

Health and the Environment

Among the factors that affect the Region of the Americas' health conditions, the environment deserves special attention. Environmentally mediated health problems are both intense and wide ranging. Of perhaps greater concern, however, are the deep inequities that are apparent upon analyzing different population groups' exposure to environmental health risks. Inequities in exposure can be seen between rural and urban residents, across

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economic strata in urban areas, between men and women, and between workers in the formal sectors and those laboring in the informal sector; certain groups, such as children and the elderly, are particularly hard hit. Moreover, there are inequities in terms of access to environmental health services such as water supply and waste management, and inequities in terms of access to natural resources such as quality air, water, and ecological areas.

The Organization is continually supporting the countries of the Region in their efforts to reduce these inequities. Some of the year's highlights follow.

SAFE DRINKING WATER SUPPLY

Access to safe drinking water, one of the most representative indicators of public health, is a major area of concern for the governments of the Region. In both summits of the Americas, in 1994 and 1998, the heads of state of the Region have consistently recognized the need to reduce the burden of disease, particularly among children and the poor, by providing safe drinking water. Initiative 47 of Santa Cruz de la Sierra (Bolivia) requested the countries to establish and implement specific programs, laws, and policies to protect the public's health by ensuring that drinking water is free from harmful microorganisms, heavy metals, and contaminants.

Access to safe sources of drinking water shows major disparities from country to country, and there also is concern about the amount of available water. Even though the rural population in the Americas has remained relatively constant, coverage of water in rural areas is significantly lower than in urban ones, which represents a substantial inequity in access to water for rural residents. The endemic nature of cholera in the Region and the high incidence of diarrheal diseases, particularly in children, can be greatly attributed to the lack of access to safe water. Although it is recognized that many factors determine infant mortality, it is interesting to note that the higher the water supply coverage, the lower infant death rates tend to be (see Table 1). Table 1 shows the population with access to drinking water (house connections and stand posts) on the basis of reports from 20 countries, which together represent 98% of the population in the Region. There are, however, significant differences among countries and within countries.

Although water disinfection has been recognized as one of the most effective weapons for protecting human health against waterborne diseases, coverage traditionally has been low. In 1991, however, the cholera epidemic alerted the countries to the need for water disinfection and, since then, several have made significant progress in this regard. The most recent information puts the percentage of the population with regular access to disinfected water at 59%, although this

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Country	Infant mortality ^a	Population with water supply services ^b
Canada	7	100
United States	8	100
Cuba	10	91
Chile	14	91
Costa Rica	14	100
Uruguay	20	89
Venezuela	23	79
Argentina	24	65
Panama	25	84
Colombia	28	75
Mexico	34	83
Dominican Republic	42	73
Honduras	43	77
Ecuador	44	55
El Salvador	44	53
Brazil	47	69
Guatemala	48	67
Nicaragua	52	62
Peru	55	66
Haiti	86	39

^a1990–1995 data. PAHO, Health in the Americas, 1998 Edition, Vol. I, p. 64.
^b1995 evaluation data. PAHO, Mid-Decade Evaluation of Water Supply and Sanitation in Latin America and the Caribbean.

TABLE 1
Infant mortality per 1,000 live births and percentage population with water supply services.

figure varies greatly from country to country. Moreover, while water disinfection in most cities is reasonably good, the percentage of residents of small municipalities and rural areas that has access to disinfected water is extremely low, practically nonexistent in some countries.

The challenge in urban areas is to expand safe water supply services to the population that does not yet have them and to improve intermittent supplies and disinfection. In rural areas, coverage needs to be expanded and water disinfection measures and technologies need to be disseminated and broadly instituted.

In response to the initiatives agreed upon by the heads of state in Santa Cruz de la Sierra, as well as the directives of the Organization's Governing Bodies, PAHO convened an interagency group to coordinate technical cooperation designed to improve access and quality of drinking water. Several international technical cooperation and finance agencies, as well as bilateral agencies with interest in the water sector, participate in the interagency group, including the Inter-American Association of Sanitary Engineering (AIDIS), the Organization of American States (OAS), the Inter-American Development Bank, the United States Agency for International Development (USAID), the United States Environmental Protection Agency (EPA), the United Nations International Children Fund (UNICEF), the National Sanitation Foundation (NSF) International, and The World Bank. This initiative involves several phases and events, including the conduct of a regional consultation on safe water with wide multisectorial international participation. The consultation endorsed a Regional Plan of Action for improving access and quality of drinking water. The plan considers a broad

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range of actions, including gathering data on water quality, policies, legislation, and standards; water quality surveillance and control issues; increase in access to safe water and promotion of disinfection; community participation and education; and the establishment of partnerships.

PAHO also organized the Regional Symposium on Water Quality: Effective Disinfection in Lima, Peru, which successfully provided up-to-date information on the status of water supply and disinfection technologies to Latin American and Caribbean water sector professionals. The largest expansion of disinfection in the Region has been in the area of on-site generation of disinfectant by the electrolysis of salt. Through projects in Bolivia, Colombia, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, and Peru, PAHO established this technique and provided equipment for at-risk populations in small municipalities and in rural and indigenous communities. This approach played an important role in the effort to control the cholera epidemic that started in 1991, and continues to be an important tool in the fight against waterborne diseases. The approach was then expanded to include household filtration technology.

PAHO also contributed equipment, materials, and technical support to areas affected by El Niño and by hurricanes Georges and Mitch. In addition, the Organization developed the project for disinfecting water at the household level in Tacna, Peru, as part of the strategic plan for improving environmental conditions and human health in that city. The Ministry of Health and the municipality of Tacna financed the project, and CEPIS provided technical cooperation so that all of Tacna's peripheral communities, which lack water supply, will have disinfection at household level, hence guaranteeing safe water for drinking and washing food that will be consumed raw.

With the collaboration of EPA a program of training and certification for water quality laboratories was initiated in the Region; CEPIS operates as a reference laboratory in this program.

PAHO and NSF International cosponsored the symposium, "Safe Water in Small Systems," held in Washington, D.C. This event relied heavily on the dissemination of information, including training sessions, product expositions, and technical presentations on treatment technologies, analytical methods, and assistance programs for small water systems. PAHO also hosted the workshop, "Barriers to Providing Safe Drinking Water through Small Systems," which was sponsored by the National Water Research Institute (USA). Participants at the workshop analyzed the major impediments to providing safe water and made recommendations for improving processes and procedures.

As a way to strengthen the technical cooperation with the countries, PAHO invited 15 renowned agencies from Brazil, Canada, Colombia, Cuba, Saint Lucia, and the United States of America to formally become collaborating centers in drinking water quality and organized a meeting in Washington, D.C., to acquaint these agencies with the

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process and explore the possibility of developing a work program in support of the countries.

To facilitate investment in water infrastructure and improve conditions created by the inequity in coverage and quality of services, PAHO developed a program to assist Member Countries to carry out sector analysis in support of sector reform processes. This program entailed conducting a comprehensive analysis in Paraguay, Suriname, and Uruguay by a team of national professionals, decision-makers of the water agencies, and international consultants. PAHO further supported water sector modernization in the Dominican Republic and Paraguay and prepared a report on regulations in Argentina.

CEPIS continued to facilitate the exchange of information on drinking water quality, and distributed relevant information to the countries. PAHO, in collaboration with AIDIS and the Caribbean Water and Wastewater Association (CWWA), also disseminated health education materials for schools and information on the importance of safe water to the general public on the Inter-American Water Day. Information on water disinfection for local authorities was distributed, and recommendations for safe water and disinfection of water at home and during the various emergencies were provided through publications and pamphlets.

INEQUITIES IN EXPOSURE TO CHEMICAL SUBSTANCES

Rapid economic development and the adoption of new modes of production in the Region are affecting population dynamics and altering the quality of the environment, which is having an effect on human health. In this new context, chemical substances, which are a product of development, are emitted into the environment, contaminating it and posing an increasing health risk.

In recent years, government agencies and researchers have become increasingly concerned about inequities in the exposure to chemical substances. Variables that contribute to environmental inequity or injustice include social class, age, occupation, and gender. Although there is not enough information to establish precise relationships, it is known that many of the Region's population groups that are categorized as poor are more likely to be exposed to environmental pollutants than others who enjoy better economic conditions.

There is a direct correlation between poverty and the weakening of individual protective factors, such as good nutrition; physical exercise; and access to good living conditions, education, and health services. Because the poor often reside in areas with high industrial concentration, often living next to waste dumps and without adequate water supply and sanitation services, they are more exposed to chemical substances. Geographic location also is a variable for environmental risk. Rural inhabitants generally have greater exposure to pesticides, ultravi-

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oilet rays, physical risks, and they have worse health conditions, overall. The situation in Peru, where infant mortality in rural areas is up to three times higher than the rate in the capital, Lima (50 per 1,000 live births), is a case in point.

Children are especially susceptible to the effects of exposure to chemical substances, but poor children are at an even greater risk, representing one of the most vulnerable groups to these risk factors. They are also threatened by risk factors generally associated with poverty, such as the fact that poor children are often forced to work, and do so under adverse conditions, which may include exposure to chemical substances.

Pregnant women also deserve special consideration, since the physiological changes they experience make their bodies more vulnerable to the absorption and build-up of some chemical substances, which may affect the fetus from the beginning of pregnancy.

The countries use different amounts and types of chemical substances and apply different measures to protect potentially exposed populations. The exposed populations also face different degrees of risk. PAHO has attached great importance to obtaining and disseminating information on these inequalities, in order to plan activities to effectively reduce them. To this end, it supported national and regional initiatives to assess the impact of chemical substances on health and generate information that would make it possible to develop control strategies in priority areas.

In collaboration with other international institutions, especially UNEP, and with the support of the United States Environmental Protection Agency (EPA), the Organization conducted studies and organized seminars on pervasive organic pollutants, which led to better participation by the countries in international negotiations for the legal prohibition of these substances, including DDT.

The Organization supported the countries of the Region in carrying out the recommendations of the Intergovernmental Forum on Chemical Safety regarding the preparation of national chemical safety profiles. It also collaborated with the United Nations Institute for Training and Research (UNITAR) and with the International Program on Chemical Safety (IPCS), and offered technical advisory services to the countries for the development of national plans of action.

Since Central America is considered to be one of the regions with the heaviest pesticide use in the world, PAHO launched the Program on Environment and Health in the Central American Isthmus (MASICA) and the Project on Occupational and Environmental Aspects of Pesticide Exposure in the Central American Isthmus (PLAGSALUD), which receives support from the Danish International Development Agency (DANIDA). Through these two projects, significant progress has been achieved in the establishment of systems for surveillance and control of the effects of pesticides.

The latter project uses a “from-the-bottom-up” strategy of information generation and dissemination that is based on the organization of local committees on pesticides and the training of workers, technicians, professionals, and the general public. It also has promoted the formation of national pesticide committees and facilitated research and the revision of legislation on pesticides in Central America. Under the project, cooperation was provided for multisectoral efforts that included governments, workers, nongovernmental organizations, industry, and the public. It was thus possible to gather more information and develop better mechanisms of coordination between the different sectors, which led to a greater understanding of the problem of pesticides in Central America and laid the foundation for coordinated action.

Reduction of exposure to chemicals in work environments is one of the biggest challenges facing the oil industry. PAHO cooperated in the search for solutions to this problem through the Occupational Health Project in the Petroleum Industry in Colombia, financed by the Colombian Petroleum Company (ECOPETROL) and carried out with the participation of the petroleum workers’ union and the Ministry of Health. With the support of several PAHO collaborating centers, a situation assessment was carried out in priority areas of the company (benzene, toluene, and xylene production plant, maintenance and services, and laboratory), recommendations were made, and a model was designed for installing a system for surveillance and control of the occupational safety and health of workers in the Barrancabermeja Industrial Complex. In addition, a joint commission, “the Aromatics Commission,” composed of representatives of workers and management, was formed. The commission has helped to produce good, sustainable technical results, while at the same time offering a new perspective on the management of conflicts and health problems in the company.

Another chemical exposure problem in the Region involves the presence of lead in the environment. PAHO cooperated in implementing the resolution to eliminate lead in gasoline adopted by the presidents and heads of state at the Summit of the Americas, registering significant progress in the control of contamination from this substance. This project, which involved several international organizations, was carried out under the coordination of the Organization of American States, with financial support from the World Bank. PAHO participated by supporting the dissemination of information on health issues and the effects of lead exposure on health. All the countries in the Region are expected to eliminate leaded gasoline before the year 2005.

INEQUITIES IN WORKERS’ HEALTH

Equity in workers’ health means, among other things, equality of access to health information and services. Access to information is the

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cornerstone of the right to knowledge and the effective participation of employers and workers in the search for and application of solutions to workers' health problems. Equal access to health services means having the opportunity to receive integrated health services, with emphasis on health prevention and promotion measures.

In recent years, work has come to be recognized as a risk factor in terms of mortality and disability-adjusted life years (DALYs). Risk factors in the workplace and adverse working conditions, coupled with low salary levels and limited purchasing power, are important inequities that have an impact on health. Differences exist both between regions, between countries, and even within countries. For example, in the 1993–1996 period, the estimated annual rate of fatal work-related accidents was 13.5 per 100,000 workers in Latin America and the Caribbean, 5.3 per 100,000 in the United States of America, and 6.9 per 100,000 in Canada. Moreover, the increasing globalization of the economy, and the concomitant development of multinational companies, has spawned some very specific inequities. Consider, for example, the workplace double standard, whereby one standard is applied in the developed world and another in the developing countries, to the detriment of working conditions in the latter.

Inequities are present both in the formal and informal sectors of the economy. In the formal sector, among the determinants of inequities are company size and structure, type of industry and the risks associated with that industry, hiring modalities, unionization, social security services, and access to information on risks and rights and to prevention and health promotion services. Workers in the economy's informal sector carry out their activities in a variety of settings, ranging from small industries to working at home, with each carrying different risks and providing widely variable income levels. In general, informal-sector workers are subject to more difficult and riskier conditions, and they enjoy less social and legal protection against accidents and illnesses. Furthermore, they are generally not entitled to the labor rights established by law in their respective countries, such as the right to a minimum wage or restrictions on working hours. Work-related inequities are even more acute in the case of special groups in the informal sector, such as children, migrants, indigenous peoples, women, and older workers.

PAHO has responded to work-related inequities in the Region by conducting technical cooperation activities based on a strategy of producing information on the subject and disseminating that information as a way to reduce these inequities. The Organization's activities take place within the framework of the Regional Plan on Workers' Health, which also serves as a framework for action at the national level and external cooperation in the Region.

Through training of human resources, support was provided for primary prevention aimed at controlling or eliminating workplace risks and

Risk factors in the workplace and adverse working conditions are responsible for health inequities.

strengthening workers' health. The quality of information also was improved, which helped reveal the inequities workers face in the area of health. Among the activities carried out at various levels, the Organization created and disseminated a computer system for identifying and controlling risks in the workplace. This system was adapted for use by ministries of health and has been implemented in Chile and Cuba.

A study carried out by the Organization in nine countries of the Region facilitated the implementation of specific activities to improve regional information systems. In addition, working with CEPIS and a Peruvian nongovernmental organization, PAHO established a Web site that makes it possible to compare information and experiences from throughout the Region. In collaboration with the Danish International Development Agency (DANIDA), PAHO launched a project aimed at reducing the effects on health from pesticide use in Central America, which has also led to substantial improvements in surveillance systems.

PAHO cooperated with various official agencies and decision-making entities, providing information to facilitate the identification of inequities and the definition of priority areas of action. It also worked to sensitize political leaders at the national and international levels to problems relating to workers' health, supported economic integration processes, and carried out specific activities to harmonize legislation so as to reduce inequalities between countries.

More than 20 countries in the Region have drawn up national workers' health plans. PAHO has been assisting countries in incorporating those plans into their national health and development plans; Chile, Colombia, and Panama have already done so.

The Organization also has collaborated in health promotion activities aimed at empowering workers and sensitizing employers and the community, with emphasis on equity of access to information and participation in decision-making. The Organization signed an agreement with the ministers of labor of the Central American countries for establishing "healthy workplaces," and it collaborated with the communications media to disseminate information on workers' health.

As part of the Regional Plan on Workers' Health, PAHO has endeavored to reduce inequalities in access to health services through an approach oriented toward primary prevention and health promotion. Working on the basis of the concept that curative care in the area of workers' health should be incorporated and strengthened within existing services, the Organization implemented projects in Ecuador and Peru that resulted in expanded coverage of workers in the context of national development.

PAHO has relied on primary prevention and health promotion to reduce inequalities in access to health services.

