organizations with an interest in public health, and five who are health specialists. An interesting element of the Lithuanian example is accountability. The board must present annual reports to Parliament on the state of population health, and it has the right to demand government papers and information.

A multi-stakeholder group also developed the recent Swedish health policy called “Health on Equal Terms: National Goals for Public Health.” It identifies six priorities: strengthening social



capital; enabling youth to grow up in a satisfactory environment; improving conditions at work; creating a satisfactory physical environment; stimulating health-promoting life habits; and developing a satisfactory infrastructure for health issues. These six priorities are translated into 18 goals. For each goal the policy identifies the specific target groups, the players, and the measures to be taken—for example, at different levels of government or in the private or voluntary sector. One important element of the Swedish policy process deserves highlighting: in recognition of the crucial need to develop partnerships and build consensus, the stakeholder group was given a period of three years to develop policy goals and priorities (NIPH 2000).

*Increasingly, the development of health objectives is a democratic process.* The link to Parliament in Lithuania underlines how crucial it is to have health objectives adopted and continually reconfirmed at the highest political level. Not only do they need political legitimacy; they also continually require action by very different parts of government.

This is particularly true of health objectives that can lead to conflicts with different parts of society, such as the private sector or other interest groups. Two areas of healthy public policy that are of prime importance to the MENA/EM region (and central to the health of young people) are tobacco control and control of injuries. Both are highly dependent on sectors outside of health: they involve taxation, marketing, policing, infrastructure investments, educational measures, and regulations of various types, such as speed limits, seat belt laws, and laws against smoking in public places. Many of these measures are potentially controversial. In order to maintain political commitment to such a multisectoral effort, health issues need to be continuously discussed with politicians, parliamentarians, government officials, and the public. The media play an increasingly important part in this discussion.

### *The process of building partnerships*

All this of course is not easy. Most professions have not learned to work together, and the sectors speak different languages. Often they bring different sets of goals to the table and need to be convinced that supporting a health strategy will allow them to fulfill their own missions better. Schools, for example, are mainly responsible for providing education, not health. But a strategy of “health-promoting schools” could convince school directors, administrators, teachers, and parents that health can be an important input to learning and that a health-promoting school will be able to reach its educational goals better.

Bringing together different agencies and interests can be very complex and requires skills in motivation and negotiation from the side of the health-promoting team—especially if the proposed project is not in response to an immediate crisis but is conceived as a long-term development approach. Significant time must be allotted for the various stakeholders to get to know each other, to dispense with preconceived perceptions of each other, and to develop a feeling of joint ownership rather than competition. It is important not to underestimate the effort required. A number of key components have been mapped out by Ina Simnett (1995):

1. *A joint identification of the problem.* It is crucial that a significant amount of time be spent on this phase. Even when they use the same words (such as “health”), participants in the planning process might have quite different understandings as to what they mean.
2. *Generating alternative solutions.* Participants need to be encouraged to think “outside the box” and explore solutions that their agency would not necessarily embark on alone, but could possibly undertake in partnership with others. This includes identifying the many assets each of the partners brings to the table.
3. *Evaluating the alternative solutions.* Participants need to do a reality check on the proposed solutions and perhaps generate yet another way of approaching the problem. In this phase,

as in the preceding one, the health promoter facilitates the process of exploration and discovery, making sure all issues are put openly on the table and that the partners are realistically assessing their capacity to implement the various alternatives.

4. *Decisionmaking/plan of action.* In a cooperative project this is the most important phase because it creates joint ownership. It requires the health promoter to show significant skills in the art of negotiation, because if one of the partners has felt pressured into accepting a certain solution, problems will surely follow in the implementation. Resources must be clearly identified and an understanding developed of the different types of resources the various partners bring to the table (the private sector might bring management expertise, the NGO sector outreach, and so forth).
5. *Implementing the solution.* Now all partners have to commit to action and take responsibility for certain parts of the project. Significant trust should have been built between the partners by this stage, but one should never underestimate the problems or misunderstandings that can emerge along the way and need to be resolved.
6. *Reviewing and revising the solution.* The agreements have to allow for adjustment. Usually real life is much more complex and surprising than the best-laid project plan.

### ***Partnerships and democratization***

A study by the World Health Organization analyzed best practice in alliance and partnership building for health promotion (Gillies 1998). Many of the examples reported policy development as a major achievement and success indicator of interventions. They focused on larger macro issues, or “determinants of health,” addressing the physical environment, the working environment, and the economic and social environment. These projects crossed borders by creating income-generating activities and boosting local economies. They addressed poor sanitation, family violence, and village governance, sometimes giving women a say in community planning for the first time. In a range of societal contexts, then, health can become a means of democratization.

A recent study from Nicaragua underlines the interface between NGOs, democracy, and development (Ewig 1997). It shows how the women’s movement in Nicaragua combined practical efforts (such as to improve health services for women) with strategic efforts (to change the subordinate position of women in society). The movement managed to achieve significant influence on state health policies and some effect—though more difficult to measure—on societal values with regard to women. In other contexts, similar effects can be shown for the gay rights movement in relation to HIV/AIDS.

The WHO has launched a number of “settings projects” that seek to advance health promotion in specific settings, notably the Healthy Cities Project and the Global School Health Initiative. These projects have been of particular interest to the countries of Central and Eastern Europe because they see them as an opportunity to practice democracy. The Latin American countries, when discussing health promotion strategies at the Fifth Global Conference on Health Promotion held in Mexico City in 2000, had a similar strong focus on democratization and strengthening civil society, particularly among indigenous populations. Amartya Sen, in his recent book *Development as Freedom* (1999), also makes the point that it is not only the end but also the means that are important in achieving development, democracy, participation, and commitment to social justice and fairness, because these are values that lead to high social capital and increase sustainability.

### **Increase Community Capacity and Participation**

Which kinds of partnership work best, and why? There is considerable evidence that the stronger the representation of the community and the greater the level of community involvement in health

promotion activities, the greater the impact and the more sustainable the gains. Examples come from initiatives on specific diseases and on issues such as HIV/AIDS, smoking, and family planning, and from a range of settings such as workplaces, schools, and hospitals. The WHO's Healthy Cities Project gives many examples of how this can be achieved, but the WHO report on partnership building also sounds an important warning: community effort cannot replace lack of action and responsibility in other sectors (Gillies 1998). Reciprocity is key, and efforts must be made across levels of society and across formal and informal networks. This underlines the point made by the Ottawa Charter: healthy public policy, supportive environments, personal skills, and community action interact in productive ways if they are harnessed and supported through an inclusive strategy.

National efforts need to be supported by regional and local action. The Healthy Nations initiative opens the door for MENA/EM countries to exchange experiences in setting healthy policy objectives and addressing cross-national issues of concern to all countries. First steps in this direction have been taken with the Pan Arab Project for Family Health (PAPFAM), which will be implemented in 12 countries, and with the Arab League's involvement in tobacco control. Action can also be taken at the local level through a similar process, which can lead to municipal health plans; examples include the Healthy Cities Project and similar WHO initiatives such as the Safe Communities Network and the Healthy Villages Project. Some experiences have been gained in the MENA/EM region with such approaches and they show interesting potential. And if we look to other low- and middle-income countries, for example in Latin America, we see that municipalities are now one of the strongest forces for health promotion. The effort in Latin America is led by the Association of Mayors, which has decided that health is a valuable resource for cities and communities.

The section on setting health objectives underlined the need and the potential for the health sector to cooperate with other sectors: frequently their willingness to invest or take action is necessary in order to achieve health gain. Involvement of local sectors and community organizations can be strengthened through participatory initiatives such as those focused on healthy cities, healthy villages, and health-promoting schools. The MENA/EM region already has a number of such initiatives, but they urgently need to be taken to scale. There is a need to explore the potential of public-private partnerships, new funding for health promotion based on such partnerships, and new ways for civil society to contribute to health promotion in the region.

Cooperation with nongovernmental organizations can ensure that resources reach the local level and are applied at the family level where they are most needed. The success of Bangladesh in improving child survival is very much due to intensive cooperation between the government sector and NGOs.

An example of a successful community-based program is the Health Promoting Lifestyles Profile study in Jordan. Through participatory education, emphasizing self-actualization and interpersonal support, the program has increased Jordanian women's awareness of health issues and provided them with skills to improve their own health and that of their families. Similar positive experiences with well-targeted health promotion messages can be found with rural women elsewhere. One example is the iron deficiency anemia project conducted in rural primary care clinics in Egypt, which used quality assurance methodology to build local capacity. This effort reduced the prevalence of iron deficiency anemia among pregnant mothers in the study population from 100 percent to 5 percent, and among children from 37 percent to 5 percent.

### *Skills for community health promotion*

The major part of health promotion work takes place at the community level. Gillian Kaye, in a very useful book on community participation (Wolff and Kaye 1995), has developed the six "Rs" of participation:

- *Recognition* of the community contribution to health. Health is a resource that is produced by people in the context of their everyday lives. People are very capable of defining their priorities and discussing strategies to promote health.
- *Respect* for the role of “ordinary” people. Professionals and politicians involved in health programs must learn to listen to the community, and even when there are disagreements, show that they recognize the contributions of laypeople.
- Having a *role* is important for self-esteem and an important determinant of health. Community health groups allow people to contribute in many different roles.
- *Relationships* are built and social capital is created, another important determinant of health.
- *Rewards* must outweigh costs. Community members invest a lot of time in health programs and must gain recognition for it, through visibility, prizes, and success.
- *Results*, of course, are the most motivating factor of all.

Community participation is crucial to health promotion because it is part of a virtuous cycle. We know many of the factors that create health: social integration, social capital, feelings of self-esteem, a sense of control. Many models from health education and from psychological and social research show us that people who feel part of their community, who feel they are contributing something useful, who feel in charge or who feel needed, are healthier. Successful strategies of health empowerment work with such a virtuous cycle; while bringing the community together and having effects far beyond health, *they bring health benefits to individual members and to the community overall.*

A major step in any community-based health promotion strategy is to identify the health resources in people and families, in community organizations and businesses, in the different sectors of city government, and in the broader environment. The community should be encouraged to develop a map of its “assets, riches, and capacities” along with a map of its needs. The map of neighborhood assets provides the first list of potential participants in the community planning process.

### **Secure an Infrastructure for Health Promotion**

A final strategy is to build an infrastructure for health promotion that includes an appropriate financial base, a regulatory framework, institutions, a broad range of associations and organizations, and opportunities for education and training.

Slowly, countries are realizing that their health financing systems have not taken account of the financial needs of health promotion. Health budgets usually devote a minimal percentage of funds to health promotion activities, and the infrastructures for health promotion in ministries of health are weak and do not have much status. This makes it difficult to do the kind of healthy public policy advocacy and development work that has been described above. In response, there has been an effort to develop new financing models such as “health promotion foundations” that receive their funds either through a dedicated percentage of the tobacco tax or as a dedicated allocation for health promotion within the health insurance contribution. Such foundations are particularly useful in encouraging community action and broad partnership involvement, as in the case of the recently established health promotion foundation of Thailand.

Health promotion financing models appropriate to the MENA/EM region must be explored in order to increase funds for health promotion, prevention, and primary health care, particularly at the village and community levels. The *waqf* system of charitable endowments common in Muslim countries might hold promise in this regard. So might examples of community financing, such as the health financing program in Indonesia known as Dana Sehat. Indeed, programs that combine involvement and empowerment with financial support may hold the most promise. This should

be kept in mind as some countries in the MENA/EM region explore the setting up or reform of social funds and social/health insurance systems. The basic needs approach, small grants, and microcredit programs have shown what much of the research on development underlines: the great synergy between socioeconomic activities and health activities. While each on their own can lead to good health outcomes, together they achieve significantly higher rates of success. This is why finance ministers and health ministers constitute such an important alliance.

One of the most crucial components of health promotion infrastructures is regulatory action: laws and regulations to ensure safe living conditions and workplaces, food safety, and appropriate restrictions on tobacco and alcohol, to name but a few. Specific approaches include trade policy, advertising regulations, tax policies, and pricing.

### *Government-based infrastructures*

Although many organizations throughout society can contribute to health promotion, *a central health promotion entity within government is essential in order to ensure determined action on healthy public policies and inequities in health.* In most cases it will be located in the ministry of health or linked closely to a public health infrastructure. It is important to ensure that such a health promotion unit is not just a renamed health education division expected to run health education campaigns under a new name. In fact, many European countries have health promotion agencies that have grown out of health education bodies and are mainly tasked with capacity building; they have little clout in the policy arena. Whatever the form, location, or name of such a governmental entity for health promotion, it needs:

- A power base for advocacy and intersectoral work
- The ability to be heard on controversial issues
- Easy access to decisionmakers and policymakers.

Different models exist. In highly decentralized systems it is important to have health promotion units at the provincial and district levels as well as at the local level. For example, the Health Promotion Directorate in South Africa links with health promotion coordinators in all the provinces.

Many countries have a mixed system, with responsibility shared between units within government and separate agencies linked to the government. In England, for example, the health promotion units within government are complemented by a Health Development Agency and an intersectoral committee to oversee the implementation of health objectives under the initiative “Saving Lives—Our Healthier Nation.” As more countries set national health objectives, new intersectoral committees and boards are established which sometimes take on oversight functions of their own. Increasingly, not only government officials but also parliamentarians are involved in such committees. Tasks include monitoring objectives and the implementation process and regular reporting back to government, as in Lithuania. In Sweden this task lies with the National Institute of Public Health, which has a strong health promotion orientation. In many countries intersectoral government committees also exist for special health promotion challenges, in particular related to HIV/AIDS.

At the local level, the WHO’s Healthy Cities Project has led to innovative new infrastructures for health promotion. The project guidelines recommend that a Healthy Cities Project office be established either in the local public health department or in the mayor’s office, and be complemented by an intersectoral Healthy Cities committee. Some cities have also created walk-in health promotion centers sometimes known as “Healthy City shops” or “health houses.” Another model, popular in Germany, has been regular roundtables on health promotion. These



bring together a wide range of partners (city or regional government, health insurance organizations, medical and other professional bodies, nongovernmental organizations) active in health promotion initiatives.

### *Independent infrastructures*

In many countries financial constraints make it difficult to rededicate funds from within the health care system for health promotion. As a consequence some countries have created new types of infrastructures linked to new financing models. The most recent are health promotion foundations that are independent from ministries of health but linked to them through different mechanisms of accountability. Such foundations can be financially supported in several ways:

- Through a levy on the tobacco tax. For example in Victoria, Australia an extra 7 percent was added to the tobacco tax. In Thailand 2 percent of tobacco and alcohol taxes will be dedicated to the Thaihealth Foundation.
- Through the health insurance system. The Swiss health promotion foundation is funded by an extra charge on individual health insurance premiums.
- Through redistribution of government health funds. The Austrian health promotion foundation is funded by redistribution of the state health care budget assigned to three of the provinces.

These foundations are overseen by intersectoral boards and frequently have accountability to Parliament. In the United States long-standing philanthropic organizations—sometimes linked to major foundations and to health maintenance organizations—have been funding health promotion initiatives for many years.

### *Structures in institutions and settings*

The World Health Organization's promotion of a wide range of "settings for health" has led to increasing interest in health promotion in workplaces, schools, and hospitals. Such programs have led to a reorientation and strengthening of health units in these organizations and have given them new access to the management and decisionmaking structure. In the developing world, projects in villages (as in the Syrian Arab Republic) and in marketplaces have been popular. These projects in turn create networks at the national, regional, or even international level to exchange experiences and benchmark their achievements. There are such global networks on cities, schools, and physical activity, and of course increasingly on tobacco control. Health promotion is also a component of many microcredit programs and of programs to promote the involvement of women.

Schools, of course, are central infrastructures for health promotion. They provide the opportunity to introduce health curricula into classrooms, and even more importantly, can provide settings for joint health action. An example is Jordan's "health-promoting schools," which aim to be healthy and safe environments. Many such projects are underway in the MENA/EM region.

The Healthy Cities Project involves the mayor and all major decisionmakers and political parties in a given city in a process that helps them understand what health means to their community, and allows the community to participate directly in planning for health and setting priorities. This makes city management more accountable for health and creates new responsibilities and infrastructures in the process. The Healthy Cities Project and the Women's Development Program in Alexandria, Egypt have taken up issues related to environmental protection and have worked to discourage harmful traditional practices, with a focus on squatter communities.

### ***Nongovernmental organizations***

The contribution of nongovernmental organizations to health promotion is crucial. They play a central role in setting health promotion agendas, in advocacy, and in delivery of health promotion initiatives, especially at the local level. They can be broad organizations that advocate for health improvements in general, or single-issue groups such as those focused on women's health, tobacco control, or HIV/AIDS. Many large NGOs have adopted health issues as part of broad agendas; examples include the Alliance for Arab Women, the scouting movement, or Rotary International. Private foundations dealing with specific issues, such as the Noor Al Hussein Foundation, play an important role. So do faith-based health organizations: mosques and churches in the MENA/EM region have, for example, been active in tobacco control.

Networks of health promotion professionals at both the national and international levels, such as the International Union for Health Education and Promotion, contribute to advocacy and capacity building. Many Arab organizations for health exist, and many international organizations have helped local and national NGOs to take up a health promotion agenda. Public-private partnerships exist in a number of areas in the MENA/EM countries, in particular in the important area of micronutrients.

### ***Education and training***

In the last 25 years many new infrastructures for health promotion training and capacity building have emerged. Master's programs in health promotion have been established, courses are held as part of the general public health training, and there are many opportunities for distance learning and advanced professional training.

Research bodies have begun to take on the health promotion agenda and have created new funding possibilities in the field. Several major health promotion journals exist; one of them, *Health Promotion International*, was founded just after the Ottawa Charter was published and is now in its second decade. There is a wide body of literature in the field and an excellent selection of tools and handbooks. Indeed, the knowledge base of health promotion has become extensive.

Making these resources available in the MENA/EM countries, developing locally appropriate materials, and strengthening the academic and capacity base of health promotion is a priority endeavor for the region.

### **Conclusion**

Health is a resource that should be understood as a key area of long-term investment across sectors of government. Sound economic policy contributes to health, and health in turn contributes to economic and social development. This process can only happen when determined leadership insists on the value of health as an integral component of human and social development and ensures the interface of health promotion with poverty reduction and rural development efforts. Focused objectives are crucial to progress, and concentrating on a few key areas—such as the health of young people—with long-term and sustainable impact will allow for explicit recognition of the health contribution of nonhealth sectors and can take MENA/EM countries toward a healthier future.

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# 6

## *The HIV/AIDS Situation in the MENA/EM Region*

Carol Jenkins and David Robalino

By the end of 2001, approximately 500,000 adults and children were believed to be living with HIV/AIDS in the region of the Middle East and North Africa/Eastern Mediterranean (MENA/EM). Compared to the situations in neighboring Asia, Europe, and Sub-Saharan Africa, it appears that HIV infection rates in the region are relatively low. However, low prevalence does not mean low risk. Early intervention to curb the spread of HIV/AIDS is vital, because experience has shown that once prevalence exceeds a certain threshold, the virus spreads very fast—sometimes increasing even tenfold in five years, as has been the case in several southern African countries. The longer the introduction of programs is delayed, the greater the likelihood that the epidemic will grow exponentially. Greater investments in improved surveillance, prevention, and care are needed now—to maintain low prevalence levels and preserve the focus on national and regional development goals.

This chapter summarizes an overview of the HIV/AIDS situation in the MENA/EM region jointly produced in 2002 by the World Bank, the World Health Organization's Eastern Mediterranean Regional Office (WHO/EMRO), and the Joint United Nations Programme on HIV/AIDS (UNAIDS). The study was based on interviews conducted in August–September 2001 with 51 people in government, U.N. agencies, bilateral donors, and international nongovernmental organizations in four countries of the region (Arab Republic of Egypt, Tunisia, Djibouti, and Republic of Yemen), as well as Geneva. Documents were gathered from all pertinent sources, especially the WHO, UNAIDS, the U.S. Census Bureau's HIV/AIDS database, and the U.N. Office for Drug Control and Crime Prevention.<sup>1</sup>

This summary briefly reviews the spread of the epidemic in the MENA/EM countries through 2002 and looks at some risk factors in the region. The authors present an original analysis of the macroeconomic impact of a variety of diffusion scenarios based on the spread of HIV to and from unprotected injecting drug users and prostitutes, which are the best-understood examples of high-risk groups as well as pertinent to specific countries in the region. Finally, the chapter offers a framework for multisectoral strategic actions to reduce behaviors that risk spreading HIV, to care for and support those who become infected, and to diminish vulnerability among specific segments of society.

### **Global Experience Responding to HIV/AIDS**

In 1991, with the evidence available at the time, experts estimated that 15–20 million adults and 5–10 million children cumulatively would become infected with HIV by 2000. By the end of 2001,

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1. As full information for every country in the region was not available from any of these sources, there are inevitable gaps and possible inaccuracies.

however, the WHO reported that 40 million people worldwide were living with HIV/AIDS and 5 million new infections had occurred during the year. The substantial gap between these estimates and earlier projections reflects both the unexpected spread of the virus and the inadequacy of statistics used to track the epidemic. HIV does not always spread rapidly, but it certainly can if conditions permit. Rapid social and economic changes underlie the spread of the virus in most of Africa, Russia, Central Asia, Eastern Europe, China, and elsewhere. HIV epidemics have been particularly sensitive to large migrations of people, wars, economic downturns, and other alterations in social stability. The WHO estimates that 1.2 percent of all adults worldwide are presently infected with HIV. Given that HIV/AIDS epidemics tend to exhibit exponential growth, experts agree that the pandemic's worst effects are still to come.

Societies cope with HIV and prevent its spread best where governments are open about the issues, provide information and services, and establish partnerships with organizations representing affected communities. HIV is not a pathogen that can be managed simply by using a typical public health approach, and health services alone cannot tackle the breadth of issues that produce vulnerability. A coordinated, multisectoral response is needed that includes appropriate government departments, nongovernmental organizations and community-based groups, bilateral donors, and U.N. agencies.

The collective experience of the past 20 years has shown that the spread of HIV and its effects can be slowed through an approach that reduces risk, vulnerability, and impact, as reflected in the U.N. Global Strategy Framework. To ensure success, the highest levels of political commitment are needed. The best possible implementation of programs will be achieved with the right mix of policy processes, donor collaboration, and governments working together with civil society actors.

### An Opportunity for Prevention

The World Health Organization estimates that approximately 83,000 people were newly infected with HIV in the MENA/EM region in 2002, and about 0.3 percent of the region's adults are currently infected (see table 6.1).<sup>2</sup> Recent evidence suggests that the incidence of sexually transmitted infections including HIV/AIDS is increasing, and the total number of AIDS deaths has increased almost sixfold since the early 1990s. In the low- and middle-income countries of the region, HIV/AIDS was the third leading cause of morbidity among people 14 to 44 years old in 1998. Rates of HIV infection among tuberculosis patients are also rising, and by mid-2001 had reached 4.8 percent in Oman and 4.2 percent in the Islamic Republic of Iran.

While these rates are relatively low compared to those in Sub-Saharan Africa, the Caribbean, and South and Southeast Asia, low prevalence does not equate to low risks. Inadequate surveillance methods, a universal weakness in the region, can overlook outbreaks in marginalized social groups. Further, even in low-prevalence countries, the situation can change rapidly, as has occurred in Indonesia and Nepal. *Many countries in the MENA/EM region have enough evidence of risk factors to warrant immediate investments in improved prevention programs.* HIV epidemics also are very sensitive to changing economic and social factors, and it is noteworthy that current methods of surveillance in the MENA/EM region will fail to detect meaningful changes where they are most likely to occur. Because the cost of the epidemics to society and to economic development

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2. For the purposes of this paper, the MENA/EM region includes Algeria, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, and Republic of Yemen. Information on important neighboring countries included in the operational region of collaborating U.N. agencies, such as Sudan and Somalia within WHO/EMRO and UNICEF, is also included. West Bank/Gaza has been omitted due to inadequate comparative information.

**Table 6.1** *Global Regional Variation in HIV Prevalence, 2002*

<i>Region</i>	<i>HIV prevalence among adults (%)</i>	<i>Adults and children newly infected with HIV in 2002</i>	<i>% of HIV-positive adults who are women</i>
Sub-Saharan Africa	8.8	3.5 million	58
<b>North Africa and Middle East</b>	<b>0.3</b>	<b>83,000</b>	<b>55</b>
South and Southeast Asia	0.6	700,000	36
East Asia and Pacific	0.1	270,000	24
Latin America	0.6	150,000	30
Caribbean	2.4	60,000	50
Eastern Europe and Central Asia	0.6	250,000	27
Western Europe	0.3	30,000	25
North America	0.6	45,000	20
Australia and New Zealand	0.1	500	7
Total	1.2 (average)	5 million	50 (average)

Source: UNAIDS/WHO 2002.

can be tremendous, good surveillance and other programs are relative bargains compared to the cost of epidemics.

Unfortunately, mostly mandatory screening has produced continued low levels of case detection. Appropriate behavioral data are lacking, and the region's governments are overconfident in the protective effects of social and cultural conservatism. These factors combined have dictated a low priority for HIV/AIDS. Globally, solid evidence has been amassed that justifies a multisectoral investment in intensified prevention while prevalence is low. Waiting until there is an appreciable rise in prevalence is a costly delay, leading to tremendous human, development, and financial costs. By then, an epidemic may be underway, and it will be too late to prevent the inevitable losses in labor productivity, capital investment, and workforce availability, as well as reductions in human well-being and societal stability.

A thorough review of available data reveals numerous gaps and epidemiological inadequacies. HIV epidemics are very sensitive to changing economic and social factors, and in the MENA/EM region, current methods of surveillance are unable to detect changes where they are most likely to take place. In no country, for example, are the high-risk groups systematically sampled and surveyed; instead the general population, represented by low-risk groups such as antenatal women and blood donors, is extensively screened. Although high-prevalence countries can benefit from this type of surveillance, it may fail to record rising rates of HIV among hidden or marginalized groups in a country thought to have low prevalence. UNAIDS and the WHO advise that "second-generation surveillance"—consisting of targeted HIV serosurveillance, behavioral surveillance, and surveillance of sexually transmitted infections—can reveal the epidemic as it emerges in the groups most at risk, and identify those who are potentially at risk in the immediate future. Instituting this type of surveillance requires considerable collaboration with nongovernmental organizations (NGOs), community groups, and social scientists in order to gain access to otherwise marginalized groups. But to achieve an essential and realistic vision of the national situation, barriers to collaboration with such groups must be overcome, and appropriate technical assistance may be required.

Working with the available information, we attempted a rough classification of epidemic type by country based on the most recent and least ambiguous statistics from the period between end-1999 and mid-2001 (see box 6.1 and table 6.2). While early cases were detected mainly among

**Box 6.1 HIV Epidemic Levels in the MENA/EM Region**

*Type 1:* Repeated testing, consistently low rates, but no consistent, systematic testing (or reporting) of high-risk groups.

*Found in:* Egypt, Syrian Arab Republic, Jordan, and possibly Saudi Arabia and Iraq.

*Type 2:* Accumulating levels of infection, gradual and slow, some rapid increase in identified high-risk groups.

*Found in:* Algeria, Islamic Republic of Iran, Libya, Morocco, Tunisia, Lebanon, Oman, Bahrain, Kuwait, Republic of Yemen, and possibly United Arab Emirates and Qatar.

*Type 3:* High levels of HIV in the general population, although solid epidemiological data are lacking.

*Found in:* Djibouti, Sudan, and probably Somalia.

*Note:* Viral subtypes have not been identified in all countries of the region, or if they have, the information has not been published in standard medical journals. However, in Djibouti subtypes A2, E, and C have been found, indicating sources from West and Central Africa as well as Asia.

foreigners and returning migrants, HIV has now begun to spread among citizens in all the region's countries. Patterns are shifting, with a rising proportion of cases due to sexual transmission. These cases are sparked, perhaps, by earlier outbreaks among injecting drug users (IDUs) and they are increasingly balanced between females and males. Djibouti has the highest prevalence of HIV and the highest levels of sexual transmission in the region. In at least half the countries, significant outbreaks have occurred among IDUs in the past and may be continuing. Other infected groups include men who have sex with men (MSM), sex workers and their clients, prisoners (who are frequently drug users), and patients with sexually transmitted diseases (STDs).

### **Social and Structural Vulnerability in the Region**

Without adequate social-behavioral research, effective HIV prevention programs cannot be planned and carried out. Most published research related to HIV in the MENA/EM region concerns clinical and biomedical issues such as transmission through dialysis. Little substantive HIV-related social or behavioral research has taken place in the region. Designing, implementing, and monitoring prevention programs without information on the sexual and drug-taking behavior of a population and its subgroups is an exercise in futility. While the expertise exists in most countries of the region to conduct these investigations, institutional and political support for such research is desperately needed.

Based on the little research available and a variety of other sources of information, a typology of risk factors was constructed. It should be noted that much of this information is unpublished, unscientific, or anecdotal, underscoring the great need for well-conducted research. Simply stated, people are at risk of acquiring an HIV infection because of what they are doing or what they might do if placed in a facilitating situation. Two primary groups were identified: an at-risk group and a vulnerable group.

In the MENA/EM region, as elsewhere, people with known risky behaviors, such as sex workers and their clients, IDUs, MSM, and those who acquire STDs, are immediately at risk. While it is likely that they represent a minority, any of these subgroups can form the core of spread into the rest of the population, depending upon the extent and nature of social linkages and networks.

**Table 6.2** Reported AIDS Cases in the MENA/EM Region, 1987 through June 2001

Country	< = 1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	June 2001	Total (thousands)	Popu- lation (thousands)	Rate per 100,000 popu- lation
Algeria <sup>a</sup>	5	16	17	27	35	34	31	53	32	48	39	49	24	58	17	501	30,841	1.6
Bahrain	1	—	1	2	—	6	3	6	10	11	14	11	9	8	7	89	652	13.6
Djibouti	—	1	6	51	107	144	144	196	231	358	434	111	267	131	—	2,181	644	339.0
Egypt, Arab Rep. of	5	6	9	7	12	23	29	22	16	14	25	33	34	44	42	321	69,080	0.5
Iran, Islamic Rep. of	1	3	5	10	25	16	32	19	16	27	40	21	27	68	76	386	71,369	0.5
Iraq	—	—	—	—	7	6	21	37	16	15	2	4	6	6	4	124	23,584	0.5
Jordan	5	1	6	1	8	7	8	6	2	4	12	11	3	14	10	98	5,051	1.9
Kuwait	1	—	1	1	3	2	2	5	4	5	2	19	4	12	10	71	1,971	3.6
Lebanon <sup>b</sup>	4	3	5	10	13	7	22	12	18	5	8	37	32	21	21	218	3,556	6.1
Libya	—	24	5	11	6	9	2	11	16	21	38	396	72	—	—	611	5,471	11.2
Morocco	10	14	20	26	28	30	44	77	57	66	92	93	165	118	129	969	30,430	3.2
Oman	17	26	26	22	25	32	37	51	28	24	36	24	28	30	35	441	2,622	16.8
Qatar <sup>c</sup>	31	12	9	10	13	5	8	8	6	2	4	3	9	3	2	125	575	21.7
Saudi Arabia	16	6	7	5	10	6	12	38	37	100	112	39	24	24	29	465	21,028	2.2
Somalia	1	4	3	5	—	—	—	—	—	—	—	—	—	73	—	86	5,892	1.5
Sudan	4	64	122	130	188	184	198	201	250	221	270	511	517	652	354	3,866	31,809	12.2
Syrian Arab Rep.	2	2	8	1	7	3	3	4	6	9	8	8	7	7	14	89	16,610	0.5
Tunisia	20	23	19	36	36	38	52	51	65	54	62	44	42	44	48	633	9,562	6.6
United Arab Emirates	0	0	0	8	1	3	1	2	1	2	1	1	2	—	—	22	2,398	0.9
Republic of Yemen	0	0	0	1	0	3	4	3	11	60	40	34	34	18	31	239	19,114	1.3

— Not available.

a. Algeria is included in the World Bank MENA region, but in not the WHO/EMRO region.

b. Lebanon's total includes four cases with unknown date of reporting.

c. Qatar's total includes two cases with unknown date of reporting.

Sources: Compiled from data provided by national AIDS programs and WHO/EMRO.



Prevention strategies differ considerably for these different subgroups. The risk factors associated with the at-risk group must be researched and brought to light, if they are to be addressed effectively.

The next group consists of those who may be considered vulnerable, that is, who may be at risk if and when their life situation changes. This group includes, for example, migrants going to work abroad, refugees, mobile workers such as truckers, tourists traveling for fun and recreation, noninjecting drug users who may switch to injecting when the availability or price of a drug changes, and young people in general, some proportion of whom will engage in nonmarital sex under certain conditions. Reducing the vulnerability of people in these social categories is an integral part of HIV prevention. In the MENA/EM region, the HIV-related issues concerning migrants, internally displaced persons, and refugees are especially significant. Given the very large numbers involved in foreign labor migration, AIDS prevention takes on a truly international perspective and must be approached accordingly.

While the majority of countries in the region have recorded outbreaks of HIV among IDUs, for example, few countries have made serious attempts to find out how many people are at risk, where they are located, and how to reach them with information and services. In the short run, the perceived negative consequences of public knowledge of such activities may be a valid concern, but inaction can do serious harm to HIV prevention programs in the long run. Learning how to reach at-risk and vulnerable subgroups in discreet, unpublicized ways would contribute significantly to the national AIDS programs throughout the MENA/EM region. This will require a special policy process, political commitment, and the creative collaboration of NGOs, social scientists and social workers, and AIDS program managers.

Structural factors also increase overall vulnerability: they include poor and dysfunctional health care systems, high rates of unemployment, and a lack of access to information, adequate STD and drug dependency treatment, and condoms. Other structural factors exist as well, including legal restraints on NGOs in some countries or on the rights of orphans, and health policies that disadvantage the young and unmarried, the poor, and noncitizens. In each case, such policies may require review and modification to alleviate barriers to improved prevention and care.

Table 6.3 at the end of the chapter presents profiles of the HIV/AIDS epidemics in countries of the MENA/EM region, including estimated HIV prevalence in specific high-risk groups and features of epidemic transmission modes among reported AIDS cases.

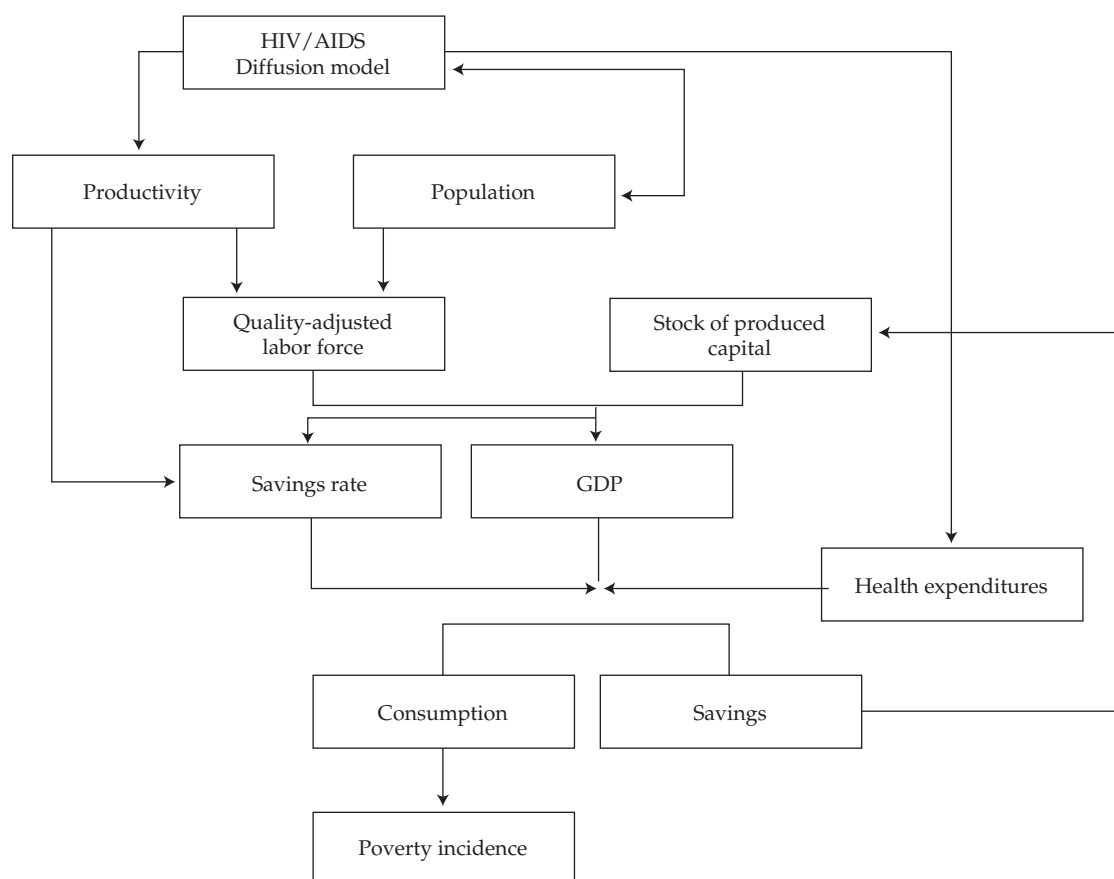
## **Macroeconomic Impact**

The human cost of HIV/AIDS is incalculable, from the pain and guilt surrounding personal and intimate relationships, to threatened military and political security at the state level. It is nonetheless revealing to examine the costs and losses that *can* be calculated, for these too are great and can have a major impact on a country's future.

The main constraint in making projections about the diffusion of the epidemic and its economic impact is the poor quality of available data. Underestimation of prevalence levels in most MENA/EM countries is likely. Based on predictions drawn from comparable international HIV data and other socioeconomic indicators, our assessment suggests that current prevalence levels in MENA/EM countries may be underestimated by 0.2 to 1 percent on average.

Even using the most recently published estimates of HIV prevalence, losses in gross domestic product (GDP) and consumption resulting from the diffusion of HIV/AIDS could be significant. These losses occur as rising mortality and morbidity reduce labor productivity and capital investments and shrink the labor force (see figure 6.1). Based on data from nine MENA/EM countries,



**Figure 6.1** *A Model of Growth to Evaluate the Macroeconomic Impacts of HIV/AIDS*

Source: Authors' design.

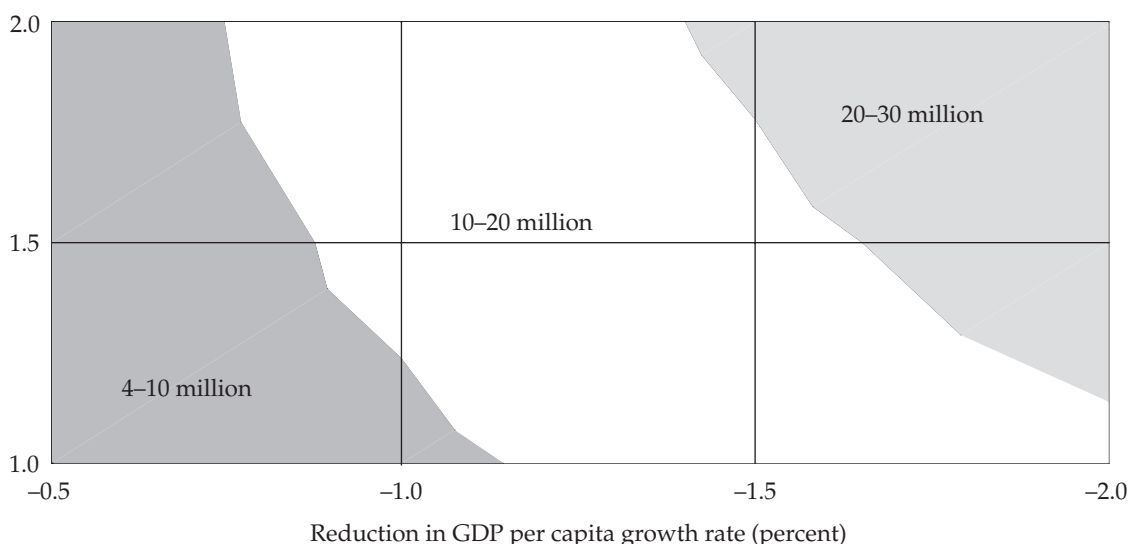
calculations for a broad range of diffusion scenarios indicate that the average growth rate of potential GDP could be reduced by 0.2 to 1.5 percent per year for the period 2002–25. The future losses of potential output and consumption during that period could be equivalent to 35 percent of today's GDP, even under conservative assumptions. Expected losses in output and consumption in MENA/EM countries imply that, by 2010, 4 million to 30 million people—who would have escaped poverty in the absence of the epidemic—will instead continue to have consumption levels below the poverty line.

The evolution of the poverty prevalence of a country is determined by the growth rate of average income and the change in income distribution. Research has shown that over periods of 10 years income distribution remains relatively unchanged. Therefore, it is mainly economic growth that determines how many people are lifted out of poverty. In general, a 1 percent increase in per capita income can be associated with a 1–2 percent reduction in poverty prevalence (Dollar and Kraay 2001).

At the macro level, if the growth rate of GDP per capita is reduced by 0.5–2.0 percent as a result of HIV/AIDS, the number of people who fail to escape poverty could range from 4 million to 30 million by 2010. In 1998, close to 30 percent of people in MENA countries (85 million) were

**Figure 6.2** Number of People in the MENA/EM Region Who Would Remain below the Poverty Line as a Consequence of HIV

Percentage reduction in poverty prevalence from a 1% growth in GDP per capita

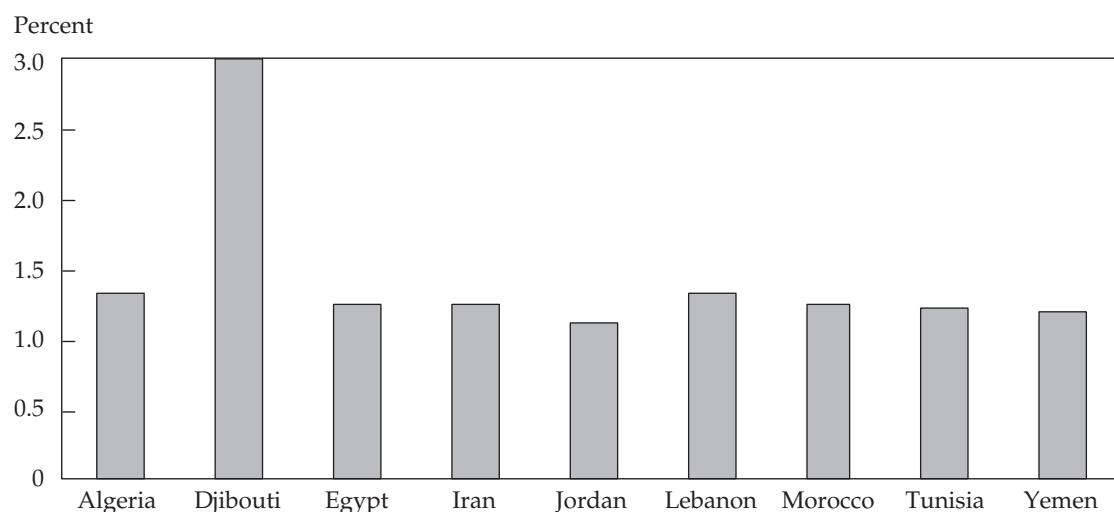


Source: Authors' calculations.

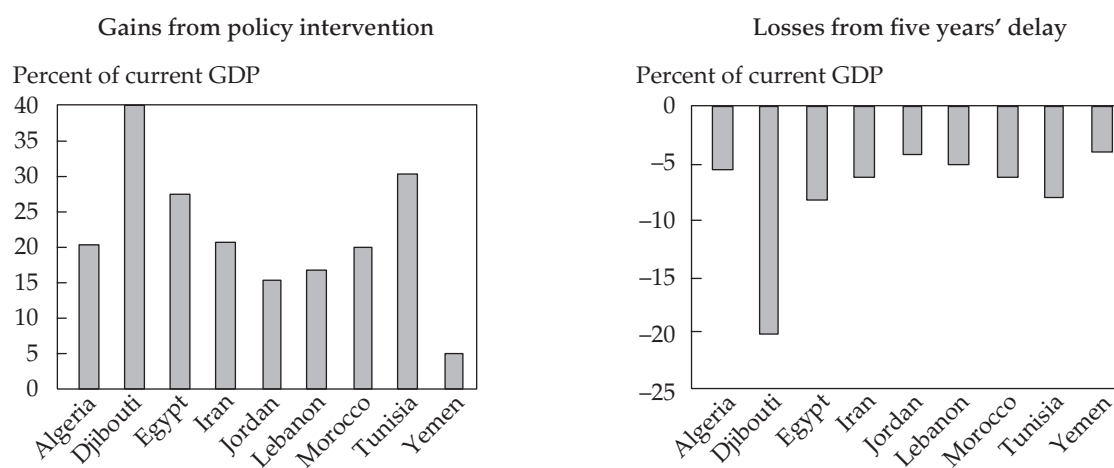
living on less than \$2 per day. With an average growth rate of 3 percent per year, by 2010 poverty prevalence could be reduced to 22–16 percent (depending on how sensitive the poverty prevalence is to the growth rate of income per capita), and the number of poor could fall to 79 million–58 million. Because of HIV/AIDS, however, poverty prevalence would be higher in 2010 as the average growth rate of GDP per capita falls by 0.5 to 1.0 percentage point (depending on the severity of the epidemic and its impact on labor productivity). The number of people who would have failed to escape poverty could then range between 4 million and 20 million, depending on how sensitive poverty prevalence is to economic growth (see figure 6.2). These calculations are based on the baseline total population in the absence of HIV/AIDS. Clearly, HIV/AIDS is expected to reduce the number of people and, even if the percentage of poor is not reduced significantly, the absolute number of poor could be reduced. This, however, masks the impact that HIV/AIDS can have on poverty.

The analysis also reveals that there could be a considerable impact on health expenditures (see figure 6.3). By 2015, annual expenditures to treat all AIDS patients may have increased by 1.2 percent of GDP, on average—even with only limited use of antiretroviral drugs. It is possible to find cases where HIV/AIDS-related expenditures surpass 5 percent of GDP.

Governments have a key role in developing and financing the implementation of policies to confront HIV/AIDS. Indeed, individuals alone cannot devise appropriate mechanisms to contain the epidemic. *To achieve significant results, governments can only intervene if cost-effective interventions are available. Fortunately, international experience shows that low-cost prevention strategies are effective in slowing the spread of HIV/AIDS.* In the case of MENA/EM countries, our analysis shows that increasing condom use and expanding access to safe needles for injecting drug users can generate savings equivalent to 20 percent of today's GDP. We also show that delaying the implementation of these policies could give rise to accumulated costs for the period 2000–15 that are equivalent to 1.5 percent of today's GDP for each year of delay (see figure 6.4).

**Figure 6.3** HIV/AIDS-Related Average Health Expenditures in 2015, as a Percentage of GDP

Source: Authors' calculations.

**Figure 6.4** Benefits from Expanding Access to Condoms and Safe Needles for Drug Users and Costs of Delaying Action

Source: Authors' calculations.

The main messages from these analyses are, in sum:

- The risk of an increase in the HIV / AIDS prevalence level in MENA / EM countries is real.
- Expected costs over the next 25 years could be considerable—on the order of 35 percent of current GDP even under very conservative assumptions.
- Effective actions can be implemented to prevent the spread of the epidemic and the costs of these actions would be more than compensated by the savings they generate.
- *The time to act is today*, while prevalence levels are still low.

## Responses

Timing is critical. While national HIV surveillance concentrates on relatively low-risk groups, the virus can reach others. It takes a number of years, particularly in low-prevalence settings, to convince those at risk to alter their behaviors. Where skills are scant and NGOs or community-based agencies have little experience in HIV/AIDS prevention, it takes several years to develop these skills. Finances must be mobilized and efficiently directed, often requiring new administrative structures and mechanisms. Popular, political, business, and religious leaders must be educated to help create an enabling environment in which effective prevention activities can be carried out. Usually, legislative change is required and legal reform takes time. The MENA/EM region is lagging on most fronts in its defense against HIV.

To date, most decisionmakers in the region have not considered investment in HIV prevention a high priority. Although all countries in the region have national AIDS committees and 12 have U.N. Theme Groups, their functioning varies considerably. Most countries have instituted actions to ensure safe blood supplies, although this is incomplete in some. Efforts to install universal precautions and safe waste management in the health services are also inadequate in some countries. Medical management and counseling for people with HIV/AIDS has been set up in many countries, and antiretroviral therapy (ART) is available in several countries. Use of ART to reduce mother-to-child transmission is found less frequently. These measures, however, are only the most basic foundation for a successful HIV/AIDS prevention plan.

Little has been done on the essential work of reducing stigma and discrimination, except among health workers in some countries. Educating the populace about HIV has been spotty and seldom emphasizes the use of condoms for prevention. Indeed, condom promotion is nearly absent in the region. High-risk groups are rarely reached with targeted interventions or with systematic surveillance. Harm reduction for IDUs has not been discussed, except in the Islamic Republic of Iran.

The response from U.N. agencies has until recently been mainly from WHO/EMRO, which has supported numerous meetings, small studies, and basic program reviews since the 1980s. One or two other agencies have been active in supporting HIV/AIDS prevention either in selected countries or within specific programmatic areas (for example, school education). Nearly all other U.N. agencies concur in recognizing that their involvement has been limited to date, but is now changing. UNAIDS has begun funding a series of small activities, mainly through WHO/EMRO; most have not yet been evaluated.

Few countries have undertaken a process of developing an HIV/AIDS policy or strategic national plan involving all stakeholders, including civil society and groups affected by HIV. Bilateral donors are present, as are several international and local NGOs, but they are inadequately utilized. Only a few countries are demonstrating a commitment to prevention on a scale large enough to make an impact. With funding from the United Nations Population Fund through a consortium of NGOs, Tunisia has piloted a project for young people that offers appropriate education, counseling and testing, condoms, and STD services. The project has reached about 10 percent of youth and is being scaled up to reach more. In the Islamic Republic of Iran, a large-scale response to rising rates among IDUs has recently been set in motion, including voluntary counseling and testing, methadone treatment, needle exchanges, and associated activities such as drug demand reduction programs. Morocco has begun an ambitious effort to upgrade STD services as well as to develop and approve a comprehensive strategic plan. Djibouti is undertaking a similar process, but with its epidemic at an already advanced stage, considerable resources will be required to diminish the disease's impact on many citizens and residents. The Republic of Yemen recently demonstrated public and political concern about HIV/AIDS, a welcome development.

## A Way Forward

The specific activities needed in each country depend on the stage of the epidemic and other essentially local issues. Recommendations for improving the current situation include:

- Raise the priority of HIV/AIDS through research, the media, and advocacy.
- Evaluate national HIV/AIDS/STD programs.
- Develop national policy and strategic plans, with associated budgets and the identification of potential resources.
- Institute second-generation surveillance, including STD and behavioral surveys.
- Learn to conduct targeted interventions with high-risk groups in a discreet, culturally appropriate manner, in collaboration with NGOs.
- Reduce the vulnerability of migrants, internally displaced persons, and refugees with the involvement of the International Organization for Migration, the U.N. High Commissioner for Refugees, and appropriate international NGOs. This can begin with research to create a taxonomy of situations and a process involving all stakeholders to design appropriate and coordinated interventions.
- Improve the provision of clear information and means of protection and take steps toward the development of adequate promotion of condoms.
- Develop life skills and drug demand-reduction education for youth that is culturally appropriate and effective and recognizes the structural factors associated with drug use.
- Reduce vulnerability among youth through multisectoral planning to affect sexual and reproductive health, unemployment rates, educational costs, and information access, among other critical issues.
- Ensure that ART treatment programs include adequate prevention services as well.
- Empower affected communities by encouraging local NGO development.
- Develop a regional network of experts to fulfill technical needs, while developing local capacity.
- Develop programs based on sound knowledge of situational context with monitoring and evaluation plans and budgets.
- Promote future sustainability of low prevalence through insurance and other health financing schemes.

These actions require the collaborative efforts of many partners, including multiple sectors within government, community-based groups, religious and other local leaders, international NGOs, bilateral donors, and various U.N. agencies. Most of all, the coordination of such a program requires political commitment at the highest levels. If that is attained, the threat that HIV represents to the development goals of the MENA/EM region can be averted.

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**Table 6.3 Profiles of the HIV/AIDS Epidemics in Countries of the MENA/EM Region**

Country	Date of first recorded AIDS case	Estimated adult prevalence level (UNAIDS/WHO)	Adults and children living with HIV/AIDS: reported (R) and estimated (E) by UNAIDS/WHO, 2000	Female share of reported AIDS cases or reported HIV infections	HIV prevalence in high-risk groups	Features of epidemic transmission modes among reported AIDS cases, 1997–2001	HIV prevalence in general population	Major risks and indicators of change
Algeria	1985	0.1%	1,067 (R, January 2001); 13,000 (E, adults)	27% (AIDS)	1.2% in FSW (1988); 0.10% in 20 FSW (2000); 3% in 139 FSW (2000)	41% hetero, 5% homo, 18% IDU, 10% blood, 2% MTCT	0.9% at 4 ante-natal sites (2000); 0.3% in 345 TB patients (1998); 0.4% in 1,984 antenatal women (2000)	High levels of migrants from West and Central Africa transiting through southern area; FSW from Algeria and elsewhere
Bahrain	1985	0.3%	216 (R, December 2000); 1,000 (E)	7% (AIDS); 11% (HIV, July 2001)	1.6% in 242 multi-transfused children with hemolytic anemias (1995); 0.3% in 291 IDU (2000); 0.9–2.3% in IDU (1998)	11% hetero, 4% homo/bi, 72% IDU, 2.4% MTCT, 10% blood	0 in 2,079 blood donors (1999); 0.2% in 627 ante-natal women (1998)	Migrant sex trade, opiates
Djibouti	1986	2.8%	3,500–14,500 (E, 1999)	21% (AIDS, 1997–98); 54% in 15–29 year cohort	22% in STD patients (1996); 28% in FSW (1998); > 50% in street sex workers and 26% in bar sex workers (1996)	99% hetero, 1% MTCT (1997–98)	1.9% at private ante-natal clinic (1999); 26% in TB patients (2001); 1.8–3.1% in blood donors (2000)	High levels of commercial sex, with youth involvement; refugees; 3.2% syphilis in antenatal women (1997)
Egypt, Arab Rep. of	1986	< 0.1%	1,291 (R, June 2001, cumulative); 8,000 (E)	11% (WHO); 17.3% (NAP)	1% in 102 MSM (1999); 0.79% in 382 MSM (2000); 0.86% in 815 MSM (2001); 0 in 129 FSW (2001); 0 in 920 STD patients (2001)	45% hetero, 21% homo, 6% IDU; 16% blood, < 1% MTCT, 11% unknown	0.006% in blood donors (2000); 0 in antenatal women; 0.6% in TB patients	75% of infections acquired in Egypt

Iran, Islamic Rep. of	1986	< 0.1%	20,000 (E)	8%	0.72% in 140,277 drug users tested over time; 0.5% in 8,202 IDU (1998); 2.3% in prisoners, mostly drug users (2000); 0 in 5,700 STD patients (1998); 0 in 1,605 FSW (1998)	10% sex, 64% IDU, 6% blood, 1% MTCT, 19% unknown	4.2% in TB patients (2000); 4% in VCT center users (2001)	Rapid three-fold increase in HIV/AIDS in 2001; sex work, polygamy among risk factors
Iraq	1991	< 0.1%	< 1,000 (E)	9%	Mandatory screening for prisoners, STD patients, health and hotel workers; mandatory pre-marital tests	9.3% hetero, 86.1% blood, 4.6% MTCT (1999)	0 in antenatal women (2000)	Reported cases of STDs increased between 1999 and 2000; 0.1% syphilis in antenatal women (2000)
Jordan	1986	< 0.1%	118 (R, June 2001); < 1,000 (E)	13% (WHO); 26% (NAP)	No surveillance except prisoners; 0 infected of 945 tested (2000)	40% hetero, 3.2% homo, 3.2% IDU, 38.9% blood, (1997–2000); 1.1% MTCT; 13.7% unknown	To end of 2000, only 1 of 281 TB patients infected, 0.03 in blood donors; 0 in antenatal women tested in 1992, 1994, and 1999	KAP study (1999) of 3,200 people revealed 4–16% had sex outside of marriage in last year, of which 10% MSM
Kuwait (includes expatriates)	1984	0.12%	835 (R, December 2000); 1,300 (E)	18%	0 in 2,600 STD patients; mandatory testing for sexual offense prisoners, IDU in treatment/custody; 0 in 193 IDU (2000)	73% hetero, 6% homo, 6% IDU, 2% MTCT, 6% blood, 8% unknown	275,307 people screened in 2000, 1.7% HIV-positive; 0 in pregnant women	STDs increased from 1,002 in 1991 to 6,043 in 1997, 30% gonorrhea, 1.6% syphilis; HIV types B and C, via India; migrants, sex, heroin
Lebanon	1984	0.09%	613 (R, December 2000); 1,500 (E)	16% (AIDS); 21% (HIV / AIDS cases, December 1999)	0 in 205 select FSW (1999); 0.2% in prisoners; 6.3% of all reported HIV cases are IDU, all males	47% hetero, 28% homo, 3% IDU, 15.6% blood, 6.7% MTCT (cumulative)	—	> 50% recent cases of local origin; rising percentage of women; general population behavior surveys in 1991 and 1996 showed drop in ever use of condom from 40% to 33%

(Table continues on the following page.)



Table 6.3 (continued)

Country	Date of first recorded AIDS case	Estimated adult prevalence level (UNAIDS/WHO)	Adults and children living with HIV/AIDS: reported (R) and estimated (E) by UNAIDS/WHO, 2000	Female share of reported AIDS cases or reported HIV infections	HIV prevalence in high-risk groups	Features of epidemic transmission modes among reported AIDS cases, 1997–2001	HIV prevalence in general population	Major risks and indicators of change
Libya	1990	0.2%	611 (R, 1999); 1,182 (R, end 2000); 7,000 (E)	—	571 new infections in 2000, of which 98 among IDU	56% hetero, 22% blood, 22% MTCT (cumulative, but not currently accurate)	Outbreaks in hospitals due to lack of infection control, 370 children in 1998; 0.3% in 296 TB patients (1998)	—
Morocco (includes expatriates)	1986	0.1%	809 (R, September 2000); 13,000 (E)	41%; 50% among new cases	0.16% in STD patients (2000); no surveillance among FSW or IDU or MSM	70% hetero, 9% homo, 6% IDU, 3% blood, 2% MTCT, 6% other, 4% unknown	< 1% in antenatal women (2001)	Rising rates in some areas, Tangiers higher in IDU, Marrakech higher in MSM; 94% of all cases among Moroccans
Oman	1987	0.1%	600 (R, February 2001); 1,300 (E)	32% (WHO/UNAIDS)	5% in 135 arrested IDU (1999); 8.3% in 60 IDU (2000); 0 in 337 STD patients (2001)	41% hetero, 11% homo, 2% IDU, 22% blood, 6% MTCT, 2% other, 17% unknown	2% in TB patients (2000)	Incidence rate of reported STD cases fell from 92 to 48.6 per 100,000 between 1996 and 2000; among 245 men in social clubs, 13% had nonmarital sex in past year (1995)

Qatar	—	0.09%	300 (E)	29% (cumulative AIDS)	5% in 2,249 STD patients (1999)	20% hetero, 4.8% homo, 58% blood, 8% MTCT, 9.6% unknown (1999–)	0 in 2,464 blood donors (1999)	—
Saudi Arabia	—	—	—	34% (AIDS, 1997–98); two-thirds of AIDS cases are among male expatriates	2.3% in multi-transfused children (1989); 0.14% in 2,102 IDU (1997)	72% hetero, 6% homo, 2% IDU, 15% blood, 4% MTCT (1997–98)	—	—
Somalia	1987	1.0%	43,000 (E, adults)	—	2–4% in FSW (1990)	Little information; MTCT 3%	3–9% in antenatal women (2000); 0.8–4.4% in blood donors; 6.9% in 649 TB patients (1999)	—
Sudan	1985	1.6%	450,000 (E)	29.8%	1% in out-migrants, 4.3% in 470 refugees, 4.4% in sex workers, 2.5% in tea sellers, 1.6% in TB patients (2002); 9% in STD patients (2001)	97% hetero, 3% MTCT (1997–2001)	1.4% in blood donors (2000); 1–5% at antenatal clinics; 7.7–20% in TB patients; 1.6% in national survey of 7,385 people (2002)	Clear rise starting late 1980s, generalized by mid-1990s; 2% syphilis in antenatal women
Syrian Arab Rep.	1987	0.01%	145 (R, July 1999); 800 (E)	21% (July 1999, NAP)	0.12% in STD patients, 0.12% in FSW, 0.04% in bar girls, 0.59% in MSM, 0 in IDU (1998)	73% hetero, 8% homo, 8% IDU, 8% blood, 4% MTCT (1997–2000)	250,000 people tested yearly, almost all mandatory; 0.0015% in blood donors, 0.005% in Syrian travelers before departure	Few cases detected; April–June 1999, 2,342 STD cases reported at 4 centers according to syndromic method

(Table continues on the following page.)

Table 6.3 (continued)

Country	Date of first recorded AIDS case	Estimated adult prevalence level (UNAIDS/WHO)	Adults and children living with HIV/AIDS: reported (R) and estimated (E) by UNAIDS/WHO, 2000	Female share of reported AIDS cases or reported HIV infections	HIV prevalence in high-risk groups	Features of epidemic transmission modes among reported AIDS cases, 1997–2001	HIV prevalence in general population	Major risks and indicators of change
Tunisia (includes expatriates)	1985	0.06% (March 2001)	985 (R, December 2000); 2,200 (E)	40% (AIDS, 1998–99)	0 to < 1% in registered FSW throughout 1990s; 0% in 570 FSW (1999); 0.22% in 458 FSW (2001)	51% hetero, 10% homo, 27% IDU, 8% blood, 4% MTCT (1998–99)	0 in 108 antenatal women (1999); 0.25% in TB patients (1996); 0.003% in blood donors	> 50% detected as AIDS; all infected females and 30% of males acquired infection in Tunisia; high proportion among expatriates
United Arab Emirates	—	0.18%	2,300 (E, January 2000)	—	—	—	—	—
Yemen, Rep. of	1990	0.01%	960 (R, December 2000); 9,900 (E)	33% (2000); approximately 50% HIV (2000)	5% in 88 FSW (1998); 3% in 585 STD patients (1998); 27% in 147 prisoners (1998); 2.7% in FSW (1999); 7% in FSW (2001); 1.84% in 284 STD patients	77.3% hetero, 15.9% homo, 6.8% blood (1998)	0.7% in 11,070 “low-risk” people (1998); 0.04% in 19,813 blood donors (1998), rose to 0.28% in 2000; 6.9% in TB patients (1999); 45% of HIV infections are among Yemenis, 55% among non-Yemenis	More than 50% of infections acquired in Republic of Yemen; gender of ratio changed from 4:1 male-female in 1995 to 2:1 in 1999 and 1:1 in 2000

— No information available.

Note: FSW = Female sex workers; IDU = injecting drug users; MSM = men who have sex with men; MTCT = mother-to-child transmission; NAP = National AIDS program; STD = sexually transmitted diseases; TB = tuberculosis; VCT = voluntary counseling and testing.

Note: Proportions represent AIDS cases and assumed modes of transmission according to the World Health Organization (WHO 2001).

Sources: Compiled from WHO updates, UNAIDS updates, national AIDS programs briefing papers, and epidemiological reviews.

# 7

## *Addressing the Challenge of Road Safety*

Andrew Downing

The first recorded fatality from a motor vehicle crash occurred in 1896 in the United Kingdom. The coroner declared: “This is a terrible tragedy which must never happen again.” Since then, an estimated 25 million people have died in road crashes worldwide (Faith 1998). In the region of the Middle East and North Africa/Eastern Mediterranean (MENA/EM), road accidents claim more than 70,000 lives each year.

Awareness is growing that deaths and injuries from road crashes constitute a serious public health menace in the region. Fortunately, there are ample opportunities for improved policy and management of road safety, but success will depend upon convincing stakeholders of the need for partnerships to tackle the problem. This chapter outlines the dimensions of road safety in the MENA/EM region, identifies some core interventions and the role of the health sector, and makes some specific recommendations for countries and the region as a whole.

### **A Global and Regional Problem**

Although communicable diseases remain the major health issue for developing and transition countries, particularly for the poor, deaths and disability from injury are growing in importance. Around the world, increasing industrialization and motorization have caused injuries of all types to soar. The World Health Organization (WHO) projected the number of deaths from injuries at 5.8 million worldwide in 1998. Unintentional injuries rank fifth as a cause of death, represent 5.2 percent of morbidity, and account for 10–30 percent of hospital admissions. The majority of such injuries occur in low-income countries (World Bank 2002). The current prediction from the WHO database is that injuries from all causes will account for 20 percent of the disease burden in the MENA/EM region by 2020.

Against this backdrop of rising mortality and morbidity from injuries, the problem of road crashes is immense (see box 7.1). The number of lives lost and of people injured and disabled in crashes is increasing in both developing and transition countries.

In the MENA/EM region, the WHO database provides an estimate of more than 70,000 road crash deaths per year. As can be seen in table 7.1, the region has a greater share of global road crash deaths (6 percent) than would be expected from its share of vehicles (2 percent) or population (4 percent). There are large differences in the levels of motorization, urbanization, and industrialization among MENA/EM countries, and these factors affect the risk of death and injury from crashes. Across the region, however, many of those killed and injured come from the poorest sectors of society, and their families are least able to cope with the shock.

### ***Road crash costs***

Costing road crashes or estimating values for lives saved and injuries avoided is a contentious issue. However, many countries have adopted methodologies for estimating such costs, and the

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**Box 7.1** *The Global Road Crash Picture*

- 750,000–880,000 deaths in 1999
- 100 deaths per hour, equivalent to five or six jumbo jets wiped out every day
- 85 percent of road crash deaths occur in developing and transition countries
- 23 million–34 million people injured in 1999
- Global costs around \$500 billion in 1999
- Costs to developing and emerging nations about \$70 billion
- About 70 million hospital inpatient days used by road crash victims.

Source: Jacobs, Aeron-Thomas, and Astrop 2000.

highly motorized countries have moved toward willingness-to-pay techniques that ask the public to estimate how much they would pay for safety interventions that reduce the risk of crashes or injury. This has led to an increase in valuations. A comparison of a number of national figures suggests that very crude estimates lie between 1 and 2 percent of gross national product (GNP) in 1999. The estimated regional costs based on setting a percentage within this range are shown in table 7.2. The total cost for the MENA/EM region is about \$7.4 billion for 1999.

**Fatality risks and death rates**

Figures 7.1 and 7.2 show how some MENA/EM countries perform on indicators of deaths per 100,000 population (fatality risk) and deaths per 10,000 vehicles (death rates). The more motorized countries have the higher fatality risks and the lower death rates. This pattern is not unusual, but the fatality risks for the Gulf states are some of the highest in the world and are cause for concern.

The use of these indicators as comparative measures of safety is not ideal. The indicator of deaths per 10,000 vehicles does not allow for differences in distances traveled or in vehicle occupancy levels. It is better to take into account exposure by estimating vehicle-kilometers traveled, but few countries carry out travel surveys. The few figures that are available are shown in table 7.3. They indicate that the risk in Bahrain is similar to the risk in the United States and Europe, but that the risk is twice as high in the United Arab Emirates.

**Table 7.1** *Distribution of Road Crash Deaths, Vehicles, and Population by World Region*  
(percent)

<i>Region</i>	<i>Road deaths</i>	<i>Vehicles</i>	<i>Population</i>
Asia and the Pacific	44	16	54
Central and Eastern Europe	12	6	7
Highly motorized countries <sup>a</sup>	14	60	15
Latin America and the Caribbean	13	14	8
<b>Middle East and North Africa</b>	<b>6</b>	<b>2</b>	<b>4</b>
Sub-Saharan Africa	11	4	11

a. The highly motorized countries include those in Western Europe plus the United States, Canada, Japan, Australia, and New Zealand.

Source: Jacobs, Aeron-Thomas, and Astrop 2000.

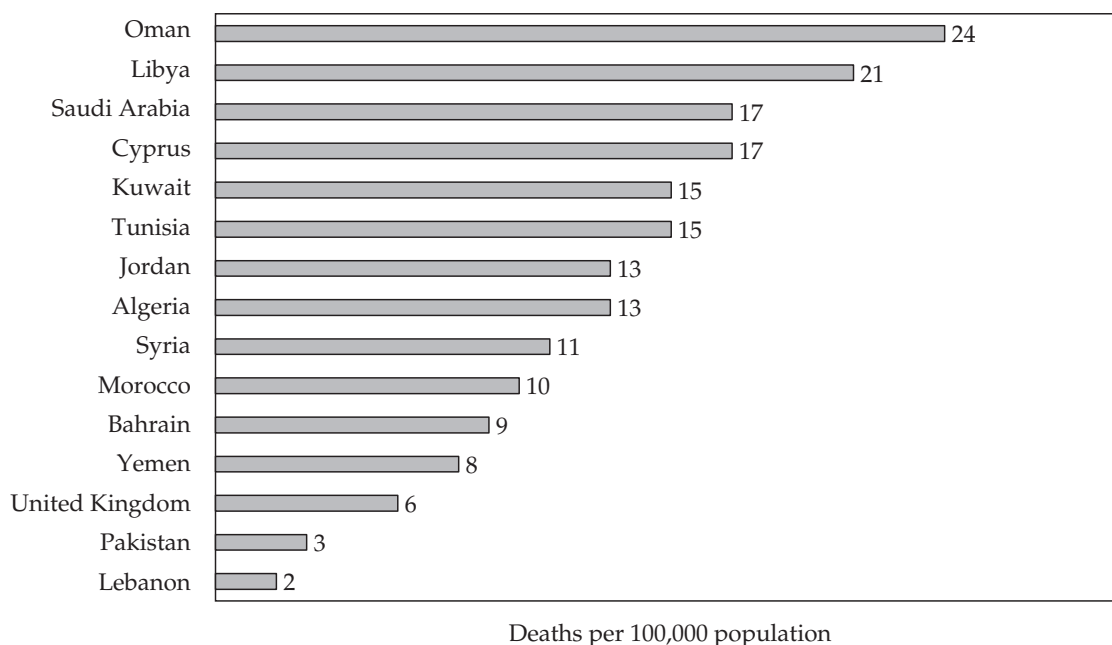
**Table 7.2** *Estimated Road Crash Costs, by Region, 1999*

<i>Region</i>	<i>Assumed percentage of GNP</i>	<i>Estimated cost (billions of U.S. dollars)</i>
Asia and the Pacific	1.0	24.5
Central and Eastern Europe	1.5	9.9
Highly motorized countries	2.0	453.3
Latin America and the Caribbean	1.0	18.9
<b>Middle East and North Africa</b>	<b>1.5</b>	<b>7.4</b>
Sub-Saharan Africa	1.0	3.7
<b>Total</b>		<b>517.7</b>

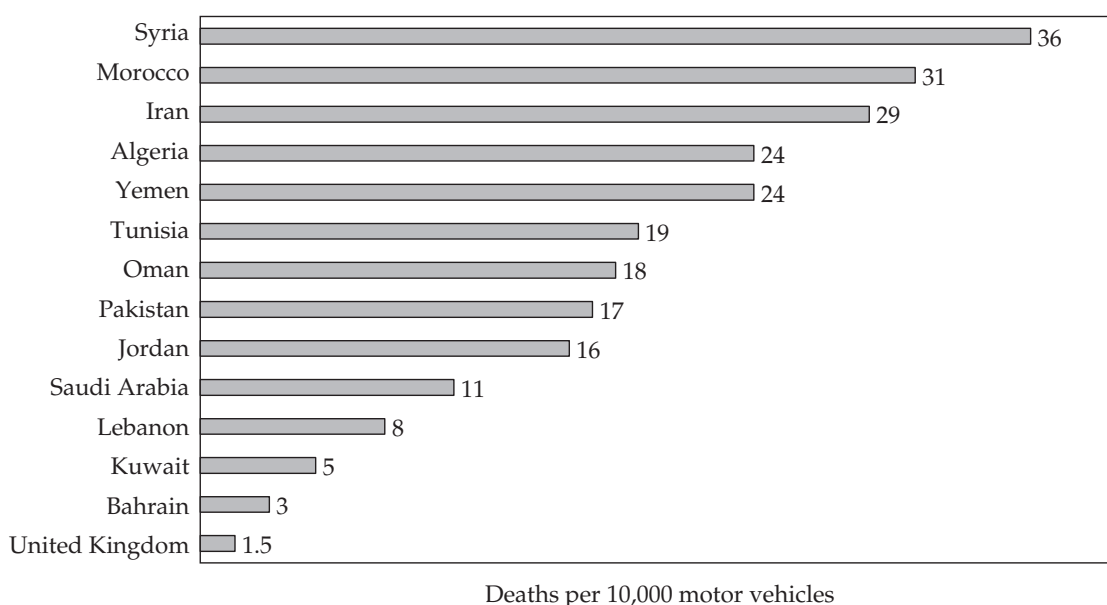
Source: Jacobs, Aeron-Thomas, and Astrop 2000.

Figure 7.3 shows the trends in road crash deaths for the different regions between 1980 and the mid-1990s. The increases range from around 20 percent in MENA/EM to around 70 percent in Asia. MENA/EM may have shown the smallest increase over the period, but much of this occurred in the last five years of the period. While the less developed countries have experienced an alarming rise in road crash deaths, developed countries have experienced a drop of about 20 percent. Although differential rates of population and vehicle growth will explain some of these differences, it seems likely that the safety programs of the more developed countries have had some success.

For the future, projections by the World Health Organization from its 1990 database are even more worrying. These predictions have to be treated with some caution, but they nonetheless

**Figure 7.1** *Fatality Risk from Road Crashes, Selected MENA/EM Countries*

Source: Jacobs, Aeron-Thomas, and Astrop 2000. Figures for Kuwait and Tunisia were updated from other sources.

**Figure 7.2** Death Rates from Road Crashes, Selected MENA/EM Countries

Source: Jacobs, Aeron-Thomas, and Astrop 2000. Figures for Kuwait, Morocco, and Tunisia were updated from other sources.

show that road crashes will climb to third place by 2020 as a cause of years of life lost to death and disability (DALYs), as shown in table 7.4. The total number of deaths from road traffic injuries is predicted to rise to 2.3 million annually by 2020, with 90 percent of these deaths in the “less motorized” countries, that is, the developing world (Peden and others 2001).

Figure 7.4 shows fatality indices (deaths as a percentage of all casualties) for a number of countries. The data come from police records. The range in values is enormous, with some countries indicating that more than one in five road crash casualties die from their injuries. It is likely that this result is spurious and that many of the casualties in road crashes have not been reported to the police (Aeron-Thomas 2000). Underreporting of crash injuries has been documented in some places: for example, in Pakistan only 14–39 percent of hospital casualties matched police records (Hyder, Ghaffar, and Masood 2000).

Even though road crashes are likely underreported, the severity rates are unquestionably high. There are several reasons for this, including poor emergency services, medical facilities, and trauma management; overcrowded vehicles and weak standards for occupant protection; and high rates of pedestrian involvement in road crashes.

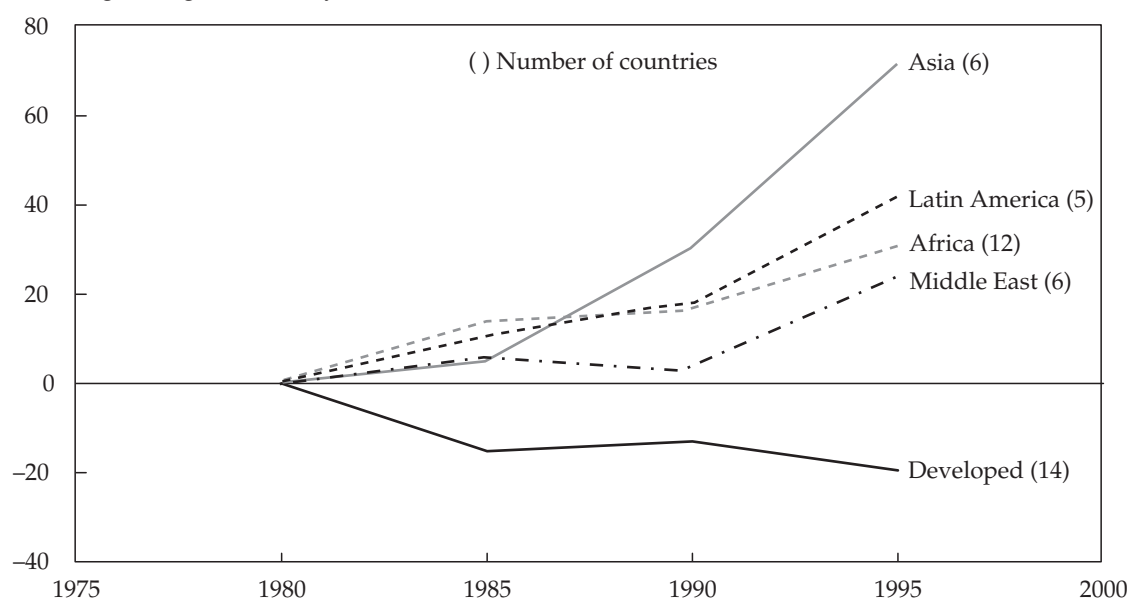
**Table 7.3** Road Crash Deaths per Billion Vehicle-Kilometers Traveled

Country or region	Deaths per billion vehicle-kilometers traveled
United Kingdom (1998)	7.4
Europe (1999)	15.8
United States (1998)	15.8
Bahrain (1998)	15.2
United Arab Emirates (1998)	33.3



**Figure 7.3** *Percentage Change in Road Crash Fatalities, by Region*

Percentage change from base year 1980



Source: Baguley and Jacobs 2000.

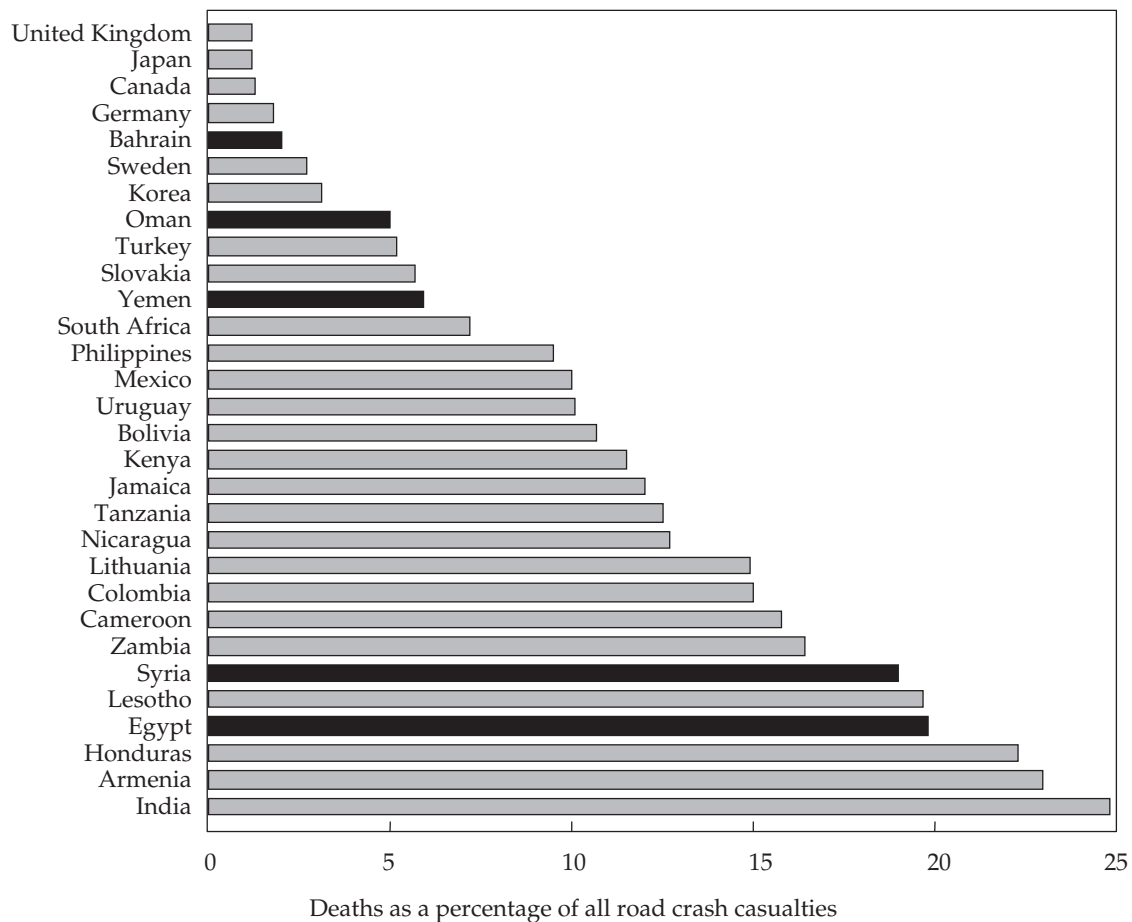
**Who Is at Risk?**

In the MENA/EM region and worldwide, certain groups are especially vulnerable to injury and death in road crashes. In the European Union, for example, the European Transport Safety Council reported that car occupants account for 57 percent of road user deaths, followed by riders of two-wheeled motor vehicles with 17 percent and pedestrians with 15 percent (ETSC 2001). The pattern is slightly different in the developing world, where pedestrians are at much higher risk.

**Table 7.4** *Ten Leading Causes Worldwide of Years Lost through Death and Disability, 1990 and 2020*

1990		2020	
Cause	Rank	Cause	Rank
Lower respiratory infections	1	Ischemic heart disease	1
Diarrheal diseases	2	Unipolar major depression	2
Perinatal conditions	3	<b>Road traffic injuries</b>	<b>3</b>
Unipolar major depression	4	Cerebrovascular disease	4
Ischemic heart disease	5	Pulmonary diseases	5
Cerebrovascular disease	6	Lower respiratory infections	6
Tuberculosis	7	Tuberculosis	7
Measles	8	War	8
<b>Road traffic injuries</b>	<b>9</b>	Diarrheal diseases	9
Congenital anomalies	10	HIV/AIDS	10

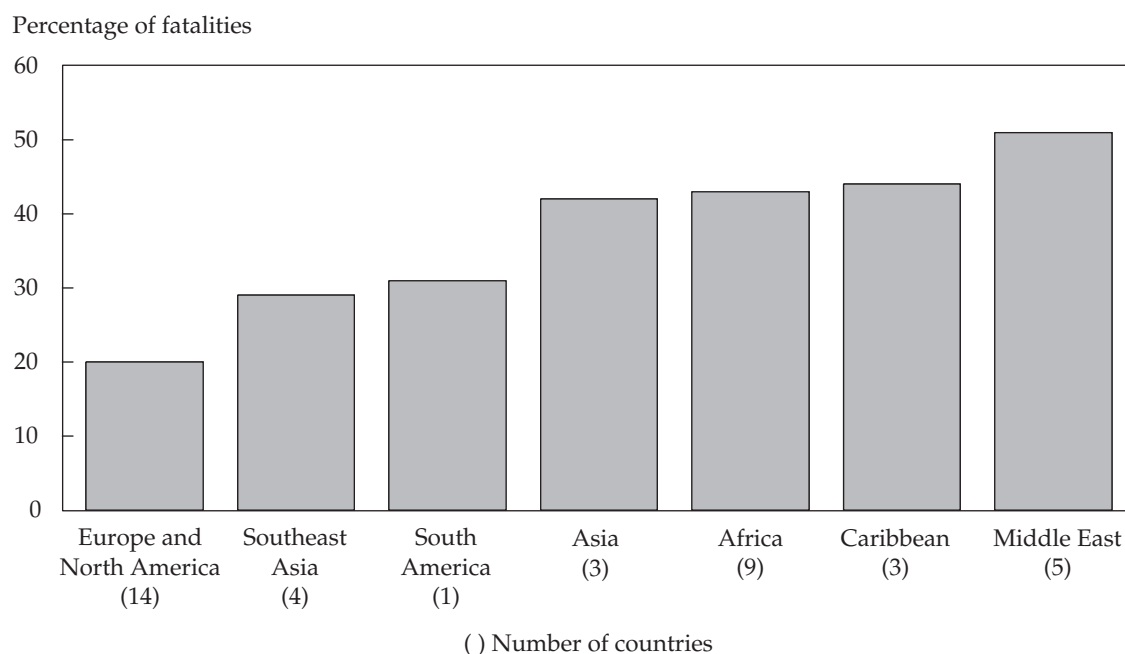
Source: Murray and Lopez 1996.

**Figure 7.4** *Fatality Indices for Selected Countries*

Source: Jacobs, Aeron-Thomas, and Astrop 2000.

Pedestrians account for 40–50 percent of road crash fatalities in Asia, Africa, the Caribbean, and the Middle East (see figure 7.5). The MENA/EM region has the highest overall percentage of pedestrian fatalities, although there are considerable differences among countries in the region (see table 7.5). In addition, motorcycles, buses, and trucks are more likely to be involved in road crashes in developing countries. More than 50 percent of crash deaths in some Asian countries are among motorcyclists. Up to 40 percent of developing-country crashes involve buses and up to 70 percent involve buses or trucks.

The young and the poor are particularly vulnerable. Typically, 20 percent of crash victims in developing countries are younger than 15 years of age. Although females are at less risk than males, women often have to carry the burden of care for those injured in crashes. The poor, unskilled, and unemployed are particularly vulnerable; even some of the wealthy Gulf states report problems with the relatively high involvement of immigrant populations. Poor people often have no social security or other insurance to help deal with medical costs, and, along with women and children, are less likely to receive adequate medical attention when they are injured. The significance of the road crash problem in the context of fighting poverty has been aptly summarized by President James Wolfensohn of the World Bank: “Road safety is an issue of immense human

**Figure 7.5** *Pedestrian Deaths as a Percentage of All Road Crash Fatalities, by Region*

Source: Downing 1993.

proportions. It's an issue of economic and social proportions and also an issue of equity. Road safety very much affects poor people."

### How Can Road Safety Be Improved?

Many industrial countries have demonstrated that it is possible to reduce the death toll from road crashes. The United Kingdom did not quite reach its overall casualty reduction target for the year 2000, but it reduced deaths and serious injuries by about 60 percent. There is, then, considerable potential for all countries to prevent and control injuries from road crashes, and there is much to learn from the successful countries. Four core issues need to be addressed if we are to seriously

**Table 7.5** *Pedestrian Deaths as a Percentage of All Road Crash Fatalities in Selected MENA/EM Countries*

Country	Pedestrian deaths as % of crash fatalities
Bahrain	27 (car occupants 42%)
Jordan	46
Lebanon	62
Morocco	33 (car occupants 34%)
Oman	23
Pakistan	42

Sources: Bahrain, Jordan, Oman: national statistics. Morocco: Coury 2002. Pakistan: Ghaffar and others 1999. Lebanon: Jacobs, Aeron-Thomas, and Astrop 2000.

tackle the problem of road safety: crash/injury information systems, road safety plans, financing, and advocacy. The main requirements for each of these elements are described below.

### *Crash/injury information systems*

The first step is to build an objective and reliable information system on crashes and injuries. This information is crucial for diagnosis, decisionmaking, evaluation, and research. As noted above, the police data often have large gaps because of underreporting by the public involved in crashes, and there is a need for complementary hospital-based data. Some key recommendations for crash/injury information systems include:

- Quality police system with minimal underreporting and useful outputs for ALL users
- Hospital/medical injury surveillance systems linked with police systems
- Sharing of data
- Annual publications
- Linkage into international and regional systems.

Examples of international systems include the International Road and Traffic Accident Database (IRTAD) in Europe and North America, and the Asia-Pacific Road Accident Database (APRAD) maintained by the United Nations Economic and Social Commission for Asia and the Pacific.

### *Road safety plans and targets*

Road safety plans are an essential requirement for focusing scarce resources on key problem areas in an integrated way. These plans are usually multisectoral but they need not be complex. The most important requirements are that they focus on the most vulnerable groups and dangers identified by crash and injury information and that they use proven approaches. It is important that the health sector be involved in planning for road safety and for injury prevention and control, but in many countries the participation and commitment of the health sector are inadequate. Some of the principal requirements for road safety plans are shown in box 7.2.

#### ***Box 7.2 Recommendations for Road Safety Plans***

- Countries need immediate/annual action plans as well as longer-term strategic plans.
- Plans must be achievable and have measurable targets.
- Plan components must have clear accountability and identify funding support and the delivery process.
- The health sector must be involved in the planning process, and links should be established between health sector policies and transport policies. An example is the Healthy Egyptians 2010 plan that includes objectives for reducing injuries.
- Road safety planning courses should be included. Several have been held in the MENA/EM region.
- Countries with road safety plans should help others prepare their own national plans.
- An appropriate regional strategy should be prepared.

*Sources:* Latif 2002; Aeron-Thomas and others 2001.

National targets can vary, from stipulating a schedule of deliverables and outputs to calling for reductions in casualties and social costs. The Healthy Egyptians 2010 program, for example, calls for reducing deaths from motor vehicle crashes to no more than 10 percent of registered injury deaths, and reducing pedestrian deaths to no more than 3 percent of registered injury deaths. It also sets a target of increasing use of helmets, seat belts, and child safety seats to at least 70 percent. The Egyptian target of reducing road crash deaths as a percentage of all registered injury deaths is interesting, but reductions in deaths and casualties or their risks are probably better indicators of real impact. For example, Australia's target calls for a 40 percent reduction in road crash deaths per 100,000 people, from 9.3 in 1999 to 5.6 in 2010. New Zealand takes still another approach: its draft proposal sets a target of reducing the social cost of crash injuries from \$3.1 billion to \$2 billion by 2010.

### *Financing road safety*

Many road safety plans have not been delivered in full because funding streams and the process of obtaining funds have not been identified. There are several innovative approaches (see box 7.3). It should also be noted that often more than half the expenditure on road safety is spent on care and treatment of victims. This balance needs to be addressed, and the health sector stands to gain significantly from efforts to do so.

### *Advocacy*

It often seems that road crashes have become an acceptable part of everyday modern life. However, governments and societies have begun to protest, and Sweden's recent policy of "vision zero," which tolerates no deaths from road crashes, challenges policies that assume that some level of road deaths and injuries is unavoidable. In most countries there is still a need to raise awareness about road safety and increase the commitment to making roads safer for the next generations. Advocacy is therefore an important component of a national road safety strategy—to raise awareness of decisionmakers, to raise awareness and empower communities, and to promote effective road safety measures.

The health sector can play a significant role in advocacy. It has the respect of government and communities, and of all the government sectors it stands to gain the most in freeing up its resources when crash casualties are reduced.

#### *Box 7.3 Four Approaches to Financing Road Safety*

- Insurance levies: for example, Finland raised \$8 million from a 1 percent levy for education and publicity.
- Hypothecation: for example, Western Australia pays one-third of traffic fines into a road trauma trust fund.
- Road funds: road user charges derived from vehicle registration or fuel sales can be used to finance road network safety, as for example in Botswana and New Zealand.
- Technical assistance: development support may be available. For example, Jordan and Morocco have used international support.

*Source:* Aeron-Thomas and others 2001.

## Who Is Responsible?

Many sectors both inside and outside government can make valuable contributions to road safety. There are three main pillars. First, strong leadership is a critical requirement, along with good management, organization, and coordination. Second, partnerships are vital, especially partnerships that encourage community participation. Finally, delivery depends on an adequate team of road safety professionals and ongoing capacity building.

### *Leadership, management, and coordination*

Strengthening the management of road safety is essential for most countries in the MENA/EM region. There are several models for effective road safety organization, including a strong lead ministry (as in the United Kingdom and Sweden) and multisectoral committees or boards (as in Victoria State, Australia). Nongovernmental organizations (NGOs) play important roles in some places. It should be noted, however, that road safety councils or committees often are not successful: they need clear terms of reference and the capability to prepare and deliver an achievable plan. Whatever model is used, the effort needs capable technical support, clear funding streams, and strong stakeholder commitment.

The health sector can play a significant role in leadership and in strengthening coordination. For example, the health sector led an injury prevention program in the Arab Republic of Egypt, and has chaired local government road safety partnerships in the United Kingdom (Aeron-Thomas and others 2001; Latif 2002).

### *Partnerships*

Partnerships at all levels are vital for crash and injury prevention. They should bring together:

- Transport, health, and other involved government agencies at all levels
- National, regional, and local levels
- Government, the private sector, and civil society.

It is particularly important that business partners work with government and others to meet the road safety challenge. Transport services and vehicle manufacturers are major business sectors that are directly affected and involved. They can and should contribute significantly to the improvement of road safety practices and raising of safety standards.

The Global Road Safety Partnership (GRSP) is an international partnership between business, civil society, and government, dedicated to the sustainable reduction of road crashes. It is one of four Business Partners for Development programs launched by the World Bank in 1999. The GRSP focuses on two main activities. First, it initiates partnership-based road safety projects and evaluates them. For example, it has promoted a publicity and enforcement campaign against drinking and driving in Bangalore, India, which includes a national health institute and an alcohol policy group funded by the alcoholic beverage industry. Second, the GRSP disseminates road safety knowledge, in part through its Web site at [www.GRSProadsafety.org](http://www.GRSProadsafety.org). In the MENA/EM region, Lebanon, Jordan, and the Syrian Arab Republic are considering participation in GRSP programs.

Many development agencies are also committed to promoting partnerships for road safety improvement, among them the Department for International Development of the United Kingdom.

Local programs and community participation are essential to ensure that measures are tailored to the needs of communities, especially the needs of poor and vulnerable people, and to

encourage local ownership and acceptance of the improvements. Community participation also encourages intersectoral approaches. NGOs are often good at brokering partnerships and representing the underrepresented.

### *Road safety professionals and capacity building*

Adequate professional units that can develop and deliver integrated multisectoral plans are essential for the improvement of road safety. A key problem for the less motorized countries, therefore, is the lack of professional road safety units and staff to plan and deliver programs of interventions in the transport, health, and other involved sectors.

Most countries in the MENA/EM region need capacity-building programs that include institutional strengthening and the development of sustainable training programs. The health sector can play a key role in capacity building in first aid, emergency services, and trauma care management. Outsourcing and NGO participation are important options, for example in relation to driving and vehicle tests. As an important part of capacity building, road safety professionals need to be valued and supported.

## **Interventions**

There are two main areas of intervention in road safety programs: (a) crash and injury prevention, and (b) post-crash measures to reduce deaths and disability from crashes.

### *Crash and injury prevention*

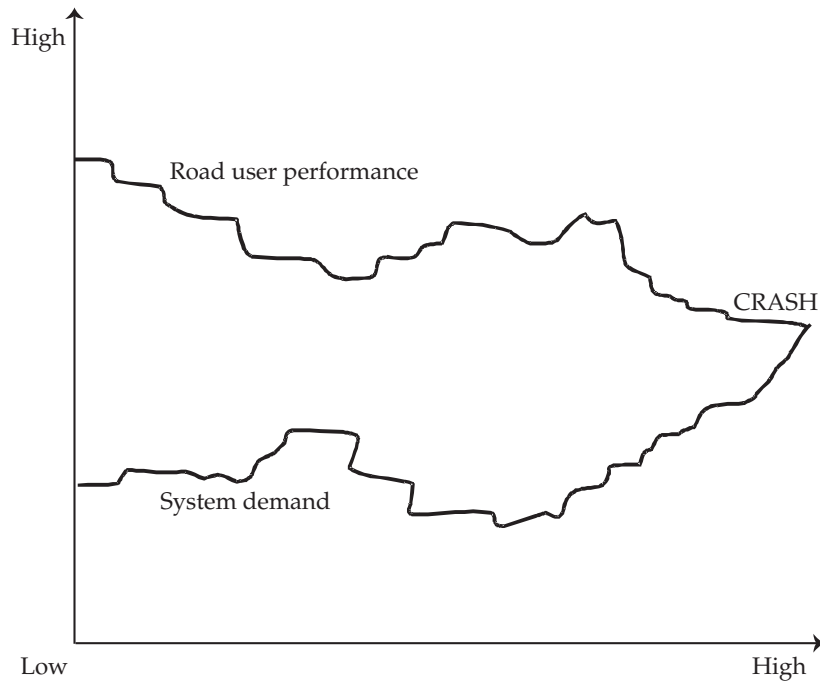
An essential first step in preventing road accidents is to understand the various factors that contribute to them. Road crashes are usually blamed on road user error and often on poor driver behavior. However, scientific studies conducted by multidisciplinary teams have indicated that the police statistics usually considerably underestimate the contribution of road environment factors. For example, Sabey and Staughton (1975) found road environment factors to be involved in 28 percent of all crashes, mostly in combination with human factors, which were present in 95 percent of crashes. The vehicle itself was an additional factor in a minority of crashes (8 percent).

Although human factors are involved in almost all road accidents, it does not follow that behavioral measures alone hold the key to crash prevention. Recently road safety programs have moved toward a systems approach, with emphasis on providing environments and systems that take into account road users' limitations. This can be done both by simplifying system demands and by providing safeguards and forgiving mechanisms to protect those making errors. Environments are also being designed to avoid leading road users into "unexpected" traps and to inform them of the type of conditions they face. Figure 7.6 shows how crashes can occur when high system demands occur simultaneously with low road user performance. It follows, therefore, that reducing system demand can reduce the likelihood of a crash, taking into account human performance.

Research points to four main interventions with a large potential for crash and injury reduction:

- Enforcement (speed reduction; drinking-and-driving enforcement; seat belts and car occupant protection; helmet use).
- Road engineering.
- Vehicle engineering.
- Education, training, and publicity. These are most effective if integrated with the measures above.



**Figure 7.6** Systems Approach to Understanding How Crashes Occur

Speed reduction stands out as a key factor in the survival of pedestrians in crashes and in saving lives overall. Lower speeds reduce the likelihood of crashes: research in the United Kingdom found that crashes are reduced on average by 3 percent for every kilometer drop in mean speed (Finch and others 1994). Furthermore, higher speeds tend to make crashes less survivable. One study documented the effect of car impact speed on pedestrian deaths: at 32 kilometers per hour, 5 percent of pedestrians hit by cars were killed; at 48 kph, 45 percent were killed; and at 64 kph, 90 percent were killed (Ashton and Mackay 1979).

Since speed is such an important factor in crashes, it is interesting to observe what happens when posted speed limits change (see table 7.6). Evidence from several European countries and the United States suggests a significant effect both on actual mean speeds and on crash deaths.

Some estimates are also available for lives saved by other enforcement measures. According to sources reviewed by the author for the World Health Organization, in the United States legislation against drinking and driving saved more than 5,000 lives between 1984 and 1989; achieving 50 percent use of seat belts saved an estimated 4,800 lives in 1990; and use of motorcycle helmets saved an estimated 5,000 lives between 1982 and 1987.

**Table 7.6** Impact of Changes in Speed Limits

Country	Limit change	Change in mean speed	Change in deaths
Switzerland (rural)	100 to 80 kph	–10 kph	–6%
Denmark (built-up)	60 to 50 kph	–3 to –4 kph	–24%
Sweden (motorways)	110 to 90 kph	–14 kph	–21%
United States (interstates)	55 to 65 mph	+2 to +4 mph	+19 to +34%

**Table 7.7** *Costs and Benefits of Selected Countermeasures in the United Kingdom*

<i>Countermeasure</i>	<i>Estimated costs (per site)</i>	<i>Reduction in crash rates (per year, unless otherwise noted)</i>
Speed cameras (1990s)	£12,500 for installation + £8,500 for annual operation	28% (1.25 fewer per site per year) or 3% for every 1 kph reduction in speed
Red-light cameras (1990s)	£9,200 for installation + £5,600 for annual operation	18% (0.48 fewer per site per year)
Camera enforcement (speed and red-light) (2000–02)	Not available	35% fewer killed and seriously injured in two years
Traffic calming (20 mph zones)	£100,000 to £200,000	60% in annual crash frequency
Fiber optic signing	About £7,000	20% predicted crash reduction
Speed limiters (fixed advisory)	Not available	9% predicted crash reduction from simulation
Compulsory seat belt wearing	Hard to estimate	Estimated 7% reduction in deaths

*Sources:* Hooke, Knox, and Portas 1996; DfT 2003; Barker and Baguley 2001; Webster and Mackie 1996.

There is also some evidence on the costs and benefits of different countermeasures, as shown in table 7.7.

Vehicle design and occupant protection have made significant contributions, especially to injury prevention. Researchers and road safety stakeholders including the health sector have strongly advocated improved vehicle designs, and the vehicle manufacturers have responded. There is still considerable scope for improvements in vehicle engineering and in intelligent transport systems (telematics). This is reflected in the components of the United Kingdom's road safety target for 2020, set as a 40 percent reduction in persons killed or seriously injured (KSI). More than 30 percent of this national target is to be delivered through improvements in vehicle engineering (see table 7.8). It is also interesting to note the relative contributions of central and local government to road safety interventions in the United Kingdom.

### *Post-crash measures and injury control*

Post-crash measures are often overlooked in road safety plans, but these also offer opportunities for saving lives and reducing disability, particularly where health facilities are inadequate. The problems of access to health care are usually greater for poor people and those in rural areas. This is clearly an intervention that comes under the health sector and one where it is important for health and transport to have integrated policies. Some key areas for improvement are:

- First aid training and provision
- Emergency telephone and central control
- Emergency transportation systems—improved resources and better management
- Improved casualty department, trauma care, and triage
- Improved rehabilitation services
- Low-cost medical insurance schemes.

**Table 7.8** *Components of the United Kingdom's 2020 Road Safety Target of 40 Percent Reduction in KSI, by Area of Intervention and Government Responsibility*

<i>Area of intervention</i>	<i>Reduction in number killed or seriously injured (%)</i>	<i>Central government responsibility</i>	<i>Local government responsibility</i>
Vehicle engineering	14.6	++	
Novice drivers	1.9	++	+
Drink/drugs driving	1.2	++	+
High-mileage drivers	1.9	++	++
Road engineering	7.7	++	++
Rural single carriageway	3.4	+	++
Speed reduction	5.0	+	++
Child safety	1.7	++	++
Pedestrians/cyclists	1.2	+	++
Driver behavior	1.0	+	++

+ Some responsibility for delivery. ++ High responsibility for delivery.

Sources: Reduction targets: Broughton and others 2000. Government responsibility: David Lynam, Transport Research Laboratory, Crowthorne, U.K.

### The Health Sector's Role in Road Safety

The World Health Organization's five-year strategy for preventing road traffic injuries highlights the need to focus on epidemiology, advocacy, and prevention (Peden and others 2001). The health sector has a key role to play in all three areas. An important additional area where the health sector can and should take the lead is injury control, as described above. Specific elements of the health sector's role in road safety are summarized in box 7.4.

#### **Box 7.4** *The Health Sector's Role in Road Safety*

- Establish injury information systems
- Increase role and responsibility in leadership, coordination, and planning
- Integrate health sector policies with transport and safety policies
- Adopt mortality and injury reduction targets for road crashes
- Advocate improved policies and promote specific proven interventions
- Improve road safety education through health communication systems at the national and community levels
- Improve emergency and casualty services, especially for the poor and vulnerable
- Improve rehabilitation services
- Encourage and strengthen partnerships with transport, NGOs, the private sector, and insurance providers
- Improve monitoring, evaluation, and research
- Develop sustainable training programs at the regional and national levels, such as in first aid and trauma care management
- Disseminate lessons learned throughout the MENA/EM region and scale up successes.

It is especially important that the health and transport sectors work together, and there are many opportunities for this. In particular, both health and transport policies need to address issues of access to health care, particularly for the poor and in emergencies. Two other areas where health and transport can add value by working together are preventing the spread of HIV/AIDS through the risky behavior of transport sector workers, and reducing pollution by the transport sector (Downing and Sethi 2001).

## Conclusions and Recommendations

Road crashes present a major and growing challenge to the health sector worldwide and in the MENA/EM region. Worldwide, 1 million people are killed and about 50 million are injured each year in road crashes, and the WHO predicts 2.3 million deaths from road accidents in 2020. In the MENA/EM region, more than 70,000 deaths from road crashes cost the region approximately \$7.4 billion each year. Road crash deaths increased by 20 percent in MENA/EM from 1980 to 1995, and the trend has continued. However, *countries can reverse this trend without spending large sums of money.*

Several highly motorized countries have achieved notable successes in reducing deaths and injuries from road crashes. Activities and achievements in the MENA/EM region vary from country to country, but several have moved forward on road safety management, and the more motorized countries in the region, notably the Gulf states, have made considerable advances in their road infrastructure and supporting systems. However, the problem of pedestrian deaths and injuries remains extremely serious for the whole region.

The core interventions outlined in this chapter are not terribly expensive, suggesting that MENA/EM countries can rise to the challenge without spending vast sums of money. Key recommendations for countries and for the region as a whole are summarized in box 7.5. They are

### **Box 7.5** Country and Regional Recommendations

Countries should:

- Develop data-led plans with integrated contributions from transport, health, and other sectors
- Introduce health-related targets and monitoring
- Establish effective committees or powerful leadership mechanisms for coordination
- Identify financial support—innovative solutions are available
- Develop a cadre of valued professionals for successful delivery of road safety plans
- Adopt partnership approaches and engage the private sector and civil society
- Establish injury information systems and strengthen research and evaluation
- Disseminate lessons learned and scale up successes.

The region should:

- Facilitate the adoption of best practices through workshops, by producing guidelines and manuals, and by developing regional policies
- Develop a regional road safety strategy with measurable targets and carry out monitoring, possibly through two yearly summits
- Strengthen regional facilities and centers of excellence that can help other countries, particularly the poorer nations
- Develop a regional crash and injury database and promote a regional road safety research program.

based on international experience rather than on a detailed knowledge of current local situations in MENA/EM countries. Therefore the recommendations need to be discussed by all stakeholders and modified according to local priorities and opportunities.

The health sector bears the brunt of the problems caused by road crashes, and therefore has a great deal to gain by strengthening its role in the prevention and control of crash deaths and injuries. Toward this end, the sector must increase its role in the promotion, planning, delivery, and monitoring of road safety programs. It should engage in constructive partnerships with transport and other agencies—not just to prevent and control injuries from road crashes, but also to achieve other health targets and millennium goals. Finally, the health sector should focus on those interventions where it can have maximum effect: information systems, advocacy, education, community programs, emergency services, trauma care, and triage.

The potential for saving lives and suffering from road crashes is huge. The time to act is now.

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# 8

## *Strengthening Primary Health Care in the Islamic Republic of Iran*

Bijan Sadrizadeh

In 1984 a population survey in the Islamic Republic of Iran showed that more than 42 percent of all deaths were occurring in children under 5 years of age. About 80 percent of these childhood deaths occurred in infants under 1 year of age. Of these infant deaths, approximately one-sixth were due to vaccine-preventable diseases; almost one-sixth were due to infectious diseases, which in most cases are preventable; and nearly one-fifth occurred as a result of diarrheal diseases. Altogether, the survey showed, more than 52 percent of the infant deaths were due to causes that could have been prevented.

In response to these problems, from 1985 onward high priority was given to the development of primary health care (PHC) services, including expansion of immunization coverage and programs to control childhood diarrheal diseases and acute respiratory infections. As a result of these intensive efforts, both morbidity and mortality from vaccine-preventable diseases, diarrhea, and respiratory infections have been drastically reduced. Leprosy and neonatal tetanus have been eliminated, dracunculiasis (guinea worm) has been eradicated, and schistosomiasis and poliomyelitis are now on the verge of eradication.

The largest country in the Middle East, with a population of 64.5 million (2000), the Islamic Republic of Iran has seen its overall health indicators improve remarkably over the last two decades (see table 8.1). For example, during the period 1988–2000, the infant mortality rate decreased from 45 to 28.6 per 1,000 while the under-5 mortality rate fell from 56 to 36 per 1,000. The maternal mortality rate fell from 90 to 37.4 per 100,000, and the population growth rate declined from 3.2 percent to 1.24 percent. At the same time, life expectancy increased from 67.7 to 70 years.

These improvements have come in the context of significant shifts in the country's health patterns, linked to socioeconomic changes, industrialization, urbanization, demographic transitions, change in lifestyle and diet, and increasing access to health services. On the one hand, most of the endemic communicable diseases have been controlled, eliminated, or eradicated. On the other hand, because of reduced mortality, increased life expectancy, and a growing elderly population, noncommunicable diseases are moving to the top of the list of causes of death. According to recent information, the three leading causes of death are now cardiovascular diseases, injuries, and cancer.

### **National Health Policies and Strategies**

In the third five-year National Development Plan (2000–04), the Islamic Republic of Iran reaffirms its commitment to the delivery of comprehensive health care as the right of all people. The

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**Table 8.1** *Current Health Indicators for the Islamic Republic of Iran*

<i>Indicator</i>	<i>Value</i>	<i>Year</i>
Midyear population estimate	64,528,000	2000
Population growth rate (percent)	1.24	2000
Total fertility rate	2.0	2000
Crude birth rate (per 1,000 population)	16.3	2000
Crude death rate (per 1,000 population)	4.4	2000
Newborns with birthweight of 2,500 grams or more (percent)	94	2000
Children with acceptable weight for age (percent)	89	2000
Infant mortality rate (per 1,000 live births)	28.6	2000
Under-5 mortality rate (per 1,000 live births)	36	2000
Maternal mortality rate (per 100,000 live births)	37.4	2000
Life expectancy at birth (years), both sexes	69	2000
Adult literacy rate (10 years and over) (percent):		
Both sexes	81.4	1997
Males	86.8	1997
Females	75.9	1997
Per capita GNP (US\$)	1,500	2000
National health expenditure as percentage of GNP	4.5	2000
Ministry of Health expenditure as percentage of GNP	3.0	2000
Population with safe drinking water (percent)	92.0	2000
Population with adequate excreta disposal facilities (percent)	82.0	2000
Contraceptive prevalence rate (percent)	72.9	1997
Births occurring in hospitals/health centers (percent)	81.2	1996
Births attended by trained health personnel (percent)	84.0	1996
Population with access to basic health services (percent)	94.0	1996
School enrollment (percent)		
Primary	96.5	
Secondary	80.0	
Age at marriage (female)	20	1996
General fertility rate	79.4	1996
Unmet need for contraceptives (percent)	7.7	1997
Pregnant women receiving prenatal care (percent)	58.1	1997

plan also outlines support for the policy guidelines of health for all, with targeted adaptation to the socioeconomic and cultural realities of the country. In this framework, the government has made a number of explicit choices:

- Focus on comprehensive primary health care as a priority
- Consolidate the 1985 initiative of integrating the Universities of Medical Science into the Ministry of Health, in order to reorient the training of human resources for health to the realities of the health care system and the health needs of the country
- Strengthen national strategic policies for the control, elimination, and eradication of communicable and noncommunicable diseases
- Support the basic needs of low-income groups, the disabled, and other vulnerable groups that are not covered by insurance and social welfare services
- Promote intersectoral action and community involvement in health and integrated total development for a better quality of life
- Pursue the concept of essential drug policies and sustain the generic system of drug labeling to improve efficiency, promote competition, and encourage the private sector

- Promote food safety, food security, and nutrition literacy with emphasis on children, mothers, and other vulnerable groups, and sustain micronutrient policies that attempt to achieve universal coverage
- Introduce regulatory norms and quality programs for continuing education of all categories of health professionals
- Strengthen referral care by expanding specialized outpatient and short-stay facilities and improving emergency care referral support
- Ensure the comprehensive coverage of the different strata of society with health insurance
- Encourage the privatization of health care delivery through cooperative-based schemes and/or public-private partnership ventures
- Expand health system research to all levels of the health care delivery system
- Strengthen the health management information system for evidence-based decisionmaking
- Promote national self-reliance in essential drugs manufacturing and procurement of medical supplies and equipment.

### Development of the PHC System

In 1972, the Islamic Republic of Iran in collaboration with the World Health Organization (WHO) undertook a research project in West Azarbaijan Province. Among its objectives were the establishment of “health houses” and the training of auxiliary health workers known as *behvarzes*. The government accepted the concept in 1977 and decided to expand the project throughout the country. During 1977–78, accordingly, 1,800 health houses, 1,200 rural health centers, and 1,220 urban health centers were established countrywide.

In 1979 the former Ministry of Health and Welfare commissioned a large group of experts to draw up a plan for radical change in the infrastructure of the country’s health system, in line with the findings of the West Azarbaijan research project. Later, three health experts began designing a new health system based on the PHC approach. These efforts resulted in publication of a guide entitled “An Approach to Health and Health-Manpower Development” in 1981. Preparation of master plans for the expansion of PHC networks to every district in the country began that year and continued until 1984. In early 1985, in the midst of the eight-year war with Iraq, the Parliament approved an allocation of 2,500 million rials to establish a prototype PHC network in one district of each province. This approach continued until 1996, when almost all provinces completed their district PHC networks at the provincial level.

In compliance with a 1985 law, the medical sciences, including medical education, were removed from the Ministry of Culture and Higher Education and brought under the Ministry of Health. Formed through this merger, the Ministry of Health and Medical Education is responsible for both health care provision and medical education at the national level. The universities of medical sciences and health services (39 at present) are responsible for medical education and health care delivery at the provincial and district levels.

Maternal and child health and family planning programs are under the jurisdiction of the ministry’s Family Health Department, established in 1976. Since its inception, the family health program has played a major role in reducing maternal and child mortality. Its activities include prenatal and postnatal care; promotion of breastfeeding and child nutrition; and a vast expansion of family planning throughout the country. It is also responsible for developing programs to curb childhood diarrheal diseases and acute respiratory infections, for the Expanded Program on Immunization, and for the Integrated Management of Childhood Illness program.

Reproductive health and family planning services are now being provided to the public through the well-organized health network system. The services include prenatal and postnatal care, safe delivery, family planning, maternal and child care, diagnosis and treatment of infertility, and prevention and control of breast and cervical cancer and sexually transmitted diseases. Various

modern contraceptives are available in rural and urban health centers and health houses, and surgical contraception is provided by mobile teams free of charge.

Efforts have been made to improve the quality of care by training service providers at different levels of the PHC network system. In view of the importance of family planning counseling in enabling people to make free and informed choices, nearly 487 premarriage counseling centers have been established throughout the country.

The Ministry of Health and Medical Education has recently been restructured. Under the new structure, the Center for PHC Development and Health Promotion is responsible for planning, monitoring, and evaluating the primary health care program, including development of PHC networks, at the country level. The center consists of seven “expert groups” focusing on health economics, PHC structure, health manpower development, health education, health management, curative care, and health resources (health facilities, supplies, and equipment).

### Structure of the PHC Network

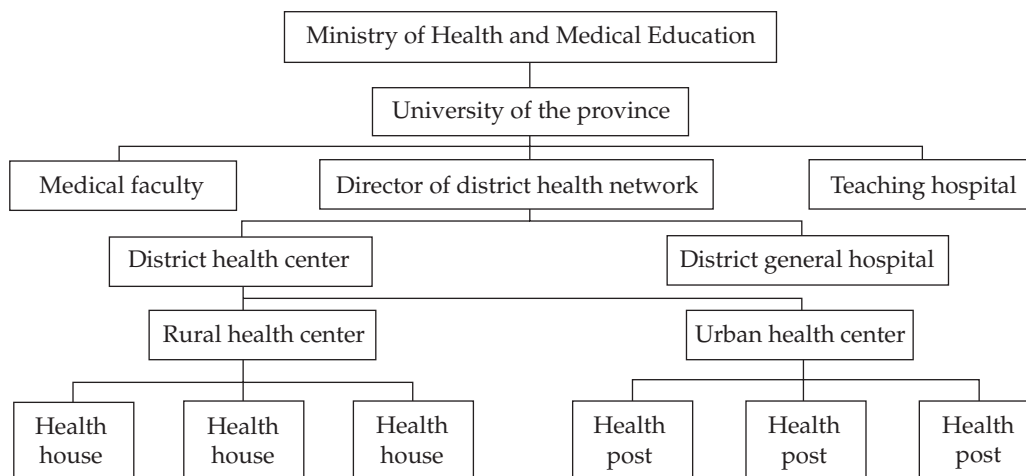
Following the victory of the Islamic revolution in 1979, the Ministry of Health attempted to reform the health system in order to provide a more equitable allocation of health resources based on PHC. Three basic policies were declared:

- Priority of prevention as a long-term investment
- Priority of rural and underprivileged areas in resource allocation
- Priority of ambulatory care over hospitalization.

Based on these policies and on the results of the West Azarbaijan pilot conducted in the early 1970s, the ministry designed a network of health facilities whose main objective is to deliver primary health care services equitably to all who need them. The PHC network (see figure 8.1) is an integrated and stratified health care delivery system. Initially the system focused on the rural areas, but the migration of villagers to the urban peripheries and the paucity of health facilities in these areas made it necessary to change the design of the urban network in later years.

The health houses are the most basic rural facilities in the network, each covering an average of 1,500 people. At present more than 16,000 health houses are operating throughout the country, providing coverage for more than 90 percent of the rural population. Health houses are usually located in accessible villages and may cover several satellite villages as well. Each health house is

*Figure 8.1 Structure of the PHC Network of the Islamic Republic of Iran*



staffed by a male and a female community health worker (*behvarz*), selected from among young and interested villagers. After receiving two years of training in a *behvarz* training center, these health workers provide PHC services, including family planning and reproductive health care.

The rural health center is a village-based facility that has one to five health houses under its supervision. A general practitioner, several health technicians, and administrative personnel staff the rural health center.

The urban health posts are responsible for delivering primary health care to urban populations, functioning much as the health houses do in rural areas. Each urban health post covers a population of about 12,000. Three family health technicians, one environmental health technician, and a midwife (who is also responsible for family planning) staff each health post.

The urban health center, which is functionally similar to the rural health center, has three to five health posts under its control. Two general practitioners work in each urban health center, mainly supervising the health posts and managing case referrals. The private sector has a predominant role in providing curative services in urban settings.

At the managerial level, the district health center is responsible for logistics and administration of the district health network. The director of the district health network coordinates all activities and health programs at the district level.

The Ministry of Health and Medical Education is responsible for both health science education and provision of health services. In each province, a state university of medical sciences and health services is responsible for these activities. Therefore, in addition to the district health network directorates, different medical faculties and teaching hospitals are also part of this organizational tier in each province. As a result of this organizational unity, academic faculty members have been more or less involved in health system management, evaluation, research, and design. It is hoped that close cooperation between scientific and executive bodies will facilitate the movement of the Iranian health system toward more efficient, equitable, and sustainable service provision.

## **The PHC Information System**

The information system of the health network is mainly based on data gathered from defined populations covered by the health facilities. Health houses cover the great majority of the rural population, and in urban areas, the health posts are gradually expanding their coverage. In some urban areas, health centers directly cover a defined population and use the same tools and forms as the health houses and health posts for gathering and processing data. Through annual censuses, these facilities update their information on the population living within their catchment areas. In addition to the censuses, routine data are gathered using special tools that are described below. Because it is not possible to gather all the required data through a registration system, periodic surveys are also conducted throughout the country, mainly to gather data related to coverage, household effects, and outcomes of health programs.

### ***Household folders***

Each household has a folder containing all health-related information on the household, including the name, sex, age, and literacy status of each member; the mother's condition during previous pregnancies; health status of the children; history of major diseases; patients requiring long-term care; births and deaths; and sanitary condition of the home.

### ***Vital horoscope***

A large wall chart is displayed in each health facility, giving an updated account of births, deaths, and family planning activities in the catchment area. The chart owes its name to the colored and

segmented circle at its center, which resembles the horoscope of ancient astrology. From the center outwards, concentric rings represent live births and mortality among infants, children aged 1–5, and people over 5 years of age. Each circle is divided into 12 segments representing months of the year. Six other tables show the results of the current year's census, with information on live births (including birthweight, type of birth attendant, sex, mother's age at delivery, and so on); maternal mortality; all deaths by age and sex; under-5 deaths by cause; and data on family planning activities. All data are recorded for main and satellite villages. Box 8.1 lists indicators extractable from the vital horoscope.

### *Follow-up logbooks*

Health personnel record their daily activities in specially designed logbooks as well as in the household folders. Each logbook covers a specific program or activity, such as family planning, medications dispensed, or immunization.

### *Monthly report forms*

All facilities in a district health network are required to prepare monthly reports on their activities for submission to the district health center. To avoid a last-minute rush at the end of each month, all data are tallied daily on large, user-friendly tables posted on the health facility wall. At the end of the month, the tallies are added up.

### *Health network information software*

Expansion of the health network and opening of new facilities are based on a master plan in which the number and locations of health facilities are determined for each district. This plan also

#### ***Box 8.1 Indicators Extractable from the Vital Horoscope***

Population by age group  
 Dependency ratio  
 Crude birth rate  
 Crude death rate  
 Mortality rate by sex  
 Under-5 mortality rate  
 Infant mortality rate  
 Neonatal mortality rate by cause (tetanus, low birthweight, etc.)  
 Cause-specific mortality rate (diarrhea, measles, acute respiratory infections, accidents, etc.)  
 Maternal mortality rate  
 General fertility rate  
 Age-specific fertility rate  
 Total fertility rate  
 Population growth rate  
 Sex ratio  
 Percentage of deliveries at maternity facility or hospital  
 Percentage of deliveries by trained birth attendant



includes the number and qualifications of personnel at different levels of the network. For proper planning and resource allocation, up-to-date information about the expansion of the network was of utmost importance in the early years of the process. To respond to this need, special software was developed for gathering and processing data on the expansion of the network in relation to the master plan. The program also includes updated information on the human and most important nonhuman resources in each existing facility, as well as the data recorded in the vital horoscopes. The district health center is the most basic level of data entry. Diskettes are used to transfer data from the district to the provincial level and from there to the PHC Department in the Ministry of Health and Medical Education.

### *Death and disease registration*

Information about deaths and diseases is of critical importance in setting priorities and in evaluating the performance of the health system. In the Islamic Republic of Iran, the Civil Registration Organization is legally responsible for registering deaths. Physicians issue death certificates that include causes of death. When physicians cannot determine a cause of death based on available data, the district forensic medicine department is responsible for making a determination. In the absence of physicians, which is very rare nowadays, local authorities are permitted to verify a death and determine its probable cause.

The intersectoral nature of death registration in our country is the main reason for its low reliability, validity, and representativeness. Accordingly, a decision was made to improve the capacity of the district health network to register all deaths by age, sex, cause, and place of residence. To accomplish this task, the district health network does not need to recruit new health personnel or make any change in its structure. Based on the existing structure, the following sources could be used for registration of deaths:

- District hospital
- Health houses (for deaths occurring in rural areas)
- Health volunteers (for deaths occurring in urban areas)
- Forensic medicine department (for deaths that should be investigated because of legal concerns)
- Authorized cemeteries.

Currently, deaths in rural areas are recorded in the vital horoscopes and reported to the national level on a yearly basis. Although causes of death are also recorded, they are by no means always reliable and valid. Because health facilities in urban settings do not always have a defined catchment area and do not provide complete coverage of the urban population, it is not possible to gather death data in urban areas as it is done in rural areas. In order to gather urban data and also improve the quality of rural registrations, it was decided to gather death data from all of the sources listed above. These data are gathered, compared, and checked in district health centers, and after excluding duplications, defective and unreliable data are corrected through contact with reporting sources. The final lists compiled by the districts record for each death the person's name, age, sex, and place of residence, as well as the place, cause, and date of death. Causes are recorded according to the International Classification of Diseases (ICD), using both 17- and 103-group classifications. Those causes in the 103-group classification that are not encountered in the Islamic Republic of Iran (mainly tropical diseases) have been replaced by diseases like thalassemia and G6PD deficiency.

The district lists are sent to the provincial health centers where the data are entered using the "death registration software" designed for this purpose. The software compares new cases entered and deletes duplicates after verification.



This initiative began in Bushehr Province, with a population of about 700,000, three years ago, and was expanded in 1999 to four provinces (including Bushehr) with a combined population of about 5.5 million. The success of the initiative in these provinces encouraged us to add six more provinces in 2000. Therefore, death information by name, age, sex, place of residence, place of death, cause, and date of death is now available in 10 of 28 provinces of the country, and we hope soon to have it for the whole country.

A comprehensive surveillance system including all important or reportable diseases does not exist in the Islamic Republic of Iran, but for special groups of diseases well-developed surveillance systems are being used and are producing reliable and valid data.

Four main sources of data are used for measurement of disease-related indicators:

- Compulsory reporting of certain diseases. These include malaria, poliomyelitis, measles, tuberculosis, diphtheria, HIV / AIDS, neonatal tetanus, cholera, major thalassemia, and meningococcemia. Except for HIV / AIDS, our current information about diseases in this group is complete and acceptable.
- Surveys. The incidence and prevalence of some childhood illnesses, including diarrheal diseases, acute respiratory infections, and nutritional disorders, have been measured through surveys. The prevalence of major disabilities in all age groups and diabetes have also been measured in this way.
- Data being gathered during the primary implementation phase of certain health programs. Programs have been launched in a few study areas to control diabetes, hypertension, brucellosis, kala-azar, and severe mental disorders. Data gathered from the study areas may make it possible to extrapolate the situation of these health problems in other parts of the country.
- Medical records of hospitals and outpatient clinics. In university teaching hospitals ICD codes are used for disease classification. The quality of records is usually acceptable in these centers. The low quality of medical records in other centers decreases their usefulness as a source of data for calculating disease indicators.

### *Strengths and weaknesses of the health information system*

The existing health information system has a number of strengths. It is based on active service delivery to a defined population, and is kept up to date through linkage to routine activities. It employs user-friendly data-gathering tools. And there are clear standards and guidelines for data gathering that are taught during training courses for health personnel, especially *behvarzes*.

The main weak points of the current information system are poor analytical capability and stratification. These weaknesses have resulted in the information system not being used in decisionmaking, and as a result, insufficient attention has been paid to the validity, reliability, and representativeness of indicators. This has made the information system rather infertile, and considering the resources allocated, it has played a weak role in the continuous evaluation and improvement of the health system.

### **Mobilization of Resources**

Reflecting the high priority accorded to primary health care, the government has increased the program's annual budget regularly. Currently, the Ministry of Health and Medical Education, with an expanded infrastructure throughout the country, accounts for a considerable share of the national budget. The primary health care budget has centralized and decentralized components. The universities of medical sciences and health services have decentralized budgets for

the establishment of primary health care facilities (rural and urban health centers, health posts, and health houses) and for particular health activities. However, because of the importance of the PHC program, there is also a special centralized budget line intended for quality improvement and for provision of supplies and equipment to the newly established rural/urban health centers, health posts, and health houses. In 2001 nearly \$60 million was allocated to this budget line, and it is expected to continue in the coming years with appropriate increases.

The primary health care program benefits from the support of a number of external organizations. UNICEF and the WHO contribute about \$200,000 and \$100,000 respectively to the program each year.

The World Bank has contributed to the development of PHC services in the Islamic Republic of Iran through two projects in the context of a loan agreement. The first began in 1993 with a budget of \$141 million. It aimed to expand rural health centers, strengthen managerial capacities, strengthen the management information system, and develop a population control program. Of the 549 rural health centers envisaged by the project, 324 had been established as of mid-2002. A National PHC Management Center has been established and dozens of management training courses have been conducted. The project has also played a role in implementation of the Demographic Health Survey, development of population control activities, and strengthening of the management information system.

The second project, with a budget of \$87 million, seeks to upgrade rural health centers, promote nutrition and food safety, and improve the quality of human resources in health.

## **Main Achievements of PHC**

The principal achievements of primary health care in the Islamic Republic of Iran can be summarized as follows.

The population enjoys increased access to primary health care services. At present, about 90 percent of the rural population and 100 percent of the urban population have such access. This marks a significant increase since 1988, when only 54 percent of rural and 70 percent of urban dwellers had access to PHC services.

Programs to prevent and control major communicable diseases (malaria, tuberculosis, HIV/AIDS) and noncommunicable diseases (mental disorders, thalassemia, diabetes, hypertension) are now fully integrated into primary health care services. Malaria cases declined from 98,160 cases in 1991 to 19,163 cases in 2000.

Coverage of the Expanded Program on Immunization is high. Immunization is now above 97 percent for the program's target diseases, thanks to high access to primary health care services.

The national program to prevent iodine deficiency disease is proving successful. Universal salt iodination was achieved in 1995, and in 1996 a law was passed prohibiting production and sale of noniodized domestic salt. According to the multiple indicator cluster survey of 1997, 93 percent of rural and 97 percent of urban households are using iodized salt. The prevalence of goiter has declined by 30 percent since 1990.

Breastfeeding is being promoted successfully. The percentage of infants breastfed for at least one year increased from 65 percent in 1988 to 89 percent in 2000. Importation of powdered milk fell from 50 million cans in 1988 to 11 million cans in 2000.

The population has increased access to safe drinking water and sanitary excreta disposal. Access to safe drinking water increased from 78 percent of the population in 1988 to 82.5 percent in 1997 and 92 percent in 2000. Coverage of adequate sanitary facilities increased from 28 percent in 1988 to 78 percent in 1997 and 82 percent in 2000.

There has been a reduction of dental caries in schoolchildren.

## Challenges and Future Directions

Iranian society is experiencing rapid transformations in all aspects of life. Urbanization and changing lifestyles, demographic shifts, and an evolving socioeconomic environment all have a strong impact on the health of Iranian citizens. To achieve its mission, the health system must respond to these changes as they happen while still trying to meet criteria of efficiency, equity, and sustainability.

The country's health system has important strengths. These include stratification, integration, a focus on catchment areas, organizational unity of academic and executive bodies, and a standardized health program. But there are also significant weaknesses. Among them are poor intersectoral and intrasectoral coordination, provider and client dissatisfaction, resource limitations, and centralized decisionmaking that is insufficiently based on information.

In order to meet the major challenges facing the country's health system, steps should be taken to:

- Achieve closer cooperation between the scientific and executive bodies in order to respond to a changing environment and solve existing problems using scientific tools and techniques
- Improve the transparency of health policies and programs in order to gain better cooperation from other sectors and make the health sector itself more consistent and coordinated
- Improve client and provider satisfaction
- Improve the health information system to make possible decentralized information-based decisionmaking
- Secure sustainable financing (through insurance schemes or user fees)
- Promote decentralization of the system to make it more flexible and responsive to environmental changes and hence improve its sustainability
- Improve the efficiency of referrals, especially at the secondary care level
- Undertake a broad-based health system research program and give health workers a direct role in its implementation as a problem-solving tool
- Match community health needs and development of human resources
- Prioritize nutrition and food safety
- Ensure the relevance of human resource development to the health needs of the community
- Meet the increasing demand for higher-quality care, and provide qualified managerial support for the delivery of PHC services.

A number of ongoing efforts are addressing these concerns. Integration of medical education into the Ministry of Health has already brought about close coordination and collaboration between the producers and users of human resources in health. As the executive bodies become increasingly involved in medical education and research activities, this will certainly strengthen their technical capacities. At the same time, there is a trend toward further involvement of medical faculty in planning, monitoring, and evaluating health programs, bringing them close to the program managers and facilitating the exchange of knowledge and experience between the scientific and executive bodies.

The Ministry of Health and Medical Education is addressing the problem of malnutrition and food safety in several ways. A Joint Project on Nutrition Promotion is being implemented in collaboration with the Ministry of Agriculture, Ministry of Education, Ministry of Interior, Literacy Movement Organization, and rural cooperative corporations. The project was started in 1996 as a pilot in three districts and evaluated in 1999. It is already being implemented in the rural areas of 29 districts and is expected to reduce child malnutrition by 50 percent. Malnutrition and food safety are also being addressed through the ongoing joint projects with the World Bank and UNICEF.

Assessment of Health System Performance was launched as a joint government-WHO project in 2001, and is expected to generate a vast body of information on the strengths and weaknesses of the national health system. The information provided by the assessment exercise will be used as a basis for proper planning and implementation of the health sector reform initiative being undertaken by the Ministry of Health and Medical Education. Health sector reform is expected to address, among other things, issues related to equity, quality, efficiency, effectiveness, client satisfaction, and fair financing of the health system.

The World Bank's contribution to the development of primary health care services will result in further strengthening of the information system and managerial capacities at the national level and will help to improve the quality of care in both rural and urban areas.

The basic minimum needs approach, which was initiated as a pilot project in three districts in 2000 and is being expanded to the rest of the country, will play a major role in mobilizing intersectoral support for health promotion and direct involvement of grassroots bodies in integrated development schemes.

Finally, the Ministry of Health and Medical Education is working to demystify health research by launching a broad-based program of health systems research. All levels of health care delivery have a direct role in the implementation of this research as a problem-solving tool. The aim is to use research to improve the delivery of care and resolve technical, managerial, and logistic problems that impair the efficiency of the health care system.



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