

**ASSESSMENT
OF
USAID'S HEALTH STRATEGY IN ARMENIA**

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PREFACE

This report was prepared with the purpose of advising the USAID Mission in Yerevan, Armenia, on its health sector strategy. The objective of the exercise was to assess USAID's assistance to the Armenian health sector. The report reviews the health component of USAID/Armenia's current five-year social transition strategy (FY 1999–2003), and it is anticipated that the report will be used in designing the follow-on strategy (FY 2004–08). The report is intended to provide the analytical underpinnings for the Mission's health sector strategy planning and to offer a reference document for future activity development. It is also anticipated that the document will be useful to the Mission's government counterparts and other development partners.

The assessment team was headed by Robert Taylor, a specialist in health management, policy, and reform, and included Capri-Mara Fillmore, a family physician and epidemiologist, and Tatyana Makarova, a specialist in health organization and finance. The team was provided able logistics and translation support by Shushanik Avagyan and Svetlana Mardanyan. The report reflects information gained by the team during a 3-week visit to Armenia in late April and early May 2002. The team had the opportunity to interview numerous individuals and to review an extensive list of documents, as detailed in the attached appendices.

ACRONYMS AND TERMS

Abt	Abt Associates, a PADCO subcontractor in health
AIHA	American International Health Alliance, a USAID cooperating agency and a PADCO subcontractor
APEC	AIDS Prevention, Education and Care
ASTP	Armenian Social Transition Program (the name of the PADCO contract)
AUA	American University of Armenia
CHI	Compulsory health insurance, also MHI and NHI
CHSR	Center for Health and Services Research, AUA
CRS	Catholic Relief Services
DALY	Disability-adjusted life year
DHS	Armenia Demographic and Health Survey 2000
DOTS	Directly observed treatment, short course
FIMR	Fetal infant mortality review
GDP	Gross domestic product
GTZ	German Technical Cooperation
HMIS	Health management information system
IDU	Intravenous drug use
Marz	Regional governmental division
MOH	Ministry of Health
NCAP	National Center for AIDS Prevention
NGO	Nongovernmental organization
NHA	National Health Accounts
NHI	National health insurance, also CHI and MHI
NHIAC	National Health Information Analytic Center
NIH	National Institute of Health, Armenia
NIS	Newly Independent States
NSS	National Statistical Service
PADCO	Planning and Development Collaborative, Inc. (prime contractor for the ASTP)
Pap test	Papanicolaou test
SanEpid	The Department of Hygienic and Infectious Disease Surveillance and/or one of its local reporting units
SHA	State Health Agency
STI	Sexually transmitted infection
STP	Social Transition Program, USAID
UMCOR	United Methodist Committee on Relief
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WFP	World Food Program
WHO	World Health Organization

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EXECUTIVE SUMMARY

Armenia's health system is in transition, reflecting changes in society, the economy, and government that began in 1991, when Armenia declared its independence from the Soviet Union. As in other Soviet countries, Armenia's health system was centrally financed and managed, with the Ministry of Health overseeing an extensive system of hospitals and clinics. But after independence, faced with severe economic difficulty and a health system that was outdated and overstaffed, the Armenian government was no longer able to guarantee free health care for all. As public funds for health diminished, the burden of financing health care began to shift to private citizens.

One result of the transition has been that Armenia has experienced little improvement in health status in recent years and several problem areas continue. In the 1980s, in the waning years of the Soviet Union, Armenia was reported to have the longest living people of all the Soviet republics. In the years immediately following independence, however, life expectancy in Armenia dropped slightly, although it has since recovered. (See appendix A for a review of the Soviet legacy and health status in Armenia.) Of particular concern, maternal and infant death rates remain high, due primarily to diminished access, the poor quality of health care services, and weaning infants too early. Cardiovascular disease has become the leading cause of death among those over 65 years of age. There has also been a disturbing increase in the incidence of antibiotic-resistant tuberculosis. Smoking rates for Armenian men remain among the highest in the region and cancer is on the rise.

These changes in health status are rooted in the way health care in Armenia is financed, organized, and delivered and have stimulated the Armenian government to launch a major program of health reform. They are also the foundation upon which the U.S. Agency for International Development's (USAID) health strategy in Armenia is constructed.

The government's health reform agenda has three major thrusts: improving access to primary health care services, improving health financing, and optimizing health facilities and personnel. With the support of USAID and other international donors, the Armenian government has made good progress in initiating the reform process, but much work remains to be completed. At this stage of development, the following issues deserve particular attention by USAID if the government's health reform agenda is to continue to make satisfactory progress:

1. Many Armenians are not accessing health services when they are needed because they cannot afford the costs. Private out-of-pocket payments, both formal and informal, now account for 60 percent or more of all health expenditures. The poor, especially, bear a substantial burden of financing health care. As a foundation for planning and decision-making, USAID should support a study of private payments and their impact on access and equity.
2. Advocacy for family medicine is weak. Family medicine is a fundamental building block for strengthening primary health care but is not well understood, even within the Ministry of Health, where advocacy for family

- medicine should be centered, nor within the National Institute of Health (NIH), where responsibility rests for educating family practitioners. To help build understanding and advocacy for family medicine, USAID should sponsor study tours and hands-on training to expose government of Armenia leadership to family medicine training programs and practice sites.
3. The family group practice pilot clinics will be watched with a combination of expectation and skepticism. Their success is critical to the acceptance and expansion of family medicine in Armenia. USAID should closely monitor the progress of the pilot clinics and supplement training and technical assistance as necessary to assure their success. The State Health Agency (SHA) should be encouraged to provide financial incentives for family group practice clinics.
 4. Armenia's health system is chronically underfunded and the resources that are available are not used to advantage to help reshape the system. A Basic Benefits Package has been introduced but is too inclusive to adequately target limited public health expenditures. In addition, the SHA is not able to exercise its discretion as the principal buyer of publicly financed health care services. To support improvements in the Basic Benefits Package and SHA's role as a buyer, USAID should sponsor a study of service patterns, eligibility requirements, and payments.
 5. With reform, people and institutions at all levels—national, regional, and local—are struggling to adapt to changing roles and new responsibilities. The impact of decentralization is still being felt among hospitals and clinics and within regional health authorities. The introduction of family medicine is beginning to affect medical specialists throughout the health system. USAID needs to continue—even to expand—its efforts to provide technical assistance and training aimed at strengthening the understanding and capacities of local institutions to deal with their changing roles.

Health reform in Armenia is at a critical point. Revolutionary changes have been introduced but are not yet established and are vulnerable to delay, setbacks, and even failure. Continuity of effort during this period is required if the momentum that has been established is to be sustained. Over the last few years, USAID and its contractors have developed good working relationships with the Ministry of Health and other government agencies. They have established credibility as knowledgeable and able sources of support for the reform agenda. The principal thrusts of USAID's health activities in Armenia are on track and no dramatic changes are recommended. In essence, as USAID reexamines its health strategy for Armenia, it is encouraged to finish what it has begun. While systemic health reforms mature, USAID is also encouraged to continue to support activities—particularly reproductive health, child health, nutrition, and the growing threat of tuberculosis—that address the immediate health needs of those who are most vulnerable.

I. ARMENIA'S HEALTH SYSTEM IN TRANSITION

Armenia's health system is in a state of transition, mirroring systemic changes that are now underway throughout the society, the economy, and the government. Change is increasingly evident in the way health care is financed, organized, and delivered. Shortly after declaring independence in 1991, there was a significant shift in health financing, away from government as the principal source of health payments, to out-of-pocket payments from private citizens. The Armenian government, burdened with a health system that was overbuilt and overstaffed and recognizing its inability to continue to guarantee health care for its entire population, introduced an ambitious program of health reform. Programs were initiated to restructure the country's extensive system of hospitals and clinics, to strengthen primary health care and introduce family medicine, and to alter the role of the Ministry of Health (MOH). A Basic Benefits Package was developed, intended to target limited public funds to the most vulnerable, and the State Health Agency (SHA) was created to serve as the principal buyer of publicly funded health care.

As dynamic as these changes are, the health of the Armenian people, as reflected in health status indicators, has shown uneven and limited improvement in the last decade. A number of troubling health problems continues to be of concern, and others are emerging that challenge the ability of the country's health system to respond.

While Armenia has had many accomplishments in health reform, most of the reform initiatives are still in a state of development with much yet to be done. In that light, USAID is currently assessing its health strategy and programming to determine how it can best assist the government of Armenia to further advance the health reform agenda.

HEALTH SYSTEM FINANCING AND ORGANIZATION

Reforms are already changing how Armenia's health system is financed and organized.

Health Spending in Armenia

Estimates of health expenditures in Armenia vary widely, but probably total something over 25 billion dram (US \$46 million) annually.¹ In a recent study, governmental expenditures for health accounted for about 28 percent of all health expenditures, with 60 percent from private out-of-pocket sources, and 12 percent from donors and other external sources.²

As shown in table 1, the percentage of expenditures attributable to public, private, and donor sources varies based on whether actual governmental expenditures or the obligated budget figures are used. According to one study, actual spending for health in 2000 from all sources accounted for only 2.4 percent of the gross domestic product (GDP), with public and donor sources together accounting for less than 1 percent of the GDP.³ Using updated census estimates of 3 million from data released in 2002, per capita expenditures

¹ Telyukov, Alexander, *Report No. 47: An Assessment of Health Financing Options for Armenia*, August 2001.

² Telyukov, *Report No. 47*, p. 13.

³ *Ibid.*, p.13.

for health totaled over US \$15, with public and donor sources contributing about US \$6 of the total.

Table 1
Health Expenditures in Armenia, 2000
Financial figures in AMD (Armenian dram) and U.S, Dollars

	Obligated Budget	Actual Expenditures
Population of Armenia	3.8 million	3 million
GDP 2000, AMD Billion	1,032.6	1,032.6
Total health expenditures, AMD billion	34.97 (US \$63 million)	25.34* (US \$46 million)
As a percentage of GDP	3.4 %	2.4 %
Per capita, AMD	9,197 (US \$16.7)	8,447 (US \$15.4)
Public Expenditures, AMD billion	16.6 (US \$30.2 million)	6.97 (US \$12.7 million)
As a percentage of total health expenditures	47 %	28 %
As a percentage of GDP	1.6 %	0.7 %
Per capita, AMD	4,368 (US \$7.9)	2,323 (US \$4.2)
Donor Expenditures, AMD Billion	3.01 (US \$5.5 million)	3.01 (US \$5.5 million)
As a percentage of total health expenditures	9 %	12 %
As a percentage of GDP	0.2 %	0.2 %
Per capita, AMD	792 (US \$1.4)	1,003 (US \$1.8)
Private Expenditures, AMD billion	15.36 (US \$27.9 million)	15.36 (US \$27.9 million)
As a percentage of total health expenditures	44 %	60 %
As a percentage of GDP	1.5 %	1.5 %
Per capita, AMD and US \$	4,042 (US \$7.4)	5,120 (US \$9.3)

Source: Adapted from Telyukov, Alexander, *Report No. 47: An Assessment of Health Financing Options for Armenia*, August 2001, tables 1 and 2, pp. 13–14, with updates to reflect recent census data.

*Total health expenditures in table 1, *Report No. 47*, were shown as AMD 28.82 billion, which appears to be an error in addition.

These figures differ significantly from those quoted by the European Observatory. Those estimates, based on the Ministry of Health (MOH), the World Health Organization (WHO), and other sources, indicate that the state *budget* for health dropped from 2.7 percent of the GDP in 1990 to a low of 1.3 percent in 1997, with an increase to 1.7 percent in 1999.⁴ *Actual* expenditures by the government have always fallen short of the budget, by as much as 40–60 percent, supporting the possibility that actual public expenditures are less than 1 percent of the GDP.

Whether government expenditures for health are 1.7 percent or 0.9 percent of the GDP, they are very low, ranging between US \$4 and US \$8 per capita per year. As shown in the preceding table, in the year 2000, the Armenian government dispersed only 42 percent of its obligated health budget. If fully funded, the state health budget would amount to about 11 percent of the total state budget.

RECOMMENDATION

The source and application of health expenditures in Armenia are changing and are not well documented. A National Health Accounts (NHA) study, now being considered by the Ministry of Finance, should be encouraged by USAID through the provision of funding and technical assistance. Whether an NHA study should be a periodic or routine exercise should be examined.

⁴ Hovhannisyan, Samvel, E. Tragakes, S. Lessof, H. Aslanian and A. Mkrtychyan, *Health Care Systems in Transition: Armenia*, European Observatory on Health Care Systems, 2001, p. 37.

Private Payments for Health

With chronic underfunding by the government, many of Armenia's hospitals and clinics have accumulated debt, primarily in the form of unpaid salaries. In addition, they have not been able to pay for needed maintenance on their buildings and equipment. Financially stretched, health service providers were authorized by law in 1997 to introduce a system of formal fees, with exemptions for selected vulnerable populations. Charges are based on a facility's cost estimates as long as they fall within limits set by the MOH. Typically, providers charge a registration fee and then specified fees for various services and supplies. In theory, drugs are provided free to covered patients but chronic shortages force patients to purchase drugs on the open market, which is a significant cost factor. In essence, much of the burden of financing Armenia's health system has been shifted from the government to the people.

Formal fees provide health service providers with critically needed revenues that supplement payments from public sources and help cover current operating costs. But revenues have not been adequate to cover costs or to eliminate back wages. As a result, a system of informal or gratuity payments, a long-time tradition in Armenia, continues. Typically, gratuity payments are expected or even solicited from all patients—the poor, vulnerable, and the well to do—by doctors, nurses, and other health professionals as an essential supplement to their income.

As shown in table 1, private out-of-pocket payments (both formal and informal) now account for an estimated 60 percent of all health expenditures in Armenia, possibly more. Compared with other countries, the 60 percent figure is not particularly noteworthy. For example, in a 1997 study profiling 30 developing countries throughout the world, private financing for health ranged from a low of 15 percent to a high of 78 percent, averaging 50 percent of all health expenditures.⁵ What is important is the rapid shift in Armenia from public to private health financing and the inequities and allocative inefficiencies that have been introduced in the process. With no health insurance programs in place, virtually all private payments in Armenia are not reimbursed. As discussed later in this report, the poor are especially hard hit, as evidenced by the number of those who are ill who do not seek health care because of the cost.

RECOMMENDATIONS

The amount of private payments for health, both formal and informal, and their impact on access, equity, and utilization, should be studied in detail. In part, this effort can be incorporated into a comprehensive National Health Accounts study, as suggested earlier. But it is also recommended that the periodic household surveys now conducted by Planning and Development Collaborative, Inc. (PADCO) be expanded to examine these issues in greater detail.

Health System Organization

During the Soviet era, Armenia is said to have had one of the best developed health care systems in the Soviet Union.⁶ At the time, Armenia was divided into 37 administrative

⁵ Taylor Associates International, *Private Hospital Investment Opportunities*, International Finance Corporation, 1997, p. 19.

⁶ Hovhannisyan, p. 5.

districts, each with a hospital and associated polyclinics. Rural areas were served by networks of health posts and feldsher stations. Citizens registered with a local health institution and were assigned a named physician.⁷ While local authorities were responsible for funding local health services, the bulk of the power for directing and financing the health system was concentrated in the state, with the Ministry of Health playing a central role in providing oversight and direction.

With independence, Armenia's administrative districts—along with their health facilities—were consolidated into 11 regions, including Yerevan and 10 marzes. As before, regional governments were assigned the responsibility of funding local health services, although the MOH continued to exercise considerable control over the process. As table 2 shows, virtually all the health facilities established during the Soviet era continue in operation today.

Table 2
Armenian Health Service Capacity and Utilization

	1985	1991	1995	2000*	United Kingdom	Canada
Number of Hospitals	167	179	183	171		
Hospital Beds				23,169		
Hospital Beds per 1,000	8.36	8.46	7.62	7.7**	5.1	6.0
Hospital Admissions (per capita)	0.153	0.121	0.075			
Average Length of Stay	16.6	15.4	15.2		10.2	12.6
Occupancy Rate	86 %	62 %	40 %	40 %		
Number of Polyclinics	484	537	501			
Clinic Visits (per capita per year)	10.5	7.4	4.8			
Physicians (per 1,000 population)	3.8	4.1	3.4	4.3***	1.5	2.2
Nurses (per 1,000 population)	9.1	9.9	8.3	10.5***		

Source: Adapted from *Annex 1: Armenia Health Sector Indicators*, The World Bank. Comparison figures for the United Kingdom and Canada are from 1995.

* Figures in this column are from the MOH, *The Strategy of the Ministry of Health*, (circa 2000–2001), p. 4.

** Calculated on the basis of the 2000 census of 3 million.

***Physician and nurse ratios are for 1995, adjusted for the census of 3 million.

There is evidence that Armenia's health system is overbuilt and overstaffed. Clinic visits and hospital utilization rates have dropped sharply over the last several years (see table 2). Even before the drop in utilization, Armenia appears to have some, if not a dramatic, overabundance of hospitals and doctors. As important as absolute numbers, however, but not evidenced in the table, may be disparities in capacity and staffing between urban and rural areas and in the mix of medical specialists, general practitioners, and family doctors.

In 1993, the organization of Armenia's health system began to change when state health care institutions (hospitals and clinics) became state health enterprises, or semi-independent units that could generate their own revenues.⁸ In 1995, hospitals were permitted to provide private as well as state-funded services. Moreover, in 1998, with the creation of the State Health Agency (SHA), the role of regional governments as third-party payers was centralized.⁹

⁷ Ibid., p. 6.

⁸ Hovhannisyan, p. 13.

⁹ Ibid., p. 12.

The SHA was created to serve as the principal public buyer of health services in Armenia. As a buyer, the SHA is expected to contract with provider organizations and pay them for services defined in the Basic Benefits Package. At present, SHA is the conduit for 80 percent of all public funds spent on health, excluding donor contributions. Based on the obligated health budget, SHA sets hospital rates for each diagnosis in the Basic Benefits Package of health services. It also sets per capita payment rates for clinics based on each clinic's costs and the population it serves. Hospitals are then to be paid monthly based on the number of defined services they provide to eligible (vulnerable) patients. Clinics also receive periodic payments based on their per capita rate.

Created as an independent agency, the SHA has recently been moved under the MOH organizational umbrella—undoing, at least in part, the separation of purchasing and provision established in 1998. It is too early to determine the impact the move will have on the role and functions of either SHA or the MOH.¹⁰

In this period of transition, the role of the MOH has changed significantly. Historically, the MOH has had the responsibility for guiding Armenia's health system—providing health policy development, planning, regulatory oversight, and monitoring—and that role continues. Since decentralization and the creation of state health enterprises, however, the MOH is no longer the country's major health provider. The ministry retains responsibility for managing only a few tertiary and specialty hospitals operating in Yerevan. In addition, with the creation of the State Health Agency, the MOH lost much of its role in financing health services. The MOH still develops the annual health budget but the Ministry of Finance collects tax revenues and controls their disbursement. The MOH does retain the responsibility for developing national health policy and is the “ultimate arbiter in terms of medical education, licensing, regulation and setting standards.”¹¹ In addition, the Ministry, through its SanEpid units, serves as the central collection point for epidemiological data.

Armenia's Health Reform Agenda

Beginning in the early 1990s, the MOH launched an ambitious program of health reform designed to improve access to health care by changing how the health system is governed, optimizing the nation's system of hospitals and clinics, strengthening primary health care and introducing family medicine, and altering how health care is financed.¹² Based on recent reports, the MOH is undertaking a number of activities to further advance the following objectives of health reform:¹³

- Improve health system governance
- Improve health financing
- Increase accessibility to health care
- Improve medical education and research
- Improve the hospital system
- Assure the adequate supply of equipment and technology

¹⁰ See appendix B for additional information on the changing roles of the MOH and regional governments.

¹¹ Hovhannisyan, p. 10.

¹² Ministry of Health, *Main Directions of Armenian Ministry of Health 1999–2002 Health Care Development Strategy*. MOH, 2000.

¹³ Ibid.

- Increase the effectiveness of international cooperation in health care
- Improve the public health system
- Advance multisectoral cooperation in health

The government of Armenia has sought and obtained support for these reform programs from the donor community and significant progress has already been made—most notably, the decentralization of health facilities, the establishment of training programs in family medicine, the creation of the SHA, and the design of a Basic Benefits Package. However, these reform initiatives are in various stages of development and all will require continuing support and encouragement if they are to continue to advance. Obviously, the government of Armenia’s health reform agenda is the foundation for what will become USAID’s health strategy and program in Armenia.

HEALTH STATUS OF THE ARMENIAN PEOPLE

Based on the best available data, life expectancy, infant mortality, and nutrition have all shown some improvement since Armenia declared independence. In contrast, maternal mortality, the incidence of tuberculosis (TB), cardiovascular deaths, and abortion rates appear to be worsening. Some affluence-associated health indicators are also increasing—obesity, diabetes, and neoplasia rates, for example. Abortion rates, as well as rates of gonorrhea and syphilis, appear to be starting to decrease. Armenia has had significant decreases in alcoholism, alcoholic psychosis, and substance abuse. Smoking rates among men, still among the highest in the former Soviet Union, decreased sharply after independence, but are starting to rise again. Given Armenia’s widespread poverty and generally decreased access to health care, these general, although mild, improvements in health status are surprising. Clearly there are factors that influence health other than the performance of the health system—possibly Armenia’s high level of education, funds repatriated from relatives abroad, and other influences.

Life Expectancy

In 1985, in the waning years of the Soviet Union, Armenia reported life expectancy of 72.9 years for its citizens, longer than any of the other Soviet republics.¹⁴ After independence, life expectancy first declined slightly (to a low of 71.1 years in 1993), but then rebounded to 72.5 years in 1995—continuing to climb until 1999, when life expectancy reached 74.7 years. Data for 2000 indicate that life expectancy dropped again, back to 1995 levels—possibly due to a statistical anomaly.¹⁵ Life expectancy would probably be increasing more rapidly if it were not for Armenia’s high infant mortality rate and an increasing incidence of cardiovascular disease, especially among women.

Estimates of life expectancy should be interpreted with caution, however. Life expectancy at birth is extremely variable. Low-weight infants who survive less than 7 days are often counted as miscarriages rather than live births, historically a common practice in the region. If they were counted according to international standards, life

¹⁴ Gomart, E., *Report on Social Assessment in the Health Sector*, American University of Armenia, as cited in *Country Papers: Armenia*, USAID, p. 49.

¹⁵ Armenian Ministry of Health, *2000 Annual Statistical Report: Health in the Republic of Armenia—2000*, Official Statistics Data, Yerevan.

expectancy in Armenia would probably be lower than reported. If the Armenia Demographic and Health Survey (DHS)¹⁶ is correct for infant mortality, life expectancy would be adjusted downward by almost two years. (See appendix C for how life expectancy adjustments might be calculated.)

Infant Mortality

Infant mortality, at 36.1 deaths per 1,000 live births, remains high, although somewhat improved over the last 15 years. The trends reported in DHS 2000 may be the most accurate because it used the WHO definition of a live birth—a recall method where the mother is asked if the infant showed any sign of life.¹⁷ According to the DHS, infant mortality rates have decreased in Armenia since the Soviet era—if somewhat erratically.¹⁸ For the years 1986–90, the infant mortality rate was 45.6, by 1991–95, it had increased to 50.5, before dropping to present levels.¹⁹

The National Statistical Service (NSS) also reports an improving trend in infant mortality, reporting a rate of only 15.6 deaths per 1,000 live births for the year 2000—less than half the rate reported in the DHS and probably a significant underestimation due to the continuing practice of classifying live born infants as miscarriages or stillbirths.

High infant mortality suggests a number of problems—in particular, early weaning and prematurity. Many Armenian mothers reportedly stop breastfeeding after only 2 months, rather than the recommended 6 months, contributing to malnutrition and low immunity. Prematurity also suggests the need for improved care for pregnant women. Documented decreases in infantile acute respiratory and diarrheal diseases over the last 10 years probably explain most of the recent decrease in infant mortality.

RECOMMENDATIONS

Infant mortality should continue to be a significant concern in USAID's health strategy and programming. USAID should continue or expand its support for technical assistance and training that encourage the following activities:

- *more accurate data collection through the support of teaching clinics on the WHO definition of live birth at all maternity hospitals and departments;*
- *the creation of fetal infant mortality review boards, where all infant deaths are reviewed at least annually (see appendix D).*
- *encouragement of longer breastfeeding;*
- *the teaching of obstetricians to give corticosteroids to women with intractable premature labor to increase the lung maturity of their babies; and*
- *the upgrading of neonatology services, as needed.*

Maternal Mortality

Maternal mortality rates in Armenia are high, possibly as high as 48 deaths per 100,000 life births for the three-year period 1999–2001. Estimates are extremely unstable,

¹⁶ *Armenia Demographic and Health Survey 2000*, National Statistical Service (Yerevan), Ministry of Health (Yerevan), and ORC Macro (Calverton, Maryland), December 2001.

¹⁷ See appendix C for a discussion of how perinatal mortality and prematurity rates are calculated.

¹⁸ *Armenia Demographic and Health Survey*, table 9.1.

¹⁹ For a more detailed discussion on infant mortality rate estimates, see appendix C.

however, because of the small number of maternal deaths each year and varying definitions for live birth, as mentioned above. The maternal mortality rate in Armenia appears to have been at its lowest in 1991–92, and since then has been sporadically increasing to its present level, the highest level in 15 years. (For a discussion of maternal mortality data and the data itself, see appendix E.)

The greatest cause of maternal mortality (1995–97) is classified as extragenital diseases (28.9 percent), followed by hemorrhage, hypertensive disorders, abortion complications, and sepsis (11.1 percent each).²⁰ The MOH 2000 Statistical Report states that hemorrhage is the most common cause of maternal death, with miscellaneous unspecified complications the next most common, then ectopic pregnancies and abortions. Hemorrhaging is often worse among women who are anemic during pregnancy. One reference²¹ shows a greater than 10 percent increase in pregnancy anemia in the last 10 years. The low rate of 2.6 percent pregnancy anemia (1988) would be questionable, however, for even the healthiest countries (if the women are greater than 3 months pregnant). The survey technique, gestational age, and numbers tested were not mentioned. Anemia often decreases in the first trimester of pregnancy because menses are not present and blood volume has not yet expanded. For example, a 1998 Italian nutrition survey tested only a few more pregnant women than the Mkrtychyan study but found 30 percent of third-trimester women anemic, and an overall pregnancy anemia rate of 16 percent. The DHS 2000 found among a nonstatistical sample of 169 pregnant women that 16 percent were anemic (all trimesters).

Abortions associated with high mortality rates were generally those performed outside medical facilities in locations with poor hygienic conditions. It is illegal in Armenia to have an abortion after 12 weeks of pregnancy except for medical/social reasons.²² Some unreported maternal mortality or those of unknown cause may be related to this abortion law. Women also may seek abortions outside the system because they cannot afford to pay for abortions performed in facilities. Obstetricians report that poor women sometimes purchase methytrexate over the counter in local pharmacies for self-induced abortions, which can lead to incomplete abortion and hemorrhage. The government of Armenia projects about 2.3 abortions during the average woman's lifetime, but the DHS found a lifetime average of 3.3. A 1997 reproductive health survey found that 51 percent of pregnancies ended in abortion, much higher than the rates reported by the government of Armenia (appendix E). The 2000 DHS found that 55 percent of the pregnancies in the preceding three years ended in abortion. In Kotayk and Armavir marzes, 64 percent of pregnancies ended in abortion. Induced abortions are associated with 10–20 percent of maternal mortality (MOH Annual Health Statistics Report). DHS concluded that there was no significant change in rates of induced abortions in the last five years. It is unlikely that increased abortions, if indeed there is a trend, explain the increase in maternal mortality.

In figure 1 on the following page, two or three years are grouped together (depending on the number of years necessary to constitute more than 100,000 births) to smooth out maternal mortality rate trends. The sharp drop in the maternal mortality rate following

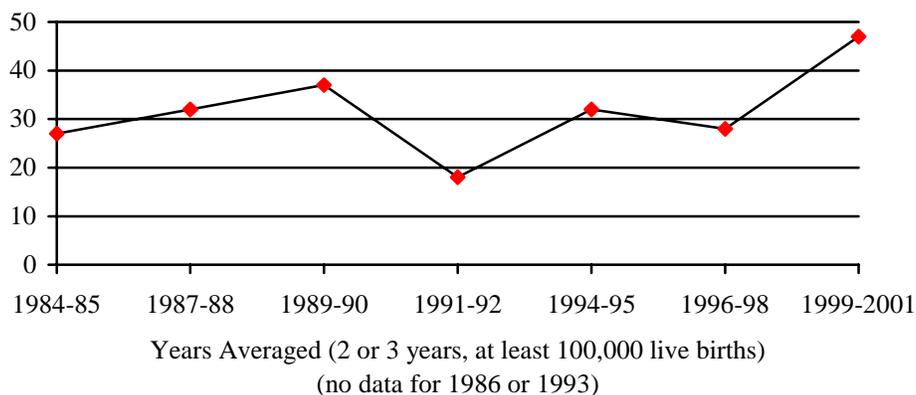
²⁰ UNICEF, "A Situation Analysis of Children and Women in Armenia," Save the Children, 1998, p. 105.

²¹ Mkrtychyan, Ararat, *New Trends in Armenia Health Care*, Akop Megapart, Yerevan, 2001.

²² Armenian Government, "The Law of the Republic of Armenia on Reproductive Health of Humans," Article 11 on abortion.

independence may reflect a breakdown in the death reporting system. There appears to be a clear trend of increasing maternal mortality rate after 1992, but this could be related to immediate postindependence underreporting, which was finally corrected. Nonetheless, the 2000 maternal mortality rates are the highest reported in Armenia in the last 15 years and provide great cause for concern. During these years, Armenia has a high rate of “other” category for cause of maternal mortality death. These deaths need to be fully investigated in order to institute preventive measures.

Figure 1
Trends in Average Maternal Mortality Rate in Armenia
 Deaths per 100,000 live births



RECOMMENDATIONS

Maternal health should continue to be one of USAID’s principal programmatic efforts in health. USAID should support the following:

- *Educational programs in handling emergency obstetrics (for all primary care providers) would help decrease maternal mortality.²³*
- *Widespread use of magnesium for preeclampsia and premature labor needs to be taught and practiced, with specific guidelines that can be used by nonobstetric providers.*
- *Anemia screening and treatment, vitamin D injections, and iodine (when not in salt) are also needed during pregnancy.*
- *Obstetrical services should be upgraded, where needed.*
- *A maternal mortality review team should be established (see recommendation in appendix D).*

Fertility and Infertility in Armenia

Fertility rates in Armenia are low—an average of 1.6 births for the life of a woman (no information is available for men).²⁴ If reports of extraordinarily high infertility (28.5 percent of reproductive age women) are true, they are among the highest in the world.

²³ Based on observations by the assessment team, Armenian doctors lack basic skills in obstetrical emergency care. The United States has had an intensive 2–3 day course (Boston University, Family Medicine Program) in just this sort of care, but this educational program (similar to Advanced Cardiac Life Support by the American Heart Association) would have to be greatly adapted for the needs and the practical situation in Armenia. (There are also courses for midwives and communities developed by the American College of Nurse-Midwives and UNICEF, respectively.)

²⁴ *Armenia Demographic and Health Survey 2000.*

Although Armenia has some potential for increased population by repatriation, the low fertility rate causes concern among health planners. Such a low fertility rate means that Armenia's population will continue to decline even if outward migration were to stop. These rates are the same and higher than many Western European countries.

In 2000, despite the free availability of contraceptives, only 14.4 percent of women (22.3 percent of married women) used modern contraceptives. Abortion is used as a default contraceptive with the total rate of 2.6 (much higher than the total fertility rate). Many women have had six or more induced abortions, particularly in Gegharkunik (27 percent of women), Kotayk, Armavir, Tavush, and Aragatsotn. Armenia has an unusual population pyramid, where 5-year age intervals for women between 25–35 years is a lower percent of the population than women 35–55 years old, a factor that would contribute to low fertility rates.

The official rate of infertility in Armenia was 28.5 percent in 1997,²⁵ but if adjusted for the more accurate recent census, the rate would be about 22 percent (still quite high). The advisor to the Minister of Health on reproductive health (and also the director of the Center for Perinatology, Obstetrics, and Gynecology in Yerevan) reports that chlamydia rates were 40 percent in 1997, which could not be confirmed. The chief of Dermatology and Venereology at the State Medical University is currently involved in a WHO survey that should provide more accurate prevalence estimates. If the chlamydia rates are as high as reported, this may partially explain the high infertility rate. Gonorrhea and postpartum or abortion infections also contribute to infertility. However, the data from the government of newly diagnosed infertile cases in no way suggests that this high percentage of chlamydia is true (appendix E). Because of expense, neither treatment nor testing for chlamydia is readily available in Armenia.

RECOMMENDATIONS

USAID, through PRIME, should address the infertility problem, which is considered to be very important by the Armenian government.

- ***Support a study to more accurately estimate infertility rates. Male infertility should also be evaluated.***
- ***Provide technical assistance in the use of laparoscopic treatment.***
- ***The development of clinical practice guidelines for infertility workup should be given priority—with an emphasis on affordable alternatives.***
- ***Presumptive routine treatment of all sexually transmitted infection (STI) patients for chlamydia should be encouraged.***

Census-Adjusted Disease Trends in Armenia

Based on recent census figures, Armenia's population is closer to 3 million than the 3.8 million used in the health statistics yearbook²⁶ to calculate disease incidence and prevalence. The accuracy of infant and maternal mortality rates, as discussed above, is also affected. As a result, actual rates for the year 2000 are 27 percent higher than reported. Table 3 shows the trends in disease incidence and prevalence for major diseases from 1990 to 2000 with appropriate census adjustments. Rates for intervening years

²⁵ Mkrtchyan.

²⁶ Armenian Ministry of Health, *2000 Annual Statistical Report: Health in the Republic of Armenia—2000*, Official Statistics Data, Yerevan.

should also be recalculated but it is not known how rapidly the 800,000 drop in population occurred.

Table 3
Trends in Disease Incidence in Armenia
Adjusted for lower census (incidence per 100,000)

Disease	1990	2000 (Adjusted)
Tuberculosis	16.6	42.9
Pertussis	13.2	0.3
Scarlet fever	16.0	14.7
Meningitis	0.95	0.5
Influenza	1,940.8	1,345.3
Hepatitis B	22.3	4.1
Measles	24.7	0.5
Dysentery	41.3	25.8
Typhoid	1.1	0.5
AIDS	0	0.04
HIV carrier	0	0.47
Gonorrhea (women)	24.9	32.9
Syphilis (women)	2.9	9.0
All malignancies	145.1	180.7
Breast cancer (women)	36.3	44.6
Cervical cancer (women)	14.3	15.5
Alcoholic psychosis	0.8	1.7
Chronic alcoholism	11.3	6.5
Substance abuse	0.8	0.3
Diabetes mellitus	131.2	94.5
Cardiovascular disease	955.4	658.9

Sources: Armenian Ministry of Health, 2000 Annual Statistical Report, *Health in the Republic of Armenia-2000*, Official Statistics Data, Yerevan, and adjustment for census 2001 of 2000 data by multiplying rates by 1.27.

The Armenian health statistics yearbook (2000) shows decreasing incidence of pertussis, scarlet fever, meningitis, influenza, hepatitis B, measles, dysentery, and typhoid since the late 1980s, regardless of adjusting for the 2000 census. Most of these decreasing rates can be attributed to Armenia's excellent immunization rates. In 1998, vaccination rates for children under 1 year were 90.3 percent for diphtheria and tetanus, 93.5 percent for measles, 95 percent for tuberculosis, 82.4 percent for pertussis, and 96.4 percent for poliomyelitis.²⁷ Drops in the incidence of infections without immunizations may be due to underreporting because of lower utilization of the health care system. Documented decreases in infantile acute respiratory and diarrheal diseases over the last 10 years explain most of the decrease in infant mortality.

Infectious Diseases and the Rise in Tuberculosis (TB)

While vaccine-preventable infectious diseases in Armenia have decreased over the last 10 years (table 3), the incidence of new cases of tuberculosis have tripled, probably as a

²⁷ WHO, Highlights on Health in Armenia, January 2000, found at <http://www.who.dk/document/e72377.pdf>

result of antibiotic resistance and inadequate treatment. This trend of rapidly increasing TB rates presents one of the greatest risks to the future health of Armenia.

Tuberculosis causes more than half of all infectious disease deaths in Armenia.²⁸ Women of reproductive age are more likely to die of TB than of childbirth.²⁹ The incidence of TB has almost tripled and the mortality rate (currently 5.2 per 100,000 adjusted population) has more than doubled in the last 10 years. The rise in both indicators is likely due to late diagnosis, increased resistance to antibiotics, missed diagnosis of antibiotic resistance, and poor availability of antibiotics needed for treatment. Presumably, fewer TB cases are now being treated successfully (88 percent in 2000³⁰) than during the Soviet era when TB treatment protocols were more strictly enforced.

No information was available to the assessment team on current multidrug resistant (MDR) tuberculosis in Armenia. However, neighboring Georgia (where TB rates started at a slightly higher level in 1990 but have not increased quite so rapidly since) has about 10 percent MDR TB rates.³¹ Armenia is considered level three (expansion stage) of directly observed treatment, short course (DOTS) implementation, the WHO program to fight TB. Armenia qualifies for needing the DOTS-plus program (specifically for MDR TB), but since DOTS is used only in 39 percent of the TB cases, Armenia is not ready for DOTS-plus.³² WHO, the German Technical Cooperation (GTZ) and the Charles and Agnes Kazarian Memorial Fund (with Boston University) have provided anti-TB drugs and assisted with various other aspects of Armenia's TB Control Program. The International Committee of the Red Cross is helping on strategies for TB control in prisons (where TB rates are often 100 times higher than in the general public) and has built a national TB reference laboratory in the State Tuberculosis Dispensary in Abovian.³³ (For a more thorough discussion on DOTS, how Armenia is progressing on implementing DOTS, the inherent limitations of DOTS [and DOTS-plus], and additional justification of the recommendations below, see appendix F.)

RECOMMENDATIONS

Because of the threat from increasing rates of TB in Armenia, USAID should closely assist Armenia in TB control, even though other donors may take the lead.

- ***USAID should support nationwide DOTS programming, including assurance of a constant supply of anti-TB drugs.***
- ***USAID should support a system of directly observed prophylaxis INH to household contacts and active case finding.***
- ***To better document MDR TB rates, USAID should support testing of a variety of populations, such as all TB patients not successfully treated, geographic samples, prisoners, and AIDS patients.***
- ***USAID should encourage progression to DOTS-plus program (MDR TB treatment). Even though this is expensive treatment (approximately 100 times more expensive than regular TB treatment), if left untreated, the problem can be expected to get worse and more expensive.***

²⁸ Armenian Ministry of Health, *2000 Annual Statistical Report*.

²⁹ Ibid. These numbers were then compared with the data on tuberculosis by age group in Armenia, found in *WHO report, 2002 Global Tuberculosis Control: Surveillance, Planning and Financing*.

³⁰ *WHO Report, 2002 Global Tuberculosis Control: Surveillance, Planning and Financing*, WHO/CDS/tuberculosis/2002.295, <http://www.who.int/gtb/publications/globrep02>.

³¹ National Tuberculosis Program of Georgia brochure, *Tuberculosis Control in Georgia, 2002*.

³² WHO Report, 2002 Global Tuberculosis Control.

³³ *Armenia: Milestone in Fight Against Tuberculosis*, ICRC web site, 26 October 2001, <http://www.icrc.org/icrceng.nsf/Index>.

Sexually Transmitted Infections (STIs)

As shown in table 3, syphilis and gonorrhea rates have increased among women. Both appear to have reached a peak in 1995–96, 5–10 years after the Soviet partner tracing system was discontinued. Syphilis rates for women are about 3 times higher than in the late 1980s and through the 1990s. Syphilis rates in Armenia have always been lower, and rate increases in the early 1990s were much lower, than most of the CIS.

Acute gonorrhea appears to have increased over the last 10 years, but has decreased since its peak in 1995–96.³⁴ The excruciating pain from untreated gonorrhea, which progresses to salpingitis, means these women would all seek care. It is fairly certain that the increased rates of salpingitis (almost twofold in 10 years) are not an underestimate because of lack of health care access.³⁵

The incidence of HIV in Armenia is poorly documented, but available data do not suggest a serious HIV problem in Armenia, at least not yet. With a reported rate of 0.45 cases per 100,000, incidence appears to be low and there does not appear to be an increased rate of newly diagnosed HIV cases over the last five years.

All data need to be considered in light of the number of HIV tests actually performed (and trends need to be determined by repeated testing over the years). Doctors in rural areas reported that they do not test for HIV or that there is no capacity to test pregnant women, although the government says it is free and has tried to require the tests for military recruits. The MOH has a goal to test the entire blood supply, but so far only two thirds of the supply is tested for HIV because testing resources are so limited.

HIV statistics are reported by the Armenian National Center for AIDS Prevention (NCAP), which has its own web site (www.armaids.am) and the country's one HIV reference laboratory. NCAP, using sentinel surveillance, reports that Armenia has had 185 cases with positive HIV blood tests. Half acquired the disease from intravenous drug use (IDU), and 20 are known to have died. It is believed that some IDU infections are attributable to Armenian workers who migrate, predominately to Ukraine and Russia, and then return to Armenia. Some HIV cases may have left Armenia, of course, and some are entirely anonymous or may have died.³⁶ In comparison, MOH data give a total of 66 incident cases of HIV and AIDS together through the year 2000.³⁷ It is unclear which of the 66 are replicate patients who have progressed from HIV to AIDS. Since most HIV cases have been picked up from the State Medical College's Department of Dermatovenereology (approximately 75–80 percent of the cases), the chief of this department questions the NCAP's number of 185 and the claim of 50 percent being IDU acquired.

NCAP receives support from UNDP, UNICEF, UNFPA, OIS, MSF, and the Soros Foundation. In turn, NCAP gives some funds to two local nongovernmental agencies: AIDS Prevention, Education and Care (APEC) and ADRA, an American

³⁴ Armenian Ministry of Health, *2000 Annual Statistical Report*.

³⁵ Babayan, Karen, Chief of Dermatology and Venereology at the State Medical College and Dispensary.

³⁶ Grigoryan, Samuel, Director of the National Center for AIDS Prevention, Yerevan.

³⁷ Armenian Ministry of Health, *2000 Annual Statistical Report*.

nongovernmental organization (NGO), which targets youth prevention. APEC has established good contacts in the intravenous drug using population by offering them assistance and directing them to helpful doctors. APEC also has a hotline for HIV/AIDS information that started in February 2002. It is the only group known to offer assistance to HIV/AIDS patients in Armenia, but it reports working with only 10–15 intravenous drug users with HIV, which either brings to question the 185 number, or the 50 percent, or both. The male:female ratio of 3:1 among persons who are HIV positive and the likely overestimate of IDU as the exposure, suggests that homosexual transmission is probably underestimated. (It should be noted that the male:female ratio is based on people voluntarily coming in for counseling, not on a national survey.) No medicine is currently available for AIDS patients, which makes it more difficult to track cases.

RECOMMENDATIONS

Although HIV is not a pressing priority in Armenian health, USAID should support a program to regularly survey risk-prone populations.

- ***Military recruits and pregnant women are likely populations to be surveyed. But if pregnant women are surveyed, medication for preventing transmission to the newborn is morally required; at current rates, less than 2 pregnant women would be expected to be HIV positive per year.***
- ***Increasing STD rates emphasize the importance of family physicians being able to screen (and have materials to screen) for these diseases, especially for pregnant women.***
- ***Programs to strengthen HIV/AIDS education and prevention activities should also be encouraged.***

Chronic, Noncommunicable, and Lifestyle-Related Diseases

Cardiovascular diseases are the leading cause of hospitalization and mortality in Armenia. Comparing incidence and mortality rates for both cardiovascular disease and diabetes, it is clear these diseases are worsening due to lack of access to health care.

Cardiovascular Disease

Cardiovascular disease is the leading cause of death for those over 65. Cardiovascular disease incidence appears to be decreasing, but mortality rates for this disease are increasing; from 309.8 deaths per 100,000 population in 1990 to 439.9 in 2000 (census adjusted). Increasing mortality, compared with decreasing morbidity, infers inadequate access to care—the sick do not seek treatment until it is too late. According to WHO, premature (0–64 years) mortality rates of cardiovascular and ischemic heart diseases and cerebrovascular disease rates, even when adjusted, are lower in Armenia than in most other countries in the Newly Independent States (NIS), although they are higher than for Europe.³⁸ In Armenia, cardiovascular diseases account for 34.8 percent of deaths among 0–64 year olds and 66.2 percent of persons over 65 years.³⁹ An increasing percentage of Armenians are disabled due to a cardiovascular event or problem, from 16.3 percent in 1985 to 22 percent in 1998.⁴⁰ Cardiovascular disease is a disease for which both

³⁸ Armenian Ministry of Health, *2000 Annual Statistical Report*.

³⁹ Ibid.

⁴⁰ Mkrtchyan.

treatment and prevention are well known. Investment in adequate treatment and prevention programs would yield positive results.

Diabetes and Obesity

Armenia has several negative health indicator trends that reflect an increase in diseases of affluence: increased rates of obesity, increased rates of diabetes, and increased rates of specific malignancies. Deaths from diabetes have increased threefold in the last 10 years (calculated from the 2000 Statistical Report as 42.2 per adjusted 100,000 population). The DHS found that 27 percent of Armenian women were overweight and another 14 percent were obese, using the body mass index cutoff.

Mental Disorders and Substance Abuse

Rates of mental disorders are reported to have decreased since the Soviet era, but in most cases, this is probably due to people not seeking care because of the costs. Diseases that are difficult to ignore, such as alcoholic psychosis, have increased since the Soviet era and then stayed level. WHO reports that Armenia is “among the countries with a relatively low level of alcohol consumption.”⁴¹ The rate of substance abuse (drugs and chronic alcoholism) is reported in the annual health statistics (2000) to have decreased since Soviet times, even after adjusting for the current census. Screening for depression is rarely done, although the amount of stressful changes Armenians have lived through, including lack of social security, would increase depression in any population. The U.S. preventive task force summarized all available evidence on depression screening and found it useful as long as it was followed by treatment—medicine and/or counseling—resources that are not readily available in Armenia. But perhaps an affordable, culturally acceptable approach to treatment can be developed for Armenia, such as social support, healthy lifestyle, and follow up.⁴²

Smoking

A 1998 survey⁴³ found that 69 percent of men and 6.2 percent of women smoke. In 1990, the number of cigarettes consumed per population was almost 2 times higher in Armenia than in any country in the European Union or the CIS. There was a sharp drop in cigarettes per population immediately after Armenia’s independence (1991 and 1992), but the overall rate has remained high with mild increases in recent years.

Mortality from lung cancer among 0–64 year olds was below the Newly Independent States average in 1999 and has remained approximately the same since 1990 (about 22–23 deaths per 100,000 population).⁴⁴ While the comparison should be interpreted with caution, Armenia does have a higher percentage of hospitalization due to diseases of the respiratory system than the average in Europe (10.7 percent of all hospitalized patients in 1999).⁴⁵

⁴¹ WHO, Highlights on Health in Armenia, Using these graphs, then adjusting for 2000 census.

⁴² Pignone MP, Gaynes BN, Rushton JL, Burchell CM, Orleans CT, Mulrow CD, Lohr KN, “Screening for Depression in Adults: A Summary of the Evidence for the U.S. Preventive Services Task Force,” *Ann Intern Med.* 2002, May 21; 136(10):765–76.

⁴³ UNDP, 2000 Armenia: Common Country Assessment.

⁴⁴ WHO, Highlights on Health in Armenia. Using these graphs then adjusting for 2000 census

⁴⁵ Ibid.

The National Tobacco Control Program (www.tobaccocontrol.am) is a fairly recent creation. Legislation does ban direct tobacco advertising on television and radio, but not billboards, and smoke-free buildings do not exist. Health warnings are posted on tobacco products. There are a few nongovernmental organizations in Armenia that work to reduce smoking.

Malignant Neoplasms

Armenia has a higher percentage of deaths by malignant neoplasm (25 percent) than the average for the European region (23 percent), among people less than 65 years old.⁴⁶ Furthermore, malignant neoplasm deaths have increased by about 20 percent since 1990.⁴⁷ Of particular concern is the fact that the mortality rate from breast cancer among females 0–64 years old has almost doubled since 1990 and is higher than any of the other NIS countries and higher than the European Union average.⁴⁸ Cancer survival depends on early diagnosis, chemotherapy, and surgery but Armenia does not screen for cancer and has no chemotherapy capabilities.

RECOMMENDATIONS

As noted, several prevalent diseases are affected by poor access to health care.

USAID should continue its support of systemic changes that will improve access.

In addition, USAID can

- *assist in supplying working blood pressure cuffs and stethoscopes (most American medical schools have a stethoscope donation program);*
- *support the training of trainers who can train doctors and nurses nationwide on the proper techniques for blood pressure monitoring (the American Heart Association has a certification program on taking blood pressure);*
- *promote a consistent, nationally useful clinical practice guideline for treating hypertension and diabetes and encourage knowledge of these guidelines for licensing and recertification;*
- *develop clinical guidelines and training programs for depression screening (with valid treatment/counseling available);*
- *help ensure the availability of low-cost hypertensive medications;*
- *help promote laws to decrease smoking, including the increased taxation of tobacco;*
- *support public health education on smoking, diet, exercise and other lifestyle factors affecting health;*
- *encourage awareness of obesity as a problem in Armenia and promote low-fat foods; and*
- *support an early breast cancer screening program and the development of standards for chemotherapy treatment, possibly determined by age.*

⁴⁶ Ibid.

⁴⁷ MOH, Health Statistics Yearbook, 2000 calculation of mortality rate taking into account the census population.

⁴⁸ WHO, Highlights on Health in Armenia.

Nutritional Status

Four nutrition surveys have been conducted since 1994; in general, they show a decreasing percentage of acutely malnourished (wasted) children in Armenia and no significant change in stunting. There is evidence of continued malnutrition in the weaning age group, where breastfeeding is abruptly stopped and babies are shifted to cow's milk at 2–3 months. Rickets has been a problem in the past and has not been addressed.

Anthropometry of Children

The earliest available nutrition data were collected by Italy's Instituto Nazionale della Nutrizione in May–June 1998, which measured 3,152 children nationwide. This study found that 4.2 percent of children were wasted and 12.2 percent were stunted. However, this study was weighted to include about half refugees. If the refugees are excluded, 3.8 percent were wasted and 13.0 percent were stunted.

The second nutritional survey of Armenia was conducted by the World Food Program (WFP) in September 2000. It also included a significant number of refugees (although the data are not separated). In this survey, the number of children measured was not published, although 3,900 households were interviewed, averaging a household size of 4.2. The percent under 5 years is not available, but probably fewer than 1,000 children were included in the study. Wasting malnutrition percentages were not published in the WFP report, because WFP learned that the DHS had much lower rates of malnutrition and thought the study had a sampling error. The WFP's unpublished report cites a rate of 10.3 percent wasting among children less than 5 years old. Stunting malnutrition was found in 22 percent of these children.

The third nutritional survey was the DHS conducted in November 2000, which measured 1,463 children less than 5 years. Wasting was evident among 2.3 percent, and stunting was evident among 15.5 percent of the children, with some variation among marzes. By definition, wasting and stunting is above the level expected if more than 2.3 percent of children's weight-for-height or height-for-age fall below the cutoff of two standard deviations below the reference median.⁴⁹ For the 6–24 month old age group, wasting was about twice the expected level. Stunting for children less than 5 was more than 6 times the expected rate. For a discussion of the importance of improved nutrition to the weaning age group and concerns about lack of information about seasonal variations in malnutrition, see appendix G.

Breastfeeding

Early wasting among Armenia's infants can probably be attributed to the early cessation of breastfeeding. The percent of women initiating breastfeeding at birth in Armenia is again now up to 1990 levels (due to a UNICEF-supported baby friendly hospital program), but the duration of breastfeeding is much shorter than at that time. Most babies are being weaned from breast milk at 2–3 months of age (only 33.8 percent of infants are exclusively breastfed in this age group), whereas the WHO recommendation is to exclusively breastfeed until 6 months. Even worse, because of lack of money for

⁴⁹ Keller, W., and C-M. Fillmore, WHO Statistics Quarterly, 1982.

formula, most Armenian infants are being weaned to cow's milk. The use of cow's milk is a major contributor to the 48.2 percent anemia among children 6–11 months old. Cow's milk causes anemia because infants under 12 months have sensitivity to cow's milk protein, which almost universally irritates the immature intestine, causing bleeding. Anemia is associated with increased susceptibility to infectious disease and decreased concentration for learning. The problem of insufficient duration of breastfeeding urgently needs to be addressed by PRIME, which would mean extending the age of intervention for infants to at least 6 months (instead of the current plan to follow infants up to 3 months). The public health promotion message needed for breastfeeding in Armenia is, "Mom's milk only for 5–6 months and supplement mom's milk with solid food after 5–6 months. Cow's milk before 12 months causes anemia, infection, and decreased learning."

Other Indicators of Malnutrition

The Italian nutrition survey of 1997 reported body mass index below 18.5 (malnourished) in women as 5 percent, but the DHS 2000 showed a decrease in the percent of malnourished to 3.5 percent. While anemia in pregnant women has decreased slightly, reported anemia for children 6–59 months increased between the 1997 and 2000 surveys. Rickets by biochemical confirmation was determined in 4 percent of young children in 1997. No study of rickets has been conducted since then, but since no program addresses this problem, the percentage is unlikely to have improved. High levels of iodine deficiency goiter show that Armenian soil is low in iodine; 40 percent of women of reproductive age had palpable goiters in 1997. Because of the USAID–UNICEF salt ionization program, 82 percent of households with children have adequately iodized salt (DHS 2000), compared with only 70 percent in 1997.

RECOMMENDATIONS

USAID should continue and should expand its support of programs designed to improve nutrition, including extended breastfeeding.

- *Seasonal variations in malnutrition needs to be reinvestigated in the poorest marzes, as the WFP study suggests that it may be significant.*
- *USAID-supported nutrition programs need to target the weaning age groups (6–23 months) that have the most malnutrition. School-age children are never as malnourished as the weaning age group.*
- *Weaning food supplements have proven successful for this vulnerable group because adults and older children think of it as baby food and do not eat it. Supplements can be enriched with iron and vitamins A and D relatively easily.*
- *Extend the PRIME target age group to get the infant through the weaning period, at least until 12 months of age.*

Health Status and Access to Care

Several measures of health status indicate that Armenians are not accessing health care services when they are needed. As noted earlier, low incidences of cardiovascular disease and diabetes, when compared with high mortality for both diseases, indicate people are not seeking care until it is too late. Similar problems are also reflected in the low number of antenatal visits by pregnant women. In contrast, based on the high percentage of children who have health cards and the high immunization rates, children are being brought in for needed health services.

Antenatal Visits

Although each pregnant woman is entitled to four free antenatal visits, only 64.7 percent of pregnant women in Armenia have four or more visits, with rates almost twice as high in urban versus rural areas.⁵⁰ In the last five years, women from Gegharkunik, Aragatsotn, Vayots Dzor, and Lori (in that order) were least apt to have antenatal care. The median time of first antenatal visits was 3.8 months gestational age.⁵¹ Lack of pregnancy test kits could partially explain this late start, as would saving the four free antenatal visits until later in pregnancy. A late start in care is known to increase the risk of premature birth and early infant mortality. Deliveries in the hospital occur in 91.3 percent of childbirths (83.9 percent in rural areas and 98.6 percent in urban areas).⁵² More than 40 percent of women from Gegharkunik had births at home in the last five years; the next in order of frequent home births were Aragatsotn, Shirak, Ararat, and Armavir.⁵³

Children with Health Cards

Ninety-four percent of rural and 92.2 percent of urban children under 5 years have health cards.⁵⁴ A slightly increased number of health cards among rural children probably reflects access to feldshers (rural nurse-midwives), despite fewer hospital births in rural areas. Data show that vaccine coverage has been about 18 percent better among 12–23 month old children in 2000 than among 36–47 month old children⁵⁵—the improvement would coincide with the UNICEF vaccination program. Urban–rural differences in vaccine coverage are less than age group differences (2.2 percent difference versus 18 percent difference).⁵⁶

Visits by Women

Among the 54.5 percent of women who reported that they had a medical problem in the last year, only 26.7 percent visited a health professional. Those marzes with the lowest proportion of visits among women reporting that they had a medical problem in the last year (calculated from DHS table 13.1) were Shirak (where less than half of ill women sought medical care), Kotayk (where mistrust of doctors was higher than in any marz), Aragatsotn, Armavir, and Lori (where 56 percent of ill women seek medical care).⁵⁷ The four most⁵⁸ common reasons for not seeing a health professional when sick were: lack of money (approximately 15 times the next most common answer), lack of time, family objections, and not trusting doctors (in that order). Financial reasons, rather than geography, are the most commonly stated reasons for not seeing a doctor, even in Gegharkunik, which is very rural.

⁵⁰ National Statistical Service (Armenia), Ministry of Health (Armenia), and ORC Macro, 2001, Armenia Demographic and Health Survey 2000, Calverton, Maryland: National Statistical Service, Ministry of Health and ORC Macro.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ National Statistical Service et al.

⁵⁷ Ibid.

⁵⁸ Ibid.

RECOMMENDATION

Constraints on access are a major issue facing Armenia's health system. As stated repeatedly, USAID should continue its support of programs designed to increase access. The following sections provide additional background and recommendations on how access can be improved.

II. HEALTH AND USAID'S SOCIAL TRANSITION PROGRAM

As the health reform agenda advances, the Armenian government and USAID are reassessing their health strategies and programs to address changing needs. Most of the health reforms that are now underway are systemic changes, altering how the health system is structured and financed with the intent of gaining long-term improvements in health status. But in the short term, while systemic changes take shape, additional efforts are being made to address the immediate health needs of the Armenian people, particularly the most vulnerable.

USAID'S HEALTH OBJECTIVES IN ARMENIA

At present, USAID does not have an explicit health strategy for Armenia. Rather, its Strategic Objectives in health are incorporated, along with social sector programming, into the Social Transition Program (STP). Before STP was established, USAID efforts in health were focused primarily on Congressionally mandated programs (such as reproductive health) and humanitarian aid. While continuing these mandated programs, USAID is now giving greater attention to long-term development efforts to rebuild a social safety net that will help ensure that all Armenians have access to adequate and affordable health care, food, and shelter.⁵⁹ STP has three broad objectives: to mitigate the adverse social impacts of the transition, to strengthen and make sustainable key social and health systems, and to provide urgently needed services to the most vulnerable in selected regions. In the health sector, STP sets out three Strategic Objectives:

1. **Increase access to and the quality of primary health care services in selected regions.** Programmatic activities are designed to support legislative and policy reforms that promote community-based primary health care programs; assist in the development of a referral system and network of primary health care service providers, both public and private, including NGOs; and strengthen the government of Armenia's capacity to plan, monitor, and evaluate health programs.
2. **Establish the foundation for implementing a sustainable health insurance system.** Programmatic activities are designed to help enact the legal and policy reforms that support such a system, increase the government's capacity to administer the program, and increase citizen awareness of the government-supported health insurance program.
3. **Address the immediate health needs of vulnerable groups.** Programmatic activities are designed to provide mobile health services, nutrition, reproductive health (prenatal care and written information on reproductive health only) and other services. The initial focus has been on providing services in the Lori, Shirak, Yerevan, Syunik, and Gegharkunik regions.

⁵⁹ USAID, Social Transition Program, The USAID/Armenia Program 1999–2003.

In pursuing these objectives, USAID's program has included six major components:

- health sector reform,
- the development of health policy and a legal framework that supports reform and health partnerships,
- the development of a network of NGOs (a project now ended),
- reproductive health,
- the provision of health assistance, and
- conducting a demographic and health survey (DHS).

For much of its health program—primarily health reform–related activities—USAID has entered into a contract with PADCO to manage what is called the Armenian Social Transition Program (ASTP). PADCO has subcontracts with Abt Associates for health program activities, the American International Health Alliance (AIHA) for training, the QED Group for monitoring and evaluation, and AMEG for equipment procurement. The major thrust of ASTP is health sector reform and includes activities in the following areas:

- improving access to primary health care,
- developing a practice model and training programs for family medicine/primary care,
- supporting the MOH's plan for optimizing health facilities,
- reforming health finance,
- creating an effective health management information system (HMIS), and
- developing a personal identification system for improving how health services are targeted.

For USAID's other health programs—principally reproductive health, health partnerships, and health assistance—USAID works with a number of organizations, including PRIME, AIHA under a regional cooperative agreement, the United Methodist Committee on Relief (UMCOR), Catholic Relief Services (CRS), and the NGO Center.

IMPROVING ACCESS TO QUALITY PRIMARY HEALTH CARE

A centerpiece of Armenia's health reform agenda and a core component of USAID's health program is improving access to quality primary health care services. In addition, the introduction of family medicine has been adopted as the principal, although not exclusive, way of strengthening primary health care.

Armenia's health system, like health systems throughout much of the world, has become overly dependent on hospitalization and subspecialty medicine. Changing the balance—placing greater emphasis on primary health care and family medicine—has been advocated by the United Nations for several decades as the most efficient and cost-effective way to make quality health care accessible to the people. More recently, WHO concluded that family medicine doctors are the best trained to provide primary health care, especially when assisted by nurses and community health workers.⁶⁰

Primary health care is also seen as both a means to greater health system efficiency and a contributor to economic growth. The World Bank has noted that “Developing countries as a group could reduce their burden of disease by 25 percent—the equivalent of averting more than 9 million infant deaths—by redirecting, to public health programs and essential clinical programs, about half, on average, of the government spending that now goes to services of low cost-effectiveness.”⁶¹ Furthermore, the World Bank points out that “Good health...is a fundamental goal of development as well as a means of accelerating it.”⁶² The report cites a study of 70 countries that found that child mortality is a highly significant predictor of economic performance. In essence, better health means more rapid economic growth—and the road to better health is primary health care and family medicine.

Unfortunately, many Armenians are not able to access health care when they need it and efforts to strengthen the availability and quality of primary health care services, including the introduction of family medicine, are still in the formative stages.

The Need to Strengthen Advocacy for Family Medicine

Although family medicine was introduced to Armenia eight years ago, the concept is still not well understood, even within the MOH, where advocacy for family medicine should be centered, or within the National Institute of Health, where the responsibility rests for educating family practitioners. Now, as pilot family group practices are launched and family practitioners begin to be introduced into Armenia's health system, strong and informed advocacy is essential. Strong advocacy is also needed to overcome the natural resistance among traditional medical subspecialists to the introduction of family medicine and its likely impact on the way they practice medicine and earn their living.

Unfortunately, few medical professionals in the country have been trained in family medicine, have practiced as family physicians, or have had more than cursory exposure to others who have. Few individuals have an internalized understanding of what is involved in being a family physician or what is required to train one. Those who advocate the introduction of family medicine do so based on their theoretical understanding of the concept and rely on the advice of donor-sponsored outside experts. As a result, internal advocacy for family medicine is weak and vulnerable to misdirection, setbacks, or disappointments.

RECOMMENDATIONS

USAID should support additional training and technical assistance designed to

⁶⁰ World Bank, *World Development Report 1993: Investing in Health*, 1993.

⁶¹ *Ibid.*, p.iii.

⁶² *Ibid.*, p.21.

increase the understanding and advocacy of family medicine training and practice.

- *USAID should sponsor a working tour of U.S. family medicine training programs and practice sites for key leaders and their principal associates from within the Ministry of Health and the National Institute of Health.*
- *Selected individuals should be placed in U.S. training and practice sites for a week or more to gain greater depth of understanding of family medicine concepts and practices.*
- *USAID should sponsor local, in-country seminars on topics selected from the growing list of clinical practice guidelines. Medical specialists and general practitioners, as well as family practitioners, should be invited. Wherever possible, family practitioners should serve as faculty for such seminars in order to increase their visibility and credibility.*

Strengthening Family Medicine Training

Even though the concept and practice of family medicine are not well understood among Armenia's health authorities, programs to retrain doctors now in practice (terapefts [general practitioners], obstetrician/gynecologists, pediatricians, and other medical specialists) and to prepare medical students as family practitioners have been designed and are now operational. As a result, these programs are primarily didactic, relying heavily on lectures, and do not incorporate the hands-on experience and direct patient contact known to be essential in preparing skilled family practitioners.

The National Institute of Health (NIH) is the principal center for the education of health personnel in Armenia, including the preparation of family doctors and nurses. Founded 10 years ago, the NIH has replaced the Institute of Continuing Education that existed during the Soviet system that required doctors to receive 1 month of continuing education every five years in order to maintain their license. The NIH has eight departments, including the department of family medicine, with three chairs or divisions—family medicine, family nursing, and narrow specialties in family medicine. NIH has four postgraduate education programs in family medicine, including

- a two-year (postmedical school) residency program;
- an 11-month retraining program for terapefts (a program of longer duration, with weekend study modules, is being considered to make it easier for doctors to retain their practices while they are being retrained);
- short-term, 6 to 8-week continuing education programs; and
- a 6-month training program for family nurses.

In addition, since 2000, the State Medical University has offered a two-year residency in family medicine.

To date, 81 doctors have completed the family medicine retraining program and 15 have completed a two-year residency; 100 are currently enrolled. Forty-one nurses have begun the 6-month training program and 120 are expected to graduate by May 2003.⁶³

⁶³ National Institute of Health, interview, May 2002.

Unfortunately, all of the family medicine training programs (for doctors and nurses) rely too heavily on theoretical lectures and textbook readings and do not provide adequate clinical, hands-on experience.⁶⁴ For example, 25 of the NIH's 60 medical subspecialty chairs have training blocks (usually a week or two), when family medicine residents are sent to hospitals and hospital specialty clinics under the supervision of a medical specialist. Residents are not allowed to touch patients, however, and are given lectures instead. The World Bank has acknowledged that "current family medicine education programs in Armenia produce graduates who are unable to perform many of the tasks and procedures that are fundamental to the practice of family medicine."⁶⁵ The problem is twofold.

First, there is a lack of clinical outpatient sites where patient-centered, hands-on training can be provided. To a degree, the pilot family group practice sites, now in development with USAID support, can serve this purpose, but more will be needed. In addition, the physicians who make up the group practice team will need additional training if they are to serve as effective teachers of family medicine students and residence. Under PADCO's direction, some training is now being provided, but more will be required.

Second, there is a lack of clinical practice guidelines, or standards of care, needed to structure both family medicine education and practice. To date, a few clinical guidelines have been developed with USAID support, but the process of developing others needs to be better coordinated and production of additional guidelines accelerated.

RECOMMENDATIONS

USAID should encourage the NIH to introduce greater patient-centered training for family doctors.

- ***USAID, through PADCO, should continue to encourage coordination in the development of clinical practice guidelines and accelerate their development, wherever possible.***
- ***The capabilities of the pilot family group practice clinics to serve as training sites should be reevaluated and, if necessary, additional resources provided to train team members as teachers.***
- ***USAID should encourage the NIH to make additional reductions in the production of subspecialist medical students and residents so that more specialists are not added to the already oversupplied health system.***

See appendix J for suggestions on a step-by-step process for strengthening primary health care and introducing family medicine.

Pilot Family Group Practices

The pilot clinics now in development are intended to demonstrate and refine a model of family group practice and are at a critical stage of their development. Their success will influence how well and how quickly the innovation of family medicine will be adopted by Armenia's health system.

Through PADCO, USAID is supporting the development of two family group practice pilot clinics: Polyclinic #1, in Vanadzor, Lori Marz; and Polyclinic #17, in Yerevan.

⁶⁴ In 1920, in America and Great Britain, Dr. William Osler brought medical students to the patient's bedside, revolutionizing medical education.

⁶⁵ World Bank, Aide Memoire, March 9–19, 2001, p. 3.

Polyclinic #4, also in Vanadzor, has been consolidated into Polyclinic #1 as the result of the MOH optimization program. The development of other clinics, although technically not pilot clinics, has been supported by AIHA in Vanadzor, Sevan, and Yerevan. There are also about 70 rural family medicine clinic facilities being constructed in Armenia under the current World Bank loan program.

While acknowledging their differences from pilot family group practice clinics, the experiences of the AIHA-sponsored clinics are worth noting. Based on visits to the AIHA-supported clinics, it is clear that the staff involved (all levels of doctors, nurses, pharmacists, and assistants) is generally proud and happy about its experience with this program. AIHA concentrates on improving the work environment (clean, orderly, and recently painted), basic equipment (used, but modern, provided by Carelift as well as an open computer facility), and training personnel. AIHA has supplied central heating to two polyclinics, possibly the only clinics outside of Yerevan with central heating. For staff development, AIHA sponsors travel (including international visits to partner institutions and conferences) and multiple educational classes for doctors and nurses. Clinical training is usually specialty specific. The primary care focus is new and to date there are no active U.S. family physician departments partners. AIHA clinics had the best pharmaceutical supply of any clinics visited, especially medication for partner-chosen projects and treatment guidelines. Each AIHA partner clinic has ongoing and regular training of all levels of staff. The guideline-directed continuous quality improvement system observed at Polyclinic #5, related to hypertension treatment guidelines, is probably the only such program in Armenia.

While their accomplishments are commendable, AIHA partnership projects have been supported by generous funding and are not always practical for countrywide application. For example, AIHA is able to provide staff with frequent opportunities for travel and training—expensive benefits that are not available to the typical clinic. In clinical areas also, expensive options have been introduced that may not be affordable elsewhere. For example, Armenian physicians do few Papanicolaou (Pap) smears because they do not have the supplies, money, or the expertise to do them. Pap staining costs 10–100 times the cost for the Giemsa stain, a procedure that had been used in Soviet countries for years. In fact, the cost of a Pap stain is equivalent to the per capita cost budgeted by Armenia annually for health. American pathologists generally only know Pap staining, so Sevan polyclinic staff has been trained and uses only this more expensive staining procedure. It is an easier to read, clearer stain, but countries that pay attention to costs, such as Ukraine, are instituting visual inspection and on-the-spot liquid nitrogen freezing to overcome the deficiencies of the Geimsa stain.

Importantly, in the pilot family group practice clinics, PADCO's training programs are particularly well appreciated by the physicians involved. The assessment team visited a training course that PADCO stated was part of crosstraining terapefts and pediatricians in both Polyclinic #17 and Polyclinic #1, but which did not appear to be consistent with the goals of family group practice. The purpose of such crosstraining is unclear. Participating doctors need to receive additional training in their own specialties and would need far more exposure to pathology, histology, anatomy, and physiology to become capable family doctors.

Unfortunately, at the time of the assessment team's visit, there was little evidence that efforts were being made at the pilot clinics to help create the pleasant ambiance or the staff buy-in of the AIHA-sponsored clinics. In fact, the director of Polyclinic #1 complained that the clinic provides PADCO with free office space but receives nothing in return. Appropriately, since the assessment team left Armenia, PADCO has begun painting Polyclinic #1. At Polyclinic #17, renovation of the facility is to be addressed under the World Bank loan.

Polyclinic #17, where the first family group practice is just now getting ready to see its first patients—due to delays in rehabilitation that is being supported by the World Bank loan and the need to strengthen the clinical training of its family medicine trainers/providers. The clinic currently has too many specialists and family physicians, so doctors come into the clinic in three 3 to 4-hour shifts. When reconstruction begins, there will be even less room for doctors to practice. Additionally, some staff members are currently in the one year family medicine retraining residency and are expected to return.

Both PADCO-assisted pilot clinics suffer from the same chronic underfunding as other clinics throughout Armenia. Payments from the State Health Agency are regularly skipped or delayed and many clinic staff members are owed back pay. The imminent launch of the family group practice model is very visible, high risk, and not yet proven. Stakeholders may support the family medicine concept, in part because of anticipated benefits to themselves, but at the same time they are very aware of the potential for significant ongoing problems. There must be sufficient resources in place to make health services and working conditions at least a little better at these pilot clinics than in the past.

RECOMMENDATIONS

The success of the pilot family group practice is a revolutionary concept in Armenia and will need strong support. Early setbacks, which are inevitable with innovative programs, may be interpreted harshly by skeptics.

- *PADCO needs to put more effort into developing a more enthusiastic and tolerant base of support among clinic management and staff.*
- *SHA needs to make any special financial concessions that might help assure the success of the pilot programs. Paying back wages, paying on time, incentive payments for primary care procedures, and other options should be considered.*
- *Open enrollment at family group practice clinics would be helpful, with advertising to promote the advantages of attending a family group practice clinic. A demand for regular whole-household preventive care would help teaching practices. (See appendix J, number 5.)*

Emphasizing Primary Health Care and Altering the Mix of Medical Practitioners

Understandably, strengthening primary health care and introducing family medicine threaten Armenia's traditional health practitioners, both hospital-based medical specialists and terapefts who provide general medical services, primarily in rural clinics. The overabundance of medical practitioners of all types and their traditionally low pay must give all doctors some apprehension about the reforms that are taking place and how they will fit into the new system.

Dating back to the Soviet era, terapefts have been trained as either adult-only or pediatric-only general practitioners and are expected to treat only a narrow spectrum of illnesses, referring more complex cases to various specialists. Because terapefts typically practice in isolated areas, they are often required to provide services for which they have little or no training. In contrast, a well-trained family doctor can adequately diagnose and treat more than 90 percent of patients who seek medical attention. With access to a patient before a disastrous medical occurrence leading to hospitalization and/or surgery, the family physician can decrease the cost of medical care by using evidence-based preventive measures. Consider the medical costs of smoking in the Armenian population, for example. When a smoker is hospitalized for a cardiovascular problem, the damage is already done. The primary care doctor is able to offer repeated reminders of the need to quit smoking and can offer methods to help cessation. Such an approach has been found to be the best practice for decreasing smoking.⁶⁶ The family physician can also provide secondary prevention services, such as monitoring blood pressure and controlling diabetes and asthma. A well-trained primary physician can prevent diabetic coma or status asthmaticus and their resulting expensive hospitalizations or death. Although Armenia needs to make the necessary investment, such as making available medicine for secondary prevention, eventually family medicine preventive care will reduce health care costs.

There are, of course, large numbers of terapefts currently in practice throughout Armenia. Whatever their training, they are often the first line of health care available to many citizens—and will remain so well into the future. Appropriately, terapefts have been the principal candidates for the 11-month long family medicine retraining programs conducted by the NIH.

Primary health care and family medicine can also be seen as a threat to the traditional hospital-based practices of Armenia's medical subspecialists. But not all primary care services need to be, or realistically can be, provided exclusively by family doctors. For the foreseeable future, Armenia's health system will continue to be dominated by already practicing medical subspecialists. Every effort needs to be made to extend to these practitioners the benefits of training in new clinical practice guidelines, orienting them to the concepts of primary health care and improving the quality of their practices. Even in the long term, Armenia's health care system will always require quality hospital facilities and an array of competent medical subspecialists—just not in the numbers that are now available.

RECOMMENDATIONS

USAID should continue to support strengthening primary health care and introducing family medicine. These long-term initiatives will ultimately improve both access to and the quality of health care services. In addition, USAID should consider how the principals of primary health care can be further extended to the broader community of medical practitioners.

- ***USAID should continue to encourage the retraining of terapefts and other doctors in family medicine, as it enhances their skills and encourages their support for reform.***
- ***USAID should sponsor educational seminars on clinical practice***

⁶⁶ U.S. Task force on Preventive Medicine.

guidelines as they are developed for family medicine, inviting general practitioners and subspecialists as well as family doctors to attend.

- *USAID should enhance the reputation of family physicians by widely using them for updating the knowledge of adult and pediatric general practitioners.*

Licensing and Accreditation

The government of Armenia has made a few preliminary efforts to develop programs for licensing and/or accrediting health practitioners, medical facilities, medical education programs, pharmacies, and pharmaceutical production, but much remains to be done. In September 2001, the National Assembly enacted a general law on licensing professionals of all kinds and, at the request of the MOH, the ASTP has drafted two normative acts to begin implementation of the procedures required for licensing health professionals.

In February 2002, PADCO held a seminar in Yerevan, “Principles of Licensing and Accreditation in the International Environment,” with invitations extended to representatives of the MOH, NIH, SHA, Family Medicine Training Center, State Medical University, State Nursing College, and SanEpid. Representatives of the USAID Mission, PADCO, and the World Bank were also present.

Shortly after the conference, PADCO published “Recommendations for a Strategy to Implement Licensing and Accreditation in Armenia.”⁶⁷ The report defines licensing and accreditation as follows:

Licensing: The process of judging a health professional or health care facility against a set of minimum standards needed to practice or operate safely. Licensing is mandatory and is usually subject to periodic renewal and sometimes reexamination.

Accreditation: The process of external evaluation of health facilities or programs according to a set of standards on procedures, physical structures, administrative and financial processes, and outcomes that are related to the quality of care or medical education. Accreditation is voluntary.

The report recommends that the MOH create working groups to develop physician/nursing licensing and medical facility accreditation systems and education curricula for physicians, nurses, and pharmacies. The creation of a licensing center with the MOH was also recommended. Action on the report’s recommendations is pending.

Certification, which defines advanced levels of professional training or specialization in terms of medical residency activity, time spent at various activities, setting of learning activities and qualifying examinations, goes well beyond the requirements for licensing and accreditation and is outside the scope of Armenia’s current capacity.

⁶⁷ PADCO, *Report No. 62: Recommendations for a Strategy to Implement Licensing and Accreditation in Armenia*, USAID, March 2002.

RECOMMENDATIONS

- *Licensing and accreditation initiatives should continue to be pursued, with the MOH taking the lead role with USAID's encouragement and support.*
- *Examples from the United States can be tapped through PADCO's consultants and/or AIHA's academic partners; at least one other donor country or WHO should be approached for additional examples.*
- *The Armenian professional associations should be involved in this process and mentored in their role.*
- *Because licensing and accreditation change as medical knowledge evolves, the goal should be to eventually have professional associations take over this function with input by the MOH.*

HEALTH FINANCING REFORM

Armenia has already introduced a number of significant reforms that have a direct impact on how health care is financed, although much remains to be done. Many people are still not accessing health care when they need it because of the costs. In addition, Armenia is not yet using its limited financial resources to full advantage to advance the health reform agenda. In particular, neither the Basic Benefits Package nor the State Health Agency–reform initiatives—is being administered in a way that fulfills its potential. In addition, conditions are not in place that would support establishing mandatory health insurance.

Private Payments and Their Impact on Access

Armenians are not accessing needed health care services—in large part because they cannot afford the costs. The need to pay for care is probably an important contributor to the drop in clinic visits and hospital utilization rates since independence (see table 2 in the preceding section). Direct evidence of the impact of cost on access comes from a November 2001 survey where 65 percent of households stated that at least one member of the family experienced a medical problem in the previous 6 months but that 46 percent of those had not consulted anyone about it.⁶⁸ Of those, 82 percent cited the high cost as the major impediment.⁶⁹ Among those considered impoverished, about 55 percent of the total population, over 90 percent cited cost as the major deterrent to seeking health care. Even among the better off, 50 percent mentioned cost as their principal reason for not seeking health care. In the same survey, 19 percent of households reported not being able to afford prescription medications.

The survey also noted that the amount spent on any given illness was high and varied widely, with a median expense of 7,000 drams (\$12), an amount equal to or exceeding the monthly income of 30 percent of the population. While out-of-pocket costs appear to burden all but the most wealthy, the poor are disproportionately discouraged from accessing health care as compared with those in the better off category. These findings were reinforced by the DHS 2000, which notes that among the 54.5 percent of women who had a medical problem in the preceding year, only 26.7 percent visited a health professional.

⁶⁸ PADCO, *Report No.70: The Armenian Social Transition Program Third Survey on Public Use of, Knowledge of, and Perception of Social Services*, USAID, March 2002.

⁶⁹ *Ibid.*

While distance and the cost of transportation were also cited as deterrents to seeking health care, these factors appear to be relatively less important than the cost of health services themselves. In the November 2001 survey, 8 percent mentioned the lack of transportation as the reason that they did not seek health care when it was needed, and 12 percent noted that health services were too far away.

As noted earlier, out-of-pocket payments, both formal and informal, now account for 60 percent or more of all health expenditures. Revenues from formal fees charged for services not covered by the Basic Benefits Package are intended to supplement revenues from public sources allocated by the State Health Agency. But even in combination, these legitimate revenues have not been adequate to cover costs and many hospitals and clinics have accumulated significant debt, primarily in the form of unpaid salaries. In field interviews conducted by the assessment team, some medical providers reported that they had missed 15 months of pay since the end of 1999. In early May 2002, several doctors and clinic staff reported that, so far for the year, they had been paid for only 2 of the 4 months they had worked.

Low salaries are known as the most significant factor supporting a system of informal payments, a condition that is exacerbated when wages are not paid for long periods. It is not surprising that Armenia's long tradition of informal gratuity payments continues. Informal out-of-pocket payments no doubt help sustain the health system during times of failing governmental support. They supplement meager salaries and create a market of sorts, even if perverse. However, informal payments are assessed against all patients. The people the government most wants to protect, the poor and the vulnerable, are especially burdened.⁷⁰ In addition, while the revenues generated by informal payments benefit individual employees, they do not provide financial support for provider institutions or for the betterment of the health system. They foster corruption and undermine governmental priorities. Government employees are encouraged to seek unrecorded payments that avoid taxation.

RECOMMENDATIONS

Patient charges, both formal and informal, are restricting access to health care. To help address the problem, USAID should consider supporting the following initiatives.

- *As recommended earlier in this report, USAID should support a National Health Accounts (NHA) study, including documentation of the scope of private payments for health, both formal and informal.*
- *USAID should sponsor a patient flow study that follows patients through the health system—from their first encounter through various stages in the referral network—documenting diagnoses, financial requirements, and treatments received. The analysis of improved data may lead to new or refined initiatives to address access.*
- *USAID should continue to encourage the government of Armenia to reduce the accumulated arrears in back wages now carried by many hospitals and clinics and to make regular payments from the SHA.*
- *In the short term, while systemic changes take shape to improve primary health care and restructure the health system, USAID support for*

⁷⁰ Belli, Paolo, *Ten Years of Health Reforms in the ECA Region: Lessons Learned and Options for the Future*, The World Bank, May 2000, pp. 23–27.

programs that address the immediate health needs of the most vulnerable, and those least able to access needed health services, should be continued and possibly expanded.

- *The percentage of households that reported someone ill that did not seek health care because of the cost is useful as baseline data, but probably not as a performance indicator. It is unlikely that USAID activities will have any measurable impact on this measure during the life of the project, although they should in the long term, as family medicine becomes more dominant. Changes in this performance indicator are dependent on widespread financial reforms (such as lowering user fees) or significant improvements in Armenia's economy, neither of which is likely to happen soon.*

Basic Benefits Package

Recognizing its inability to financially support all health services, the government of Armenia introduced the Basic Benefits Package in 1998 with the intent of providing selected services free of charge to targeted, vulnerable segments of the population. In practice, however, the Basic Benefits Package is too broadly inclusive and too underfunded to fully achieve its purpose.

When the Basic Benefits Package was developed, about 100 diseases and medical conditions were evaluated using disability-adjusted life years (DALYs).⁷¹ In the DALY methodology, as developed through a collaborative effort between Harvard University and the World Bank, each medical condition is evaluated on the basis of loss of productivity due to disability or premature death. In theory, DALYs lend an objective measure to help set priorities for the diseases that should be funded from governmental sources. In reality, objectivity is often compromised in defining coverage, for any number of political and practical reasons. So it is with Armenia's Basic Benefits Package. Unfortunately, the Basic Benefits Package has become too inclusive and the utility of determining DALYs has been obscured.

Under Armenia's Basic Benefits Package, everyone is entitled to free primary care provided by general practice physicians and free hospital care for selected diseases, such as gonorrhea, syphilis, tuberculosis, and other diseases with social implications. Vulnerable groups, including the disabled, war veterans, children, families with four or more children, and others, are eligible to receive free hospital care and free outpatient medicines and diagnostic tests.

One intent of the Basic Benefits Package is to promote outpatient care versus hospitalization, but in application the program is inconsistent. In some cases, the Basic Benefits Package encourages hospitalization for conditions such as strep throat and influenza that are more appropriately treated on an outpatient basis.

RECOMMENDATIONS

The Basic Benefits Package has considerable potential as a way of targeting the application of limited governmental funds. USAID should continue to support efforts to strengthen the Basic Benefits Package and its application.

- *USAID should support a study of the impact of the Basic Benefits Package,*

⁷¹ The World Bank, *World Development Report 1993*, p. 213.

as now administered, to determine how it might be adjusted to more effectively target limited governmental funding to improve access to essential health services.

- *Recommendations should be developed that better balance projected costs with anticipated revenues by setting priorities for covered services and assuring that services are provided in the most appropriate setting.*

State Health Agency

With about 80 percent of the government of Armenia health budget now being processed through its channels, the State Health Agency can exercise considerable influence in shaping the health system of the future. SHA authorizes payments to hospitals and clinics for publicly funded health services, as defined by the Basic Benefits Package. As an independent buyer, SHA can, at least in theory, be selective in the health services it buys and the institutions it chooses to pay. So far, however, SHA has been constrained in exercising its potential. Currently, it is not able to exclude or favor any health service provider on the basis of the need for or the quality of the services provided.

Based on the obligated health budget, SHA sets hospital rates for each diagnosis in the Basic Benefits Package of health services. It also sets per capita payment rates for clinics based on each clinic's costs and the population it serves. Hospitals are to be paid monthly based on the number of defined services they provide to eligible (vulnerable) patients. Clinics are also supposed to receive periodic payments based on their per capita rate. But for several years, the obligated health budget has not been fully funded and SHA has never been able to meet its commitments to health service providers. Often, providers receive no payment for several months of the year.

When funds are short, which they typically are, SHA has not used the funds that are available to reinforce stated health objectives or to influence provider behavior. SHA does appear to set priorities for payments when there is a budget shortfall—favoring emergency and hospital services rather than primary health care and clinics. It has been reported that emergency services are paid because they need to purchase fuel from the private sector or they cannot provide emergency transport. Hospitals are paid because they incur debt to state-owned utility companies. In the meantime, clinics in rural areas have no heat throughout the winter.

Admittedly, SHA is hampered in fulfilling its role as a buyer. Under current conditions, it must pay any provider that offers its services and cannot eliminate a provider on the basis of quality or redundancy. So far, SHA has not attempted to exercise its powers or to use its growing database to persuade policymakers that it can do more to shape the health system. Potentially, SHA can exert considerable influence, such as

- give first priority to paying primary care providers,
- provide financial incentives that encourage family group practice,
- set priorities for diagnostic services included in the Basic Benefits Package and pay providers for those services before paying for other services,

- alter payments or eliminate providers identified by the MOH as redundant facilities in the restructuring program, and
- implement quality improvement programs, including financial incentives that encourage providers to improve their performance.

In order to exert its powers, SHA needs the authority to do so.

RECOMMENDATIONS

The potential of SHA to influence the structure of Armenia's health care system should be studied.

- *USAID should assist SHA in studying the impact of its current health services purchasing practices and help develop recommendations for adjustments and future developments.*
- *USAID should encourage SHA to make regular payments to health service providers. Consistent monthly payments, even at a lower level to reflect actual government of Armenia funding, would allow hospitals and clinics to plan realistically.*
- *USAID should encourage the government of Armenia to pay off the back wages owed to health workers. Relieved of their outstanding debt, hospitals and clinics could adjust their operating costs to reflect ongoing revenues.*

Mandatory Health Insurance

Mandatory health insurance has been proposed by the MOH as a way of ensuring a sustainable, predictable, and adequate source of financing for Armenia's health system—a proposal that has received support from USAID. PADCO has helped draft legislation to introduce mandatory health insurance although it has not yet been adopted.⁷² As envisioned, mandatory health insurance would be introduced in stages, with advancement to each stage based on the accomplishment of predetermined criteria. The conditions that need to be in place in order for mandatory health insurance to proceed, as identified by PADCO, include

- a database of all working Armenians has been created and is updated monthly;
- SHA has created and received approval of a reimbursement schedule;
- there are no arrears in SHA payments to providers for the preceding year;
- actuarial projections have been prepared that show that revenues will be adequate to cover projected payments;
- SHA has created a system of contracts and procedures to cover eligible reimbursements;
- a state social insurance fund has been created with a separate account for the deposit of dedicated payroll contributions;

⁷² PADCO, Draft, *Report No. 77: Draft of Law to Introduce Mandatory Health Insurance*, USAID, April 2002.

- financial procedures have been designed, tested, and approved;
- operations of the State Mandatory Health Insurance Fund are subject to independent audit; and
- the state budget shows appropriations to pay for health care that are not smaller than the previous year's appropriation.

It is clear that Armenia is not yet at a point where mandatory health insurance can be implemented—and it will be several years before it is. The economy is still weak, employment in the formal sector is low, and wages are depressed. Appropriately, the Ministry of Finance and Economics is reluctant to impose any new taxes on a population that is already burdened.

While mandatory health insurance must wait for conditions to improve, the government of Armenia can take other steps to strengthen its insurance function. Mandatory health insurance is an insurance *scheme* and as such is only one means toward strengthening the government of Armenia's insurance *function*. There are other alternatives. At present, all the insurance functions are in place in Armenia—they are just not as strong as required. There is a defined population to be served (as provided in the Basic Benefits Package), a list of defined covered services (again as provided in the Basic Benefits Package), a means of selecting and paying providers (SHA), a system of providers (hospitals and clinics), and a source of supporting revenues (now the general tax base). As discussed earlier, a number of these functions—most notably the Basic Benefits Package and SHA—can be strengthened without resorting to mandatory health insurance. Further optimization of hospitals and clinics will also have impact. At a minimum, current revenues can be better utilized while improved sources are developed.

RECOMMENDATIONS

Conditions are not favorable in Armenia for the introduction of mandatory health insurance and are not likely to be for years to come. In the meantime, USAID should shift its support from establishing mandatory health insurance to efforts to strengthen the government of Armenia's insurance functions.

- *As recommended earlier, USAID should support strengthening the Basic Benefits Package, to narrowly define covered services and population eligibility.*
- *USAID should support efforts to strengthen the role of SHA as a discriminating buyer of health services.*
- *USAID should continue its support of the MOH's restructuring program, with the aim of developing a more efficient system of quality health providers.*

HEALTH SYSTEM RESTRUCTURING

The restructuring or optimization plan adopted by the government of Armenia is considered a central element of the MOH's reform strategy, but the plan is still in an early stage of implementation.⁷³ Supporting the restructuring effort is and will continue to be key to USAID's health programming effort in Armenia.

⁷³ Ministry of Health, *The Strategy of the Ministry of Health*, Yerevan, Republic of Armenia.

Conceptually, the MOH's optimization plan sets out a comprehensive systems view of restructuring that matches health resources with health needs. The plan emphasizes the need to alter the balance between primary and secondary care, to define how medical solo and group practices are structured, to determine the kinds of diagnostic and therapeutic equipment needed, to examine the potentials for merging or consolidating hospitals and polyclinics, to determine the ratio of medical specialists to population, and to adjust the types and numbers of doctors produced by medical schools.

The first stage of restructuring, the decentralization of hospitals and clinics, began in 1993. The goals of optimization however, to reduce the overabundance of hospitals and staff, have not yet been realized and much more needs to be done. Important financing reforms that can help reshape the health system have been introduced, although their potentials have not yet been realized. In addition, the policy, legal, organizational, and functional arrangements that currently constrain the health system's ability to grow and change are being updated, although here too, additional work remains to be done.

Authorities and Responsibilities after Decentralization

The first phase of Armenia's restructuring program was to decentralize—a major reassignment of responsibility for the bulk of secondary hospitals and health clinics formerly under the direction of the MOH. The MOH divested ownership of these health enterprises to marz and local authorities, while the institutions were given greater autonomy and were expected to become financially self-sufficient. The MOH retained responsibility for only a few tertiary hospitals and specialty institutions located in Yerevan.

After decentralization, marz and local authorities were given little instruction or training on how to deal with their new obligations. The terms of ownership and the limits of their authority are yet to be defined. In addition, most do not have any financial resources or internal capability that they can use to either support or influence the health providers now under their direction. Payments authorized by SHA, for example, go directly from the Ministry of Finance and Economy to hospitals and clinics, bypassing marz and local authorities who have little meaningful input into the process. In essence, marz-level authorities currently serve as intermediaries for the central MOH and have little discretionary power. (See appendix K for additional details.)

Decentralized health enterprises do not have the tools or the expertise they need to deal with their expanded responsibilities. Many have been left with deteriorated buildings and outmoded and inoperable equipment. Many are burdened with excessive numbers of personnel and are restrained in their abilities to make reductions. With chronic underpayments from the government, health enterprises are not able to pay personnel on time and have accumulated substantial arrears. Global budgeting has allowed institutions some flexibility but revenues are insufficient or so irregular that they cannot cover recurrent operating expenses, let alone finance needed equipment and capital improvements.

RECOMMENDATIONS

With decentralization, hospitals and clinics were expected to become more autonomous and self-sufficient, but they do not have the facilities, equipment, skills, knowledge, financing, and legal backing needed to implement their new roles. Local authorities in the marzes and municipalities are not prepared to assume the responsibilities imposed on them with decentralization.

- *USAID should support an exercise to define the responsibilities and authorities of local and regional governments and the hospitals and clinics that were decentralized. Issues of ownership, budget and finance, employment, debt retirement, and capital financing should be addressed.*
- *USAID should support training programs designed to strengthen the capacities of local governments and health enterprises to deal with their new responsibilities.*

Rationalizing Health Services, Facilities, and Staff

A major goal of restructuring is to rationalize Armenia's overabundance of health facilities and personnel. Armenia has between 8.3 and 10.5 nurses, and between 3.4 and 4.3 doctors per 1,000 population (see table 2), approximately 75 percent more than necessary based on target ranges suggested by WHO. To date, there have been few if any doctors who have been unemployed during optimization, and only a few nurses. The number of hospitals, at 7.7 beds per 1,000 population, is somewhat high compared with Western countries, but not out of range. The geographic distribution of hospitals and their service profiles are probably of greater concern than their absolute numbers.

A word of caution is necessary, however. Based on PADCO's experience in Lori Marz, where it developed a statistical base of health facilities and personnel, official hospital bed numbers, even the number of hospitals, may not be accurate. The number of health employees is assumed to be more accurate.

RECOMMENDATIONS

USAID programming, by strengthening primary health care and introducing family medicine, may ultimately have an impact on Armenia's overabundance of doctors and nurses. But the rationalization of existing facilities and personnel is essential if these reductions are to be realized.

- *USAID should encourage the National Institute of Health to reduce further the numbers of students it accepts, especially for nonfamily medicine education programs.*
- *USAID should expand its health resources database, as piloted in Lori Marz, to improve the cataloguing and tracking of hospitals, clinics, equipment, and personnel throughout the country.*
- *The demand for health services needs to be better documented than it is. USAID should support a national study of health services demand, documenting population demographics, health needs, and the ways patients access the health system.*

Optimization: The Next World Bank Loan

The next World Bank loan, now being developed with the MOH, will pursue new efforts in restructuring and offers an opportunity for USAID to provide technical support. In the next few months, the MOH will begin working with the World Bank to define the terms of a \$30 million loan designed to support optimization. About \$13 million will be for

health. A \$450,000 Japanese grant will finance the technical assistance needed to define the terms of the loan. The loan provides an opportunity to refine the restructuring concept and to devise a framework and implementation plan that can include a comprehensive array of parameters. The loan presents the opportunity for a renewed commitment to rethink and redo optimization.

The MOH has said that it would like to complete planning for the new World Bank loan before March 2003, while the current National Assembly is still in office. The World Bank does not expect, however, to take the loan agreement to its board before mid-2003. The MOH may have to seek support from the new legislature, but if successful, it will then have the support of those in power rather than of those recently out of power. Realistically, new decisions about restructuring are almost two years away. In the interim, USAID can play an important role by being involved at the earliest stages of loan negotiation. USAID can provide technical assistance and expertise in preparing the database needed for decision-making, building on the model developed by PADCO in Lori Marz.

RECOMMENDATIONS

Negotiations are underway between the MOH and the World Bank on a loan that will focus on implementing optimization plans, particularly at the tertiary level. USAID, through its contractors, can play an important collaborative role in supporting these negotiations.

- *USAID should continue its supporting role in the development of the next World Bank loan—especially the development of a database of health facilities and their utilization, as done in Lori Marz.*
- *USAID should continue to support the development of the policy and legal framework that supports restructuring.*

POLICY AND LEGAL FRAMEWORK FOR HEALTH REFORM

The development of health policies and a legal framework that support health reform is a central part of USAID's programmatic effort in Armenia and has been a major thrust of PADCO's work since the inception of the contract. PADCO reports that when it began work, it assumed that the health policies needed to support health reform were largely in place. PADCO found, however, that many of the policies were poorly developed and did not provide the guidance needed to shape legislation. As a result, PADCO devoted considerable time over the first two years of its contract to revisiting and strengthening a number of health policies, with greater dialogue among affected stakeholders, greater transparency in the process, and more substance in the resulting policies. As a result, PADCO has produced 77 major reports covering both social and health-related policy issues, with 38 issues related to health. Some of the principal reports include

- a legal analysis of issues related to the organization and delivery of health care in Armenia;
- an analysis of the Armenian government's capacity to implement social and health sector reforms;
- procedures for the collaborative development of health management information systems and required software;

- recommendations for developing a policy resource center in the MOH;
- a functional analysis, redesign, and operating plan for Polyclinic #17 in Yerevan;
- an assessment of health financing options;
- recommendations for a strategy to implement licensing and accreditation;
- several household surveys on health and social issues; and most recently,
- a draft law to introduce mandatory health insurance.

In addition to numerous formal reports, PADCO has also produced a large number of work plans, concept papers, training programs, and presentations. While the quality of individual documents is high, so many have been produced that it is difficult to sort through the most relevant documents. PADCO has expressed concern that producing the 79 deliverables prescribed in its contract has at times overwhelmed the capacity of the MOH to absorb the materials.

Importantly, as PADCO points out, it is the process of developing each policy paper that is more critical than the paper itself. When produced, the paper should document the understandings and commitments that have been reached through a collaborative process. If policies or papers are developed in haste or in too great a volume, the intended commitment of participants is minimized or diffused. The level of understanding and buy-in and the momentum for implementation are highest at the time immediately following discussion and negotiations.

RECOMMENDATIONS

Creating the policy and legal framework that supports health reform is a critical and ongoing activity that requires USAID's continuing support.

- *PADCO officials believe that they have been successful in creating a firm policy foundation for health reform. But there is concern that much of PADCO's work will be lost in the volume of papers that it has produced if sufficient effort is not put into implementation now.*
- *PADCO should be encouraged to develop a list that sets priorities for all health policy and legislative initiatives, developed and pending, documenting their current status and planned activities.*

HEALTH MANAGEMENT INFORMATION SYSTEMS

Improving the quality and use of health information is and will continue to be an important part of USAID's health programming agenda in Armenia. In 1996, the MOH, recognizing the need for improved data, created the National Health Information Analytic Center (NHIAC) for the reporting of official morbidity and mortality data, the collection and analysis of data on health care indicators, and management of the health information system. More recently, PADCO has begun working with the MOH to develop a plan to create a more comprehensive health management information system (HMIS). The HMIS plan, described in a thoughtful report, sets out a three-phase process to be

implemented over several years.⁷⁴ The plan provides an assessment of current sources and uses of information, documents existing computer resources and software applications, and evaluates the human resources available to support the system. The plan also sets out technical specifications for the system.

At present, the HMIS plan is still in an early stage of its development. In a related effort, the 2000 DHS, the first statistical report of its kind in Armenia, was recently produced and published with USAID's support and assistance. In another related initiative, a National Health Accounts study is being considered.

Improving Health Management Indicators

A critical component of the HMIS plan is determining the information that is needed to support health policy development and management decision-making. Accordingly, PADCO, in conjunction with the Dutch consulting firm TNO, developed a report and conducted a workshop recommending a process for selecting appropriate indicators that will help guide management decisions in health.⁷⁵ Workshop participants reached several important conclusions:

- WHO Health for All indicators were found to be useful. Adopting WHO standards will ultimately bring Armenia's data collection practice into conformity with international standards.
- An excessive number of data reporting forms are currently used to gather data from health care facilities. Some of the forms can be eliminated or consolidated.
- The MOH needs to be more timely in distributing information on legal, financial, and administrative decisions to service providers.
- Information in the health system flows from the bottom to the top; there is little opportunity for discussion or feedback.
- The quality of data must be improved. Data collection methodologies need to be improved, forms need to be redesigned, and people need to be trained.
- Patient information is not communicated between health care professionals and provider institutions.
- The recording of infant deaths is not consistent with international standards and must be corrected (a factor also noted by the assessment team).
- A database on diagnostic equipment, facilities, and costs needs to be developed (similar to what PADCO developed in Lori Marz).

⁷⁴ PADCO, *Report No 42: Plan of Program to Enhance Health Information Systems in Armenia*, USAID, July 2001.

⁷⁵ PADCO, *Report No 64: Improving Health Management Indicators for Armenia*, USAID, December 2001.

- The SHA database on pharmaceuticals needs to be made available to health care providers.
- The MOH should work collaboratively to access data needed from other governmental agencies and outside sources.

RECOMMENDATION

The workshop on health management indicators was an important step in developing a more responsive, reliable, and useful health management information system for Armenia. The decisions reached at the workshop deserve active follow up and should continue to be supported by USAID.

Demographic and Health Survey

With USAID assistance, the DHS was published in January 2002. The report is based on a national household survey and other data sources and reports findings on fertility, contraception, abortion, infant and child mortality, maternal and child health, nutrition of women and children, HIV/AIDS and sexually transmitted infections, and adult health. The DHS report is a worthy first effort.

RECOMMENDATION

USAID should continue to provide technical assistance in order to help further improve data collection processes, and to strengthen Armenia’s internal capacity to interpret the data for policy development and decision-making.

National Health Accounts

The Ministry of Finance is considering conducting a National Health Accounts (NHA) study to better document the source and application of health care financing—an effort that deserves USAID support. As noted elsewhere in this report, much more needs to be known about both public and private health financing if appropriate planning and budgeting decisions are to be made. An NHA study can be conducted as a one-time exercise, supported by technical assistance and repeated in the future as needed to update information. Or, NHA can be established as an integral part of an ongoing data gathering system—a process that requires building the needed organization and technical capacity, probably within both the ministries of finance and health.

RECOMMENDATION

USAID should work with the Ministry of Finance and the Ministry of Health to help determine how an NHA study might be best organized and conducted.

The Capacity to Analyze Available Data

As recognized in the HMIS plan, the usefulness of improved data depends on the ability of the MOH, SHA, and others to analyze and apply the information in policymaking, planning, and regulation.

At present, the capacity of the government of Armenia to manage a comprehensive health management information system and to use the resulting data is very limited. One problem is a shortage of computers to assist in data collection and processing—a problem

that is being addressed with the support of a World Bank loan. Training personnel is also a concern and is being addressed by PADCO under the ASTP contract. Even with this donor support, however, the MOH has a minimal cadre of personnel as well as limited funds to provide the ongoing support needed to maintain the program. It is likely that the MOH will need continuing support if the HMIS is to develop further.

RECOMMENDATION

Building the capacity of the MOH and other state agencies, to be able to manage the HMIS, analyze data, and apply the results will be one of the most significant challenges in implementing the HMIS plan. USAID's programming should continue its support for capacity building in the next contract.

CAPACITY BUILDING

Capacity building is central to USAID's programmatic efforts in Armenia. Establishing a policy and legal framework supporting health reform can be viewed as an important aspect of capacity building, as can efforts to develop a more comprehensive health management information system. But as recognized by USAID, in addition to strengthening these technical capacities, attention also needs to be directed to the development of human capital.

People and institutions that will direct and manage Armenia's emerging health system need the tools, understanding, and capacity to successfully fulfill their changing responsibilities. Armenia's health reform agenda introduces numerous changes, a mirror of the dynamic transition being experienced in all aspects of society. Institutions and people throughout Armenia are struggling to adapt to the new social order. Governmental agencies, such as the Ministry of Health and the State Health Agency, are struggling to define their roles in a substantially revised health system. Divested hospitals and clinics are struggling to cope with their increased autonomy.⁷⁶ As primary health care and family medicine take hold, Armenia's doctors are expected to discard long established traditions and adopt new modes of practice. People are no longer able to depend on governmental support for health services but do not yet have the means or the inclination to fend for themselves. Individuals need new skills, capabilities, attitudes, and tools if they are to deal constructively with evolving demands, expectations, and opportunities.

RECOMMENDATIONS

If the potential of Armenia's changing society and its changing health system is to be realized and sustained, people and institutions need to be motivated to change, need to gain a sense of ownership, and need to be committed to the new social order.

- *USAID should continue its emphasis on training and capacity building, targeting especially the agencies, institutions, and health professionals that will reshape Armenia's health system.*
- *Particular emphasis should be given to strengthening the capacities of the MOH and SHA to plan, organize, and manage Armenia's health care system.*
- *Training programs in health management, leadership, communication, teamwork, planning, finance, decision-making, and quality assurance are all available through USAID sources.*

⁷⁶ See appendix B for more detail on the changing roles of the MOH and regional governments.

- *Wherever possible, practical training using hands-on experiences and proven adult-learning techniques should be used rather than lecture-based educational programs. Active participation is key to effective learning.*
- *In addition to training, USAID should assure that the processes of policy development, program planning, data analysis, and decision-making are as collaborative and participatory as possible.*

REPRODUCTIVE HEALTH (PRIME)

As noted earlier, maternal and infant mortality rates in Armenia are high and issues of maternal and child health will require continuing attention for years to come. The PRIME II project, with support from USAID, is responsible for developing and implementing (in coordination with PADCO) a reproductive health program to improve the access and quality of reproductive health services in Armenia, specifically antenatal, intrapartum, postpartum, and newborn services. Programming efforts are targeted to Lori Marz and its referral hospital in Yerevan. The program has two principal initiatives:⁷⁷

- the development of a comprehensive, multisectoral policy on reproductive health and
- the development and presentation of training programs for reproductive health providers—primarily feldshers, nurses and midwives assigned to rural health posts, and family medicine practitioners.

While still in development, PRIME’s initiatives have the potential for improving maternal and child health, at least in the target areas.

PRIME II is the third in a series of USAID–supported reproductive health programs in Armenia. The earlier programs, although successful in evaluating attitudes towards reproductive health and in delivering information about contraceptives to women, were not well accepted by some in the Armenian medical community, a few highly visible politicians, and segments of the media. Given the rapidly decreasing population of Armenia, the low fertility rate of Armenian women, and the fact that the MOH believes Armenia has among the highest percent of infertile women in the world, it is not surprising that a family planning program might be viewed with suspicion by the Armenian government. Superficially, family planning appears to have the goal of decreasing the birth rate, not decreasing maternal mortality, in a population of women depending on abortions as primary contraception. This perception will continue to cause problems in the future if reproductive health programs do not buy goodwill by addressing the infertility problem—training on infertility assessment and treatment and assisting the government to more accurately determine infertility rates.

PRIME II takes a gentler (and no doubt more politically acceptable) approach to family planning by providing a comprehensive reproductive health education program for primary care providers. Of all the programs supported by USAID, perhaps because of its narrow scope, PRIME’s program documents appear to have better prepared and analyzed background information and better formulated goals and objectives. The background

⁷⁷ PRIME II, *Improving the Quality of Maternal and Newborn Care*, Program Document, June 2001–September 2003, INTRAH.

information will be further improved by the epidemiological analysis of the health status (infant mortality and maternal mortality) discussed in appendix D.

PRIME's success in Armenia may be constrained because of three potential problems:

- By regulation, only obstetric/gynecologic medical practitioners are allowed to prescribe contraceptives and insert IUDs. Although one ministerial decree listed family planning as part of the work of family physicians, it does not specify which methods or rescind the previous regulations. As might be expected, obstetrician/gynecologists are motivated by the income they receive from abortions. If other health professionals obtain legal rights to prescribe contraceptives, they may be further motivated to perform abortions.
- While contraceptives are currently free (UNFPA is the donor), charges are made for unnecessarily required Pap and blood tests. In Armenia, insertion of an IUD requires an ultrasound, a practice not required elsewhere. Many poor women who really need these services will not benefit from them.
- Sustainability is threatened as soon as current free contraceptive supplies are finished. Apparently, the government of Armenia does not plan to supply them and most women do not have money to purchase both contraceptives and the precontraceptive tests.

RECOMMENDATIONS

Reproductive health is an important issue in Armenia and the PRIME program deserves continuing USAID support. To strengthen its effort, PRIME should consider the following:

- *The use of the under-5 mortality rate as a performance indicator hides the age group most in need of intervention. It would be better to look separately at infant mortality rates and the 1-4.9 year child mortality rates. PRIME is designed to follow newborns no longer than 3 weeks. To increase the chance of improving the infant mortality part of this indicator, PRIME should increase intervention until the infant is at least 6-11 months old. The program will have no impact on child mortality if it focuses on older children (1-4.9 years old). Including this age group in the indicator only dilutes the ability to detect an improvement due to the program.*
- *Given the 4 percent estimate of rickets in young children, the practice of vitamin D injections during pregnancy is recommended (at least in the rainy, cloudy, and cold seasons).*
- *The use of iron supplements to delay or prevent anemia and the use of magnesium and cortisone for preeclampsia and protection of the lungs of babies expected to be preterm should be stressed.*
- *The use of modern contraception as a performance indicator is an appropriate measure for the PRIME program.*
- *PRIME is beginning by targeting 45 feldshers, nurses, and midwives in Lori Marz for training. Consideration should be given to extending these offerings to other regions at the earliest opportunity.*

MEETING IMMEDIATE HEALTH NEEDS

While health reform initiatives advance, USAID has recognized the need to provide short-term assistance to help meet immediate health needs, such as the programs directed by the United Methodists Committee on Relief and Catholic Relief Services, reviewed below. USAID should continue to support a balance of programs that support system change and those that meet more immediate health needs.

United Methodists Committee on Relief (UMCOR)

United Methodists Committee on Relief (UMCOR), an international NGO, receives support from USAID for the provision of mobile health services in eight rural communities in Gegharkunik Marz. The area is lightly populated, including refugees, and the communities served by the mobile units do not have health facilities in place. UMCOR has a specially equipped ambulance with a staff that includes a terapeft, pediatrician, gynecologist, and laboratory technician. The mobile unit conducts a 5-hour clinic every 2 weeks in each community it visits. In addition to providing mobile clinics, UMCOR has trained about 240 community health educators to provide health education in their communities, distribute information on primary health care and healthy child development, and teach first aid. UMCOR is considering extending mobile services and the training of community workers to other communities west of the areas currently served in Lori Marz.

In 11 communities that do not have a local source for drugs, UMCOR is helping villagers establish drug revolving funds—much like the revolving drug insurance funds established in Georgia and other countries, and by Oxfam in Armenia. If individuals elect to participate in the plan, they are required to pay a small monthly fee. Proceeds are used by the plan to purchase commonly used drugs. Members are then eligible, depending on the rules, to either receive drugs free or to purchase drugs from the plan at a discount. Plans are designed to be self-perpetuating. UMCOR is planning to expand the program to a total of 16 villages.

UMCOR also provides small grants to local NGOs to provide school-based health education. Mission Armenia, a local NGO and UMCOR grantee, operates 18 soup kitchens and five clinics targeting the elderly and the very poor. They provide in-home care and medical and social services to the elderly who are in noninstitutional settings. UMCOR also provides cafeteria services for university and vocational students.

RECOMMENDATIONS

The programs operated by UMCOR appear to be meeting immediate health needs and should continue to receive support from USAID. The following additions and adjustments are offered for consideration.

- ***The mobile clinic idea may be a good permanent alternative to fixed facilities for providing health services to these sparsely populated remote communities and to similar communities in other rural areas. If SHA funding becomes more reliable, a low-cost alternative might be to locate a family doctor in the area, purchase an automobile, and compensate the doctor for travel expenses to cover the territory.***
- ***The drug fund idea has potential in other rural villages throughout Armenia. Expansion of the program, once it has been evaluated and proven effective, should be encouraged.***

Catholic Relief Services (CRS)

Catholic Relief Services (CRS), with the support of USAID funding, is helping meet the nutritional needs of children through its school feeding program. CRS provides five basic services that it sees as highly integrated—nutritional services to school children, the reconstruction of school cafeteria facilities, public health education for parents, and building the capacity of local NGOs to carry on the work. Armenian Caritas, a local NGO, is CRS’s implementing partner through a subgrant.

CRS provides about 11,500 meals monthly to school-age children in 40 schools in three marzes. Only schools with active parent councils are eligible to participate in the program and parent involvement through volunteer work is required. School attendance is required in order to participate in the program although the rules do not need to be tightly enforced; school attendance is traditionally valued. A 5-day menu is planned with a targeted caloric intake of from 30 to 50 percent of daily requirements.

RECOMMENDATION

The CRS program appears valuable as a means of supplementing the nutrition of school-age children. As such, a measure of the number of meals served is an appropriate performance measure.

- *As designed, however, the CRS school feeding program will not have any impact on decreasing anemia among under-5-year-old children, the performance measure used to monitor this program. Anemia among infants is better addressed through prolonged breastfeeding and other measures targeted to this vulnerable segment of the population. The CRS feeding program should be altered or another program should be developed that targets anemia, or another performance measure should be selected, or all three should be considered.*
- *An alternative performance measure could be “percentage of children with caloric needs met.” In addition, feeding programs might be better targeted to the most vulnerable children in a community rather than by randomly selecting schools.*

AIHA PARTNERSHIPS IN HEALTH

USAID maintains a regional cooperative agreement with the AIHA health partnership program.

The partnership program dates back to the early 1990s, when AIHA began to match hospitals in Armenia and other former Soviet Union countries with partner institutions in the United States. The current program, begun in 1999, shifts the emphasis from hospital-based partnerships to primary health care. AIHA sponsors exchanges among the staff of the partnered institutions, organizing educational seminars, conferences, and other training programs designed to promote collaborative program planning and the strengthening of local capabilities. While each partnership is free to develop its own specific program, efforts usually address one or more of the following issues: improving access, improving the quality of care, improving efficiency and effectiveness, and promoting quality primary health care or issues of women’s health or child survival.

Starting in 1999, AIHA has supported five institutional partnership programs in Armenia, one of which has now been discontinued. The partnerships include the following:

1. **Lori Regional Health Administration, Lori Region/UCLA Medical Center, Los Angeles:** Established in June 1999, the program has given priority to the development of clinical guidelines for the management of hypertension and thoracic pain in a primary care setting. The partnership has also provided training on various primary care topics, held two annual health fairs for local residents, and organized a conference on primary health care, attended by 175 doctors, nurses, and dentists. The partnership has reorganized and now operates in Polyclinic #5 in Vanadzor.
2. **Gegarkunik Regional Health Administration, Gegharkunik Region/Care New England Medical Center, Providence, and the National Perinatal Information Center, Providence, Rhode Island:** Established in August 1999, the goal of the program is to establish the Sevan primary care system as a model in the region. The partnership has provided training, renovated or upgraded three clinics, and developed an agreement with Erubouni Medical Center in Yerevan to provide cytology and gynecological training.
3. **Armavir Regional Health Administration, Armavir Region/University of Texas Medical Branch, Galveston, Texas:** Established in August 1999, the partnership has provided training for clinic personnel, produced a series of television spots on public health topics, conducted a baseline survey of health status, and developed a disaster relief plan for the marz.
4. **Armenian–American Mammography University Center, Yerevan/Armenian–American Cultural Association, Washington, DC:** Established in March 2000, the partnership has focused on breast cancer; established a state-of-the-art women’s diagnostic center for mammograms, cytology, and other gynecological services; and has renovated a satellite clinic in Gavar in Gegharkunik Marz. A new learning resource center was established, an annual walk for breast cancer is sponsored by the center, and several radio and television programs promoting breast health have been conducted.
5. **National Institute of Health, Yerevan/University of Alabama, Birmingham, Alabama:** Established in August 1999 and discontinued in 2001, the focus of the partnership had been on health management education. Workshops on management, organization, ambulatory care administration, and other topics were conducted for university faculty, students, nurse educators, and health professionals. A session was also held on how to form a professional association.

AIHA has a number of cross-partner activities that affect all AIHA partner programs, including those in Armenia. The programs include

- an infant survival program aimed at establishing evidence-based birth and neonatal resuscitation practices;

- a primary health care and quality improvement program to promote the delivery of comprehensive, evidence-based primary care and health prevention/promotion services; a significant effort in Armenia has been the development of clinical practice guidelines;
- a women's health program to provide comprehensive, cost-effective, and evidence-based primary care services to women and to promote replication of program models;
- an emergency medical services program designed to reduce morbidity and mortality rates caused by emergencies by enhancing the skills of first-responders and medical professionals;
- a nursing leadership and skills development program to increase the quality of nursing care and establish nursing as an effective and independent profession; and
- an infection prevention and control program to develop national infection control programs.

AIHA also sponsors special events for partnership participants, such as international conferences, workshops on nursing, training on adult-learning techniques, management workshops, and other events. For 2002, 17 such events are scheduled.

AIHA's partnership model has been criticized for being too expensive to be broadly replicable. Partner institutions receive infusions of training and technical support. Facilities are cleaned and renovated. Medical equipment is upgraded, often through donations of used equipment from America. Individuals are offered opportunities for paid international travel and are exposed to the best practices of American institutions. Whether the partnership model is replicable or not, AIHA program participants are optimistic and enthusiastic, their capacity is greater because of the training they receive, their work environment is improved, and the quality of the services they provide is better. The question is not whether AIHA's approach works (it does), but whether the same ends can be achieved in other programs, such as the pilot family group practice clinics, through less expensive means.

RECOMMENDATIONS

USAID should continue the AIHA partnership program in Armenia through the regional cooperative agreement.

- ***USAID should discuss with AIHA how the benefits of its partnership programs, especially its cross-partnership activities, can be extended to nonpartner institutions.***
- ***AIHA's training programs have particular potential for reaching and benefiting a broader audience, even though efforts to do so under the PADCO contract have been frustrating.***

PRIVATE SECTOR AND NGO DEVELOPMENT

As described in an MOH strategy paper, the private sector is beginning to play an expanded role in Armenia's health care system.⁷⁸ In health financing, private payments are already significant. In health service delivery, nearly all pharmacies, some dental facilities, a few pediatric polyclinics, and a handful of small hospitals are now operated privately. There are also about 2,500 NGOs of all types registered in Armenia, although only a few are active. Less than 50 NGOs are known to be providing health-related services (by law, they are not allowed to provide *clinical* services).⁷⁹

Expanding the private sector's role is seen by the MOH as a positive development that would help address five objectives:

1. Improve health financing by generating funds from the private sector while reducing informal gratuity payments;
2. Increase efficiency through improved management of material, human, and financial resources;
3. Expand the array and quality of available medical services through competition;
4. Improve working conditions for health workers; and
5. Expand consumer choice.

The MOH strategy paper uses the word privatization to represent the idea of moving toward greater private sector involvement. Technically, privatization refers to the conversion of public-owned resources to private ownership—only one of several approaches to increasing the private sector's role, which might also include contracting for health services, lease and rental arrangement, subsidies, and regulations that encourage private enterprise. These and other possible relationships between the public and private sectors are briefly described in appendix H.

The MOH plans to determine if any of the hospitals and clinics that were decentralized are candidates for privatization. Criteria for privatization would include the capacity of the facility, occupancy, level of technical equipment, profile of activities, location, condition of the facilities, staffing, availability of investors, and availability of competition. Under present conditions, where most health facilities need renovation and new equipment, it is unlikely that many, if any, publicly owned hospitals or clinics will be seen as promising candidates for privatization.

It is more likely that small private doctor's offices will begin to emerge independently, principally in more affluent neighborhoods. In fact, it is surprising that so few private doctors' offices have been organized. Usually, doctors in public employ are quick to set

⁷⁸ Ministry of Health, "The Need for Privatization of Health Care Facilities," *The Strategy of the Ministry of Health*, Yerevan.

⁷⁹ PADCO, *Report No. 22: Assessment of the Capacity of Non-Governmental Organizations in Armenia to Support AST Pilot Projects*, USAID, February 2001.

up private practice after hours to supplement poor wages. It may be that the established system of informal gratuity payments (which are not taxed) discourages doctors in Armenia from setting up formal private practices (where their income becomes taxable). In essence, a doctor can run a private practice in the hospital, during normal working hours, using hospital equipment and supplies. There is little incentive for a doctor to incur the expense of setting up an outside office or suffer the inconvenience of seeing private patients after hours.

NGOs also have the potential to play a greater role in health care. USAID, through PADCO, is attempting to strengthen the role of the private sector, particularly the capacity of local NGOs working in primary health care (and the social sector). USAID has been supporting the Armenian Assembly of America's NGO Center and other NGOs through the following activities:

- supporting community initiatives in the regions affected by the 1988 earthquake;
- improving the legal and regulatory environment for the delivery of health (and social) services;
- advancing civic participation in decision-making;
- introducing an NGO small grants program for policy research on key primary health care issues; and
- training and capacity building, including management training and technical assistance.

NGOs are already providing nonclinical health services, and their roles are expanding even though their potentials are still not fully recognized by the government. According to a recent PADCO study, NGOs offer a number of advantages over governmental agencies: they are not bound by restrictive rules and regulations, they are more flexible in determining who they can serve, and they have greater flexibility in hiring staff and in using volunteers.⁸⁰ In addition, some international NGOs can apply their experience in other countries to the needs of Armenia. The PADCO study suggests a number of activities to strengthen collaboration among NGOs and the government, including

- build relationships among NGOs and local government counterparts,
- leverage the international experience of NGOs to application in Armenia,
- publicize successful examples of NGO/government collaboration,
- strengthen the existing capacities of NGOs to provide training and technical assistance,

⁸⁰ PADCO, *Report No 26: Procedures for Building Collaboration Between the government of Armenia and NGOs Under the Armenia Social Transition Program*, USAID, March 2001.

- involve the International Center for Not-for-Profit Law in developing the legal framework supportive of NGO/government collaboration, and
- develop a campaign to educate the public to create support for health reform.

RECOMMENDATIONS

While NGO development has not progressed much beyond the PADCO concept paper, the groundwork has been laid for future advancements.

- *USAID should continue its efforts to strengthen NGO capacities.*
- *USAID should work with the MOH to determine the policy and legislative initiatives that are needed to encourage the development of the private health sector. Several options are summarized in appendix H.*

III. TOWARD AN EXPLICIT USAID HEALTH STRATEGY FOR ARMENIA

Even though USAID does not yet have an explicit health strategy in Armenia, its health program activities are on track and do not need major redirection. In fact, maintaining the continuity and momentum of current activities is vital. Any dramatic shift in course or emphasis could weaken the gains that have been made and restrain further progress. As noted throughout this report, however, and summarized below, USAID's efforts in health can be further strengthened by introducing a few additions and adjustments. In doing so, USAID needs to continue to balance its support for long-term systemic changes with meeting immediate health needs. USAID should also continue to work closely with other donors, using its comparative advantage to greater benefit.

BALANCING SYSTEMIC CHANGE AND MEETING IMMEDIATE HEALTH NEEDS

Initially, USAID's role in Armenia was to provide humanitarian aid. More recently, the emphasis has shifted to development—encouraging systemic change while still addressing the immediate needs of people in distress. Maintaining a balance between systemic change and immediate need is desirable. While many health reform issues will require long-term strategies of intervention, there are vulnerable groups that suffer because of the system's inability to respond to their needs. However, short-term programs should not be burdened with long-term expectations of sustainability and replicability.

System changes, such as the introduction of family medicine, restructuring health facilities, and financial reforms, are inherently long-term efforts. They require the development of a foundation of supporting policies and legislation, changes in the organization and management of institutions, and changes in the gathering and dispensing of funds. People and institutions need to alter both their attitudes and behaviors in order to adapt successfully to the new order. Changes need to become sustainable and the internal capacity of agencies strengthened so they become independent of outside assistance.

Programs designed to meet immediate needs are usually short term but may be extended for a longer period if a critical need persists. In Armenia, USAID's short-term programs are designed to address critical health needs in selected locations. As such, they need to mobilize quickly and target recipients efficiently. They do not need to be burdened with the expectations usually imposed on systemic change. UMCOR's mobile clinic program in Gegharkunik, for example, as discussed above, is designed to reach rural villages not served by fixed-facility clinics. The program has been criticized because it may excuse health authorities from their responsibilities to build and staff clinics in the locations served. However, building clinics in those sparsely populated areas may never be an affordable option and mobile clinics may be a preferred solution. Admittedly, the mobile clinic program, if it is to be sustained long term, will ultimately require government intervention. But the short-term goal is to meet the immediate health needs of the communities served.

RECOMMENDATION

In short-term health programs, the critical need of the targeted population outweighs concerns that the program may foster dependency. Plans should be in place for the systematic phaseout of short-term programs or their orderly transfer to an internal agency. However, short-term programs do not need to be either self-sufficient or sustainable. Nor do they need to be designed as pilot programs that can be replicated in other locations. The principal criteria they must meet are that they reach their targeted population, provide an effective intervention, and are cost efficient. The design of short-term programs to support or at least be consistent with long-term efforts is commendable but secondary to their purpose.

DONOR COORDINATION AND USAID’S COMPARATIVE ADVANTAGE

The need for greater coordination among major donors is a recurring theme in nearly all developing countries, and Armenia is no exception. There are numerous organizations and agencies, both local and international, which provide donor or charity-supported services in Armenia, but only a few target health-related projects. Ideally, USAID’s health strategy and its programmatic efforts in health should reflect its particular capabilities—its comparative advantage in relationship to other donors.

Donor Coordination

USAID and the World Bank are the two largest donors in Armenia with specific programs in the health sector. Among the other donors who are active in health care are

- Japan: provides grants to NGOs for medical equipment, current health priorities, and technical assistance (supporting development of the next World Bank loan);
- the Canadian International Development Agency (CIDA);
- the Italian government: health facilities;
- the Department of International Development, United Kingdom (DFID): provides support for UNHCR, WFP, and IFRC programs;
- the Danish government: training family practitioners and planning for restructuring;
- Germany: health-related activities;
- the European Union/TACIS: training and capacity building for public officials and legislation development (not specifically health);
- UNICEF: health and nutrition;
- UNDP: a national strategy for HIV/AIDS prevention;
- UNFPA: reproductive health and HIV/AIDS;

- the World Health Organization;
- the Soros Foundation;
- the Swiss Agency for Development and Cooperation: introduced occupational therapy in rehabilitation medicine; and
- the Jinishian Memorial Foundation: school meal programs, nutrition in pregnancy, dental hygiene, and vision.

As discussed elsewhere in this report, a number of NGOs, some of which provide nonclinical health-related services with the support of donors and/or private charities, are also active in Armenia.

While their methodologies differ, USAID and the World Bank in particular have parallel interests in Armenia, especially in primary health care and family medicine. It is not uncommon for their programming efforts to overlap or even conflict with one another on occasion. In the early stages of the current USAID program, for example, PADCO found that it had been contracted to perform work with the Ministry of Health that had already been done under the World Bank program. Another difference is that the World Bank compensates local, nongovernmental workers who participate in its working groups—often at rates well above local pay scales. USAID does not pay any local participants (except employees)—a policy not always understood by those who may be involved in both World Bank and USAID programs.

Currently, USAID Mission staff and contractors enjoy a good working relationship with World Bank staff. They have worked together successfully on the development of the health management information system and the rescue of SHA’s financial information system. They also have been coordinating their efforts to support the development of Polyclinic #17 as a pilot site for family group practice.

Collaboration requires frequent meetings and discussion on the roles of all the donors. In Armenia, donor agencies currently meet monthly—a forum that has proven to be helpful in providing overall coordination. In addition to this general coordination meeting, however, donors need to work together at the specific program level. For example, USAID will help develop the database needed to support development of the next World Bank loan aimed at optimizing tertiary hospitals in Yerevan.

USAID’s Comparative Advantage

Compared with other donors in Armenia, USAID has several advantages:

- USAID is a major donor. USAID has large sums of money to devote to its programmatic efforts. Currently in Armenia, USAID is spending \$40 million over five years on health related activities. As a result, USAID’s suggestions influence policy at the highest levels of government.
- USAID is good at providing technical assistance and training. USAID is able to mobilize technical assistance quickly. It has technical support contractors

already in place that can recruit and mobilize technical experts on short notice. In Armenia, USAID, through its contractors, has already done a great deal to lay the policy and legal foundations for health reform. In other countries, and beginning now in Armenia, USAID has sponsored training courses on a wide range of subjects for a host of different audiences.

- USAID has extensive worldwide experience. It has piloted projects on nearly every aspect of health reform in numerous locations. USAID has had a major role in health reform issues in nearly every former Soviet country. It knows the region and the issues.
- USAID can be flexible and responsive. While it may have a consistent overall strategy in health, it can be flexible in how this strategy is pursued in each country. USAID has the ability to quickly mobilize technical assistance to respond to an immediate need—a point illustrated with PADCO’s response when SHA’s database failed.
- USAID has extensive international experience in policy and legal framework development.

USAID also has some weaknesses:

- USAID is not able to support major capital investments for facilities and equipment; such investments are better handled by donor grants and loans.
- USAID does not adequately evaluate its many pilot programs and draw from them lessons learned and best practices. Because USAID works primarily through contractors, its institutional memory is weak. Lessons learned and best practices are often buried in consultant reports that are not well catalogued nor easily accessed by Mission staff.
- USAID Mission staff can be overly dependent on contract managers and external consultants. Mission staffing is often thin and individual officers must divide their time among competing priorities. In some cases, Mission staff members are generalists and do not have specialist training in health issues, especially more sophisticated issues such as health financing or mandatory health insurance.
- No matter how much assistance is provided, USAID can never provide enough continuing education on health issues for its Mission staff. It is difficult for independent health professionals to keep abreast of ever-changing issues and probably impossible for Mission staff. USAID cannot do enough to expose its Mission personnel to learning from its own experience or broader issues.

RECOMMENDATION

In developing a health strategy for Armenia, USAID should continue to concentrate on the activities it does best—providing technical assistance and training.

A PROPOSED USAID HEALTH STRATEGY AND PROGRAM

USAID's health program activities in Armenia have laid the foundation for systemic changes that are still in development. Pilot family group practice clinics are about to open their doors to their first patients. Clinical practice guidelines are in the formative stage and hold promise for shaping how family medicine will be practiced in Armenia. Numerous policy papers have been drafted that await further development and implementation. A draft law on mandatory health insurance has just been published. As these efforts advance, they will need increased attention. No thought should be given to abandoning them or introducing new initiatives that would distract energies from their support.

Not wanting to stray from USAID's current course, the following statements of health strategy and Strategic Objectives are proposed for USAID's consideration.

PROPOSED USAID HEALTH STRATEGY FOR ARMENIA

The USAID health strategy is to work with the Armenian government to improve the health status of the population by introducing systemic reforms that improve access to quality primary health care while alleviating the immediate health needs of the most vulnerable.

PROPOSED STRATEGIC OBJECTIVES IN HEALTH

- 1. Increased access to and the quality of primary health care services through the introduction of family practitioners and family medicine group practice, and the restructuring of Armenia's health system.**
- 2. Improved equity of access to health care by decreasing the burden of financing health care that now falls on the poor and vulnerable.**
- 3. Strengthened capacities of governmental agencies, public and private institutions, and individuals to define and adopt new roles and responsibilities that support the objectives of health reform.**
- 4. Improved health status by providing health services to those with immediate health needs.**

These objectives are consistent with USAID's current efforts in health but differ in a few important ways. There is no reference here to "shifting the emphasis from hospital care and specialty medicine." Rather than tacitly opposing hospitals and medical specialists, this strategy statement recognizes that they will in the future retain an important role in Armenia's health system. In fact, as noted earlier, the needs of hospitals and medical specialists have been neglected. While not a priority for USAID's direct intervention, except possibly in training and capacity building, USAID should support the efforts of others to bring hospitals and medical specialists into the reform effort.

The proposed strategy statement also provides important flexibility that will be needed if USAID is to respond to developments and opportunities not now anticipated. While no dramatic changes are anticipated in the thrust of USAID's health programming, in the next round of contract negotiations, contractual terms should allow room for adding

unanticipated deliverables. As stated earlier, in pursuing systemic reforms, USAID should put a particular emphasis on training and capacity building, while continuing efforts to develop supporting health policy and legislation.

As noted in the review of health status indicators, numerous pressing health issues are not being adequately addressed. USAID should expand its efforts to provide health services to those in immediate need, including mandated imperatives. If new programs as well as current efforts are not burdened with the need to be sustainable or replicable, more of their energy can be devoted to providing needed services.

Strategic and programmatic recommendations, as developed throughout this report, are summarized below.

Access to Quality Primary Health Care

Increased access to and the quality of primary health care services through the introduction of family practitioners and family medicine group practice and the restructuring of Armenia's health system.

- **Strengthening Primary Health Care and Introducing Family Medicine**
 - USAID should consider how the principals of primary health care can be further extended to the broad community of medical practitioners.
 - As the foundation for designing a primary health care network, USAID should sponsor a study of patient flow through the health system, documenting how they enter the system, how they access primary care services and pharmaceuticals, and how they access secondary and tertiary care when needed. Referral patterns and the factors that hinder or enhance access should be identified. The roles played by medical generalists and specialists and how they interact should be documented.
- **Family Medicine Training**
 - Assist the MOH in defining what a family practitioner is to do (a model of family practice for Armenia) as the foundation for the accelerated development of clinical guidelines and the revision of curricula for graduate and postgraduate training of family practitioners.
 - The development of clinical practice guidelines should be encouraged and accelerated, wherever possible.
 - Seminars on clinical practice guidelines should be offered as they are developed for family medicine, inviting general practitioners and subspecialists as well as family doctors to attend.
 - The NIH should be encouraged to introduce greater patient-centered training for family doctors. Training opportunities should be offered to

NIH leadership and faculty where they can observe and participate in patient-centered training.

- Further reductions in the production of subspecialist medical students and residents should be encouraged, so that more specialists are not added to the already oversupplied health system.

▪ **Family Group Practice Pilot Clinics**

- Special attention should be given to assuring the success of the pilot family group practice clinics. Their success will have a significant influence on how well the transition to a family medicine model progresses.
- The capabilities of the pilot family group practice clinics to serve as training sites should be reevaluated and, if necessary, additional resources should be provided to train team members as teachers.
- USAID should encourage family group practice pilot clinics to offer open enrollment to entire families. Pilot clinics would be better able to encourage family members to make appointments for preventive care.
- SHA should be encouraged to make special financial concessions that might help assure the success of the pilot programs. Paying back pay, paying on time, incentive payments for primary care procedures, and other options should be considered.

▪ **Licensing and Accreditation**

- Efforts to introduce licensing and accreditation and other quality assurance programs should be continued.
- The Armenian professional associations should be involved in this process and mentored in its role.
- As licensing and accreditation practices mature as medical knowledge evolves, the goal should be to eventually have professional associations take over this function, with input by the MOH.

▪ **Restructuring the Health System**

- Strengthening primary health care and introducing family medicine will ultimately have an impact on Armenia's overabundance of doctors and nurses. But the rationalization of existing facilities and personnel is essential if these reductions are to be realized.
- The demand for health services needs to be better documented. USAID should support a national study of health services demand, documenting

population demographics, health needs, and how patients access the health system.

- PADCO should expand its health resources database, as piloted in Lori Marz, to better catalog and track hospitals, clinics, equipment and personnel throughout the country.
 - USAID should continue its supporting role in the development of the next World Bank loan on restructuring tertiary hospitals.
- **Private Sector and NGO Development**
- USAID should work with the MOH to determine the policy and legislative initiatives needed to encourage the development of the private health sector.
 - USAID should continue its efforts to strengthen NGO capacities.

Improving Equity through Financial Reforms

Improved equity of access to health care by decreasing the burden of financing health care that now falls on the poor and vulnerable.

- **The Impact of Cost on Access**
- The amount of private payments for health, both formal and informal, and their impact on access, equity, and utilization should be studied in detail. In part, this effort can be incorporated into a comprehensive National Health Accounts study, an effort that should be encouraged. But it is also recommended that the periodic household surveys, now conducted by PADCO, be expanded to examine these issues in greater detail.
 - The percentage of households that reported someone ill that did not seek health care because of the cost is useful as baseline data but probably not as a performance indicator. It is unlikely that USAID programming efforts will have any measurable impact on this measure during the life of the project. Changes in this performance indicator are dependent on widespread financial reforms or significant improvements in Armenia's economy, neither of which is likely to happen in the near-term.
- **Basic Benefits Package**
- USAID should support a study of the impact of the Basic Benefits Package as now administered to determine how it might be adjusted to more effectively target limited governmental funding to improve access to essential health services.

- Recommendations should be developed that better balance projected costs with anticipated revenues by setting priorities for covered services and assuring that services are provided in the most appropriate setting.
- **State Health Agency**
 - USAID should continue to encourage the government of Armenia to reduce the accumulated arrears in back wages now carried by many hospitals and clinics.
 - USAID should assist SHA in studying the impact of its current health services purchasing practices and help develop recommendations for it becoming a more selective buyer.
 - USAID should encourage SHA to make regular payments to health service providers. Consistent monthly payments, even at a lower level to reflect actual government of Armenia funding, would allow hospitals and clinics to plan realistically.
 - Using the SHA database, USAID should help design a payment formula for SHA that provides incentives to primary care providers, especially family group practices.
 - USAID should explore how capital can be raised to finance the renovation and equipping of primary care facilities. A national guarantee loan program, with capital provided by donors, is one possibility. A small loan program, made available to primary care physicians wishing to establish private practices, is another.
- **Mandatory Health Insurance**
 - Current conditions are not favorable in Armenia for the introduction of mandatory health insurance and are not likely to be for years to come.
 - In the meantime, USAID should shift its support from establishing mandatory health insurance to efforts to strengthen the Armenian government's insurance functions.

Policy Development and Capacity Building

Strengthened capacities of governmental agencies, public and private institutions, and individuals to define and adopt new roles and responsibilities that support the objectives of health reform.

- **Strengthen Advocacy for Family Medicine**
 - USAID should support additional training and technical assistance designed to increase the understanding and advocacy of family medicine training and practice.

- USAID should sponsor a working tour of U.S. family medicine training programs and practice sites for key leaders and their principal associates from within the MOH and the NIH. Selected individuals should be placed in U.S. training and practice sites for a week or more to gain greater depth of understanding of family medicine concepts and practices.
 - USAID should sponsor local, in-country seminars on topics selected from the growing list of clinical guidelines. Medical specialists and general practitioners as well as family practitioners should be invited. Wherever possible, family practitioners should serve as faculty for such seminars in order to increase their visibility and credibility.
- **Strengthen Institutional Capacities at National, Local, and Institutional Levels**
- Particular emphasis should be given to strengthening the capacities of the MOH and SHA to plan, organize, and manage Armenia's health care system.
 - With decentralization, hospitals and clinics were expected to become more autonomous and self-sufficient but they do not have the facilities, equipment, skills, knowledge, financing, and legal backing needed to implement their new roles. Local authorities in the marzes and municipalities are not prepared to assume the responsibilities imposed on them with decentralization.
 - USAID should support an exercise to define the responsibilities and authorities of local and regional governments and the hospitals and clinics that were decentralized. Issues of ownership, budget and finance, employment, debt retirement, and capital financing should be addressed.
 - Training programs in health management, leadership, communication, teamwork, planning, finance, decision-making, and quality assurance are all available through USAID sources.
 - Wherever possible, practical training using hands-on experiences and proven adult-learning techniques should be used rather than lecture-based educational programs. Active participation is key to effective learning.
- **Health Management Information System**
- The workshop on health management indicators was an important step in developing a more responsive, reliable, and useful HMIS for Armenia. The decisions reached at the workshop deserve active follow up and should continue to be supported by USAID.

- USAID should continue to provide technical assistance to help further improve data collection processes and strengthen Armenia’s internal capacity to interpret the data for policy development and decision-making.
 - Building the capacity of the MOH and other state agencies to be able to manage the HMIS, analyze data, and apply the results will be one of the most significant challenges in implementing the HMIS plan.
- **Policy and Legal Framework**
 - Creating the policy and legal frameworks that support health reform is a critical and ongoing activity that requires USAID’s continuing support.
 - PADCO should be encouraged to set priorities for all health policy and legislative initiatives, developed and pending, documenting their current status and planned activities.
- **American International Health Alliance**
 - USAID should continue the AIHA partnership program in Armenia through the regional cooperative agreement.
 - AIHA’s training programs have particular potential for reaching and benefiting a broad audience, even though efforts to do so under the PADCO contract have been frustrating. USAID should discuss with AIHA how the benefits of its partnership programs, especially its crosspartnership activities, can be extended to nonpartner institutions.

Meeting Immediate Health Needs

Improved health status by providing health services to those with immediate health needs.

- **Maternal Health**
 - Educational programs in handling emergency obstetrics (for all primary care providers) would help decrease maternal mortality.
 - Widespread use of magnesium for preeclampsia and premature labor needs to be taught and practiced with specific guidelines that can be used by nonobstetric providers.
 - Anemia screening and treatment, vitamin D injections, and iodine (when not in the salt) are also needed during pregnancy.
 - Obstetrical services should be upgraded where needed.
 - A maternal mortality review team should be established.

▪ **Child Health**

- Encourage more accurate data collection by supporting teaching clinics on the WHO definition of “live birth” at all maternity hospitals and departments.
- Assist the MOH in setting up fetal infant mortality review boards at the marz level.
- Encourage longer breastfeeding, until 6–12 months, including education on appropriate weaning foods.
- Teach obstetricians to give corticosteroids to women with intractable premature labor to increase the lung maturity of their babies.
- Upgrade neonatology services as needed.

▪ **Tuberculosis**

- Because of the threat from increasing rates of tuberculosis in Armenia, USAID should closely assist Armenia in TB control, even though other donors may take the lead.
- USAID should support nationwide DOTS programming, including assurance of a constant supply of anti-TB drugs.
- USAID should support a system of directly observed prophylaxis INH to household contacts and active case finding.
- To better document MDR tuberculosis rates, USAID should support testing a variety of populations, such as all TB patients not successfully treated, geographic samples, prisons, and AIDS patients.
- USAID should encourage progression to a DOTS-plus program (MDR TB treatment). Even though this is expensive treatment (approximately 100 times more expensive than regular tuberculosis treatment), if left untreated, the problem will only worsen and become more expensive.

▪ **Reproductive Health**

- USAID, through PRIME, should address the infertility problem that is considered to be so important by the government of Armenia.
- USAID should support a study to more accurately estimate infertility rates. Male infertility should also be evaluated.
- USAID should provide technical assistance in the use of laparoscopic treatment.

- Clinical practice guidelines should be developed for infertility workups with an emphasis on affordable alternatives.
 - To increase the chance of improving infant mortality, PRIME should increase intervention until the infant is at least 6–11 months old.
 - Given the 4 percent estimate of rickets in young children, the practice of vitamin D injections during pregnancy is recommended (at least in the rainy, cloudy, and cold seasons).
 - The use of iron supplements to delay or prevent anemia and the use of magnesium and cortisone for preeclampsia and protection of the lungs of babies expected to be preterm should be stressed.
 - The use of modern contraception as a performance indicator is an appropriate measure for the PRIME program.
- **Cardiovascular Disease and Diabetes**
 - USAID should assist in supplying working blood pressure cuffs and stethoscopes.
 - USAID should support the training of trainers who can train doctors and nurses nationwide on proper techniques for blood pressure monitoring.
 - USAID should develop clinical practice guidelines for treating hypertension and diabetes and encourage knowledge of these guidelines for licensing and recertification.
- **Health Promotion**
 - USAID should support public health education on smoking, diet, exercise, and other lifestyle factors affecting health.
 - USAID should help promote laws to decrease smoking, including increased taxing of tobacco.
 - USAID should encourage awareness of obesity as a problem in Armenia and promote low-fat foods.
 - USAID should support an early breast cancer screening program and the development of standards for chemotherapy treatment, possibly determined by age.

- **Nutrition**
 - USAID should continue and expand its support of programs designed to improve nutrition, including extended breastfeeding.
 - Seasonal variations in malnutrition need to be reinvestigated in the poorest marzes, as the WFP study suggests that it may be significant.
 - USAID-supported nutrition programs need to target the weaning age groups (6–23 months), including education on appropriate weaning foods.
 - Weaning food supplements have proven successful for this vulnerable group because adults and older children think of it as baby food and do not eat it. Supplements can be enriched with iron and vitamins A and D relatively easily.

- **United Methodists Committee on Relief**
 - The programs operated by UMCOR appear to be meeting immediate health needs and should continue to receive support from USAID.
 - The mobile clinic idea may be a good permanent alternative to fixed facilities for providing health services to sparsely populated remote communities.
 - The drug fund idea has potential in other rural villages throughout Armenia and expansion of the program, once it has been evaluated and proven effective, should be encouraged.

- **Catholic Relief Services**
 - The CRS program appears to be of value as a means of supplementing the nutrition of school-age children. As such, the number of meals served is an appropriate performance measure.
 - As designed, however, the CRS school feeding program will not have any impact on decreasing anemia among children under 5, the performance measure used to monitor this program. Anemia among infants is better addressed through prolonged breastfeeding and other measures targeted to this vulnerable segment of the population. The CRS feeding program should be altered, or another program should be developed that targets anemia, or another performance measure should be selected, or all three should be considered.
 - An alternative performance measure could be “percentage of children with caloric needs met.” In addition, feeding programs might be better targeted to the most vulnerable children in a community rather than by randomly selecting schools.

ORGANIZATION AND MANAGEMENT OF USAID'S HEALTH PROGRAM

USAID's health activities in Armenia are extensive, interdependent, and complex—and understandably difficult to manage. Health programming is made additionally complex because of its integration with social programming under USAID's Social Transition Program. Admittedly, the health and social sectors are intertwined and developments in one sector are often affected by developments in the other. But together in one program and managed under one large contract, they create a combination that is daunting in concept and challenging in execution.

For much of its health programming—primarily health reform–related activities—USAID has entered into a contract with PADCO to manage the Armenian Social Transition Program (ASTP). PADCO's principal competencies are in the social sector. To assist with health-related activities, PADCO has subcontracts with Abt Associates, a firm specializing in health issues; AIHA, for training in Lori Marz; the QED Group, for monitoring and evaluation; and AMEG, for equipment procurement. For USAID's other health programs—principally reproductive health, health partnerships, and health assistance—USAID works with a number of organizations, including PRIME, AIHA under a regional cooperative agreement, UMCOR, CRS, the NGO Center, and Save the Children.

The complexities of managing the large and complex ASTP contract are evident. To their credit, members of the PADCO team are intelligent, experienced, and energetic and appear to understand the complexities of what they have undertaken. At the same time, PADCO, Abt Associates, and AIHA each have their own areas of expertise and quite different programmatic approaches and organizational cultures. There have been continuing strains among these entities that could negatively affect their performance. PADCO has had to devote continuing attention to managing these differences and creating harmonious working relationships.

For the next iteration of its health programming activities in Armenia, USAID should consider its contracting alternatives.

- The ASTP contract can be extended or renewed, essentially as it is. The contract will be large and complex but continuity is better and integration of social and health programming is assured. This approach is familiar to USAID Mission staff and may be easier to manage than a different alternative.
- Health reform activities can be isolated from social programming under a separate contract. AIHA would continue to be managed under a regional cooperative agreement and separate contracts would continue as needed with PRIME, UMCOR, CRS, and others. USAID's managerial burden might increase but Mission staff could more easily focus on health issues.
- All health activities, both health reform and other health programs, could be combined under one contract. The exception might be the continuation of the cooperative agreement with AIHA. Compared with the second option, this

approach might simplify USAID Mission staff members' management responsibilities but might also distance them from programmatic efforts.

RECOMMENDATION

The PADCO contract should be extended or renewed. Continuity is critically important for maintaining momentum in the development of Armenia's health reform agenda. Efforts to strengthen primary health care, to launch pilot family group practice clinics, and to build on the foundation of policy initiatives that have been established will all require continuing attention. PADCO and its subcontractors have built an understanding and commitment to the success of these programs, and their continued involvement would be a significant benefit.