

***Worldwide Efforts  
to Improve  
Heart Health***

***A Follow-up to the Catalonia Declaration—  
Selected Program Descriptions***



# Worldwide Efforts to Improve Heart Health: A Follow-up to the Catalonia Declaration— Selected Program Descriptions

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## PREFACE


This is the third in a series of publications, beginning with The Victoria Declaration on Heart Health, that advance the chief aim of the International Heart Health Conferences: to reduce the overwhelming, worldwide burden of cardiovascular disease. This new document, the product of an alliance between the Advisory Board to the International Heart Health Conferences, the Centers for Disease Control and Prevention, and the Stanford Center for Research in Disease Prevention, is a companion volume to last year's *The Catalonia Declaration: Investing in Heart Health*. That publication showed how it is in every nation's great interest—both social and economic—to implement the known means of preventing cardiovascular disease. This companion volume offers real-world examples of programs that have invested in heart health.

The programs described here show how groups and individuals in varied settings around the globe have forged alliances to prevent, reduce, or control the spread of cardiovascular disease. These wide-ranging experiences should suggest practical, effective program strategies for advocates of heart health—whether policymakers, health and social service professionals, educators, or community groups. To further encourage an allied response to what is so clearly a global need, we have included a list of resource centers around the world that can offer assistance in planning and executing interventions to prevent cardiovascular disease. We also append a selected bibliography of works on cardiovascular disease prevention.

We could not have produced this document without the help of the numerous program coordinators who contributed materials and supplied invaluable information and direction. We particularly recognize the assistance of three key officials and leaders in the world effort to prevent cardiovascular disease: Dr. Andres Petrasovits, of Health Canada; Dr. Aushra Shatchkute, of the World Health Organization Regional Office for Europe; and Dr. Nicholai Khaltsev, of the World Health Organization.



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## INTRODUCTION

According to the World Health Organization's *World Health Report 1997*, diseases of the heart and circulatory system account for more than 15 million deaths per year. Even though methods of prevention are now well known, the number of deaths due to heart attack and stroke are expected to continue rising. Concern over this growing epidemic led to the organization of the International Heart Health Conferences, which brought together scientists, policymakers, and health professionals from around the world. The goal of the first conference, held in Victoria, British Columbia, in 1992, was to discuss methods of applying existing knowledge about cardiovascular disease (CVD) toward its prevention on a global scale. To that end, the Advisory Board for the conference published The Victoria Declaration on Heart Health and formed the Victoria Declaration Implementation Committee to carry out policies emanating from International Heart Health conferences.

The Second International Heart Health Conference, held in Barcelona, Spain, in 1995, focused on financial constraints as perhaps the greatest barrier to global CVD prevention. Acknowledging that economic considerations will influence efforts to lessen the gap between accumulating and applying CVD prevention techniques, the Advisory Board published a second document, *The Catalonia Declaration: Investing in Heart Health*. This document asserts that investing in heart health now will save money in the long term. It also provides a list of 14 recommendations for promoting heart health, presents resources for and barriers to implementing CVD prevention programs, and highlights 41 successful projects that have been implemented around the world.

Although *The Catalonia Declaration* provides valuable information on research, policy, and programs, people who wish to initiate prevention programs may require more in-depth information. Accordingly, this companion document, *Worldwide Efforts to Improve Heart Health: A Follow-up to the Catalonia Declaration—Selected Program Descriptions*, was developed to further explore case studies presented in *The Catalonia Declaration* and to discuss many other programs that promote heart health. The resulting collection, which describes projects in 6 continents and over 30 countries, gathers diverse information under the central theme of CVD prevention. This publication will assist health policymakers and program practitioners all over the world to design, enhance, or evaluate heart health interventions and policies suited to the particular needs of their community, state or province, or nation. The document also provides contact information for all of the programs discussed as well as bibliographic references to help readers acquire further information.

### ***Contents***

*Worldwide Efforts to Improve Heart Health* contains 83 program descriptions and cites numerous publications and other resources. Program staff helped us compile the 83 descriptions by providing materials and follow-up responses. We collected additional information by searching computerized bibliographic databases. Bibliographic citations were selected on the basis of their reasonable availability to the reader. Although we doubtless overlooked some excellent programs and resources, we made every effort to collect materials that represent a wide variety of approaches and geographic locations. Many of the programs described are concerned with noncommunicable diseases

## INTRODUCTION

in general, of which CVD is a specific example. Descriptions of those more general programs emphasize, whenever possible, issues of heart health.

### *Organization*

The 83 program descriptions are presented in seven sections. In the first four sections, we have grouped programs according to their primary scope or setting: international, national, community-based, or school-based. Each section begins with a summary of the overall themes shared among these program descriptions. The summaries also highlight unique features of the programs as well as barriers encountered, methods used to implement the programs, and lessons learned in the process.

Programs described in the remaining sections are grouped into three risk factor areas: tobacco use, elevated blood pressure or cholesterol levels, and poor nutrition or insufficient physical activity. These sections present a mix of international, national, and community programs and the diverse processes used to address these risk factors.

### *Availability*

Program descriptions included in this publication can be accessed through the Combined Health Information Database (CHID). CHID is a computerized bibliographic database of health information and health promotion resources developed and managed cooperatively by several federal health agencies in the United States. CHID provides descriptions of programs as well as citations and abstracts of journal articles, books, reports, audiovisuals, and other resources. Users may access CHID via the World Wide Web at <http://chid.nih.gov>.

This publication will be available through CDC's Web Site at <http://www.cdc.gov/nccdphp/nccdhome.htm>.

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**DESCRIPTIONS OF  
EXPERIENCES IN HEART HEALTH**



# INTERNATIONALLY SPONSORED PROGRAMS

In this category, we present six international programs that have affected many countries and millions of people. These projects show that it is possible to implement far-reaching programs with little money and few experts, to overcome resistance to change, to adapt programs according to specific needs, and to develop policies that can be applied in widely varied settings. Descriptions include information on organizing projects, establishing collaborative networks, raising funds, training participants, and monitoring progress.

Five of the programs—the Countrywide Integrated Noncommunicable Diseases (CINDI) Programme, the two InterHealth programs, *Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No Transmisibles* (CARMEN), and International Quit and Win—emanated from and are still sponsored by the World Health Organization (WHO). The sixth, the InterAmerican Heart Foundation (IHF), was sponsored by the International Society and Federation of Cardiology (ISFC). For each program, the sponsor's major role has been to organize a network of collaborating centers or societies linked through their acceptance of common protocols. WHO InterHealth and CINDI programs have formed linkages with community-based demonstration projects worldwide; IHF links heart foundations throughout the Americas and the Caribbean.

Both InterHealth and CINDI carry out demonstration projects and affect health policies in many countries. Both have sponsored numerous subsidiary projects, including International Quit and Win and the InterHealth Nutrition Initiative. International Quit and Win is a primarily European program, but it has attracted participation in Russia, China, and Argentina. The InterHealth Nutrition Initiative encompasses 15 member countries worldwide and provides support in collecting data, setting policy, and promoting activities on nutrition and dietary change.

The six programs serve as case studies—examples in mobilizing the latent energies and power of individuals and groups throughout the world. The programs demonstrate the far-reaching impact an organization can have when it provides expertise and assistance for establishing heart health initiatives. For example, WHO wanted to contribute to

noncommunicable diseases prevention, but the organization had limited financial resources and lacked trained personnel to carry out plans on a global level. Rather than try to implement programs directly, WHO gathered the world's prevention experts in Geneva and Copenhagen in the 1980s and used their combined knowledge to design international policy for establishing effective programs worldwide. The result was the creation of the global InterHealth and CINDI programs. The Pan American Health Organization (which is the American branch of WHO) then created CARMEN.

Thus, WHO established an international policy, set that policy in motion, and inspired people worldwide to mobilize their own resources and to use WHO's expertise in initiating programs in their own countries and communities. WHO has helped advance the challenge of creating a truly global collaboration—one that seeks to unite the world in improving human health.

Similarly, IHF's efforts have provided a method for existing Latin American heart foundations to build and strengthen coalitions. The foundation's achievements underscore the importance of organizing networks among countries and providing a mechanism by which local groups can communicate, coordinate their efforts, and learn from each other. Among its efforts, IHF is attempting to decrease smoking among physicians. In so doing, it addresses one of the most significant needs in prevention today: that those who sell health messages must espouse the healthy habits they promote (Recommendation #6 of *The Catalonia Declaration*).

These programs have served as models for many other international programs. They have emphasized the importance of multifactor approaches when working on a global level, the necessity of involving organizations at the national and community level, and the significance of setting global policy with common protocols and guidelines and then enabling groups to implement programs accordingly.

Descriptions of CINDI and InterHealth projects are found throughout this document. Several CINDI programs are found in the section on nationally sponsored programs. The section on community programs includes descriptions of CINDI and InterHealth projects. A complete list of programs discussed in each section is found in the Categorical Program Title Index.

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### Summary

In 1995 the Pan American Health Organization (PAHO) initiated *Conjunto de Acciones para la Reducción Multifactorial de las Enfermedades No Transmisibles* (CARMEN) as a practical tool for helping member nations meet the World Health Organization's challenge of Health for All by the Year 2000. The project's main objective is to create national and local coalitions that can set policies and implement interventions designed to reduce risk factors for noncommunicable diseases (NCDs). CARMEN projects focus on risk factors such as smoking, high blood pressure, overweight, diabetes, and excessive alcohol consumption; the specific risk factors addressed depend on the priorities of each participating nation. CARMEN takes an integrated approach that combines preventive health care services for individuals at high risk for NCDs with health promotion efforts directed at the general population. CARMEN projects reach their target audience through community, workplace, and school settings as well as through local health services.

### Development and Implementation

CARMEN was developed in response to an increased awareness among PAHO member states that NCDs account for nearly two-thirds of deaths in the Americas, that these diseases often result from risk factors that can be modified, and that an increased emphasis on prevention could significantly improve the health status of individuals and populations. Although modeled after the Countrywide Integrated Noncommunicable Disease Intervention (CINDI) projects of Europe and Canada, CARMEN takes into account specific characteristics of Latin American and Caribbean nations. Interventions are implemented through the development of policy and practical guidelines for more cost-effective management of risk factors; professional education to reorient health services toward prevention; marketing to rally political, corporate, and social support for the project; and other measures. Countries interested in participating in CARMEN must submit an official request for membership, design an action plan for implementing interventions, and devise an evaluation plan that follows a CINDI protocol. In each participating country, CARMEN projects begin as demonstration projects that apply existing prevention knowledge and services. Experience gained is then extended throughout the country. For example, a CARMEN project in Chile that began with a demonstration project in an area covered by the Health Service of Valparaíso will be expanded based on evaluation of the project's feasibility, performance, and impact.

### Evaluation and Results

Evaluations emphasize assessment of the efficacy and effectiveness of interventions in changing NCD morbidity and mortality, as well as the prevalence of NCD risk factors. The impact of program activities is determined based upon changes in essential indicators, such as risk factors in the population and mortality due to diseases of the circu-

latory system, diabetes, cancer, and other NCDs. Each participating country collects data on essential indicators every 3 to 5 years. However, relating the data to other program activities requires long-term observation given that significant health effects may require 15 or more years to develop. In the short term, process evaluations assess how interventions work, examine cost-effective approaches to their implementation, and document their intensity and scope. Impact and process evaluations are currently under way in several countries; results of a baseline impact evaluation are available for Chile.

## Lessons Learned

Problems encountered in implementing CARMEN include lack of experience in intersectoral collaboration and coalition building, lack of economic incentives for physicians to contribute preventive health services, and resistance to the concept of integrated action. Solutions await a full assessment of these problems.



## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME

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### Summary

In 1984, WHO established the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme as part of its international strategy to provide Health for All by the Year 2000. CINDI supports the development, in member countries, of comprehensive policies to prevent noncommunicable diseases (NCDs) and alleviate their consequences. The program stresses a public health approach in targeting prevention programs to the population as a whole as well as specific groups, such as the elderly or children and youth. A key objective is to reduce risk factors (e.g., smoking, alcohol abuse, physical inactivity, and psychosocial stress) common to major NCDs through programs based in communities and workplaces. Achieving this goal entails developing intersectoral collaboration and community involvement, enhancing the role of health professionals in preventive medicine, and optimizing the use of existing resources.

### Development and Implementation

The CINDI Programme has evolved in four distinct phases: (1) concept and protocol development and design of an evaluation system, (2) establishment of national programs and an international network, (3) implementation of national demonstration programs, and (4) review and development of a policy framework. Implementing prevention approaches has required balancing medical activities focused on individuals with health promotion activities aimed at the communities. CINDI has become one of the most active WHO programs for mobilizing health professionals to adopt and apply principles of health for all. Program efforts have created a network of 24 countries that work individually and collaboratively to prevent NCDs. Recent developments of CINDI include the creation of a CINDI EuroHealth Action Plan to be implemented over 5 years. The plan identifies priorities and central issues for establishing NCD prevention strategies, including policy development and multiple risk reduction through community and primary care. A second development has been the antismoking Quit and Win campaign, held in 13 countries and involving about 15,000 people. Planning is under way to introduce alcohol control activities into CINDI community programs.

### Evaluation and Results

Assessment of both process and outcome is a critical aspect of program evaluation, as is comparison of trends between member countries and demonstration areas. To ensure comparability, assessment methods must be based on standardized criteria established by CINDI. Member countries have access to countrywide information on mortality and periodically collect risk factor data in program demonstration areas. A high-quality Data Management Centre is maintained in Heidelberg to facilitate inter-country comparisons and analysis of trends. Overall, evaluations show that CINDI programs have helped to reduce smoking and have encouraged healthy eating patterns and physical activity. As a result, risk factors and death due to NCDs have decreased significantly in some areas.

## Lessons Learned

Experiences in some member countries demonstrate the potential for programs to impact health policy at a national level. The repertoire of intervention approaches developed by member countries can meet various health needs and can be adapted to different health care systems and different cultural and political environments. One of CINDI's priorities is to establish models for information systems that meet the requirements of policymakers, program developers, and practitioners. To be useful, these systems will need to provide current, user-friendly information at regional and local levels.

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**Summary**

The InterAmerican Heart Foundation (IHF) was created in September 1992 with the patronage of the International Society and Federation of Cardiology (ISFC) and the support of the American Heart Association. The overall mission of the IHF is to reduce disability and death caused by cardiovascular disease (CVD) and stroke among populations in North, Central, and South America and the Caribbean. The IHF organizes a variety of programs and networks to promote an environment favorable to reducing CVD and stroke, facilitate the growth and development of heart foundations, and encourage alliances between the health sector and other sectors of society. Risk factors targeted by IHF programs include smoking, hypertension, hypercholesterolemia, sedentary lifestyle, Chagas disease in Latin American countries, and rheumatic fever.

**Development and Implementation**

In April 1994, representatives of 12 countries met in Mexico City, Mexico, to approve organizational principles and sign a Statement of Intent to become IHF members. In September 1994, the ISFC approved the IHF as the official intercontinental foundation for the Americas. Since then, 20 heart foundations throughout the Americas have ratified their membership, and the number of members continues to grow. Among many programs and projects being planned or implemented are a campaign to reduce smoking among physicians, prevention programs for children, and a communications effort that includes development of an IHF home page on the Internet. In addition, a survey will be done of organizational needs assessment to identify basic characteristics, activities, and needs of member organizations and other organizations with similar goals to help expand the IHF network of heart foundations. An extensive variety of publications are available at cost from the IHF and its member organizations, including books, charts, kits, radio spots, slides, and videocassettes.

**Evaluation and Results**

The impact of the program is currently being assessed using process evaluation. Results of the evaluation are currently unavailable.

**Lessons Learned**

Major obstacles to the mission of the IHF include the wide geographic expanse and vast cultural and socioeconomic diversity represented by participating members. An additional challenge is obtaining resources to support IHF activities. The IHF intends a slow, steady initiation of activities that will mobilize efforts of health care professionals, professionals from business and government sectors, and community volunteers. Such efforts will promote partnerships between medical and nonmedical groups to increase influence in health promotion and public policy, help member foundations to access resources and information beyond national borders, and establish a trans-continental campaign to fight risk factors leading to CVD and stroke.

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**Summary**

Established in 1986 by the World Health Organization's Division of Noncommunicable Diseases (WHO/NCD), InterHealth is an international collaborative program that has the goal of reducing risks for noncommunicable diseases (NCDs). In fulfilling this goal, InterHealth takes an integrated approach—one that targets multiple risk factors common to various NCDs. The program's main role is to provide guidance and technical assistance for establishing and monitoring demonstration projects in participating countries. InterHealth strategies emphasize community involvement, health promotion and maintenance activities, and behavior interventions, and are conducted through existing primary health care systems and other community structures.

**Development and Implementation**

InterHealth was organized in response to growing international concern over the rise in NCD-associated illness and death in developed and developing countries. InterHealth member nations now include Australia, Chile, China, Cuba, Cyprus, Finland, Japan, Lithuania, Malta, Mauritius, Russia, Sri Lanka, Tanzania, Thailand, and the United States. Each country is committed to assessing baseline levels of NCD risk factors in its population; following trends in NCD morbidity and mortality; implementing demonstration projects that involve community-based, integrated strategies for reducing risk for NCD; and evaluating the success of these strategies. The extent to which each country has carried out these activities varies. Some have established baseline data and are monitoring changes in risk factors and NCD rates; others have gone on to develop national public health policies as steps toward implementing intervention programs; still others have established demonstration projects and are evaluating their impact. The design of intervention methods is influenced by each country's cultural, environmental, social, and demographic characteristics. Once developed, the methods are introduced in demonstration communities as health education, health promotion, and treatment programs. Innovative strategies are shared among participating countries. In addition to demonstration projects, InterHealth activities include international programs for the prevention and control of rheumatic diseases and a global initiative on asthma prevention and control. Program development is supported by WHO collaborating centers established in Finland, the United States, Australia, and the United Kingdom.

**Evaluation and Results**

To facilitate the global exchange of information and to allow international comparison across demonstration areas, standardized methods are used for assessing trends in risk factors and NCDs. InterHealth projects assess smoking behavior, alcohol consumption, serum cholesterol levels, and systolic and diastolic blood pressure, and

## Lessons Learned

many projects have assessed food and nutrient intake. Data are being compiled for cardiovascular diseases, including myocardial infarct, stroke, hypertension, rheumatic heart disease, and cardiomyopathy; cancer; diabetes mellitus; osteoporosis; and respiratory diseases such as asthma and chronic obstructive pulmonary disease. Available information shows that InterHealth programs can have positive effects on lifestyle and risk for NCDs. For example, an InterHealth program in Mauritius was associated with significant decreases in hypertension, smoking, and blood cholesterol levels in a representative sample of the population. InterHealth activities in North Karelia, Finland, were associated with favorable changes in smoking, blood cholesterol levels, and blood pressure that, in turn, were predictive of dramatic decreases in mortality from stroke.

Because the cost of treating NCDs can greatly exceed the cost of their prevention, appropriate investment in integrated prevention programs is paramount. Through development of complementary strategies for health promotion and disease prevention, the InterHealth Programme will help achieve the WHO goal of Health for All by the Year 2000. Knowledge and experience gained through InterHealth programs can facilitate the development of global policies and initiatives that benefit all nations.

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### Summary

InterHealth, initiated by the World Health Organization (WHO), is an international collaborative program to prevent and control risk factors for noncommunicable diseases (NCDs). The InterHealth Nutrition Initiative, begun in 1993 under the direction of the Boston University Schools of Medicine and Public Health in cooperation with WHO and the InterHealth Coordinating Center, is a critical part of the program. The goals of the initiative include (1) evaluating global trends in food and nutrition intake with a view to NCD prevention and (2) determining the impact of nutrition interventions on behavior and risk for NCD morbidity and mortality. Interventions target dietary risk factors (e.g., high fat, cholesterol consumption) in various populations of children, adolescents, and adults.

### Development and Implementation

WHO's Division of Noncommunicable Diseases initiated the InterHealth Programme based on the philosophy that NCDs share modifiable risk factors, such as poor nutrition. Countries that participate in the nutrition initiative have developed national nutrition policies and dietary recommendations, including maintaining appropriate body weight; decreasing fat, cholesterol, and salt intake; and increasing consumption of fiber-rich foods and complex carbohydrates. In addition, participating countries are attempting to promote healthier food supplies by working with agricultural and fisheries departments, food industries, and trade organizations. Fourteen InterHealth countries have implemented nutrition intervention programs. These efforts have included diverse innovative strategies, such as increasing access to nutritious foods by reducing the price of whole wheat flour and lowering the duty on imported fruits; involving volunteers, community organizations, social groups, educational institutions, and others in community-, worksite-, and school-based interventions; and improving dietary habits of families and individuals through structured networks that refer, treat, and follow-up people at high risk for NCDs.

### Evaluation and Results

InterHealth projects follow standardized protocols that use measures of smoking behavior, alcohol consumption, blood cholesterol levels, blood pressure, rates of hypertension, and the prevalence of obesity in assessing population risk for NCDs. In addition, 12 projects have assessed food and nutrient intake. InterHealth countries have adopted common protocols for following NCD morbidity and mortality rates. Results on the impact of the InterHealth Nutrition Initiative are not currently available. Reports on the outcomes of some projects are expected in 1997.

### Lessons Learned

InterHealth investigators increasingly recognize that sustained changes in the nutrition habits of populations will require continuous effort and broader intervention strategies. These strategies will need to accommodate differences in ethnicity, dietary patterns, and environmental factors associated with risk behaviors.

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**Summary**

International Quit and Win '96 was a campaign to encourage smoking cessation in Europe and elsewhere. The campaign, implemented in May 1996, took the form of a contest. Current smokers at least 18 years of age were eligible to enter. The campaign was organized within the framework of the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) program, a major collaborative program of the World Health Organization (WHO), and was supported by WHO's Action Program Against Smoking.

**Development and Implementation**

The organization of International Quit and Win '96 was based on the successful experiences of the first multinational collaborative smoking cessation campaign, European Quit and Win, held in 1994. The National Public Health Institute of Finland coordinated the 1996 campaign. Participating countries followed a joint protocol for implementation that included common rules and procedures for registering participants and selecting winners, but otherwise organized the campaign to fit local situations. A joint campaign poster was produced and distributed to promote international publicity, and various other promotional activities were used. All current smokers who wanted to participate were required to register by the common quit date of May 2, 1996, and were asked to refrain from smoking for a 4-week contest period. Contest winners were determined by a drawing held at the end of the contest period; national prizes were awarded, as was a European superprize (US\$5,000) presented in connection with the European Tobacco and Health Conference in Helsinki. Winners had to verify that they had quit smoking.

**Evaluation and Results**

Twenty-five countries and nearly 70,000 contestants participated in International Quit and Win '96. A follow-up study to determine abstinence rates will be conducted in each country 1 year after the campaign. In each country, a sample of registrants (preferably at least 1,000) will be interviewed using a survey with core questions agreed upon by participating countries. Based on earlier evaluations, an estimated 15 to 20 percent of contestants are expected to quit smoking permanently.

**Lessons Learned**

Surveys in many countries show that many current smokers would like to stop smoking. To succeed they need practical incentives for action. Contests such as International Quit and Win '96 have provided innovative, positive means to encourage smoking cessation. Some participating countries experienced a shortage of resources in carrying out the campaign. Nevertheless, because results of International Quit and Win '96 have been positive so far, a 1998 campaign is planned that will be open to CINDI countries and to other countries as well.





# NATIONALLY SPONSORED PROGRAMS

**R**eview of nationally sponsored programs reveals the synergistic interactions often developed between national and local organizations—between “top-down” and “bottom-up” efforts. As defined in The Catalonia Declaration, top-down prevention efforts occur as policy set by a governing body, whereas bottom-up prevention efforts represent a groundswell of activism and education that originates in the community. Both approaches are crucial to successful heart health programs. Policy provides a framework for planning and implementation, whereas community support provides resources, practical skills, and activities and education that can be adapted to local needs. Coordination between the two approaches is essential; officials sending health and prevention messages at the national level need to ensure that communities are prepared to act upon these messages.

National programs are frequently carried out through a single coordinating center that sponsors provincial, state, or community demonstration projects. However, because provincial or state actions often lead to community demonstration projects, the distinction between national, provincial or state, and community projects often becomes blurred. Thus the important question is how central policies can be effectively disseminated within any geographically defined system.

The various national endeavors described here have faced radically different challenges and limitations. Developing nations, such as Tunisia and Tanzania, are currently more plagued by infectious disease than by cardiovascular disease (CVD) and other noncommunicable diseases (NCDs). Heart health programs in both Tunisia and Tanzania thus face numerous challenges, including limited resources, lack of experience with prevention methods for new health threats, and the need to convince authorities to prioritize NCD prevention. Despite such challenges, if these countries can initiate prevention efforts now, they can limit the increases in NCDs—and in their associated financial and human cost—that typically follow economic development. As described in The Catalonia Declaration, developing nations that can invest some effort now may be able to prevent or at least offset the catastrophic cost of a CVD epidemic.

In contrast to developing countries, developed countries such as Canada, the United States, and Finland have begun the battle against the CVD epidemic. Many developed countries have implemented national programs, and have, in the process, faced the challenge of creating programs that will work in numerous and varied settings. The outcome has been the development of methods that have greatly improved heart health.

Among many successful national programs for preventing CVD are the Canadian Heart Health Initiative, which required each province to initiate a heart health program and then provided support for that effort, and the National Program of Health Promotion in the Czech Republic, which receives \$1.25 million each year from its national government to implement prevention programs at the local level. Several CINDI programs described in this section should achieve similar success, but most are involved in community-based demonstration projects and have yet to achieve their ultimate goal: national dissemination of local efforts.

The Canadian Heart Health Initiative serves as an excellent model for other countries to follow. This national program's experiences have shown that (1) any national effort must begin with consensus building among all major potential participants; (2) evidence (through surveys) of a high prevalence of modifiable risk factors can help motivate development of prevention programs; (3) provincial or state governments can be persuaded to provide more financial support than the federal government; (4) coalitions and networks can be created to determine policy, share experiences, and ensure institutionalization of interventions; and (5) demonstration efforts may require 10 or more years before national dissemination can begin in earnest—in other words, patience is needed!

Many national programs had to make special efforts to communicate with hard-to-reach subpopulations. For example, the Change of Heart Program in Northern Ireland found that community-level efforts were needed to reach the poor. In the Manitoba Heart Health Project, rural communities did not respond well to program efforts until community volunteers were recruited to the project—a key strategy that emerged from focus groups.

Such community-level participation sounds the keynote of national programs: collaboration provides input from all sectors of a community and helps ensure that prevention programs will reach the maximum number of people. Many programs provide examples of effective unions formed with journalists, educators, business leaders, government officials, scientists, and health professionals. The Program for the Prevention of Infarcts in Argentina; the Canadian Health Heart programs in Prince Edward Island, Manitoba, and New Brunswick; and Planned Approach to Community Health all emphasize this approach.

Collaboration has frequently been impeded, however, by the financial constraints faced by many national programs. Several projects presented in this category, including the National Program of Health Promotion in the Czech Republic, Change of Heart, Planned Approach to Community Health, and the New Brunswick Heart Health Program, have learned to cope with limited funds by using existing infrastructure, such as that of mass media, schools, worksites, and health professionals.

Mass media, both electronic and printed, can provide an inexpensive way to reach many people. National programs that have relied heavily on mass media include the Coronary Risk Factor Study, the New Brunswick Heart Health Program, and Planned Approach to Community Health. The Remote Access Network of the Argentine Federation of Cardiology is an example of a program based entirely on electronic communication. As electronic media become more popular and user-friendly, prevention efforts should increasingly use them as a major tool for interventions. Careful research is needed, however, to design messages that maximize their impact on behavior.

Schools can provide an excellent milieu for interventions. Instilling healthy habits in children helps them to avoid risk behaviors later in life. Among other programs, Change of Heart, the New Brunswick Heart Health Program, the Program for the Prevention of Infarcts in Argentina, and the National Program of Health Promotion in the Czech Republic have made effective use of schools to educate youth about chronic disease risk factors.

The worksite furnishes yet another environment for conveying health messages. The Prince Edward Island Heart Health Program and the New Brunswick Heart Health Program have both used worksite interventions. Additional examples of programs involving school- and worksite-based activities are reported in subsequent sections of this document.

Finally, several programs described in this section have recruited health professionals to “get the word out.” Programs that have used health professionals include the National Primary Care Facilitation Program, Change of Heart, the Program for the Prevention of Infarcts in Argentina, the Remote Access Network of the Argentine Federation of Cardiology, and the New Brunswick Heart Health Program. Many practitioners have little training in preventive medicine, however, and may require education in risk factor screening and behavior change. Such training can help physicians and health care teams reach people at high risk for heart disease.

## THE PROGRAM FOR THE PREVENTION OF INFARCTS IN ARGENTINA

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### Summary

The Program for the Prevention of Infarcts in Argentina (PROPIA) is a national program designed to work in coordination with existing services to prevent ischemic heart disease (IHD). PROPIA provides a unified approach to managing health promotion, education, and other interventions directed at communities and at individuals. A fundamental goal of the program is to change behaviors associated with risk factors (e.g., hypercholesterolemia, obesity, and smoking) for infarcts. PROPIA also endeavors to fulfill a growing demand for treatment and rehabilitation services.

### Development and Implementation

Cardiovascular disease is the most common cause of death among adults in Argentina, and IHD accounts for nearly one-third of these deaths. PROPIA was created in 1990 by the National University of La Plata in reaction to this significant and complex problem. A year later, the Scientific Research Commission of the province of Buenos Aires decided to support the program, and in 1994 the Ministry of Health of the province did the same. The program's overall approach to IHD prevention involves identifying community needs and devising interventions accordingly. Three main intervention strategies have been proposed. The first focuses on modifying risk factors in the community through involvement of the media, health care professionals, educators, and legislators. As an example, a community program known as the Week of Cholesterol and Other Risk Factors consists of prevention activities directed at doctors, educators, business executives, and the general public. A second strategy provides for the systematic diagnosis and management of persons with risk factors or manifestations of IHD. One such project uses available health care and social services to detect and treat hyperlipoproteinemias. The third strategy aims to ensure the adequacy of health care delivery services. To this end, PROPIA centers have been created to serve as receiving units for local concerns and needs, as executive agencies for a range of available strategies, and as sites for information exchange. Twenty-six PROPIA centers are now operating nationwide.

### Evaluation and Results

Evaluation includes internal and formative approaches as well as external, summative approaches. Internal and formative evaluations are carried out while the program is in progress. Internal evaluation provides rapid feedback to program workers and management. Formative evaluation yields data on experiences with various program components that can be used to further develop the program. Summative evaluation assesses, over time, the overall effects of the program. Currently, results of early assessments are being processed.

## Lessons Learned

Although medical societies, provincial and municipal governments, and other organizations have made concrete contributions to counter IHD, many programs have attacked the problem only partially and may waste funds because of duplicated efforts. PROPIA is designed to optimize efforts of groups within and outside of the health sector in a coordinated and nonduplicative manner.

## THE REMOTE ACCESS NETWORK OF THE ARGENTINE FEDERATION OF CARDIOLOGY

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### Summary

In April 1995, the Network Center of the Argentine Federation of Cardiology (CETIFAC) established a computer network to allow access to the federation's specialized bibliographic database and to information about multicenter research trials. An overall goal of the network is to augment continuing medical education for clinicians and researchers and thereby promote cardiovascular disease prevention and treatment.

### Development and Implementation

CETIFAC developed the network to overcome problems of information access across the country. The network uses the Windows™ environment and is accessed via computer modem. The system is based on a client-server computing model, and the network server is located in the Engineering-Bioengineering Faculty of the National University of Entre Ríos in Paraná. The user has access to a number of network features, including E-mail; a federation database that provides information about associated societies, members, activities, and the federations's scientific magazine; and a bibliographic database that offers international information on basic and clinical research. Users can update the database or exchange files from any computer on the network. CETIFAC is also developing a system for remote medical interconsulting. This system will allow users to receive expert opinions from scientific committees of the federation and associated institutions.

### Evaluation and Results

Evaluation will assess the performance of communications in terms of availability, speed, security, and fault tolerance.

### Lessons Learned

It was found that physicians often have limited knowledge of computers. To overcome this problem, CETIFAC offers training on using the network.

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### Summary

The Heart Foundation of Barbados was established on April 18, 1985, as a nongovernmental, nonprofit association to prevent diseases of the heart and circulation. The foundation involves efforts of the public as well as business and health sectors in a myriad of education and health programs delivered in various settings. The intent of these programs is to promote healthy lifestyles among Barbadians and to reduce or control risk factors for heart disease, such as stress, high cholesterol and saturated fat intake, smoking, high blood pressure, obesity, and inadequate physical activity.

### Development and Implementation

In the 1970s, screening programs conducted at the Cardiac Unit of Queen Elizabeth Hospital and annual reports of the Chief Medical Officer of the Ministry of Health identified heart disease and hypertension as problems warranting the creation of a national voluntary organization for reducing and preventing heart disease. Subsequent collaborative efforts of the Cardiac Unit and the Lions Club of Barbados, South, made the Heart Foundation of Barbados a reality. More than 10 years later, the Heart Foundation has implemented programs that include lectures for the public, seminars for business executives, educational materials and publications, and promotional activities. One long-term project of the Heart Foundation is the Cardiac Disease Prevention and Rehabilitation (CDP&R) program, which includes a freestanding outpatient rehabilitation service, to which financial grants are made by business to allow participation of the indigent. A second project is the Healthy Heart Clubs program, established to provide activities promoting good health practices to secondary school students. The foundation also has developed alliances with businesses to provide training in all levels of Emergency Cardiac Care in a program that has been operational for the past 7 years.

### Evaluation and Results

Recent reports indicate that smoking has decreased sharply and that the incidence of heart disease has declined for the first time in 10 years. These positive results cannot be directly attributed to efforts of the Heart Foundation, because evaluation of Heart Foundation programs has not been possible due to a lack of human and financial resources. However, the Heart Foundation is contributing significantly to an increased awareness of all aspects of heart health and has made the pursuit of healthy lifestyles a major national goal. In addition, a preliminary survey has shown that many CDP&R program participants were satisfied with their progress and the sense of good health resulting from their participation in the program.

### Lessons Learned

Efforts to implement the CDP&R program, Healthy Heart clubs, and Emergency Cardiac Care programs revealed the need to tailor such programs to cultural and other specific needs of the target group. The foundation's success lies in a capacity to maintain stability through administrative continuity, sound financial management, and a clear view of the foundation's role in the community. The Heart Foundation of Barbados has been documented as a possible model for the development of similar organizations in other small island states, and is a member organization of the InterAmerican Heart Foundation.

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**Summary**

The Canadian Heart Health Initiative is a multilevel, national strategy to help all 10 Canadian provinces build capacity for preventing cardiovascular disease (CVD). The initiative has made possible a stepwise approach for implementing and evaluating heart health policies and community research demonstration programs. Conceived in 1987, the initiative is co-funded by Health Canada and the provincial departments of health. Other partners are the Canadian Heart and Stroke Foundation and numerous organizations in the public, voluntary, health professional, and private sectors.

**Development and Implementation**

Implementation spans 15 years and includes five phases. The first phase (1987–1988) involved development of a heart health policy by a federal-provincial working group in consultation with provincial departments of health and other stakeholders in the public, voluntary, health professional, and private sectors. The result was a report entitled *Promoting Heart Health in Canada*. Following approval of the report by the Conference of Deputy Ministers of Health in 1988, Health Canada began providing technical and policy support as well as research funds that were matched by provincial health departments. The second stage of the initiative consisted of CVD risk factor and nutrition surveys conducted in each province. In addition to providing information for planning and evaluation, survey results were instrumental in encouraging provincial jurisdictions to launch demonstration programs. Phases 3 and 4, begun in 1989 and still under way, involve implementing and evaluating research demonstration programs in each province. The programs use a combination of strategies tailored to provincial and local needs and priorities. Most programs address three or more of the major CVD risk factors and use two or more strategies, the most common of which are public education, community mobilization, and public policy on health. Some provinces, including Ontario, Nova Scotia, Prince Edward Island, and Manitoba, have begun the final research dissemination phase (1994–2002). This phase involves studying factors that influence the adoption of effective heart health interventions by communities and health infrastructures across the country.

**Evaluation and Results**

The provincial demonstration programs have gathered process evaluation data using a common set of guidelines and core indicators. Between 1989 and 1995, researchers have followed more than 300 projects in the 10 provincial heart health programs and in 36 demonstration communities. Extensive networks and coalitions have formed at the national, provincial, and community levels. At the provincial level, the coalitions include 15 to 30 partner organizations, including provincial Heart and Stroke



Foundations. One of these networks, the Conference of Principal Investigators of Heart Health, provides a forum for coordinating interprovincial tasks such as evaluation, epidemiological research, and social marketing at public and corporate levels. Since 1989, more than 1,100 organizations in various sectors have collaborated on projects of the Canadian Heart Health Initiative. Ten heart health teams have been created to assist with implementing epidemiologic research, program development and evaluation, and community mobilization—skills that are of value in addressing problems other than heart health. An overall process evaluation of the initiative is under way.

## Lessons Learned

The consensus reached through development of heart health policy, along with seed money from the federal government and results from heart health surveys, were key elements in obtaining the participation of each provincial department of health. The formation of multilevel partnerships furnishes a context for policymakers, health professionals, and community coalitions to collaborate toward implementing policy. Coalitions and networks are a significant asset for obtaining policy support, accessing target populations, and securing resources from various sectors. The linkage of the heart health programs to the provincial public health systems provides sustainability and supports the institutionalization of interventions.

## THE BRITISH COLUMBIA HEART HEALTH DEMONSTRATION PROJECT

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### Summary

The British Columbia Heart Health Demonstration Project (BCHHDP) is a 5-year community-based program designed to reduce multiple risk factors for cardiovascular disease (CVD) among British Columbians in four demonstration areas. BCHHDP goals include building effective partnerships among community members and local and national organizations; establishing effective, sustainable, and affordable prevention activities and strategies; and disseminating information and resources to other communities. Among specific risk factors targeted by program activities are smoking, unhealthy eating habits, hypertension, and high blood cholesterol levels. The project began in 1992 as part of the Canadian Heart Health Initiative and is jointly funded by Health Canada and the British Columbia Ministry of Health and Ministry Responsible for Seniors.

### Development and Implementation

In 1991, the National Health Research Development Program (NHRDP) distributed funds to each Canadian province as part of a Federal Provincial Heart Health Initiative. In British Columbia, researchers used these funds in a project that drew on the experiences of other CVD prevention programs such as the North Karelia Project and the Stanford community projects. However, the BCHHDP differs from its predecessors in that it takes a community development approach—one that allows communities to organize interventions according to their own needs and resources and focuses on developing and testing service delivery rather than on testing hypotheses. Various communities that had identified heart health as a local concern applied for funding, and in 1992, four communities (Squamish, Kimberly/Cranbrook, Upper Vancouver Island, and Vancouver's North Shore) were chosen for demonstration projects. At the same time, the British Columbia Heart Health Coalition was formed to provide a supportive environment for heart health activities and to contribute to strategic planning. Each demonstration community formed local coalitions that identified that community's particular needs and helped to plan and implement interventions accordingly. BCHHDP activities have included student-oriented school programs; worksite interventions at a small business and a hospital; and healthy eating, walking, and risk factor awareness initiatives. Each demonstration project has reached many individuals and yielded various educational and promotional materials which are currently being prepared for dissemination. An automated Heart Health Information System has been developed to track data on project management; planning; decision making; reporting; assessing progress; monitoring expenditures, contributions, and diffusion; identifying components for dissemination and evaluating the effectiveness of interventions.

## **Evaluation and Results**

Evaluation data are collected via annual surveys, participant and event tracking forms, and quarterly and annual reports. Pre-intervention data on physical activity, dietary practices, smoking, and other information has been collected; post-intervention data collection and analysis is under way. Although data on program impact in terms of changes in heart health is not yet available, assessment of a number of small-scale, time-limited activities have shown positive changes in participants' knowledge of heart health and intent to change heart health behaviors. An overall evaluation has focused on the establishment of effective partnerships and sustainable strategies and on dissemination of information and resources. Results show that all demonstration programs have developed and maintained partnerships among community members and local and national organizations. These partnerships have become stronger over time and will likely contribute to the sustainability of community initiatives when current funding ceases. In addition, community members have acquired skills that will increase the potential for sustaining program activities. With regard to dissemination, demonstration communities have shared various aspects of the project with interested groups within British Columbia, across Canada, and internationally.

## **Lessons Learned**

Relinquishing a large degree of decision-making power to communities can be risky for governments and funding agencies. However, broadening the scope of decision making and responsibility is more likely to result in a program that will reflect the needs and resources of the community and that can be maintained over time.

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### Summary

The Manitoba Heart Health Project (MHHP) is an ongoing study designed to document and address, on a provincial level, risk factors for cardiovascular disease (CVD). The study also examines knowledge, attitudes, and behaviors related to heart health. The project began in 1989 with the Manitoba Heart Health Survey and continued with pilot and demonstration phases (1991–1995) followed by a dissemination research phase (1996–2000). The initial survey identified the prevalence of CVD risk factors such as smoking, high blood cholesterol levels, and obesity among all Manitobans aged 18 to 74 years. Activities of the MHHP reflect collaborative efforts of the University of Manitoba Faculty of Medicine, Department of Community Health Science; the Province of Manitoba; the Heart and Stroke Foundation of Manitoba; and the Central Health Region. The MHHP is part of the Canadian Heart Health Initiative and is therefore funded by Health Canada through the National Health Research and Development Program.

### Development and Implementation

The 1989 survey showed that the prevalence of CVD risk factors was higher and knowledge of these risk factors was lower among Manitobans living in rural compared with urban areas. Accordingly, the MHHP demonstration phase involved development of a rural community activation initiative. Seven demonstration sites were established in communities with populations of 2,500 to 14,000. Volunteer committees, each assisted by a part-time facilitator, identified community needs and developed programs and activities appropriate to those needs. Committees implemented a range of low-cost programs and activities through partnerships developed with local groups and organizations; examples of community activities include heart health fairs, a stress management workshop, cooking courses, and mall/hall walking programs. The MHHP provided training to committees, overall coordination of the seven sites, and modest funding. The dissemination research phase, now underway, examines the process developed during the demonstration phase. Among other things, dissemination research questions focus on the nature of training required to empower volunteer committees and the partnership process through which committees deliver low-cost programs and activities to their communities.

### Evaluation and Results

Evaluation of the demonstration project focused on approaches and processes of community organization and citizen participation rather than particular interventions or outcomes. Data sources included needs surveys and action plans developed during the project; facilitator logs; and a telephone survey, conducted at the end of the project, that collected information on committee members' perceptions of the initiative. Findings showed that a wide array of awareness, educational, and skill-building programs were implemented during this phase of the MHHP. In addition, committee

## Lessons Learned

members have provided professional expertise and knowledge of the communities and have been able to work with many different organizations to develop program events and to incorporate programs into existing events and services. Committee members contributed about 12,000 volunteer hours, and MHHP activities reached an estimated 14,000 people.

The demonstration phase showed that a community organization approach can be used to encourage citizen participation in rural communities and to plan and deliver heart health activities. Volunteer committees and facilitators played a critical role in linking the MHHP to communities and in ensuring acceptance of and participation in heart health initiatives. The committees required some paid assistance as well as technical assistance in carrying out tasks and activating resources.

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### Summary

The New Brunswick Heart Health Program (NBHHP) was a 5-year (1991–1996) demonstration program designed to develop, implement, and evaluate strategies to improve knowledge and awareness of heart disease among the people of New Brunswick. A key objective of the NBHHP was to enhance the profile of activities for cardiovascular health in all sectors of society. Program strategies promoted nonsmoking, healthy eating, regular exercise, and maintenance of blood pressure. One of 10 provincial programs comprising the Canadian Heart Health Initiative, the NBHHP was funded by the New Brunswick Department of Health and Community Services and Health Canada through the National Health Research and Development Program.

### Development and Implementation

The program consisted of a planning phase (1991–1992), an implementation phase (1992–1995), and an evaluation phase (1995–1996). A coordinating committee made up of representatives from a variety of government, volunteer, and private sector organizations assisted with planning, implementing, and assessing the impact of program strategies. The program's overall intervention approach included public education, network building, professional practice, and focused interventions. Public education strategies employed mass media and social marketing techniques to increase awareness of cardiovascular risk factors and lifestyle changes that help prevent cardiovascular disease (CVD). Network building helped develop partnerships among agencies, organizations, and private sector groups capable of promoting heart health. Professional practice strategies established joint initiatives with professional organizations such as the New Brunswick Association of Dietitians and the New Brunswick Teacher's Association to increase their memberships' involvement in heart health. Focused interventions consisted of community action projects designed to establish and evaluate heart health activities in workplace, community, and school settings. NBHHP projects included a walking campaign to promote physical activity and healthy eating; a workplace wellness program, "NBTel Well," conducted in collaboration with the Heart and Stroke Foundation of New Brunswick, and a YM-YWCA school project involving a play-based curriculum for teaching young children about heart health.

### Evaluation and Results

Program assessment involved process evaluations to understand how well intervention strategies reach target groups; impact evaluations to determine the effectiveness of interventions, and outcome evaluations to analyze long-term changes in CVD morbidity and mortality. Among other findings, evaluations showed positive lifestyle changes and improvements in the public's knowledge of risk factors. The impact of NBHHP projects on changes in behavior related to cardiovascular health is not yet known, and long-term changes in CVD morbidity and mortality remain to be assessed.

## Lessons Learned

During the third year of the NBHHP, it was realized that with the exception of time-limited public education activities, the program lacked sufficient resources to continue expanding its network of professional agencies, organizations, and private sector groups. As a result, efforts were made to inform target organizations about NBHHP initiatives, strategies, and resources in the hope of encouraging the organizations to independently adopt heart health promotion activities.

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**Summary**

The Newfoundland and Labrador Heart Health Program (NLHHP), 1 of 10 provincial programs that make up the Canadian Heart Health Initiative, is a community-based program designed to reduce the high prevalence of heart disease among people of the province. One goal of the project is to develop programs to help reduce the incidence of cardiovascular disease (CVD); another goal is to incorporate and diffuse the programs into the existing community health system to maximize the sustainability and impact of NLHHP. Community groups and health agencies working with NLHHP have focused on reducing CVD risk factors such as high blood pressure, smoking, and high blood cholesterol levels. Officially launched in October 1990, NLHHP was funded as a demonstration project through September 1996. It is hoped that funding will be available to continue research through a dissemination phase.

**Development and Implementation**

The NLHHP was developed following a survey that identified a high and widespread prevalence of CVD risk factors in the province (about 70 percent of adults have one or more risk factors). A lack of awareness about healthy lifestyles and determinants of cardiovascular risk in the population also signaled the need for a community-based prevention program. A coordinating committee made up of representatives from volunteer, professional, and consumer groups has provided leadership and direction for project planning and implementation. A public education subcommittee has developed a Heart Health Leadership Manual and video as well as a model for community television programming. This subcommittee has also published a newsletter, called *Heart Matters*, for circulation throughout the province. Community groups have designed and carried out various intervention projects, including the Heart Smart Restaurant Program, the Allied Youth Smoking Prevention Program, community kitchens and gardens, and walking clubs. The manual, newsletter, and other materials are available through an NLHHP home page.

**Evaluation and Results**

Evaluation methods have included needs assessments, surveys, key informant interviews, and feedback from Heart Health Workshops sponsored by NLHHP. In addition, detailed evaluation reports on each project have been submitted to NLHHP. Preliminary data indicate that NLHHP has succeeded in creating and sustaining an awareness of heart health, encouraging professional and consumer participation in heart health activities, and maintaining and diffusing these activities. If funding permits, risk factor prevalence will be reassessed as an indicator of the project's impact.



## Lessons Learned

The economic situation of the province required that projects be sustainable by communities: seven of nine original community projects have been successfully maintained although project funding has ceased. Evaluation efforts have identified strong leadership and broad community participation in planning and program delivery among other features that distinguished successful from less successful community activities.

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## Summary

In 1988, the Department of Health and Social Services and Health Canada established the Prince Edward Island Heart Health Program (PEIHHP) as part of the Canadian Heart Health Initiative. The intent of the program, which will continue until 2000, is to examine community-based approaches for reducing premature death and disability caused by cardiovascular disease (CVD). PEIHHP provides a community organization approach focused on reducing CVD risk factors (e.g., smoking, high blood pressure) among residents of Summerside, Prince Edward Island.

## Development and Implementation

Following the models of the Minnesota Heart Health Program and the Community Intervention Trial for Smoking Cessation project, a citizen planning group is responsible for program planning and administration. Program development has involved three phases: an initial survey to determine risk factors in the population of the Greater Summerside Area (approximately 14,000 residents), a demonstration project, and a dissemination study. The survey showed that two-thirds of the population have at least one modifiable risk factor for CVD. The demonstration project involved efforts of community organizations and volunteers in many different activities, including work-site health assessments, community kitchens and gardens, public forums, and television and radio shows. Various projects were carried out, including a Freedom from Smoking Course, focused on reducing the prevalence of smoking, and Heart Smart Grocery Store Tours, which provided nutrition information to the public. Volunteers contributed to all aspects of the program; for example, they developed annual and long-range program plans, checked blood pressure and provided advice on health promotion to participants, and wrote newspaper articles on healthy living. The dissemination study will document the process of activating resources in and for the community, and will show how successes of the demonstration project can be transferred to other regions of the province. To provide a wider base of support for behavior change, the program has emphasized voluntary participation of residents in all aspects of planning, implementation, evaluation, and management and encouraged a grass roots decision-making process.

## Evaluation and Results

Process evaluation results and interview data indicate that community mobilization efforts were successful and that volunteers were generally satisfied with their roles and accomplishments. Over 3 years, community volunteer organizations, public health nurses, schools, local businesses, and media partners contributed over 3,000 volunteer hours and approximately \$100,000 in in-kind contributions. Individual programs were also evaluated. For example, assessment of two Freedom from Smoking courses revealed quit rates of 43 and 38 percent, and that the potential for program dissemination, in terms of cost and preparation, was good. Evaluation of Heart Smart Grocery Store Tours showed that the tours were useful for initiating and maintaining behavior changes.

## Lessons Learned

Components and people essential to the success of the program have included a broad volunteer base, a local program coordinator, and a multisectoral planning committee.

## THE SASKATCHEWAN HEART HEALTH PROGRAM

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### Summary

The Saskatchewan Heart Health Program (SHHP) has as its mission “to work together to enhance the health of Saskatchewan residents and communities through an initial focus on cardiovascular health.” Part of the federal-provincial Canadian Heart Health Initiative, the program’s intent is to reduce the incidence of cardiovascular disease (CVD), stroke, and associated risk factors through cooperative funding, coalition building at local and provincial levels, and community involvement. Program activities address various CVD risk factors, including poor nutritional habits, smoking, and physical inactivity. The SHHP was initiated in October 1990 and is funded by Health Canada, Saskatchewan Health, and the Heart and Stroke Foundation of Saskatchewan.

### Development and Implementation

Like other programs of the Canadian Heart Health Initiative, development of the SHHP consists of demonstration, evaluation, and dissemination phases. Demonstration projects were conducted from October 1990 to March 1996; evaluation of the demonstration projects is in progress and will be completed in 1997. Plans have been developed for the dissemination phase. The program began with formation of the Saskatchewan Heart Health Coalition, which serves as a decision-making and advisory body. The coalition includes volunteers and representatives from various sectors, such as health organizations, the government, the University of Saskatchewan, the media, consumer’s groups, and businesses. An urban area—Regina—and a rural area—Coteau Hills—were selected as demonstration sites based on community needs and interest, the level to which coalitions had developed, and other criteria. In Regina, a coalition called Heart Healthy Partners directed numerous interventions aimed at a variety of audiences. One such intervention was designed to encourage sedentary teenage girls to participate in a supportive, low skill-level recreational program. Heart Healthy Partners also provided annual awards to agencies, groups, and individuals involved in heart health activities. In Coteau Hills, a Heart Health Coalition representing five sparsely-populated agricultural communities directed innovative programs that were designed to accommodate the area’s limited resources and social and physical environment. Examples included walking clubs that met at a local health center and a community nutrition program involving peer leaders who facilitated local initiatives. Among other activities, peer leaders gave presentations at schools and community events and promoted low-fat food choices at local grocery stores and restaurants.

## **Evaluation and Results**

Evaluation methods have combined quantitative and qualitative methods to provide information about implementation, progress, and impact of the program. The evaluation protocol is based on a Logic Model and adheres to federal and provincial guidelines. Data are collected to provide core measures and to assess program impact; data collection approaches include quarterly reports, program records, surveys of community leaders and organizations, and a Saskatchewan Heart Health Survey. Among other results, a 1994 survey of community leaders and organizations showed that the coalition efforts produced many positive changes. Efforts of the Coteau Hills Coalition had a catalytic effect on the visibility of heart health issues.

## **Lessons Learned**

Through participation in workshops, Healthy Heart coalition members identified lessons learned in the areas of building coalitions and developing community-based initiatives. The process of building and maintaining coalitions required significant time and energy, but yielded a synergy that contributed to program success. Coalitions were especially successful in advocacy and in resource sharing. Among elements identified as critical to development of community-based initiatives were adequate access to resources, establishment of clear expectations, strategic action planning, and open communication.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN THE CZECH REPUBLIC

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### Summary

The Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in the Czech Republic (CR) is one of many ongoing CINDI programs that address the growing problem of noncommunicable diseases (NCDs) in European countries and elsewhere. CINDI-CR was initiated in 1983 with the support of central institutions in Prague and the World Health Organization. The program offers a myriad of educational activities and publications that target NCD risk factors, including cardiovascular disease, in the Czech population. These interventions focus on nutrition, smoking, stress, physical activity, alcohol consumption, and drug abuse. Currently, 33 regions participate in CINDI-CR, and this number is growing.

### Development and Implementation

CINDI-CR programs include both individual and community-based prevention approaches. General practitioners often carry out individual interventions; district hygiene stations implement both community and individual prevention activities. Welfare Promotion Centres that concentrate on primary and secondary disease prevention are in operation at hygiene stations in all CINDI regions. Since 1990, program activities have increased and their quality has improved. In 1994 alone, 37 projects were initiated with funding from the National Health Programme. A collaborative effort with the National Institute of Public Health produced new volumes of a manual on disease prevention for general practitioners. Programs currently in development will set up teams of clinicians and doctors that will focus on primary prevention for people at risk.

### Evaluation and Results

In 1991 and 1995, investigators collected extensive data on biochemical and behavior indicators in representative populations of various CINDI districts. Over the 4-year period, investigators observed declines in body mass index and in blood levels of total and high density lipoprotein cholesterol. Blood pressure declined among women. Smoking decreased among men and increased among women; however, neither trend was significant. The proportion of men and women who ate smoked meats and pork declined, whereas the proportion of men and women who ate fish and vegetables increased. Alcohol consumption increased for both sexes. These changes have been accompanied by favorable changes in morbidity and mortality. Written reports showed that the number of interventions implemented in clinics to reduce smoking, promote exercise, control stress, or modify diet increased from 1991 to 1994.

### Lessons Learned

Changes in many biochemical and behavior indicators suggest that CINDI-CR has improved the health status of the Czech population. Tested methods of health promotion and disease prevention will be made available to all health professionals, and the National Institute of Public Health will continue to expand the network of participating districts.

## THE NATIONAL PROGRAMME OF HEALTH PROMOTION IN THE CZECH REPUBLIC

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### Summary

The National Programme of Health Promotion was established in 1992 to provide an organizational, economic, and political framework for improving the health status of the Czech population. Funded by the Czech government, this ongoing program aims to (1) reduce basic health risks such as smoking, poor nutrition, and lack of physical activity; (2) devise and implement health promotion strategies in the community, family, school, and workplace; and (3) ensure conditions for prevention in the health insurance system and in national and community budgets. An overall priority is to achieve changes in lifestyle.

### Development and Implementation

In 1991, on the initiative of the Chief Hygiene Officer of the Czech Republic, a working group developed the National Programme of Health Restoration and Promotion—Medium Term Strategy as part of a new system of health reform. One task of the program was to prepare an implementation project that became the National Programme of Health Promotion. Each year the Czech government contributes US\$1.25 million for the implementation of health promotion projects selected based on their potential to improve health and economic viability. One project involves interdisciplinary teams of cardiologists, lipidologists, and physicians who provide comprehensive treatment and preventive care for patients who have had or are at risk for myocardial infarction. These efforts are supported by individual, group, and community interventions directed at the general population. A second project provides healthy recipes and instruction to workers in school kitchens to improve the nutritional standards of schools.

### Evaluation and Results

The program implemented 130 projects in 1995. Evaluations are pending or under way for many of these projects. Targets have been established for priority areas: For example, the target for smoking is to achieve a marked decline in smoking prevalence and cigarette consumption by the year 2000. The campaign for healthier school meals has led to changes in practices of many school kitchens, including a reduction in the amount of animal proteins and fats used in food preparation.

### Lessons Learned

Several barriers impede the establishment of national health programs. For example, many Central and Eastern European countries are undergoing economic transformation; as a result, governments devising budgets may overlook or neglect health promotion programs. In addition, there is a shortage of effective legislation on public health promotion, in part because of a perception that health promotion is the concern of individuals and cannot be prescribed by law. However, legislation can define the scope of prevention responsibilities for nations and communities.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN ESTONIA

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### Summary

Official statistics indicate that coronary heart disease rates in Estonia are among the highest in the world. Estonia has participated in the World Health Organization Countrywide Integrated Noncommunicable Diseases Intervention (WHO/CINDI) program since 1986. The goal of CINDI Estonia is to reduce the prevalence of coronary heart disease, other noncommunicable diseases (NCDs), and risk factors associated with NCDs (e.g., smoking, sedentary lifestyle, hypercholesterolemia, and hypertension). In 1987, a WHO Collaborating Centre was established at the Institute of Cardiology (IC) and the Institute of Experimental and Clinical Medicine (ICEM) in Tallinn. CINDI Estonia initially involved employees at nine industrial enterprises and has since expanded under the leadership of the National CINDI Program Council, which was established in 1993.

### Development and Implementation

Initially, program development involved designing and testing investigation methods and determining their specificity and sensitivity. The next phase was a demonstration project involving 15,000 employees at nine industrial enterprises. Tasks of the demonstration project included identifying NCDs, risk factors, and ways to reduce risk factor levels among employees; introducing prevention methods into the medical care system; altering attitudes of the population toward health promotion; and attracting participation from other sectors (e.g., trade unions, the media, sports organizations). Intervention approaches included a population strategy, directed at all employees, and a high-risk strategy, directed at employees who showed symptoms of or risk factors for NCDs. The population strategy included educational activities promoting healthy lifestyles. Employees with NCD symptoms were sent to specialists at the IC or the ICEM; at-risk employees were given verbal and written recommendations and educational materials. Factory physicians, nurses, and specialists at outpatient clinics and hospitals carried out intervention activities under the guidance of researchers of the IC and ICEM. Further development of CINDI Estonia has been conducted under the direction of the National CINDI Program Council. Three new demonstration areas were defined in 1994. In addition, the Estonian Centre for Health Education and Health Promotion was established in 1993 to implement national health promotion programs, including the National Heart Program and the Anti-Smoking Program. A public health network has been in place since 1995.

### Evaluation and Results

Comparison of surveys conducted at the beginning of the demonstration project and 5 years later revealed changes in risk factor prevalence among employees. Each survey involved 1,600 to 1,700 randomly selected men and women aged 25 to 64. After 5 years, the prevalence of hypertension decreased from 39 to 28 percent among men and from 28 to 22 percent among women, and mean systolic and diastolic blood pres-

## Lessons Learned

sure decreased for both men and women. Smoking decreased from 51 to 45 percent among men and from 18 to 15 percent among women (for women, the decrease was not statistically significant). High body mass index and unhealthy diet were the most stable risk factors for NCDs; these factors improved only slightly with intervention.

Although Estonia is experiencing serious economic difficulties, CINDI Estonia has proven to be a powerful approach to improving the health of Estonians. The program has been expanded to include the entire population of Tallinn, has incorporated activities focused specifically on children, and should be further developed at the national level.



## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN POLAND

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### Summary

The Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Poland was initiated, under the auspices of the World Health Organization (WHO) and the management of the Department of Social and Preventive Medicine at the Medical University of Łódź, in 1992. Program efforts are designed to decrease the risk for cardiovascular and other noncommunicable diseases (NCDs). Interventions directed at reducing common risk factors for NCDs, including smoking, alcohol use, physical inactivity, hypertension, and high blood cholesterol levels, are conducted in medical universities, primary and secondary schools, and workplaces. The program encompasses 10 demonstration areas and benefits more than 1 million people.

### Development and Implementation

The program was initiated as a response to extremely high morbidity and mortality due to NCDs in Poland, especially in the Łódź region. Initially, program development involved organization and education of staff. Conferences were held for physicians and postgraduate courses on health promotion and prevention of NCDs were provided to over 200 general practitioners. Before initiation of intervention activities, a population survey was conducted in three demonstration areas to identify the distribution of risk factors for particular circulatory system disorders. Interventions were designed and implemented; these have included lectures and art competitions held at primary schools to convey the harmful effects of smoking, training of medical professionals to facilitate early detection of alcohol problems, and sports and recreational classes to promote physical fitness in schools. A manual on health promotion at the workplace has been translated into Polish and used to encourage physical activity among employees. CINDI Poland workers have participated in international meetings concerned with developing, expanding, and evaluating CINDI programs, and have participated in preparation of the Eurohealth Action Plan.

### Evaluation and Results

Evaluation of CINDI Poland has included process evaluation as well as periodic screening to determine risk factors for NCDs. Because the program is still young, evaluation data are as yet unavailable. However, surveys of school children to determine their knowledge about NCDs have shown that educational activities increase this knowledge. In addition, programs for promoting physical fitness in schools have reached about 8,000 students. In Ostrów Wielkopolski, a Youth Festival attracted about 1,000 participants and provided an opportunity to distribute thousands of brochures about addictions and healthy lifestyles. In the same demonstration area, an early detection program screened about 3,000 people for alcoholism risk factors and provided support as appropriate. Since initiation of the program, the Polish Parliament has passed legislation restricting smoking and increasing the number of physical education classes at schools.

### Lessons Learned

## Lessons Learned

International collaboration has played an important role in the development of CINDI Poland, in the evolution of evaluation strategies, and in the creation of new program components. The program is a model toward achieving aims of the WHO strategy to provide Health for All by the Year 2000. Each year, interest in NCD prevention has increased in different regions of the country. This interest has led to the establishment of new CINDI demonstration areas and expansion of CINDI Poland.

## COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN PORTUGAL

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### Summary

In 1987, Portugal became the eleventh member state of the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme. Conducted with support from the Portuguese Ministry of Health, CINDI-Portugal takes a multidisciplinary, multisectoral approach to preventing cardiovascular disease, cancer, diabetes, mental illness, and other noncommunicable diseases (NCDs). Program activities focus on reducing risk factors common to many NCDs, including poor nutrition, physical inactivity, stress, tobacco use, and alcohol misuse.

### Development and Implementation

A coordinating council and a group of directors from Portugal's National Institute of Health, National Institute of Preventive Cardiology, and Primary Health Care Directorate defined objectives and guided program planning and implementation. The program began as a demonstration project in Setúbal District (with a population of about 770,000), where each of 15 health centers prepared baseline surveys and demographic reports that were used to plan health promotion and disease prevention activities. At the outset, these activities were primarily concerned with improving nutrition; gradually, other risk factors—smoking, alcohol abuse, physical inactivity, and stress—were addressed. Program activities have included annual health fairs, a healthy bread (low salt, high fiber) campaign, and worksite health promotion programs. CINDI Week has become an annual event. Each CINDI Week focuses on a specific health issue, such as physical activity, and has helped generate public enthusiasm and involvement. Various health professionals (e.g., general practitioners, nutritionists, nurses, social workers) have collaborated with the media, trade unions, and governmental and nongovernmental organizations to conduct interventions. Health education teams have received training on nutrition, alcohol problems, and health education planning and teaching approaches. Successes of the project in Setúbal District have led to the adoption of the CINDI program throughout Portugal. Mass media has become the main vehicle for educating the public, and recently, pharmacies have become involved in CINDI activities. Coordinators of CINDI Portugal have established an international network that includes Brazil and Portuguese-speaking communities in Africa, Europe, and North and South America.

### Evaluation and Results

The initiation of CINDI activities in Portugal has mobilized communities to take personal responsibility for health. Evaluations have shown that community interest in health problems has increased, mortality rates due to stroke have declined, and hypertension control has improved significantly since the program began.

## Lessons Learned

At first, the concept of health promotion and disease prevention was not well-accepted in the community and among health professionals. In addition, communities and even health professionals were initially resistant to the concepts of disease prevention and health promotion. Training efforts and communication among health education teams and Health Center Directors helped to overcome these obstacles. Government funding for CINDI activities has been limited; contributions from the private sector have proven valuable in program implementation.

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### Summary

The Coronary Risk Factor Study (CORIS) was designed to assess whether community-based interventions could effectively decrease the prevalence of risk factors for coronary heart disease (CHD) among white South Africans. Interventions focused on reducing high blood pressure, blood cholesterol levels, and stress, and encouraged exercise and smoking cessation. CORIS was a collaborative effort of researchers from the South African Medical Research Council, the Human Sciences Research Council, and the Department of Health Services and Welfare, House of Assembly. The active intervention program began in 1979 and ended in 1983. Effects of interventions were evaluated at the end of the intervention program and re-evaluated in 1991.

### Development and Implementation

CORIS was planned in response to research showing high prevalences of CHD mortality, CHD risk factors, and familial hypercholesterolemia among Afrikaans-speaking South Africans. The study consisted of two cross-sectional risk factor surveys conducted before and after a 4-year intervention program designed to address multiple CHD risk factors; additional follow-up surveys were conducted 8 years after the intervention program. A low-intensity intervention (LII) was implemented in one community and a high-intensity intervention (HII) in another; a third community served as a control. Participants in all three communities were informed of their risk factor status as determined in the initial survey; from this point until the final survey, further contact with the control community was avoided. In both LII and HII communities, interventions began with a 4-month general awareness campaign. A series of programs followed, aimed at: (1) reducing blood pressure through regular checks, lower salt intake, weight loss, and medication when appropriate; (2) reducing blood cholesterol through diet modification; (3) managing stress; (4) increasing physical activity; and (5) avoiding or quitting smoking. The series was repeated over the next 2 years. In addition, both intervention communities were exposed to billboards, posters, mailings, and news coverage. Community fun runs and family walks were organized, and blood pressure stations were set up for screening, for distribution of educational materials, and to provide non-drug management of risk factors. Additional efforts in HII communities included interpersonal approaches, such as small-group interventions for people at high risk for CHD and active follow-up of people with hypertension.

### Evaluation and Results

For baseline and follow-up studies, respondents in intervention and control communities completed a questionnaire on knowledge of CHD risk factors, smoking habits, and medical history. Body weight, blood pressure, and total and high-density lipoprotein (HDL) cholesterol levels were determined, and an arbitrary summary index of overall risk was computed. The effectiveness of interventions was determined by comparing baseline and follow-up measures. Results from surveys conducted immediately following interventions indicated significant reductions in blood pressure, smoking, and

overall risk score among participants in LII and HII communities compared with participants in the control community. Decreases in total cholesterol levels were observed for all communities; however, participants in LII and HII communities had significantly higher HDL cholesterol levels. Comparison of overall risk factor scores revealed no apparent differences between LII and HII communities. At 12 years, the risk factor profile for participants in the LII community was significantly more favorable than that of the control town. However, the risk factor profile of the HII town matched that of the control town, suggesting the influence of secular trends that increased knowledge of risk factors regionally.

## Lessons Learned

The findings show that CORIS community-based interventions were successful in the short term. In addition, although the investment of time, finances, and personnel in the HII community was much greater than that of the LII program, the LII program performed about as well as the HII program as determined in the first follow-up survey. Over the longer term, the lack of differences between HII and control communities suggests the influence of secular trends—an increased awareness of CHD risk factors regionally or nationally. Results of the LII community suggest that local factors enhanced secular trends. The main lesson learned is that broad-based media and education interventions can be effective. Components of the LII programs are currently being incorporated by health services in communities across South Africa.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN SLOVAKIA

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### Summary

The Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Slovakia, begun in April 1993 by the National Center for Health Promotion with collaborative support from the World Health Organization, is designed to build effective approaches to primary prevention of heart disease among Slovaks. Program goals, strategies, and methods follow the guidelines of the international CINDI Programme. The Slovakian program employs individual counseling to help people understand and apply knowledge of risk factors for cardiovascular disease (CVD), such as smoking, obesity, and physical inactivity, to the prevention of heart disease.

### Development and Implementation

In spring 1992, public health specialists at the Ministry of Health, Postgraduate School of Medicine, and the Specialized Public Health Institute of Banská Bystrica district assessed conditions, needs, and opportunities for beginning a primary prevention program. The assessment identified a group of public health officials to start new activities and developed an organizational structure based on information from public health institutes in each of 38 districts, the National Center for Health Promotion, and the Postgraduate School of Medicine. The assessment also revealed a need for more information about the epidemiology of noncommunicable diseases, for practical experience in coalition building and marketing to promote prevention activities, and for better collaboration between public health and primary care professionals. Based on this assessment, the National Center for Health Promotion began a demonstration project in Banská Bystrica district, which has a population of about 180,000 people, 120,000 of which are aged 15–64 years. An initial survey involving public health professionals and selected general practices in the district showed that the population was relatively well-informed about health issues but lacked the skills to implement this knowledge, and that most people preferred individual counseling to group activities. Counseling centers were organized and equipped, and individual counseling interventions began. The Canadian Heart Health Test was used to screen for individual and familial CVD risk factors and as an indirect means to assess knowledge about CVD risk factors. Several months of promotional activities attracted large numbers of participants. Four years later, program efforts had established 34 counseling centers throughout Slovakia to provide health promotion and primary prevention activities across the country.

### Evaluation and Results

Program efforts are being evaluated by assessing cardiovascular risk factor prevalence every 3 years and mortality rates every year. In addition, intervention populations are screened every 2 years to determine the level of knowledge and practice regarding the modification of risk factors. As yet, results of these evaluations are unavailable.

### Lessons Learned

The lack of public health professionals who had training in noncommunicable disease interventions presented a serious problem to program implementation. However, an excellent tradition of interventions in communicable diseases provided a basis upon which to train professionals.

## POLICY IMPLICATIONS OF ADULT MORBIDITY AND MORTALITY IN TANZANIA

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### Summary

Policy Implications of Adult Morbidity and Mortality, also known as the Adult Morbidity and Mortality Project (AMMP), is an investigation of all major causes of morbidity and mortality among adult Tanzanians. Conducted by the Ministry of Health, the project was initiated in August 1991 and is funded through March 1997. Project objectives include (1) defining the causes and rates of mortality in rural and urban communities of Tanzania; (2) defining biological, social, economic, and environmental determinants of poor health and premature death, toward identifying vulnerable populations; (3) assessing the social and economic impact of health problems; and (4) testing and implementing cost-effective interventions that reduce disability, enhance individual well-being, and improve economic productivity. AMMP is funded by the British Overseas Development Administration.

### Development and Implementation

AMMP is a continuation of a Noncommunicable Diseases (NCDs) Project begun in 1987 to determine the frequency of diabetes, cardiovascular diseases, and associated risk factors and establish a model system for treatment and prevention of NCDs. Pilot projects were initiated in Dar es Salaam and in selected villages in Morogoro Rural and Hai Districts. Surveys assessed the prevalence of NCDs and villagers received treatment for diabetes and hypertension. Funding for the first project ceased in 1988. To obtain further funding, researchers were challenged to describe the contribution of NCDs to the overall burden of illness and death in Tanzania. AMMP was funded as a project to collect and publish data on all causes of morbidity and mortality, data that can then be used for disease prevention and control. The first stage of AMMP entails surveys of the adult population in the same regions as its parent project. The next stage involves the development of interventions. One project, the Essential Noncommunicable Disease Health Intervention Project, is already under way and will provide protocols and training packages for prevention and treatment in Tanzania, Mauritius, and Cameroon.

### Evaluation and Results

Surveys of approximately 160,000 adults ages 15–59 indicate age-specific mortality rates in Tanzania that are up to 43 times those of England and Wales. Preliminary analyses show that HIV disease is a common cause of death. A recent study determined risk factors for coronary heart disease (CHD) among approximately 8,500 Tanzanians 15 years of age living in Morogoro, Kilimanjaro, and Mara regions. The study found a low prevalence of CHD risk factors: For example, blood cholesterol levels were well below the World Health Organization recommended upper limit of 200 mg/dl and the prevalence of obesity was very low in all regions studied. However, hypertension was increased in Kilimanjaro relative to Morogoro and Mara.

### Lessons Learned

Until recently, information about causes of morbidity and mortality among Tanzanians was nearly nonexistent. Cause-specific mortality data are essential for policy and planning of interventions. The low rates of CHD risk factors among Tanzanians suggests that at present, prevention and control programs should place more emphasis on other chronic diseases, such as hypertension, diabetes, and cancer.



## TUNISIA'S NATIONAL PROGRAMME TO CONTROL CHRONIC DISEASE

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### Summary

Tunisia's National Programme to Control Chronic Disease was initiated in 1993 and is sponsored by Tunisia's Department of Basic Health Care within the Ministry of Public Health. Its goal is to standardize primary health care approaches to screening, diagnosis, treatment, and follow-up of chronic conditions. Another goal is to establish a large-scale campaign using schools and mass media to educate people about the influence of lifestyle on development of cardiovascular disease (CVD). Risk factors targeted include obesity, hyperlipidemia, diabetes, and hypertension.

### Development and Implementation

Recent improvements in education and in the standard of living have meant increased life expectancies for Tunisians. However, these changes have been accompanied by an increased prevalence in chronic noncommunicable diseases (NCDs) such as CVD. Tunisian health authorities agreed to initiate a national program to counter this problem. Public health officials held a meeting of physicians, university professors, nurses, and other health care professionals to consider trends in disease incidence and to establish an implementation committee. In 1992, the Chronic Disease Commission was created to begin work on the program, which is to be introduced in specific regions then expanded to a national network. A National Public Health Seminar held in 1993 introduced a program for treatment of hypertension, one of the primary risk factors for CVD. This program includes guidelines for examining and treating patients at basic health care centers and for providing education about diet, physical activity, and other means of preventing and managing hypertension at local, regional, and national levels. Some studies of CVD risk factors conducted in different regions of Tunisia represent an initial step toward identifying health needs of those populations. The next step will be to introduce a program to promote cardiovascular health in those regions, and in the country as a whole.

### Evaluation and Results

The program has yet to be evaluated. However, baseline information has been collected on the quality of care given to patients with chronic disease before program implementation. Changes will be assessed following implementation.

### Lessons Learned

One problem experienced in carrying out the program has been lack of patient compliance with treatment. Efforts to educate patients and increase the availability of medicines may help encourage compliance.

## NATIONAL PROGRAMME OF PREVENTION OF COMMON NONCOMMUNICABLE DISEASES

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### Summary

The National Programme of Prevention of Common Noncommunicable Diseases, one of several Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) programs in Eastern Europe, was launched in 1996 with financial support from the World Health Organization. The program's immediate goals are to reduce smoking and other tobacco use, alcohol abuse, unhealthy eating habits, physical inactivity, stress, and other risk factors for noncommunicable diseases (NCDs). Its long-term goals are to reduce illness and death associated with cardiovascular and cerebrovascular diseases, cancer, chronic pulmonary diseases, diabetes mellitus, and mental disorders.

### Development and Implementation

Recent statistics have revealed that health conditions in Turkmenistan are worsening. Mortality rates have increased, and life expectancy has declined from 72 years in the 1960s to 66 years in the 1990s. Cardiovascular diseases cause 40 percent of adult deaths, and high rates of hypertension have been observed in sample populations. The decline in the population's health status has been blamed on an out-of-date health care system. In response, the president of Turkmenistan initiated a health care reform program, which then became the impetus for starting the National Programme for Prevention of Common Noncommunicable Diseases. The National Programme follows the standard CINDI format, and is designed to reduce risk factors through the implementation of primary and secondary prevention measures administered in the community and in primary care settings. Interventions use health education materials that promote a balanced diet, alcohol reduction, smoking cessation, and hypertension prevention. Radio talk shows and a weekly television show, *Health*, provide advice on disease prevention and health promotion. The program began in 1996 with intervention trials followed by a demonstration project in one of the districts of Ashgabat, Turkmenistan's capital.

### Evaluation and Results

No information is currently available.

### Lessons Learned

Program development and implementation has been slow, in part due to the resistance of authorities at the Turkmenistan Ministry of Health. Their skepticism was likely based, in part, on the failure of earlier "prevention surveillance" programs carried out by physicians in clinics to improve the population's health status. Difficulties in coordinating interventions by various international agencies also has slowed implementation. To help speed progress, community efforts have been mobilized.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN UKRAINE

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### Summary

The Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Ukraine was established through efforts of the Ukrainian Strazhesko Research Institute of Cardiology and the CINDI Programme of the World Health Organization (WHO). The overall goal of CINDI Ukraine is to improve the health of the population by developing integrated measures for preventing and reducing morbidity due to noncommunicable diseases (NCDs), such as cardiovascular and cerebrovascular disease. Interventions concentrate on reducing the incidence of common NCD risk factors, including hypertension, smoking, obesity, poor nutrition, and hypercholesterolemia, in the Ukrainian population. A second goal is to establish collaborative, intersectoral approaches to managing risk factors and promoting health.

### Development and Implementation

In 1992, the Ukrainian Ministry of Health requested that Ukraine be accepted into the CINDI program; acceptance was granted in May 1994. Four demonstration projects are under way in Kiev, Kharkov, Dnepropetrovsk, and Ivano-Frankivsk. Because epidemiological studies have shown that approximately half of adult Ukrainians have elevated cholesterol levels, the current focus of the CINDI Ukraine project is to reduce the incidence of this risk factor. Program activities include increasing physicians' knowledge of disturbances in lipid metabolism and associated diseases and of primary and secondary prophylactic methods, and educating people about normal and abnormal blood cholesterol levels and prevention of hypercholesterolemia. To assist in these efforts, the Ukrainian Lipid Center was established at the Research Institute of Cardiology. The Lipid Center has opened branches in 19 regions of the Ukraine. These branches provide local inhabitants with blood cholesterol checks as well as advice about correcting cholesterol levels and developing healthy lifestyles. The Lipid Center also produces and distributes printed materials and publications to promote good health and cholesterol control. Merck, Sharp and Dohme of the United States has provided sponsorship and equipment to help establish Lipid Center branches.

### Evaluation and Results

CINDI Ukraine will be evaluated by monitoring specific risk factors and health parameters in demonstration areas. The effectiveness of Lipid Center activities will be assessed in terms of physician and patient knowledge about blood lipid and cholesterol levels and in terms of consumption of hypolipidemic drugs.

### Lessons Learned

Challenges to CINDI Ukraine include the country's unstable economic situation and insufficient health care resources. These challenges are difficult to overcome, but demonstration projects can proceed with financial help from WHO. Until the establishment of CINDI Ukraine, no mechanism was in place to promote health or to monitor blood cholesterol levels. Creation of Lipid Center branches across the country is a start toward correcting this situation.

## THE CHANGE OF HEART PROGRAMME

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### Summary

The Change of Heart Programme was a 10-year program that began in 1986 under the auspices of the Department of Health and Social Services. The Health Promotion Agency developed a range of actions to help reduce rates of smoking and high blood pressure, improve nutrition, encourage greater physical activity, and prevent alcohol misuse among all people of Northern Ireland. The overall goal of these actions was to reduce coronary heart disease (CHD) by 15 percent.

### Development and Implementation

Goals and activities set for the program have been incorporated into a larger framework outlined in the Department of Health and Social Services Regional Strategies for 1992–1997 and 1997–2002. A major baseline clinical study was conducted in 1990 to help assess progress toward achieving program goals, and to provide a basis upon which to develop program activities. These activities have involved social marketing techniques, high profile public education, and collaborative efforts with many organizations. Examples include the Healthy Eating Circle, which presents awards to restaurateurs and caterers who provide clean, nonsmoking areas and promote foods that are low in fat, sugar, and salt and high in fiber. The Healthy Eating Circle is operated in association with the environmental health services of each of 26 District Councils and with local health and social services boards. The Alcosense program and a campaign known as Drinkwise Day were initiated to raise public awareness of health problems associated with alcohol. To combat cigarette smoking, the agency started the Smokebusters Club, a club that presents fun ways for kids to reject tobacco use. Project Apex was developed as an eating and exercise program for schools, and a Health Through Exercise scheme was initiated to encourage doctors to prescribe exercise for their patients.

### Evaluation and Results

By 1993, CHD mortality had been reduced by 25 percent, well over the targeted reduction goal of 15 percent. The agency then set more stringent goals to reduce CHD mortality by 30 percent in 1997 and by 40 percent in 2002. Smoke-free public places have increased in number, and there has been a trend toward decreased fat consumption and increased fiber consumption. Despite these favorable results, evaluators feel that progress is in some ways slow. For example, although smoking among adult males has declined by nearly 25 percent, smoking rates among adult females have not fallen and remain highest in the lower socioeconomic groups. In addition, a 1992 survey showed that 70 percent of men and 80 percent of women do not exercise enough.

### Lessons Learned

Some groups, such as the poor, were especially hard to reach. For this reason, although public education programs at the national level are important, community-based programs are essential. Finite resources for highly successful programs were sometimes an issue: For example, the Healthy Eating Circle membership has grown to about 700 establishments, necessitating review of how the program will be managed and supported in the future.

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## Summary

The National Primary Care Facilitation Programme began as the Oxford Prevention of Heart Attack and Stroke Project in April 1982. Funded by the Stroke Association, the project's aim is to prevent stroke and coronary heart disease (CHD) among men and women aged 35–64 by identifying risk factors (e.g., high blood pressure, smoking, obesity) in a general practice setting. Initial goals were to examine the role of a “facilitator” with primary care training who helps to incorporate preventive medicine in general practice and to produce a prevention model adaptable to other health problems.

## Development and Implementation

The program began in response to a report by the Royal College of General Practitioners stating that if existing knowledge were applied, about half of all strokes and one-fourth of CHD deaths among people under 70 could probably be prevented (*Prevention of Arterial Disease in General Practice*, Report No. 19, 1981). A 3-year controlled trial was conducted to test a model using a facilitator and health checks by nurses to put preventive medicine into practice. Facilitators were responsible for acquainting general practitioners, nurses, and other staff with the potential to reduce risk factors for arterial disease and stroke; providing guidance and tools to identify risk factors among patients; and conducting baseline and follow-up audits to measure progress. Staff offered health checks to all patients who visited the practice. Health checks were used to determine risk factors, provide advice about smoking and diet, and refer patients for treatment as necessary. By 1986, 23 facilitators had been appointed to assist general practitioners covering a population of 10.5 million. Adoption of the facilitation model continued to expand, and in 1990 the project was renamed to reflect the national adoption of the model. Currently, nearly 500 facilitators cover 96 percent of the Health Authority districts and an estimated 56 million people in the United Kingdom.

## Evaluation and Results

The first trial included audits in three experimental and three matched control group practices in Oxfordshire. During an initial audit, more than 7,000 medical records of patients in three experimental practices were examined for documentation of high blood pressure, smoking habits, and obesity. Follow-up audits, conducted in the experimental and control practices 2½ years later, included a review of medical records to establish whether the level of risk factor identification had increased. Practices that had facilitators and offered health checks showed a highly significant increase in risk factor recordings compared with control practices. In addition, in 1990 the net cost to each practice was only £13.25 a week (about US\$25). There was no intent to examine the impact of the program on the rate of strokes and heart attacks, in part because the study population was too small to detect significant changes; nonetheless, epidemio-

## Lessons Learned

logic studies indicate a continuing decline in heart disease mortality in Oxfordshire. The success of the trial stimulated widespread adoption and international interest in the model. The Netherlands developed a similar approach to cardiovascular risk management in its HAPP project. The model has been applied to smoking cessation in Australia, preventive medicine in Canada, and cancer prevention in the Belgium and the United States.

Results of a recent survey identified a need for improved nutrition education and training of general practitioners, nurses, and facilitators to enhance their ability to give appropriate advice to patients. Two recent studies show that primary care-based, nurse-led health checks can achieve some change in coronary risk factors. Health checks are only the beginning of a successful preventive program, however. The challenge is to provide effective interventions and follow-up.

## PLANNED APPROACH TO COMMUNITY HEALTH

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### Summary

The Planned Approach to Community Health (PATCH) was developed in the mid-1980s as a model for planning community health promotion programs. Although originally developed by the public health sector, PATCH has been adapted and used by universities, private hospitals, businesses, voluntary health organizations, and other groups. The model has been applied in hundreds of diverse communities to address a range of health problems, including cardiovascular disease, teen pregnancy, drug abuse, access to health care, and quality of life. Over the years, PATCH has achieved wide dissemination and acceptance as a community development model that helps communities to mobilize; collect and use local data; set priorities; design and implement effective interventions; and perform process, impact, and outcome evaluations.

### Development and Implementation

PATCH was developed by the National Center for Chronic Disease Prevention and Health Promotion at the Centers for Disease Control and Prevention (CDC) in partnership with state and local health departments and community groups. PATCH follows the PRECEDE (predisposing, reinforcing, and enabling constructs in educational/environmental diagnosis and evaluation) model, and incorporates five elements that CDC considers critical to success in developing a community health promotion program: (1) community members participate in the process; (2) data guide the development of programs; (3) participants develop a comprehensive health promotion strategy; (4) evaluation emphasizes feedback and improvement; and (5) the community capacity for health promotion is increased. The model encourages the formulation of a comprehensive intervention plan that applies multiple strategies (e.g., educational, policy, environmental) within various settings (e.g., health care facilities, schools, work sites) and that targets the community as a whole as well as specific groups. A recently revised manual, *Planned Approach to Community Health: Guide for the Local Coordinator 1995*, was issued, joining concept guides, meeting guides, tools, and handouts for carrying out PATCH in a community as well as guidelines for adapting the process to a particular community.

### Evaluation and Results

Between 1988 and 1992, the PATCH process was evaluated three times. A national working group carried out the first evaluation; and researchers at the University of North Carolina and the Research Triangle Institute carried out the second and third evaluations. Among other findings, evaluators determined that using PATCH increases within the community (1) organizing and data use skills, (2) awareness and interest in health, (3) networking and ability of groups and organizations to work together, and (4) the number of health promotion interventions activities.

## Lessons Learned

To plan an effective intervention, a community must go through its own process of assessing needs, setting priorities, formulating solutions, and establishing program ownership. Interventions are more effective if linkages are formed both within the community and between the community and state health departments, universities, and regional and national organizations that can provide data, resources, and consultation. A program will be more successful if it has a strong and enthusiastic coordinator and program champion; adequate resources; supportive management within key organizations; and true ownership by the community. Community ownership helps ensure that the interventions are appropriate and effective.



# COMMUNITY-BASED PROGRAMS ADDRESSING MULTIPLE FACTORS IN HEART HEALTH

**C**ommunity-based programs provide an opportunity to involve all members of society in the common goal of heart health. Like national programs, community programs often involve a combination of top-down and bottom-up efforts, but the interaction is on a smaller, more personal scale. Individuals become an invaluable resource in a community project and can often produce change with surprisingly little material support.

The effectiveness of individuals, however, hinges on what is sometimes called technology transfer: outside agencies, applying minimal resources and training, bring knowledge and process into the community, where they are internalized as a vital, truly community-based program. In this setting, all members of society can pursue the common goal of heart health.

This section includes many examples of programs that have effectively applied technology transfer and successfully empowered communities. Among these are the North Karelia and Stanford community projects, which were the first to demonstrate that entire cities and counties can benefit from heart health interventions, that institutions established as part of a program can remain long after interventions have ceased, and that successful project sites can become resource centers for other groups who wish to launch health promotion programs.

Community programs are especially important for targeting unique, underserved groups, largely because the people who live in communities know best who their underserved are and how they can be reached. Several projects have specifically targeted underserved populations, including the Pawtucket Heart Health Program, the Bootheel Project, the Otsego-Schoharie Healthy Heart Program, the Stanford Community Projects, and the Good Hearted Glasgow Campaign. For some projects, such as Heart to Heart, initial efforts did not reach a minority group. The experiences

of Heart to Heart underscore the value of process evaluation as a way to measure differences in program effects across population groups.

For several programs, including the Stanford Community Projects and the Global Project in Cienfuegos, financial constraints were cited as a barrier. In those two cases, this hurdle was overcome: funds were reallocated, and organizations raised money to augment support for public health measures and to increase program longevity and effect. As part of the Stanford projects, public health officials were trained to apply for outside funding.

Efforts of the Pawtucket Heart Health Program (PHHP) exemplify how health changes can be achieved with minimal resources by enlisting the aid of thousands of community volunteers. The Otsego-Schoharie Heart Health Program has also offered far-reaching, low-cost interventions to circumvent financial constraints, not only through recruiting volunteers but by organizing rural villages into more efficient program units.

Collaboration is a key element in community-level prevention efforts. Virtually all of the projects in this section cite coalition building and intersectoral collaboration as essential; without input from all levels of society, an intervention would be less likely to reach the entire community. The Martignacco Project, for example, involved collaborative efforts with the government, public health agencies, hospitals, women's groups, athletic clubs, and the food industry.

For community programs as for national programs, mass media has played a critical role in conveying health messages. The Otsego-Schoharie Healthy Heart Program, the Community Learning Action for Coronary Risk Abatement Program, the Stanford Community Projects, the North Karelia Project, and the program for Prevention and Control of Noncommunicable Diseases in Tianjin have all relied heavily on mass media as a cost-effective means to spread the word. Health advice incorporated into newspaper articles, flyers, mailings, billboards, and television and radio programs has reached many more people than would have been reached by individual counseling alone.

School-based activities can be important components of comprehensive community programs. Among programs that have had positive influences by involving schools are the Stanford Community and North Karelia projects; the Otsego-Schoharie Healthy Heart Program; the Regional Project for Prevention of Cardiovascular Disease in Friuli-Venezia Giulia, Italy; and the Inter-Tribal Heart Project.

Worksite-based health promotion programs can also help bring about favorable changes in health risks and behaviors (The Catalonia Declaration). For example, worksite hypertension screening programs will give a large number of people greater access to information sessions, educational material, and follow-up with health professionals. Worksite interventions have produced positive effects in various community programs, including the Otsego-Schoharie Healthy Heart Program, the Stanford Community Projects, the Inter-Tribal Heart Project, and the Good Hearted Glasgow Campaign. Worksite screening programs are most effective when they are part of a comprehensive, integrated approach.

Several programs have relied on health professionals to reach target populations. For example, as part of the Regional Project for Prevention of Cardiovascular Disease in Friuli-Venezia Giulia, Italy, and the Inter-Tribal Heart Project, physicians have been trained and primary care facilities included in prevention efforts. These approaches have helped to reach high-risk individuals as well as provide them with specific interventions.

Finally, leadership and persistence are essential in spearheading community prevention efforts, as exemplified by the Program of Chronic Disease Control in Dong Cheng, Beijing, China. By persevering in their desire to initiate prevention measures, a few “program champions” at the Institute of Epidemiology were able to gain the support of local authorities in implementing the program. The result has been the reduction of risk factors for chronic disease in Dong Cheng and the extension of the program to seven other cities in China. The involvement of such program champions can ensure community program sustainability and institutionalization.

Many of the approaches described in this section have been extended to other communities. The Martignacco Project has expanded regionally, and the North Karelia and Dong Cheng projects have expanded nationally. Furthermore, the Stanford and North Karelia projects have been used internationally as model programs. In addition, several programs have grown from the North Karelia Project, including International Quit and Win (see Internationally Sponsored Programs). To have maximum effect, programs must strive to use basic tenets that can be replicated elsewhere. The Stanford projects have met this goal not only by producing positive changes in intervention communities that have been replicated elsewhere but also by distributing over 1.5 million prevention documents worldwide.

The success of these community studies can thus be attributed to three elements: (1) the empowerment of local organizations and individuals via effective technology transfer, (2) the institutionalization of skills and knowledge, and (3) the dedication of individuals in ensuring the continuation of the programs after initial interventions are complete.

## PROGRAM FOR THE PREVENTION OF CARDIOVASCULAR DISEASES OF ISCHEMIC ORIGIN IN THE PROVINCE OF BUENOS AIRES

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### Summary

The Program for the Prevention of Cardiovascular Diseases of Ischemic Origin in the province of Buenos Aires was initiated in 1995 by the Program for the Prevention of Infarcts in Argentina. The intent is to provide strategies for diagnosing and managing people with risk factors or manifestations of ischemic heart disease (IHD) who are beneficiaries of health care and social service systems. The program includes interventions designed to help modify IHD risk factors such as stress, sedentary lifestyle, smoking, hypertension, and diabetes. Objectives include decreasing morbidity and mortality due to IHD by increasing awareness of the feasibility and efficacy of prevention efforts, by enhancing accessibility to intervention strategies, and by helping social service systems reduce health care costs (e.g., costs of hospitalization, surgery, etc.).

### Development and Implementation

The program is to be carried out in two stages. The first entails disseminating information on prevention to beneficiaries and providers and surveying beneficiaries to assess cardiovascular health status and risk factors. The second involves providing medical consultations and clinical tests (e.g., blood tests for cholesterol and triglycerides, electrocardiograms) to beneficiaries, follow up, and program evaluation. Individuals at risk for heart disease are detected through distribution of a medical history questionnaire and coupon books for consultation and diagnostic tests. Beneficiaries are motivated by the questionnaire or by their own interest to participate in the program. Beneficiaries of the *Instituto de Obra Medico Asistencial* in the city of Florencio Varela will receive interventions in a pilot test of the program.

### Evaluation and Results

Existing information, combined with survey data, can be used as a basis for evaluating and monitoring program effectiveness. Evaluation also may involve specific indicators of program efficacy, efficiency, and impact. Similar programs are being implemented by other social works organizations elsewhere in Argentina.

### Lessons Learned

The high economic cost of cardiovascular disease can be measured both in terms of hospitalization expenditures as well as lost productivity incurred through illness, disability, or premature death. Resources spent on this program will represent a minimal investment relative to the cost of disease.

## ARBEITSKREIS FÜR VORSORGE-UND SOZIALMEDIZIN (WORK GROUP FOR PREVENTIVE AND SOCIAL MEDICINE)

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### Summary

In 1964, a network of independent community physicians established the Arbeitskreis für Vorsorge-und Sozialmedizin (Work Group for Preventive and Social Medicine), known as AKS. AKS programs are designed to prevent disease and promote health among communities of the county of Vorarlberg, a region that includes about 350,000 inhabitants. In frequent cooperation with the World Health Organization, AKS offers Vorarlberg residents comprehensive counseling and therapy programs in the early detection of disease, health promotion, and rehabilitation. Among various AKS activities are group programs, initiated in 1984, that are oriented to cardiovascular health. Risk factors targeted by AKS programs include poor nutrition, physical inactivity, overweight, and high blood cholesterol and lipid levels.

### Development and Implementation

For individual programs, AKS general practitioners (GPs) help to identify needs at the community level. Needs are incorporated into plans and then into structured projects, with the GP always serving as the focal point for feedback from the community. Within the scope of their own practices, physicians develop programs designed to promote individual responsibility for behavioral change. AKS offices provide a framework for disseminating information about health promotion to health policy makers, physicians, and patients. Examples of AKS activities include school programs that provide physical exams and other preventive efforts to students; general health examinations, carried out by GPs, that include a physical exam, blood count, tests for blood sugar and lipid levels, and counseling; and group programs designed to affect permanent change in health behavior. Two such programs include “Stay Healthy” for children aged 8–12 years who have weight problems; “A Healthy Heart” for people with stress and high blood lipid or cholesterol levels; and “Heartgroups” for people who have had or are at risk for a heart attack. Since the establishment of AKS, Vorarlberg has become a demonstration area for the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme.

### Evaluation and Results

Elected panels or teams and a scientific advisory board have developed standards for evaluating programs and established requirements for international comparisons. Participation of students in school programs has ranged from 96 to 98 percent, and the number of general health examinations has risen dramatically from 7,124 in 1974 to 35,500 in 1994. AKS has become a major force in the prevention of disease in Vorarlberg.

### Lessons Learned

The people of Vorarlberg have learned to seek medical advice when they are well—as a strategy to prevent becoming ill.

## PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES IN TIANJIN

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### Summary

In Tianjin, as elsewhere, noncommunicable diseases (NCDs) have surpassed infectious disease to become the major cause of death. Thus, preventing NCDs among Tianjin residents has become a major challenge. In 1984, the Department of NCD Control of the Tianjin Bureau of Public Health established a Four NCD Program as a means to prevent and control coronary heart disease (CHD), stroke, hypertension, and cancer. Project activities include community-based educational interventions directed at controlling three major risk factors for NCD: smoking, high salt consumption, and hypertension.

### Development and Implementation

Initial stages of program development involved establishing a management network, including public health bureaus in districts and counties, municipal professional institutes, a Center for Sanitation and Disease Prevention, medical colleges, and offices for heart and cerebrovascular diseases and cancer prevention and treatment. Demonstration sites were set up in urban districts within the city of Tianjin as well as in villages and towns nearby. A surveillance network was created to investigate incidence, prevalence, and mortality trends for NCDs and associated risk factors. Baseline surveys were carried out in 1985 and in 1989. A comprehensive, community-based intervention strategy was developed and conducted with guidance from domestic and foreign experts. Numerous health promotion activities were initiated. For example, more than 20 different types of educational materials have been distributed and more than 300 articles have appeared in newspapers and periodicals. Project efforts have produced a "diet guidebook" for distribution to every household in each demonstration site. More than 34 smoke-free institutions have been established, and 17,233 hypertensive patients have been detected in demonstration sites. The World Bank helped to fund the project, and collaborative efforts of the Tianjin Bureau of Public Health, the CDC, and the Institute of Health in Finland have facilitated training, technical guidance, and academic exchange. In 1991, the World Health Organization (WHO) accepted Tianjin as a member of WHO InterHealth. Since 1992, a NCD prevention and cooperation group was formed by Tianjin together with Beijing, Shanghai, Chengdu, Siping, and Baoji. The group has involved 20 cities and held workshops on NCD prevention and intervention research, national training classes on NCD control and prevention, and a national academic conference for sharing experiences on NCD intervention.

## Lessons Learned

Sample surveys and studies of risk factors compared residents of demonstration sites with residents in control sites. Results showed that health knowledge increased significantly and that smoking rates and salt consumption decreased significantly in demonstration sites. In addition, studies of disease indicators showed that from 1985 to 1993, the stroke mortality rate decreased by about 40 percent and the CHD mortality rate decreased by about 19 percent among residents in demonstration sites. These decreases contrast with the increasing rates of stroke and CHD mortality observed for the whole city and indicate a beneficial impact for interventions.

More than 10 years of effort has provided extensive experience in the control of NCDs. The Four NCD Program serves as a model for prevention programs in large and mid-sized cities that is effective, technically feasible, and affordable.

## PROGRAM OF CHRONIC DISEASE CONTROL—DONG CHENG, BEIJING, CHINA

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### Summary

From 1989 to 1996 the Chinese Academy of Preventive Medicine (CAPM) conducted a program to prevent cerebrovascular and cardiovascular disease in Dong Cheng, a small community in Beijing, by addressing risk factors such as smoking and salt intake. The program involved health education and management of hypertension and was delivered to residents through the local preventive health system.

### Development and Implementation

A disease surveillance program conducted in the 1970's and 1980's showed that chronic disease was the main cause of death and a major contributor to morbidity in China. The CAPM brought the problem to the attention of China's Ministry of Public Health and Dong Cheng's health bureau and community government, and launched discussions about the need for chronic disease prevention in journals and at disease control meetings. Next, with support from the Minister of Public Health and the community government, the academy began the prevention program in Dong Cheng. CAPM researchers separated residents of Dong Cheng into intervention and control groups and conducted a baseline survey in 1989. Experts from the CAPM worked with employees in the community government, the local primary health care system, and an anti-epidemic station to plan and implement interventions aimed at reducing smoking, improving diet, and controlling hypertension. Interventions included lectures, dissemination of educational materials, measurement of blood pressure, sports activities, and for smokers, a contract to quit smoking.

### Evaluation and Results

Surveys in 1989, 1991, and 1994 revealed smoking rates of 28 percent, 27 percent, and 26 percent, respectively, for the intervention group and 30 percent, 33 percent, and 29 percent, respectively, for the control group. In 1989 the daily salt intake for both groups was 12.5 grams; in 1994 the daily salt intake of the intervention group was 10 grams, compared with 11 grams for the control group. Thus over a 5-year period, reductions in smoking and salt intake were observed in both groups, with slightly greater decreases in the intervention group. The intervention group also showed favorable changes in hypertension control. No significant differences in mortality due to cerebrovascular or cardiovascular disease were observed in the two groups.

### Lessons Learned

The World Health Organization gave the Dong Cheng program its support and accepted it as part of their InterHealth Program. In 1993, experts from around the globe came to an InterHealth meeting in Beijing to discuss the Dong Cheng program and to exchange ideas. Based on the program's success, the Ministry of Public Health has decided to conduct similar programs in seven other cities.



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### Summary

The Global Project of Cienfuegos (GPC) is a comprehensive, community-based multi-disciplinary intervention project targeting groups at high risk for chronic noncommunicable diseases (CNCD) in the province of Cienfuegos. Initiated in 1989 in response to growing concern about CNCD in the province, the project was inspired by InterHealth and established with the sponsorship of the World Health Organization, the Pan American Health Organization, the Public Ministry of Cuba, and the Provincial Government of Cuba. An overall objective of the GPC is to improve the health, quality of life, and well-being of Cienfuegos residents. Specific goals include reducing the prevalence of such CNCD risk factors as tobacco use, hypertension, lack of exercise, obesity, hypercholesterolemia, and alcoholism through an integrated, community-level intervention; increasing participation in beneficial lifestyle changes; and serving as a model for similar projects throughout Cuba.

### Development and Implementation

The GPC was initiated by provincial authorities as a project that would include both individual-level interventions and a population-level intervention involving various sectors, organizations, and community groups. A Technical Advisory Group was formed in 1991 to make recommendations on policies and strategies of the project. A general protocol was subsequently approved by the Vice-Ministry of Medical Care of the Public Health Ministry (MINSAP). Work groups were established to develop principal strategies; these groups soon determined a need for specific subprojects to deal with education, social communication, publications, and other components of the GPC. The project combines three main strategies of community intervention. One focuses on providing preventive health care and controlling risk factors among individuals, a second on modifying lifestyles and environmental risks in the population, and a third on redirecting existing community resources to fulfill needs for health-related services as they arise.

### Evaluation and Results

The prevalence and distribution of risk factors for CNCD were assessed in 1991–1992 using a stratified, random sampling of the population to provide baseline estimates for a follow-up evaluation. A second assessment of the same cohort took place in 1994–1995. Although only preliminary results have been published—mostly in Cuba—they have provided valuable information about the success of the project in terms of changes in risk factor prevalence. The most dramatic change noted was a decline in the prevalence of hypertension from 42 to 34 percent. The 1994–1995 evaluation also examined various factors of project implementation that will provide data about feasibility, impact, and the effectiveness of the project's structure.

## Lessons Learned

Resources for printed educational and communication materials have been limited, but other strategies, including door-to-door communication, have helped minimize this difficulty. GPC activities provide new ways to involve all citizens in solving health problems related to CNCN. The program serves as a model that can be used by other Cuban provinces. In 1992, MINSAP released a document citing objectives and directions for improving the health of the Cuban population over the years 1992–2000; the GPC is seen as a contribution to examining how these objectives can be fulfilled.

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### Summary

The North Karelia Project began in 1972 as a project to prevent cardiovascular disease among residents of this province of Eastern Finland. The Finnish Heart Association coordinated the initial discussions, which included community representatives, national experts, and several representatives of the World Health Organization (WHO). Later, the program expanded to include other noncommunicable diseases. The project has shown that high rates of heart disease are not inevitable; community-based projects guided by experts can reduce rates dramatically.

### Development and Implementation

The project began following a petition from provincial representatives who had learned their province had extremely high rates of cardiovascular disease; several earlier epidemiological studies also stimulated creation of the project. The project had a board of directors (which ensured broad community support), a steering committee led by the county medical officer of North Karelia, and various working groups (e.g., on health education, smoking, nutrition) that included a large number of community representatives. Staff at the North Karelia Project office have defined program objectives, trained participants, coordinated and promoted activities, and assessed results, but community members have done most of the project work. Originally, the steering committee managed and executed the program; the various working groups functioned under the board of directors and the steering committee. In later years, project administration became more centralized, with much of the work carried out in the project office (in the provincial capital). Still, the project keeps close ties with many community organizations. County medical officers, physician chiefs at local health centers, public health nurses, voluntary organizations, and many other individuals and groups (e.g., sports organizations, berry and vegetable farmers) have become involved. Every public health nurse and physician has been asked to help modify risk factors of their patients and clients; opinion leaders in various villages have become project assistants; many health promotion efforts have taken place at worksites; national television broadcasts have targeted smoking and guidance about health; and national “quit and win” contests have been held to reduce smoking. Other initiatives have included cholesterol-lowering competitions between villages and youth and school projects. The North Karelia Project has become affiliated with and has contributed to development of WHO’s InterHealth and Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) projects, and has been involved in health promotion training and outreach worldwide.

### Lessons Learned

## **Evaluation and Results**

Surveys have been conducted every 5 years (from 1972 to 1992). Results show that over the long term, the project has been very successful. For example, cardiovascular mortality rates for men aged 35–64 decreased 57 percent from 1970 to 1992. The project also contributed to policy changes in health, agriculture, and commerce within Finland as a whole. For example, the food industry collaborated with the project to promote low-fat dairy products and sausage as well as salt reduction in several foods.

## **Lessons Learned**

The project shows that major change is possible in behaviors associated with heart disease. In 1972, some 90 percent of the population used butter on their bread; in 1992 only 15 percent did so. Fruit and vegetable consumption increased from about 20 kg per person annually in 1972 to 50 kg in 1992. Smoking dropped dramatically among men but actually increased among women. The North Karelia Project has provided examples of approaches to training and dissemination for other groups interested in community-based health promotion.

## COMMUNITY LEARNING ACTION FOR CORONARY RISK ABATEMENT

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### Summary

The Community Learning Action for Coronary Risk Abatement (CLARA) project is a spin-off of two independent programs under way in Udine, Italy, and Bremen, Germany. Directors of the Centre for Cardiovascular Diseases in Udine and the Institute for Prevention and Social Medicine in Bremen sought to develop a model for preventing cardiovascular disease (CVD) that is founded on established prevention principles and is culturally appropriate to diverse ethnic groups found across Europe. This cultural model, which is designed to educate people about CVD prevention, lifestyle-related CVD risk factors, heart attack symptoms, and ways to improve survival of heart attack victims, was tested in two pilot programs in communities of Bremen and Udine. The project was initiated in February 1995 and ended in February 1997.

### Development and Implementation

After obtaining approval from the European Union and the collaboration of local health agencies, a workshop was organized to convene international experts in health education and prevention, epidemiology, social sciences, and communications. The workshop produced a European Code for Cardiovascular Health and a survey tool to assess the population's awareness, knowledge, and beliefs regarding CVD risk factors and myocardial infarction. Teams in Udine and Bremen then used the survey in telephone polls to collect data for creating appropriate intervention campaigns. Interventions consisted mostly of mass media communications that were designed based on theories of social marketing and social learning; in addition to media campaigns, interventions relied on the publication and distribution of culturally appropriate materials. Community events to promote healthy lifestyles were planned in both areas. In Bremen, there was a particular emphasis on good nutrition; the Bremen team obtained the cooperation of restaurants, supermarkets, and factory cafeterias in promoting heart-healthy menus. The European Union financed interventions. Following a second telephone survey to evaluate changes resulting from the program, a final workshop will be held, and a joint publication describing the project will be issued.

### Evaluation and Results

The project will be evaluated based upon results from the two telephone surveys; results will be available after completion of the surveys. If results from the evaluation are favorable, the cultural model may be marketed throughout Europe. The objectives, methods, and experiences of CLARA may be disseminated to other European countries under sponsorship of the European Union.

## Lessons Learned

Among difficulties encountered in developing and initiating the program was bureaucratic red tape, which interfered with funding and delayed implementation of projects; to date, no simple solution to this problem has been found. In addition, geographical distances between the teams in Bremen and Udine created communication difficulties that were resolved in part by face-to-face meetings in both cities and by frequent use of telephone and fax machines.

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### Summary

The Martignacco Project began in 1977 through the efforts of the Udine Centre for Cardiovascular Diseases and the Council of Martignacco. The purpose of the project was to demonstrate the feasibility and efficacy of a comprehensive, community-wide program to prevent cardiovascular disease (CVD) in an area burdened with high CVD mortality. The intervention program has three components: a population strategy to educate all citizens about CVD risk factors and reducing risk for CVD; a high-risk strategy to reach high-risk individuals or groups; and a secondary prevention strategy to educate and rehabilitate patients with established CVD and help modify the course of the disease. Risk factors addressed included smoking, physical inactivity, and unhealthy diet. The project involves collaborative efforts of the World Health Organization (WHO), Italy's Health Council of the Friuli-Venezia Giulia Region, Udine's Santa Maria della Misericordia Hospital, the Martignacco City Council, and the local Heart League.

### Development and Implementation

In 1976, participants at a meeting sponsored by WHO considered whether successes of a community-wide CVD prevention program in North Karelia, Finland, could be achieved in different countries with diverse cultures. WHO experts drew up a protocol and guidelines for Comprehensive Cardiovascular Community Control Programmes, and Italy was one of a dozen European countries that agreed to implement the programs. Project planners focused on the Friuli-Venezia Giulia Region, where CVD mortality rates were 20 percent higher than the national average. Martignacco, a small town (5,000 citizens) in the region, was selected as an intervention site; a similar town was selected as a reference site. An agreement between the Martignacco City Council and the Udine Center for Cardiovascular Diseases was signed, and program activities began in 1977. Local administration and health care agencies helped to convert existing community structures to accommodate screening, health risk assessments, and community prevention efforts. Educational activities were developed to teach the community about CVD risk factors and ways to reduce risk factors. Community efforts included organization of heart-healthy cooking classes and creation of a fitness trail through the nearby hills. People at high risk for CVD received one-on-one counseling from program physicians at least twice a year. Secondary prevention efforts included a full rehabilitation program for heart attack patients and placed special emphasis on reducing the delay between diagnosis and treatment of myocardial infarction.

### Evaluation and Results

Both Martignacco and the reference community were surveyed at the outset of the program and 3, 5, 10, and 15 years later. Survey results have shown a decline in risk factors and a parallel decrease in total mortality (17 percent), cardiovascular mortality (29 percent), CHD incidence (31 percent), and stroke incidence (35 percent). A 20-year survey will soon be under way.

## Lessons Learned

The project's success confirms the effectiveness of comprehensive community-wide approaches for preventing CVD and demonstrates the value of community organization and empowerment in generating change. Publication of results stimulated the interest of other communities, which then requested help in establishing similar programs. In response, the Regional Health Authority asked the Udine Centre for Cardiovascular Disease to design and coordinate a regionwide program for CVD prevention.



## THE REGIONAL PROJECT FOR PREVENTION OF CARDIOVASCULAR DISEASE IN FRIULI-VENEZIA GIULIA, ITALY

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### Summary

In 1992, the Regional Project for Prevention of Cardiovascular Disease in Friuli-Venezia Giulia, Italy, was initiated in response to the devastating effects cardiovascular disease (CVD) has had on the people of this region. The project's goal is to combat CVD by implementing numerous prevention, intervention, and rehabilitation activities in hospitals, schools, restaurants, and other settings. Specific objectives include (1) reducing the incidence of myocardial infarction by 15 percent over 5 years by reducing the prevalence of hypertension, hypercholesterolemia, and smoking; (2) decreasing the loss of productivity that results from CVD; and (3) increasing public awareness of CVD prevention measures in the community, with special attention to school children. The 5-year project is sponsored by the Friuli-Venezia Giulia Region Health Council and financed by the Regional Administration.

### Development and Implementation

In the Friuli-Venezia Giulia region, despite the availability of good health facilities for diagnosis and treatment of heart disease, cardiovascular disease mortality among people aged 25 to 64 exceeds the national average by 20 percent. This finding indicates a critical need for effective prevention strategies. The current project, which was designed based on achievements of an earlier project carried out in Martignacco (an area central to the same region) was sponsored by the Health Council of the Regional Administration in collaboration with the Centers for Preventive and Social Cardiology for the provinces of Trieste, Gorizia and Monfalcone, Pordenone, Sacile, and Udine. Prevention approaches are oriented both toward the population as a whole and people at high risk for CVD. In addition, secondary prevention approaches have been implemented to slow the progress of existing CVD and to prevent repeated myocardial infarctions, and rehabilitation programs have been developed to optimize the physical, emotional, and vocational well-being of people affected by CVD. Interventions were planned and implemented by health authorities at regional and local health units. Examples of interventions include health education programs in schools, sport clubs, and hospitals; training courses for employees on good nutrition, ideal body weight, and control of blood cholesterol levels; and smoking restrictions in hospitals and other health facilities. The Regional Administration assumes most of the financial burden of project activities. The cost of the first year of activities was estimated to be 1,000 lire, or about 70 cents per person.

### Evaluation and Results

A comprehensive process evaluation has been set up to monitor achievements of and barriers to project activities. Outcomes will be measured according to indicators specified by the World Health Organization MONICA project, which is currently ongoing in the region.

## Lessons Learned

Obtaining political and financial support of the Regional Administration was initially difficult. Networking, lobbying, statistics on CVD's effects in the region, and the results of the Martignacco project eventually secured legislative backing for the project. The project will serve as a model for developing a 10-year regional plan and a national campaign for CVD prevention.

## THE LINDAVISTA STUDY

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### Summary

The Lindavista Study is designed to detect, assess, and treat risk factors for arteriosclerosis in a sample of Mexico City residents. Risk factors examined include obesity, diet, alcohol consumption, hypercholesterolemia, and sedentary lifestyle. The study, which began in January 1996 and will continue for 10 years, is supported by the Arteriosclerosis Chapter of the Mexican Society of Cardiology and the Mexican Association for the Prevention of Arteriosclerosis and its Complications (AMPAC), and is financed by a grant from the Bristol-Myers-Squibb Company.

### Development and Implementation

For the sample, investigators selected 3,000 men and women over 35 years of age who showed no signs of arteriosclerosis at the study's outset. Subjects will be followed via biannual visits, and a group of 400 subjects who have more than two risk factors for arteriosclerosis will be randomly selected for active treatment at a Risk Clinic in the cardiovascular unit of a regional hospital. Subjects in a second group will receive treatment and counseling according to the individual case; these subjects will then be sent to their own clinic or primary care physician. Both groups will receive oral and written communications about moderate alcohol consumption, the preventive value of diet, body weight reduction, exercise, managing hostility, ways to stop smoking, and controlling blood lipids, arterial pressure, and diabetes. The written communications are provided by the Mexican College of Cardiology and AMPAC.

### Evaluation and Results

Investigators will consider the incidence of risk factors and the occurrence of various syndromes and conditions associated with arteriosclerosis in the study population. They also will assess the effect of risk factors on the development of arterial pathology, and will examine differences in vasopathogenicity between subjects receiving active treatment and those receiving treatment at first-level clinics or services. Preliminary results are expected early in 1997.

### Lessons Learned

No information is currently available.

## THE PROGRAMME OF INTEGRATED PREVENTION OF MAJOR NONCOMMUNICABLE DISEASES SHARING COMMON RISK FACTORS

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### Summary

The Programme of Integrated Prevention of Major Noncommunicable Diseases Sharing Common Risk Factors was an InterHealth program carried out in Moscow's Cheremushkinsky District from 1986 to 1996. The program's principal goal was to improve the health of district residents by reducing major risk factors for chronic noncommunicable diseases (NCDs) and through early detection and treatment of such diseases. Smoking, obesity, sedentary lifestyle, and hypertension were among risk factors targeted by program activities.

### Development and Implementation

The program consisted of a demonstration project, modeling and other research activities, and training. The demonstration project consisted of a series of interventions conducted through existing health service structures with participation from nonmedical organizations and district residents. As part of the demonstration, more than 180 doctors and nurses received training on identifying and managing patients at risk for NCDs and on detecting NCDs at early stages. Demonstration efforts also included educational films for the public and a No Tobacco Day to help prevent smoking initiation and promote smoking cessation. Modeling studies were conducted to determine which risk factors predict NCD-associated morbidity and mortality. Other research projects included a study comparing the effectiveness of smoking cessation methods and an investigation of a computer-based system for detecting NCD risk factors and diagnosing chronic NCDs at outpatient clinics. Training programs included an advanced course for medical professionals on preventing NCDs. Several educational programs were developed for schoolchildren, including an anti-tobacco curriculum and a comprehensive health education course.

### Evaluation and Results

Evaluation of No Smoking Day showed that the program had an impact on 74 percent of participants. Modeling studies revealed that among people with low blood cholesterol levels, mortality rates due to cardiovascular disease (CVD) and cancer were nearly identical. However, among people with high cholesterol levels, rates of CVD mortality were more than twice the rates of cancer mortality. At one outpatient clinic, computer-based screening for NCDs identified 36 percent of patients as needing a specialist's care and 1 percent as needing emergency care.

### Lessons Learned

In 1990, many preventive activities were slowed or stopped in part due to organizational changes in the district government. These changes disrupted relationships that had been established among outpatient clinics, public health services, and non-medical organizations. Economic difficulties as well as the reorganization of systems that finance public health in Russia also have had a negative impact on prevention efforts. Despite these obstacles, the program continued providing medical training, improving diagnostic methods, and treating patients with NCDs.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN MIRNY YAKUTSK SAHA, RUSSIA

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### Summary

The Institute of General Pathology and Human Ecology initiated the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Mirny Yakutsk SAHA, Russia, in 1991. The program's aims are to educate workers at a local diamond mining company (Diamonds of Russia-SAHA) and the regional population about improving health and preventing chronic noncommunicable diseases (CNCDs). Risk factors targeted include unhealthy behaviors such as smoking, alcohol and drug use, poor nutrition, and physical inactivity. These risk factors can combine with northern climatic conditions (e.g., cold and seasonal extremes of daylight and darkness) and worksite conditions (e.g., accumulation of toxic gases in diamond quarries) to seriously impair health.

### Development and Implementation

Recent data reveal that CNCDs are the major cause of death among residents of the Mirninsky region. Furthermore, CNCD mortality occurs on average 8–15 years earlier in this region than in some developed countries. Climatic and worksite factors, along with unhealthy behaviors, contribute to the development of chronic conditions such as hyperlipidemia, hypertension, iodine deficiency, lung disease, and ischemic heart disease. Newcomers to the region are especially susceptible to these conditions. To combat these problems, the CINDI Programme for Mirny Yakutsk SAHA was developed in three stages. The first stage included an analysis of the prevalence of risk factors for CNCDs according to age, sex, age of arrival in the region, and lifespan in the North. As part of the second stage, which began in 1991 and will continue until 2000, preventive programs and measures are being developed that take into account northern climatic conditions and other regional characteristics. A system for monitoring the health of newcomers to the region is also being developed. The third stage involves implementation of interventions. These include educational programs on smoking, overweight, hypertension, and development of healthy lifestyles; primary and secondary prevention programs provided by workers in the local health care system; and screening of children to detect iodine deficiencies. Development and implementation are being conducted according to the principles of CINDI and involves cooperation of health care services; local departments of nutrition, education, and mass media; and administrators at Diamonds of Russia-SAHA.

### Evaluation and Results

Evaluation of the program is in progress. Preliminary results indicate that monetary compensation to workers on temporary disability has declined since the program began, and that permanent disability has decreased.

### Lessons Learned

Insufficient funding has hampered implementation of preventive measures. This problem has yet to be resolved.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN NOVOSIBIRSK, RUSSIA

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### Summary

The Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Novosibirsk was established in 1987 with the goal of lowering risk for noncommunicable diseases (NCDs) in the general population using a preventive approach. Project activities include collecting mortality data, maintaining disease registries, and surveying the population. A CINDI Centre has produced and distributed educational booklets for the public on smoking, hypertension, and hypercholesterolemia; used newspapers, radio, and television to deliver information; and conducted “Quit Smoking and Win” campaigns for smoking cessation. Preventive activities have focused on smoking cessation, reducing blood pressure, correcting abnormal lipid levels, and encouraging physical activity.

### Development and Implementation

The CINDI Centre, which is under the direction of CINDI Russia, has received financial support from the WHO regional office in Europe, CINDI Canada, and the Russian Academy of Medical Sciences, and has obtained sponsorship monies as well. Centre staff have monitored and educated physicians and educated other health workers and governmental officials as well as students, schoolchildren, and parents. Alliances have been formed with governmental and physician organizations and with two nongovernmental centers interested in smoking cessation. The center also engages in commercial activities, which have included selling educational booklets and dietary products. The center did substantial pre-marketing research for the booklets and has published a market research report describing that effort.

### Evaluation and Results

Various information about CINDI Novosibirsk projects has been collected. One-year follow up for the 1994 “Quit Smoking and Win” contest in Novosibirsk found that 36.5 percent of responding participants had quit smoking (the quit rate was 22.1 percent if nonrespondents were presumed not to have quit). The market research report on the three booklets found that a pre-publication test of materials is necessary and indicated that addresses of preventive medicine centers should be listed in each booklet. The report also demonstrated the value of establishing direct contacts with organizations having budgets to buy the booklets. Finally, an evaluation of a 3-week course of post-diploma professional education at the Novosibirsk CINDI Centre was highly positive.

### Lessons Learned

Socioeconomic difficulties have contributed to negative attitudes about prevention on the part of the local administration, insurance companies, and medical staff. Budgets typically accommodate treatment but not prevention. To help overcome these challenges, program efforts have concentrated on developing educational programs for physicians, nurses, teachers, and students. A postgraduate course on healthy lifestyles has been implemented by physicians.

## THE TVER INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME

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### Summary

The Tver Integrated Noncommunicable Diseases Intervention Programme is one of five Countrywide Integrated Noncommunicable Disease Intervention (CINDI) programs in Russia. The Tver program began in 1988 under the direction of the Tver State Medical Academy. Assistance for program activities has come from the local administration, public organizations, and managers of industrial enterprises. The goal of the program is to reduce chronic noncommunicable diseases (NCDs) among residents of the Tver region by meeting several objectives, including reducing smoking; preventing alcohol and drug abuse, hypertension, and oral diseases; and promoting health and preventing NCDs at industrial enterprises. The program is ongoing and is expected to end in 2009.

### Development and Implementation

The program began with an epidemiologic investigation in the late 1980's that showed significant rates of NCDs and their risk factors among factory workers in the Tver region. Since then, diverse and multifaceted approaches have been developed for NCD prevention. One intervention carried out at several Tver enterprises involves educational strategies to reduce risk factors for NCDs among factory workers and a system to monitor the quality of worksite environments. A smoking prevention program includes banning tobacco advertising, educating the public through mass media, and developing smoking cessation programs in hospitals and other medical institutions. Another strategy incorporates disease prevention and health promotion emphases into medical education curricula to help physicians and other medical professionals practice effective preventive medicine. A workshop held in Tver with support from the Health Services Directorate of Canada provided specific recommendations for implementing these changes in the Russian medical education system.

### Evaluation and Results

Program evaluation will be conducted according to CINDI specifications and will include assessments of risk factor prevalence, morbidity, and mortality. Assessments conducted in 1988 and 1993 showed that the prevalence of hypertension decreased by almost 16 percent among male factory workers and by 11 percent among female factory workers. Smoking among women also declined significantly, and a trend toward decreased smoking among men was observed.

### Lessons Learned

Barriers to program implementation included conservatism of the local administration and scarcity of finances. An intense marketing approach has helped overcome these barriers, and funds have been obtained from local budgets and from the World Bank.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN CATALONIA

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### Summary

The Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Catalonia was implemented to reduce the burden of cardiovascular disease (CVD) in the region. The Department of Health and Social Security (DHSS) of the Autonomous Government of Catalonia assumed responsibility for CINDI Catalonia, and a formal agreement to carry out the program was made with the World Health Organization Regional Office for Europe in 1993. CINDI Catalonia activities are directed at the following CVD risk factors: smoking, hypertension, nutrition, diabetes, hypercholesterolemia, and physical inactivity.

### Development and Implementation

In 1992, DHSS established and endorsed a Health Plan for Catalonia that set national health goals and provided a conceptual framework for planning interventions. A white paper entitled *The Basis for the Integration of Prevention in Health Care Practice*, published in 1993, helped define preventive activities for achieving Health Plan goals; these activities were included in a Health Services Contract with public and private health care providers. This was the context in which CINDI Catalonia began. Under the direction of a steering committee from DHSS, CINDI Catalonia has applied the knowledge and experience acquired in other CINDI demonstration projects. Many professional organizations and social institutions have been persuaded to participate in the program. Encouraged by continuing education programs and other activities, physicians, nurses, and pharmacists have collaborated to carry out prevention efforts. Specific interventions have included workshops on hypertension control in the community and smoking cessation programs that were collaborative efforts of the Councils of the Colleges of Physicians, Pharmacists, and Nurses. The document *Health Promotion through Physical Activity* was published in 1994 to raise awareness of the benefits of exercise and to encourage health professionals to promote and prescribe physical activity to the public. Other CINDI Catalonia efforts included organization of the Second International Heart Health Conference in Barcelona in 1995, the main outcome of which was the publication of *The Catalonia Declaration: Investing in Heart Health*.



## Evaluation and Results

Methods for evaluating the program included cross-sectional surveys of random samples of the general population and of certain subpopulations, such as health care providers. CINDI interventions have been associated with changes in smoking behavior, hypertension control, and diabetes. Smoking prevalence among people in the general population aged 15–64 was about 38 percent in 1992; in 1994, the prevalence dropped to about 35 percent. A significant reduction in smoking was observed among physicians: nearly 53 percent smoked in 1982; in 1996, the rate was 31 percent. In some areas of the region, rates of hypertension control have increased from less than 10 percent in 1982 to more than 30 percent in 1993. The prevalence of known diabetes among people aged 30 or older has increased from 3 percent in 1985 to 6 percent in 1995; the proportion of people with diabetes who were aware of their condition rose from 30 percent in 1985 to 60 percent in 1995.

## Lessons Learned

The experiences of CINDI Catalonia have identified the need to involve politicians and decision makers in approving and implementing interventions. In addition, they suggest that program planning should be based on clearly identified goals and that continuing education programs can help promote the involvement of professional organizations and health care providers in prevention activities.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN KHARKOV, UKRAINE

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### Summary

Since 1987, the Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme in Kharkov has been conducted through collaboration of the Research Institute of Therapy at the Academy of Medical Sciences of Ukraine and the World Health Organization (WHO) Regional Office in Europe. The program, which is slated to continue until the year 2000, seeks to prevent ischemic heart disease and stroke by reducing hypertension, hyperlipidemia, smoking, stress, physical inactivity, and other risk factors associated with noncommunicable diseases (NCDs).

### Development and Implementation

In 1981, the Research Institute of Therapy was established as a WHO Collaborating Center for Research and Education on NCDs. The Institute's participation in CINDI began in 1987. From 1981 to 1989, researchers at the Institute studied blood pressure, smoking behavior, and physical activity among men aged 40–59. More recent research has examined health problems and NCD risk factors among workers in heavy industry and in a general population of adults under age 65. All those who had or were at risk for NCDs received follow-up and treatment. Free medications have been distributed at worksites, and treatment has been provided at the Institute's clinic. Other interventions have included exercise programs provided by physical activity training groups. Educational materials on developing healthy habits have been created for lectures given in community residences and for radio and television broadcasting. In May 1996, the Institute participated in "International Quit and Win," a smoking cessation contest that was conducted in many European cities.

### Evaluation and Results

Evaluation of the first research project showed that interventions were associated with reductions in smoking and in systolic and diastolic blood pressure as well as increases in physical activity.

### Lessons Learned

Among community residents, there was a general lack of awareness of the healthy lifestyle concept. Among physicians, there was little recognition or orientation toward preventive medicine. The CINDI program has helped increase awareness of healthy behaviors in the population and cultivate preventive approaches among health care providers. It is hoped that similar programs can be developed throughout the country.

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### Summary

In May 1986, the Greater Glasgow Health Board launched the Good Hearted Glasgow Campaign in an effort to reduce the incidence of heart attack and stroke among Glaswegians by 10 percent. The campaign has included individually based, community-based, and population-based approaches to promote healthy lifestyles. Campaign activities have provided advice about nutrition and support for smoking cessation. A health promotion strategy has offered all Glaswegians ages 20–65 screening and counseling through various outlets, including general practices, health centers, worksites, and community settings. Although heart disease prevention activities have ended, many elements of the campaign continue as part of a holistic approach to health promotion.

### Development and Implementation

A high mortality rate for heart disease (CHD)—accounting for 45 percent of overall mortality—and a correspondingly high morbidity rate in Glasgow signalled a need for a successful prevention program. A baseline survey conducted in 1987 indicated that Glaswegians were well aware of major CHD risk factors but needed motivation, opportunity, and a supportive environment to develop healthier habits. Accordingly, the Good Hearted Glasgow Campaign adopted a three-prong strategy including a community-based education campaign aimed at specific at-risk groups in the community, free one-on-one health checks covering modifiable CHD risk factors in primary care settings, and a mass media campaign (which was never carried out). Unfortunately, a review conducted 1 year after program initiation by the Greater Glasgow Health Board showed that participant recruitment was poor, perhaps in part because the campaign was initiated in impoverished areas, where recruitment was likely to be difficult. In 1988, the Health Board developed a comprehensive strategy that balanced needs for broad-based health programs with the more specific, targeted activities already developed. As part of the new strategy, health checks became available through a variety of outlets and screening was implemented in workplace and community settings to support ongoing health promotion activities. These settings have helped attract clients and encourage lifestyle changes. Other components of the Board's health promotion strategy have helped to ensure the integration of CHD prevention activities with other health promotion activities.

### Evaluation and Results

The 1988 evaluation included a survey of patients from each of three health centers, one of which had achieved much higher recruitment of patients into the program compared with the other two. The survey showed that at all three centers, most patients knew about the campaign; thus, lack of awareness did not seem to explain poor recruitment figures. The same survey found that at the center with higher recruitment, 47 percent of patients reported that their general practitioner had recommended participation in the campaign, compared with only 26 percent and 17 percent at centers with poorer recruitment. These findings suggested that general

## Lessons Learned

practitioners played a key role in encouraging patient participation. A subsequent evaluation of workplace health checks showed that they had only a small effect on blood pressure, cholesterol levels, and other reversible risk factors for CHD but produced favorable changes in self-reported health-related behaviors such as alcohol consumption and dietary habits.

The long-term success of community programs may require a bottom-up, holistic approach to program development, rather than the top-down strategy used for the Good-Hearted Glasgow campaign. Conclusions drawn from reviews of the campaign included the following: (1) Consultation and participation are essential to effective health promotion, (2) programs must be flexible and adaptable to changing needs, and (3) follow up after health checks is needed to address specific health problems and to provide ongoing advice and encouragement.

## LOOK AFTER YOUR HEART—AVON

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### Summary

In 1987, a number of agencies joined forces in initiating Look After Your Heart—Avon (LAYH-Avon), a heart disease prevention program. In 1990, LAYH-Avon received funding from the Health Education Authority (HEA) for a 3-year national demonstration project focused on preventing heart disease among residents of a housing estate, the Bournville, in Weston-super-Mare, Avon County. The demonstration project took a community empowerment approach, rather than exclusively focusing on cardiovascular risk factors, to improve the general health and quality of life of Bournville residents.

### Development and Implementation

The Bournville community was selected specifically for the project because of significant health and social problems in the area and because residents were particularly at risk for heart disease. An early phase of the project involved characterizing this primarily low-income community in terms of its health needs. In general, the physical, mental, and social health of residents was poor, and it was recognized that using an agenda directly focused on lifestyle issues such as smoking, diet, and exercise would likely be ineffective because residents had more pressing concerns. A holistic approach was needed—one that takes into account less obvious determinants of poor health (e.g., deprivation and poor self-esteem) as well as cardiovascular risk factors. A project worker was appointed to work with individuals and groups to help instill perceptions of self-worth and beliefs that harmful or stressful circumstances can be changed, mobilize community efforts to solve health problems, and implement improvements in environmental and health conditions. These efforts produced a variety of positive changes in the community, including new community center activities (e.g., aerobics classes, a fitness program for people over 50) and the establishment of a multi-purpose center that provides children's health clinics, an older women's health group, a smoking cessation group, and other activities. The program drew significant attention to the need for improved primary health care; since the program's end, a building dedicated to primary health care services has been constructed.

### Evaluation and Results

The project was rigorously evaluated by LAYH-Avon members in collaboration with the HEA and the Tavistock Institute of Human Relations. An outcome measures checklist was used to chart changes and assess the program. Outcomes served as intermediate indicators of program success, and included changes in the availability of support, facilities, and resources; physical changes in the environment; and changes in knowledge and attitudes of residents. The program enjoyed considerable success in developing community activities and facilities and in raising the profile of health needs in the community. Once immediate pressures were addressed and social networks established, residents began to deal with traditional risks to health, such as smoking. Cost estimates showed that about £83,000 of the £150,000 HEA award was spent on the Bournville project. In addition, unquantified amounts of time, office accommodations, and other resources were contributed; this input was enormous but impossible to estimate.

## Lessons Learned

The project worker found it much easier to set up networks and activities with women than with men. In addition, those managing the project learned the importance of flexibility and balancing a heart health agenda with an agenda that does not directly address traditional risk factors. To avoid leaving a vacuum in support and activities at the program's end, a seminar was held to highlight achievements, identify elements needed to make program developments permanent structures of statutory agencies, and obtain long-term commitment for resources and support from agency leaders. The program's successes demonstrate that a community empowerment approach can provide an effective means for working toward better health.

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### Summary

In 1989, the Missouri Department of Health, in cooperation with the Centers for Disease Control (CDC), began a program aimed at reducing the incidence of major modifiable risk factors for cardiovascular disease (CVD) in the state's Bootheel area. The program consists of community-based activities designed to help residents of this rural, medically underserved area of southeastern Missouri alter CVD risk factors such as smoking, physical inactivity, overweight, and high blood cholesterol levels. The program's long-term goal is to reduce CVD-associated morbidity and mortality among residents.

### Development and Implementation

The intervention region was identified following analysis of mortality data that showed a high rate of death from coronary heart disease in five of the six Bootheel counties. Several models, including PATCH (Planned Approach to Community Health) and models incorporating the social learning theory and the stage theory of innovation, have guided project development. Coalitions developed by involving local leaders and community groups in the planning process have become key components of the program, and the formation of numerous local "subcoalitions" has permitted interventions to be tailored according to community needs. Local health agencies play a key role by providing training, distribution of local funds for coalition activities, blood pressure and cholesterol screenings, and other assistance. Each of six county coalitions has received about \$5,000 annually to implement intervention activities, which include CVD educational programs, aerobic exercise classes, walking clubs, and heart-healthy cooking demonstrations. Coalitions have carried out numerous projects, such as fitness festivals promoting heart health, poster contests sponsored by local schools, and the *Heart Healthy Corner*, a weekly newspaper column about preventing heart disease.

### Evaluation and Results

Surveys were carried out in 1990 and 1994 to evaluate the project's progress and success. Survey questions were standardized according to those used in the Behavioral Risk Factor Surveillance System. The two surveys were used to interview samples of adult residents of the state and the intervention region. Prevalence estimates were calculated for self-reported physical inactivity, cigarette smoking, overweight, blood cholesterol screening, and consumption of fruits and vegetables. From 1990 to 1994, physical activity increased in communities where heart health coalitions were developed and among respondents who were aware of these coalitions. Furthermore, prevalence estimates for reports of cholesterol screening were higher for respondents in areas with coalitions and among people who were aware of the coalitions. African Americans showed favorable changes in all five areas. In contrast, Caucasians showed only slight improvements for physical inactivity and cholesterol screening; unfavorable trends were observed in this group for smoking, being overweight, and consuming fruits and vegetables.

## Lessons Learned

Even with modest resources, the community-based interventions of the Heart Health Program have the potential to reduce CVD risk behaviors in a relatively brief period. For many of these rural communities, the program was the first to include African American residents in planning and development. The sense of ownership created, along with the culturally tailored intervention that resulted, likely contributed to the program's success among African Americans. Additional data is needed to fully assess the impact of the program, including longer term measures of CVD risk factors, morbidity, and mortality.



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### Summary

Heart to Heart was a 5-year demonstration project carried out in Florence, South Carolina. The project was initiated in 1986 and funded by the Centers for Disease Control and Prevention (CDC) and the South Carolina Department of Health and Environmental Control. Its overall objective was to develop a cost-effective, public health-based program in the community that would produce a sustained reduction in behavior risk factors for cardiovascular disease (CVD) and ultimately reductions in CVD. Among specific risk factors addressed through project activities were smoking, hypertension, high cholesterol levels, and high blood pressure.

### Development and Implementation

Steps of project development included formation of a coordinating council, development of an ongoing surveillance system to assess CVD risk factors and provide data for program planning and evaluation, and identification of community resources. Linkages formed among service organizations provided an infrastructure for addressing community concerns. Numerous time-limited and ongoing activities were implemented on a budget of \$2.2 million over 5 years. Time-limited community activities included "Florence Springs into Shape," a month-long physical fitness campaign with an emphasis on walking; "Quit and Win," a smoking cessation program; and "Florence Shoots for the Moon," which challenged the community to collectively log 221,000 miles (the distance to the moon) by walking, running, biking, swimming, and using exercise equipment. Ongoing activities included development of a resource inventory for health promotion programs that was distributed to local worksites, the use of electronic and print media to relay information on heart health, labeling of heart healthy foods on restaurant menus, and development of walking trails throughout Florence.

### Evaluation and Results

Evaluation of the project consisted of a quasi-experimental approach to determine project outcomes and a case study design for examining project processes. For the outcome evaluation, Florence was matched according to selected demographic and health risk characteristics with Anderson, a community of similar size about 200 miles away. A questionnaire was administered to a cohort of 1,500 residents from each community in 1987 and again in 1991. The data revealed that over this relatively short period, the proportion of participants who had high cholesterol levels increased in the control group but showed little change in the intervention group, indicating a favorable effect of interventions. In addition, the prevalence of current smoking declined significantly among men in the intervention group. However, the prevalence of high blood pressure decreased in the control group and increased in the intervention group, and the prevalence of physical inactivity and overweight increased in both groups. Process evaluation showed that the project produced many beneficial changes that are prerequisites to decreasing health risks and improving community health status. The project raised community awareness, involved

## Lessons Learned

influential community members, and fostered linkages among local health services. A total of 585 activities attracted more than 31,000 participants.

Several aspects of project implementation needed improvement. For example, certain groups, such as African Americans and the poor, could have been reached more effectively. Skilled staff with experience in community development and targeting culturally diverse groups are needed to overcome this problem. Time pressures, resulting from the need to produce outcomes, placed constraints on developing interventions, orienting staff, cultivating working relationships, and achieving community acceptance. Establishing conditions necessary for change requires time. Overall, the Heart to Heart project showed that state and local health agencies can coordinate activities that produce modest changes in awareness of cardiovascular risk factors and healthy behaviors. These changes are necessary precursors to sustainable changes in CVD risk factors.

## THE INTER-TRIBAL HEART PROJECT

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### Summary

The Inter-Tribal Heart Project (ITHP) is a two-phase project designed to (1) document the prevalence of cardiovascular disease (CVD) risk factors among the Menominee Indians and two bands of Chippewa Indians, and (2) develop community-based interventions to reduce the risk of cardiovascular disease among these communities of American Indians. The project began in 1990 as a collaborative effort of the Menominee Nation, the Red Lake Nation, the White Earth Nation, the Indian Health Service (IHS), and the Centers for Disease Control (CDC).

### Development and Implementation

Cardiovascular disease (CVD) is the leading cause of death among American Indians and Alaska Natives in the United States. Tribes in the northern tier of the United States experience CVD mortality rates that are nearly two times greater than the overall CVD mortality rate for the United States. To help combat this problem, the ITHP was initiated in three tribal communities of the Bemidji Service Area, which includes tribes of Illinois, Indiana, Michigan, Minnesota, and Wisconsin. Between July 1992 and June 1994, 1,376 randomly selected individuals from the Menominee, Red Lake, and White Earth nations participated in a comprehensive survey of CVD risk factors. The survey included interviews and physical examinations. The community intervention phase was implemented immediately after the survey phase, and ran from July 1994 to September 1996. Tribal leaders and ITHP staff involved schools, businesses, clinics, and other sectors of their communities in programs and policies geared toward reducing the risk of CVD. Project staff targeted intervention efforts at individuals, groups, and service providers (e.g., physicians, educators, nurses, store owners). They used strategies for organizational change, for policy and legislation, and environmental change.

### Evaluation and Results

Data obtained from the ITHP CVD risk survey showed that prevalences of many risk factors greatly exceeded estimates derived from national surveys of American Indian and Alaska Native people. The most dramatic inequalities were observed for diabetes (26 percent, ITHP survey; 6.6 percent, National Health and Nutrition Examination Survey II), tobacco use (54 percent, ITHP survey; 34 percent, Behavior Risk Factor Surveillance Survey), and overweight (64 percent, ITHP survey; 32 percent, Behavior Risk Factor Surveillance Survey). Preliminary results from the community intervention phase are very encouraging. Within a 1-year period, approximately 20,000 participants were involved in ITHP sponsored events (this number includes people who participated in more than one event).

## Lessons Learned

The emphasis placed on collaborative working relationships among the tribal nations, the IHS, and the CDC was an important feature of the IHTP. Tribal input, guidance, and direction were incorporated into every aspect of the project. Evaluation interviews with tribal leaders revealed that the tribes placed great emphasis on having the flexibility to develop programs that they felt were most beneficial for their communities. Active solicitation and integration of tribal guidance in the early planning stages and throughout the ITHP, as well as the flexibility to tailor programs and policies according to community needs, enhanced the project and are recommended strategies for other agencies working with American Indian and Alaska Native tribes.

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### Summary

The Minnesota Heart Health Program (MHHP) was a research and demonstration project designed to test the effect of community health education on risk factors for cardiovascular disease (CVD). The program was one of the largest community trials ever conducted in the United States. Program objectives were to enhance community-wide awareness of CVD, generate widespread participation in health programs, and encourage behaviors that reduce risk factors for CVD. Risk factors of primary concern were high blood cholesterol levels, high blood pressure, cigarette smoking, and physical inactivity. A major goal was for communities to adopt and maintain intervention programs initiated by the MHHP. Funded by the National Heart, Lung, and Blood Institute (NHLBI) from 1980 to 1993, the program was carried out independently but concurrently and in technical cooperation with the Pawtucket Heart Health Program and the Stanford Five-City Project.

### Development and Implementation

The MHHP was founded on the hypothesis that a systematic, multiple-strategy health education program for the whole community is feasible and will change the way people think about heart disease and its prevention, improve health behaviors, reduce CVD risk factors, and ultimately reduce rates of CVD. The program consisted of 5- to 7-year educational efforts carried out in intervention communities in North Dakota, South Dakota, and Minnesota. Intervention communities were selected to be of three types: small towns, large cities, and large metropolitan areas. Three communities matched in population size, type, and distance from Minneapolis-St. Paul served as comparison communities. There were seven main intervention components: (1) CVD risk factor screening; (2) nutritional food labeling at restaurants; (3) community organizations and citizen task forces that developed annual educational campaigns on CVD risk factors; (4) continuing education for health professionals to promote understanding of CVD risks and prevention; (5) mass media education via television, radio, newsprint, and other means; (6) adult education in worksites, churches, workshops, and other organizations; and (7) youth education. Educational programs were organized as a series of risk factor campaigns. For each campaign, community attention and program resources were focused on a single risk factor area for a 1- to 3-month period. In one community (Mankato, Minnesota), for example, health messages were communicated in a series of five programs, each having approximately 2 months' duration. The first program educated project leaders and promoted the public's awareness of the MHHP and its goals. This was followed by a program emphasizing smoking cessation efforts. The third program promoted increased physical activity and overlapped with the fourth, which focused on blood pressure control. The fifth program was concerned with diet and eating patterns. The campaign cycle was repeated over several years. Project resources supported education activities for a

## Evaluation and Results

defined period of years, followed by a period of reduced support focused on transferring resources and responsibilities to community leaders, to help incorporate the program into the community.

The MHHP was evaluated to determine impact and sustainability of program activities. The three main measures used to evaluate the impact of the MHHP were disease endpoints (morbidity and mortality), risk factors and their related behaviors, and the effects of specific educational programs. Data on morbidity and mortality were gathered using hospital records and death records from state health departments. Annual surveys determined risk factors and changes in behavior during the program. Evaluation results indicated a widespread awareness of and participation in MHHP activities. Reductions in risk factors, changes in risk behaviors, and a decline in coronary heart disease were observed; however, these changes occurred in both intervention and comparison communities. In addition, there was no significant effect of interventions on morbidity or mortality due to coronary heart disease or stroke. Although many specific intervention components have been effective in targeted groups (e.g., educational programs to promote nutrition and smoking cessation among youth), overall program effects were modest, of short duration, and generally within levels of chance. A recent assessment of the sustainability of MHHP programs showed that 53 percent of programs initiated in the three intervention communities remained in operation in 1993, 6 years after formal MHHP interventions ceased.

## Lessons Learned

Program impact was likely diminished by strong secular trends of increasing health promotion efforts present during the course of the study. MHHP investigators concluded that the program could not generate enough additional exposure to risk reduction efforts in a large enough proportion of the population to produce a clearly observable impact. In the future, program planners should assess secular trends in communities of interest to determine whether intervention effects can reasonably be demonstrated. In addition, interventions should involve target populations that are sufficiently large to facilitate changes in the risk factor profile of the entire community.

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### Summary

From 1988 to 1995, the Otsego-Schoharie Healthy Heart Program targeted multiple risk factors for cardiovascular disease (CVD) in two rural counties of Northern Appalachia. Sponsored by the Mary Imogene Bassett Hospital in Cooperstown, Otsego County, and funded by the New York State Department of Health, this community-based program reached county residents through the media, schools, churches, worksites, and businesses. The main objectives of program interventions were to reduce blood cholesterol and blood pressure levels and to change cardiovascular risk behaviors.

### Development and Implementation

The Healthy Heart Program was initiated in part because little is known about CVD risk factors and health promotion efforts in rural populations. Interventions considered were based on experiences of the Stanford Five-City Project and the Minnesota and Pawtucket Heart Health Programs, all of which were developed for medium-sized cities. It was soon apparent that these approaches were inappropriate for the population of rural, agricultural New York, and new strategies were developed for the close-knit villages and townships of the area. Community leaders were asked to form Healthy Heart Advisory Committees, which provided direction for the overall program. A survey of educational institutions, health care facilities, worksites, retail businesses, voluntary health associations, and other organizations indicated that although few health-related activities were under way, there was great interest in providing volunteers and resources for such activities. Survey results also indicated a strong interest in having health education programs where people work and live, and that screening and education about blood pressure and cholesterol would help interest people in altering cardiovascular risk behaviors. Special task forces were formed to address specific risk factors in the community. For example, two nutrition task forces developed recipe contests, supermarket tours, and other education and promotion activities. Local health committees were established in villages and townships to plan activities aimed at reducing CVD risk factors. Small grants awarded by the New York State Department of Health to some of these committees contributed to local ownership of the programs. Risk factor screenings were carried out at worksites, classroom demonstrations were held in schools, and health messages were delivered through restaurants and grocery stores. Media efforts including radio spots, newspaper articles, and brochures helped to increase awareness of the program and to promote heart health. These efforts were specially geared toward the rural population. For instance, *Fridge Facts*, a one-page fact sheet providing health messages aimed at low literacy audiences, was mailed monthly to all community agencies, organizations, health providers, and schools. The flyers were sent home with students; distributed with paychecks; and

## Evaluation and Results

posted on bulletin boards in worksites, community agencies, schools, and medical and dental offices, thereby achieving wide distribution at low cost.

In 1989 and 1994, researchers conducted surveys of residents in the two intervention counties and a comparison county. Information was collected on self-reported risk factors including hypertension and smoking, and clinical examinations determined blood cholesterol levels, lipid profiles, and other pertinent measures. Data analyses have focused on changes in high and low density lipoprotein (HDL and LDL) cholesterol, changes in behavior, and 10-year calculated risk for CVD. Preliminary results support a modest but statistically significant trend toward cardiovascular risk reduction in intervention counties, and suggest that reduced rates of smoking and changes in ratios of LDL cholesterol to HDL cholesterol were the main contributors to favorable changes. A cross-sectional study, begun in 1994, is assessing program effectiveness in terms of CVD risk factor prevalence, knowledge about risk factors, changes in the use of preventive services, and other information.

## Lessons Learned

The experiences of this program demonstrate that barriers to health promotion in rural communities, such as poverty, limited local health care services, low educational attainment, and underuse of preventive services, can be overcome with community time and effort and at low cost. Funding for the Healthy Heart program ended in July 1995. However, a new Center for Health Promotion and Disease Prevention at the Bassett Healthcare Research Institute has been established to reach an even wider population than did the Healthy Heart program. A direct legacy of the program has been the formation of the Otsego Public Health Partnership (OPHP). Activities of the OPHP have built on experiences of the Healthy Heart Program and have expanded to address dental health; maternal and child health; and diverse health education and other issues, including injury control and violence prevention.



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### Summary

The Pawtucket Heart Health Program (PHHP) was a community-based research and demonstration project focused on modifying major risk factors for cardiovascular disease (CVD) among residents of Pawtucket, Rhode Island. Its main goals were to reduce cardiovascular morbidity and mortality using strategies that rely on community volunteers and to develop a framework of community organization capable of sustaining health enhancement programs. Individuals, groups, organizations, and the entire community joined forces to help people learn skills, build support systems, and develop strategies for initiating and maintaining healthy behaviors. Risk factors targeted included high blood cholesterol levels, high blood pressure, smoking, sedentary lifestyle, and obesity. The National Heart, Lung, and Blood Institute (NHLBI) and the National Institutes of Health (NIH) funded the program, which ran from 1980 to 1991. The PHHP, along with the Stanford Five-City Project and the Minnesota Heart Health Program, were part of a major initiative by the federal government to translate research on heart disease prevention into effective community-based health programs, with the ultimate goal of reducing the impact of heart disease on individuals and on the nation's health expenditures.

### Development and Implementation

The PHHP originated in Pawtucket's Memorial Hospital with a decision by the Board of Directors to reduce the city's high rate of CVD. Grants from the Rhode Island Department of Health and from private foundations funded pilot research needed to apply for funding from NHLBI. With NHLBI funds, an intervention unit was formed to recruit and train volunteers to develop, deliver, evaluate, and eventually manage a program to change risk behaviors associated with CVD. The intervention unit was complemented by an evaluation unit, which conducted random household surveys, designed and implemented a complex process evaluation system, and monitored relevant changes in Pawtucket and a comparison city. A marketing strategy was developed to promote intervention programs, each focused on a single CVD risk factor. An education program based on social learning theory emphasized materials designed for people with low literacy levels. Interventions included a Lighten Up program focused on weight control; Know Your Cholesterol, which included screening, counseling, and referrals aimed at reducing blood cholesterol levels; and Quit and Win, an incentive-based smoking cessation program. The PHHP also developed a software package (FPbase), for storing and retrieving data on participants; maintaining accurate information about community interventions; providing reports on program performance; and identifying populations for health promotion activities.

## Evaluation and Results

The complex design of PHHP interventions required a comprehensive approach to process and outcome evaluation. Process evaluation focused on replicability, delivery of programs, and other variables. An overall outcome evaluation was based in part on cross-sectional random sample surveys of 1,200 persons aged 18–65 in Pawtucket and an equal number in the comparison city. Surveys began in 1981 and were repeated every 2 years through 1993. Survey data showed no statistically significant effects of PHHP activities on cholesterol, blood pressure, and smoking; these risk factors declined in both intervention and control communities. Values for body mass index remained stable in Pawtucket but rose steadily over time in the control community to yield significant between-city differences. CVD rates were significantly (20 percent) less in Pawtucket than in the control community at the peak of intervention activities; 3 years postintervention, this difference decreased to 8 percent. Estimated between-city differences in CVD risk for changes between the first and last cross-sectional surveys were statistically different only for a less educated subpopulation. Risk factor-focused interventions were also evaluated individually. In a pilot study of the Weigh-In program, a mean weight loss of 8.2 pounds over 10 weeks was observed, as well as a large decrease in blood cholesterol levels. In the Know Your Cholesterol program, 600 of 1,040 participants had lowered their blood cholesterol by an average of 29 mg/dl at 2 months after intervention. Quit and Win produced a substantial self-reported quit rate of 23.7 percent.

## Lessons Learned

Volunteers were probably the most important resource of the PHHP. Over a 7-year period, more than 3,600 people in the community and surrounding areas gave their time and energy, contributing a total of at least 200,000 hours to the program. The favorable effect on CVD risk among persons with less education suggests that PHHP interventions can effectively reach this underserved segment of society.

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### Summary

The Three-Community Study (1972–1975) and the Five-City Multifactor Risk Reduction Project (1978–1996) are demonstration projects that were conducted by Stanford University to modify risk for cardiovascular disease (CVD). Both studies involved comprehensive campaigns to educate community residents about CVD risk factors, including high blood pressure, high plasma cholesterol, smoking, and excess weight. An overall goal was to develop and evaluate methods for achieving positive behavior changes that would be both cost-effective and applicable to large populations.

### Development and Implementation

In the late 1960's scientists and public health officials noted the need for prevention strategies to counter the rise in CVD incidence that began after World War II. In response, researchers at Stanford University launched the first U.S. investigation of a comprehensive, communitywide educational approach to prevent heart disease. They began with a study involving residents of three small California communities. In two of the communities, 2-year mass media campaigns taught probable causes of heart disease, approaches to reduce risk, and skills for achieving behavior changes; in one of the two communities, individual counseling was also provided to persons at high risk for coronary heart disease (CHD). The third community served as a control. In the Five-City project, methods of the Three-Community Study were adapted for larger communities. The project examined changes in behavior and risk for CVD among residents of cities receiving a 5-year, low-cost, comprehensive educational program directed at preventing stroke and CHD. Education involved direct (e.g., classroom) approaches as well as use of television and other mass media to promote strategies for controlling risk. Special programs were developed for Spanish-language media, and school-based programs were developed to reach students, parents, and teachers and administrators.

### Evaluation and Results

In the Three-Community Study, residents of each community were interviewed and examined before, during, and after the 2-year program to assess knowledge and risk factors related to CVD. The interventions produced changes in knowledge and risk factors in the first year that were maintained and improved on in the second year. The risk of CVD decreased substantially in the communities that received education with or without counseling. Overall, estimated risk of future heart attack and stroke declined 24 percent, and even greater changes were seen among Hispanic residents. In the Five-City Project, population samples were surveyed at multiple time points over 73 months. Knowledge of CVD risk factors increased in all cities; however, the increase was greater in cities receiving interventions. Following interventions, decreases in blood pressure and plasma cholesterol levels, resting pulse rates, and smoking rates were observed,

## Lessons Learned

yielding a 16 percent decline in risk of CHD. Evaluations have shown that changes in risk factors have been successfully maintained over time. In addition, many program components have been adopted and continued by intervention communities.

By reallocating their resources, intervention communities were able to increase spending on public health; for example, one county health department increased its health promotion staff from 2 to 18 people. Such changes have allowed communities to decrease their risk for chronic disease. Meanwhile, Stanford University has become a World Health Organization collaborating center and a repository of skills and information on health promotion and disease prevention that has been drawn on by others who wish to develop similar programs.

# SCHOOL PROGRAMS

**T**he five programs described in this section represent efforts in four countries—Australia, Chile, Holland, and the United States. Program goals range from testing alternative theories of behavior change to field-testing and disseminating youth programs initiated as demonstration programs. Although both goals have virtue, a major tenet of *The Victoria Declaration* and of its sequel, *The Catalonia Declaration*, is the need to apply tested interventions to other program settings. Teachers in most of the programs discussed in this section explicitly recommended that the successful activities and strategies of their programs be applied widely.

A program that especially seems to merit wider dissemination is the Minnesota Heart Health Youth Program, a component of the Minnesota Heart Health Program. The youth program was the first to show that health education conducted continuously from the sixth to the twelfth grade can encourage students to make healthier behavior choices. Furthermore, this program is unique in that it has combined school-based family education and communitywide health promotion in a single project. As a result, school health messages have been reinforced in all aspects of life.

Similarly, the Australian project exemplifies a major goal of many states, provinces, and countries: to provide multifactor health education that combines school, family, and community programs. The two Dutch Smoking Prevention Projects also concluded that their school-based curriculum should be included as part of broader community programs. Results from the two Dutch projects confirmed that encouraging resistance to social pressure is more effective than training in decision-making alone and that video training for teachers can be cost-effective.

Although this category includes only five programs, other programs in which the school setting is less prominently featured are described elsewhere (see the section on Community-Based Programs Addressing Multiple Factors in Heart Health). The range of goals in these five projects reflects the current dichotomy in the field: the development of programs that test theories of behavior change versus the dissemination of pilot or demonstration projects in a cost-effective manner. Although each has a

virtue, a major tenet of both *The Victoria Declaration* and *The Catalonia Declaration* is that the greatest need is to apply tested interventions. In keeping with the theme of this document, three out of five of these projects focused on the practical and difficult question of general applicability to schools.

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**Summary**

The National Heart Foundation (NHF) of Australia is committed to developing policies and resources for health promotion in schools. The Western Australian Division of NHF (NHF/WA) has used a comprehensive model to develop various programs directed at school-aged children and their teachers. The programs, which have been ongoing for 10 years, focus primarily on improving nutrition, promoting physical activity, and reducing smoking.

**Development and Implementation**

Following the establishment of curriculum documents for health education by the state Ministries of Education, NHF targeted schoolchildren with primary prevention programs and resources and examined how the school environment affects the health of students and school employees. A model incorporating both school and community provides a framework for NHF/WA development of comprehensive heart health services and resources. School programs are implemented by education officers, who acquaint teachers with curriculum materials. A package developed in 1989, *Fresh Air Zones*, is designed to assist teachers, administrators, and parents achieve a smoke-free environment and to gather information and support lobbying efforts toward this goal. In 1990, NHF released the *School Canteen Handbook* to help schools improve the nutritional quality of canteen food. NHF/WA also has produced a home-based package on nutrition and smoking prevention to facilitate cooperation of teachers, schoolchildren, families, and communities in promoting heart health, and a workplace package to aid development and implementation of health promotion programs for teachers.

**Evaluation and Results**

NHF monitors the use of its resources through surveys of school principals conducted every 2 years. A recent survey of Western Australia schools showed that materials developed for primary and secondary schools were used at a high rate. NHF also monitors adoption of healthy school policies. For example, a recent survey of Western Australia schools showed that 56 percent of primary schools and 39 percent of secondary schools had healthy canteen policies and that 97 percent of secondary schools were smoke free. A survey evaluating *Fresh Air Zones* showed that most respondents found the resource useful for policy implementation. Most respondents also stated the need for a firmer stance on smoke-free schools, results that were used to convince the Western Australia Ministry of Education to issue a policy declaring all schools smoke free.

**Lessons Learned**

Relatively few barriers to implementation of NHF programs in Western Australia have arisen. Surveys of high school teachers have shown that respondents view health education as positive and as beneficial to students. One potential problem, obtaining release time for teachers to attend training sessions, has been overcome using short-format, cost-free sessions provided after school.

## LOOK AT ME! TO BE A HEALTHY ADULT IN THE YEAR 2000 (¡MIRAME! PARA SER UN ADULTO SANO EN LOS AÑOS 2000)

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### Summary

In 1992 *Mirame! Para Ser un Adulto Sano en los Años 2000* began under the direction of the Faculty of Medicine of the Catholic University of Chile. The *Mirame!* program consists of health education interventions with a psychosocial approach that target elementary school students. The program's general intent is to improve quality of life through health promotion activities. Specific goals are to prevent initiation and encourage cessation of risk behaviors such as smoking, alcohol consumption, and marijuana use, and to control physiologic risk factors such as obesity, high blood pressure, and abnormal blood lipid levels. Funding for the project, which will continue through 1998, is provided by the government of the Republic of Finland (through the Finnish International Development Agency); the National Fund for Scientific Research and Technology, in Chile; and Laboratorio Saval, a Chilean pharmaceutical company.

### Development and Implementation

The *Mirame!* program was initiated in response to studies of the increasing prevalence of mortality due to chronic noncommunicable diseases (NCDs) among Chileans. Surveys of representative samples of the general population conducted in 1988 and 1992 revealed an urgent need for actions to reduce the prevalence of NCD risk factors. In response, a research team attempted to develop strategies at the primary health care level according to World Health Organization InterHealth recommendations. When this attempt proved unsuccessful, the team shifted its efforts to the educational sector. The result was a protocol that was implemented at school sites in selected communities. Following a baseline study of the prevalence of risk factors by sex, age, and socioeconomic status at each site, interventions were implemented and their impact was evaluated. The interventions, which include training courses and seminars for teachers, parents, and health professionals, incorporate three concepts: (1) Children learn by observing and imitating others, (2) society influences children's behavior, and (3) children need positive skills to develop a healthy self-image. The interventions include basic health education as well as supportive, reinforcing activities for students' families, teachers, and communities.

### Evaluation and Results

The research team developed and validated a protocol and instruments to provide baseline and outcome data at intervention and comparison schools. Samples were selected from elementary school students in fifth and sixth grade. The baseline survey was conducted in 1993; data collection for follow-up was completed in 1996. Preliminary results indicate that about 10 percent of the students surveyed have unhealthy lifestyles, that these lifestyles begin at an early age, and that the prevalence of unhealthy behaviors increases with age. Analyses showed that the interventions had a positive effect on behavior; for example, smoking and alcohol consumption declined, mainly among boys. Analyses of physiologic risk factors have yet to show



## Lessons Learned

changes, but favorable changes in obesity, high blood pressure, and blood lipid profiles are expected. A process evaluation has shown that the community, parents, and teachers enthusiastically support continuation of the *Mirame!* program and its expansion to other elementary schools.

The *Mirame!* program has provided students with access to educational interventions that will help them avoid NCDs and other common health problems, such as drug abuse and unplanned pregnancy. Furthermore, the program can be implemented at relatively low cost, a significant consideration for developing countries.

## NON-SMOKING: YOUR CHOICE—THE DUTCH SMOKING PREVENTION PROJECT

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### Summary

From 1984 to 1988, the University of Limburg's Department of Health Education conducted the first Dutch Smoking Prevention Project, also known as Non-Smoking: Your Choice. The project's overall goal was to develop and evaluate a school-based program to prevent smoking in adolescents. Various project activities were conducted in high schools and vocational schools. This and a subsequent smoking prevention project are part of a larger ABC Cancer Prevention Research Programme, funded by the Dutch Cancer Foundation.

### Development and Implementation

Project development and implementation consisted of three phases. Because adolescents' beliefs about smoking determine individual decisions to smoke or not smoke, the first phase used open-ended questionnaires and group interviews to characterize these beliefs. The second phase involved development of a smoking prevention program for adolescents aged 13 and 14 years. Designed based on a social influence model and findings from the first phase, the program consisted of five weekly sessions including videos and peer-led activities intended to reinforce nonsmoking attitudes, develop skills for resisting social pressure, and increase self-efficacy in nonsmokers. In the third phase, the smoking prevention program was implemented in experimental schools; control schools received no special smoking education. The program was then evaluated to determine its acceptability among students and teachers and to assess its behavioral impact.

### Evaluation and Results

Program evaluation involved questionnaires and group discussions among students and teachers. Qualitative and quantitative approaches were used to determine individual decisions to smoke or not smoke. Results from the first phase of the program indicated that compared with smokers, nonsmokers linked smoking more strongly with health hazards, personal hazards, and environmental harm; smokers recognized these consequences but tended to minimize their importance. In addition, smokers experienced stronger peer-group pressure to smoke than did nonsmokers, and students tended not to connect smoking initiation with regular smoking. Both students and teachers evaluated the program positively. The program prevented the onset of regular smoking among vocational school students but had no such impact among high school students. Fewer students in experimental schools than in control schools began to experiment with smoking. In addition, the program had a significant impact on quitting: Compared with smokers in control schools, more smokers in experimental schools reduced or stopped smoking.

## Lessons Learned

Researchers recognized a need for broader interventions, such as community approaches that address the smoking behavior of parents. Videos were cost-effective in that they minimized the need for teacher training; the videos were well received by all parties. Examination of factors contributing to the differential impact of the program in vocational and secondary schools suggested that the social influence program should be adapted to an education level more appropriate for high school students and should be implemented in a higher grade. Findings also indicated a need for a decision-making program for high school students.

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**Summary**

The second Dutch Smoking Prevention Project of the University of Limburg's Department of Health Education began in 1989 and ended in 1992. The project's overall goal was to build on findings of the first project in developing a smoking prevention program for students in the second and third year of high school. Like its predecessor, this project is part of a larger ABC Cancer Prevention Research Programme, funded by the Dutch Cancer Foundation.

**Development and Implementation**

Based on evaluation of the first prevention project, researchers determined that prevention programs should be better adapted to the educational level of high school students, should be implemented at a higher grade, and should include decision-making strategies. To accommodate these needs, two different programs with "boosters" were developed. The first was a social influence program; the second was a decision-making program. Programs consisted of five sessions that included videos and peer-led activities. Boosters were provided in the form of three newsletters distributed to students; the newsletters contained information also given in the videos. The social influence program focused on attitudes such as reasons why people smoke, do not smoke, and quit smoking, and on influences such as direct and indirect pressure to smoke from peers, adults, and advertising. This program incorporated self-efficacy through demonstration and practice of resistance skills. The decision-making program concentrated on developing basic decision-making skills through evaluating information, considering possible decisions, and drawing conclusions. Both programs were communicated using district health educators as a link between providers (program developers) and users (schools). Beginning in November 1992, one or the other program was implemented in 32 experimental schools; an additional 20 schools served as control sites.

**Evaluation and Results**

Program evaluation considered multiple aspects, including predictors of future use of smoking prevention programs and program impact. Teachers were asked to submit responses to a questionnaire; responses showed that teachers were convinced of the importance of teaching smoking prevention and would teach the program again if they could select the time it is to be taught. Program impact was examined using a pretest and several posttests to assess attitudes toward the program and self-reported smoking behaviors. Results showed that students and teachers evaluated both programs positively and that the sources and channels used for both programs were effective in providing information about nonsmoking. The social influence program with boosters had the best preventive effects: In this group, a 9.7 percent increase in smoking was observed, compared to a 14.9 percent increase in the control group.

## Lessons Learned

Teachers indicated that they would prefer three sessions over five sessions, and that students enjoyed the sessions, but were less interested during the last session. However, research has shown effective programs require a minimum of five sessions. Thus, better communication with teachers and school administrators may be needed to change teacher perceptions. Alternatively, the prevention program could be incorporated into a broader approach to health education. Overall, results showed that smoking prevention programs designed for high school students can be effective in preventing smoking. Further research is needed to determine the long-term effects of both programs.

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### Development and Implementation

The Minnesota Heart Health Youth Program was a component of the Minnesota Heart Health Program (MHHP), a community-based program for preventing cardiovascular disease (CVD) that was funded by the National Heart, Lung, and Blood Institute. The youth program combined school-based and community-wide interventions aimed at smoking, dietary habits, and physical activity among adolescents in grades 6 through 12; school-based interventions also targeted alcohol and marijuana use. The youth program began in 1980 and ended in 1990.

To initiate the program, MHHP staff negotiated with community leaders, school system personnel, and parents in selected intervention and reference communities. The intervention community comprised three contiguous communities—Fargo and West Fargo, North Dakota, and Moorhead, Minnesota. Sioux Falls, South Dakota was selected as the reference community on the basis of size, socioeconomic makeup, and distance from Minneapolis-St. Paul, Minnesota. Public school districts in each community made commitments to participate in surveys, allow class time for programs, and provide release time for training of teachers and students who served as peer leaders. Program participants included sixth graders enrolled in public schools in 1983 in intervention and reference communities; this group was followed through high school graduation in 1989. Over this time period, students participated in various programs designed specifically for each year from age 11 to 16. One example was the Lunch Bag Program, a one-hour session introduced in the sixth grade to teach the basics of a heart healthy diet. Students learned how to make healthy lunches, and were given lunch bags bearing the slogan “Have a Hearty Lunch—It’s in the Bag” to reinforce the program’s message. A program implemented in the ninth grade, Shifting Gears, was designed to prevent alcohol, tobacco, and marijuana use. A third program, Slice of Life, was a nutrition and exercise program introduced in the tenth grade. Each program used trained peer leaders as role models for healthy behavior and incorporated behavioral health-enhancing concepts such as self-management and resistance to peer pressure. Students participated in many different activities, such as designing their own newspaper, developing storyboards, and producing and acting in videotapes on the consequences of tobacco and alcohol use. Students in the intervention community also were exposed to community-wide MHHP activities, including mass media and education campaigns that complemented school-based efforts to promote cardiovascular health.

## Evaluation and Results

Self-reported health behaviors and other information was collected via surveys conducted every April from 1983 through 1989. Information obtained included self-reported food preferences, exercise patterns, smoking behaviors, and alcohol and marijuana use. The data showed that relative to girls in the reference community, girls in the intervention community developed significantly healthier eating habits and exercise patterns; findings for boys were similar but not as robust. In addition, students in the intervention community showed significant reductions in smoking from 1984 to 1989. With regard to alcohol use, ninth-grade students in the intervention community reported fewer drinking occasions in the past 30 days than did students in the reference community; however, this positive effect was not maintained through the twelfth grade. With regard to marijuana use, no significant differences between students in intervention and reference communities were observed.

## Lessons Learned

Results from the Minnesota Heart Health Youth Program show that school-based programs embedded in a larger, community-wide prevention program can initiate and sustain changes in health behavior among adolescents. With regard to exercise and healthy eating habits, girls responded more favorably than boys, perhaps because girls were more receptive to the group-oriented, open-discussion approaches that characterized interventions. The community-wide program did not include interventions aimed at alcohol and marijuana use; perhaps a complementary community-wide program would have enhanced school-based efforts to produce longer-lasting, more significant effects on students' use of these substances.





# TOBACCO CONTROL PROGRAMS

**T**he eight projects described in this category include international, national, and community programs dedicated specifically to tobacco control. Each program employs various tobacco control measures, ranging from advertising and taxation policies to educational approaches. Program planners may be able to apply one or more aspects of these diverse programs to the projects they wish to initiate. The overriding lesson to be learned from these descriptions is that multiple strategies are required to overcome the chemical and psychological strength of nicotine addiction as well as the political power of the tobacco industry.

Planning and implementing any prevention project requires, first of all, an organizational phase. This phase may then be followed by educational and regulatory phases. Examples of these three phases are noted throughout the descriptions in this category.

Organizational efforts often include political advocacy and coalition building. Political advocacy is an integral part of both the Tobacco Control in Asia program and the California Tobacco Tax Initiative. Political advocacy can take many forms. One approach is to apply what can be called “pressure from the top,” whereby politicians and health ministers who have received information from individuals or advocacy groups create policy change. The influence wielded by the leader of the Asian Consultancy on Tobacco Control is an example. This approach assumes that political change can occur readily once the health and economic consequences of tobacco use are made clear. However, because the political influence of the tobacco industry may limit the effectiveness of political leaders, policy change is likely to require “pressure from below.”

The California Tax Initiative provides a sterling example: a stricter tobacco control policy resulted from a grass-roots effort that got the initiative on a state election ballot.

Coalition building is also critical to organization. Efforts to provide technical assistance to many Asian governments in the Tobacco Control in Asia program led to the creation of national coordinating organizations that were inspired and led by the government. Although this “top-down” approach to coalition building was not possible in California, where the tobacco industry wielded strong political influence, citizens in

the state formed a coalition of nongovernmental health and advocacy groups and succeeded in bringing about a state tobacco control policy. Similarly, coalition building by local organizations was an important step in developing COMMIT and the Smokeless Besançon Project.

Once the organizational phase has been completed, the program can progress to the educational and regulatory phases. The educational phase can use a variety of tools and methods. For example, the California Tobacco Control Program counteracted tobacco advertising during televised sports events by developing a series of well-researched and visually striking television spots, many of which favorably influenced hard-to-reach low-income and minority youth. Communitywide education (including the worksite and schools) was a key feature of the twenty COMMIT sites and of the effort to create a smoke-free Olympics in Barcelona. Other educational methods include contests and peer resistance training.

Finally, regulatory steps are critical to the success of prevention programs. Three examples of regulatory controls are taxation, restrictions on advertising, and bans on indoor smoking.

The 300 percent increase in cigarette taxes achieved in 1983 in Hong Kong (see the description of Tobacco Control in Hong Kong) represents an early application of taxation as a financial disincentive to smoking. Financial disincentives can be especially effective in preventing adolescent tobacco use. Similarly, the 1988 California Tobacco Tax Initiative had an immediate impact on smoking prevalence, and the program later used revenues to create a statewide program of education and environmental change. However, experience suggests that taxation will have a greater impact as part of an integrated approach that includes education.

One of the recommendations of *The Victoria Declaration* is a worldwide ban on all tobacco advertising. Several programs described in this section have instituted restrictions on advertising. A partial ban on tobacco advertising has been achieved in Hong Kong, and complete bans have been achieved in Singapore and some Scandinavian countries. However, complete bans are rare. Their establishment requires resolute government action to deflect the tobacco industry's strong political influence. Recently some countries (including the United States) have begun to restrict advertising directed at youth. This approach is more politically acceptable than a complete ban and therefore easier to implement.

Another key regulatory control is smoking bans in the workplace. The California Tobacco Control Program, funded by the California Tobacco Tax Initiative, showed that worksite indoor smoking bans helped workers who had quit smoking continue to not smoke; recidivism was more likely in worksites that had no such policies. The tobacco control program in Hong Kong, the Barcelona Smoke-Free Olympics program, and the Smokeless Besançon Program all used smoking bans in public places as a component of their comprehensive approaches. Such regulation clearly modifies the social environment and augments the social support needed by people who want to quit smoking.

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### Summary

Tobacco Control in Asia encompasses a variety of programs established by Asian governments from the 1970s onward. These programs are expected to increase in number and to strengthen. The Asian Consultancy on Tobacco Control has provided technical assistance to many of these programs. The programs vary by country; each tries to reduce tobacco use in its own population.

### Development and Implementation

Several factors have influenced Asian governments to become involved in tobacco control, including concern for health; economic arguments; the behavior of the multinational tobacco companies; the activities of neighboring countries; public opinion surveys; and the recommendations of the World Health Organization (WHO), the *Union Internationale Contre le Cancer (UICC)* (International Union Against Cancer), and other organizations. Ten years ago only Singapore and Hong Kong had implemented significant tobacco control measures. However, Asian governments work from the top down and have quickly implemented tobacco control measures. Today, all the Asian countries have health education activities related to tobacco, most have established a national coordinating organization, and half have some tobacco control legislation. Many countries have enacted tobacco control measures with help from consultants sponsored by WHO or UICC. For example, consultants have helped advise governments on national tobacco control policy, draft tobacco control legislation, and facilitate information exchange between countries.

### Evaluation and Results

Because resources are limited, evaluation in most countries is restricted to prevalence surveys on tobacco use and documentation of successful approaches to implementing tobacco control legislation and health education. Legislation and education will, over time, help reduce smoking prevalence; at present, it is too early to observe any reduction in tobacco use in most Asian countries. However, reductions in smoking prevalence have recently been observed in China, Hong Kong, and Singapore.

### Lessons Learned

Rapid population growth in Asia means that total smoking can increase substantially without a rise in smoking prevalence. Smoking is increasing among the young, especially girls. Control measures are hampered by governmental inexperience in this area, lack of funding, strong opposition from tobacco companies, and cigarette smuggling. However, systems are being put in place that will reduce the tobacco epidemic over time and will show that developing countries can implement tobacco control measures.

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### Summary

The Tobacco Control in Hong Kong program combines smoking-reduction initiatives by the Hong Kong government with efforts by two nongovernmental organizations created in Hong Kong in the early 1990s, People Acting for a Smokeless Society and Action on Smoking or Health. The program targets all citizens of Hong Kong, especially children.

### Development and Implementation

The Hong Kong government initiated health education programs on tobacco in the late 1970's. In 1982, inspired by its Deputy Secretary for Health and Welfare, the government began a program of increasingly strong legislation and tax increases. Since that year, smoking has been banned in many public places. In 1983, cigarette taxes were increased 300 percent. A central coordinating organization, the government-funded Council on Smoking and Health, was established in 1987. In the same year, the manufacture, importation, and sale of smokeless tobacco was prohibited. Tobacco advertisements were banned on television, radio, and in movie theaters in the early 1990's. Sales of cigarettes to minors were banned in 1995. The single health warning found on tobacco packaging or advertisements was replaced with four stronger warnings (e.g., "smoking can kill," "smoking can cause cancer") that filled 20 percent of the package or advertisement. Many tobacco control initiatives are in place in the community, schools, and workplace.

### Evaluation and Results

Numerous surveys have been conducted, including regular national surveys on the prevalence of smoking as well as surveys on knowledge and attitudes about smoking among youth and on the economic impact of tobacco. Since the program was implemented, smoking rates have fallen, and in the 1990's, smoking prevalence in Hong Kong (as well as Singapore) was reportedly the lowest in the world. In 1996, smokers comprised only 14.8 percent of the population of Hong Kong aged 15 and older.

### Lessons Learned

Recent challenges by tobacco companies have influenced the Hong Kong government to take a more conservative posture in tobacco control. Tobacco companies have formed the Tobacco Institute, which has threatened legal action if advertising bans are extended to print and outdoor media. Under such pressure, the Hong Kong government has taken few recent measures to discourage smoking despite public support for such measures; partly in response, People Acting for a Smokeless Society and Action on Smoking or Health were created. Lobbying efforts as well as publication of fact sheets and brochures have helped combat efforts of tobacco companies. Tobacco control advocates hope that after China assumes control of Hong Kong in 1997 there will again be a strong governmental commitment to tobacco control.

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**Summary**

The Victorian Health Promotion Foundation was established as part of government action taken to reduce smoking prevalence, especially among young people. The Foundation's primary objective is to sponsor activities related to health promotion and early detection of disease. Its sponsorships of activities in sports and the arts are seen as effective alternatives to tobacco sponsorships.

**Development and Implementation**

The Foundation was established as a result of the Tobacco Act of 1987. Funding for Foundation purposes is provided by a health promotion levy of 5 percent on wholesale tobacco sales that is expected to raise \$23 million annually. The Foundation offers sponsorships to groups with and without current tobacco sponsorships. Those eligible for funding include groups that support sports or any activities that encourage health by active participation; groups in the arts able to reach particular audiences, such as teenagers or immigrants; and health promotion groups, which can apply for funds to sponsor activities in sports or the arts or for developing educational campaigns that raise awareness of healthy lifestyles and disease prevention. About 10 percent of funds raised for the Foundation are allocated to medical research on the prevention and treatment of disease. Sports sponsorship is expected to phase out within a few years as sports groups begin to favor health promotion over tobacco promotion.

**Evaluation and Results**

No information is currently available.

**Lessons Learned**

Smoking is a significant health problem in Victoria, and tobacco-related illness accounts for more than 6,200 deaths per year. Marketing of cigarettes is undeniably targeted at new smokers through sports-associated and other images. Although restrictions on tobacco promotion may not lead to a significant short-term drop in consumption, limiting advertising may considerably reduce the appeal of smoking to young people who have not begun the habit. Some examples of suggested ways to use Foundation funding include sponsorship of rock concerts to deliver anti-drug and alcohol messages to teenagers and sponsorship of young athletes through the National Heart Foundation to promote the relationship between exercise and good health.

## THE SMOKELESS BESANÇON PROGRAM

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### Summary

The Smokeless Besançon Program began in 1987 under the auspices of the city of Besançon and its Health and Hygiene Department. Goals of the project were to reduce the risk of tobacco addiction in 5 years and to change attitudes about smoking among residents of the city. Numerous activities targeted specific populations, including youth and young parents.

### Development and Implementation

The program was developed over a period of 1 year. A careful literature search was conducted to gather information for strategy development. Doctors, teachers, teenagers, smokers, and others were interviewed to get their reactions to possible prevention strategies. A technical committee, comprising the Department of Health and Hygiene, the Doubs Mutual Insurance System, and the Association for the Prevention of Atmospheric Pollution, was formed as was a sponsorship committee of celebrities. A 5-year budget was developed. Prevention activities, which began in 1988, created a positive climate for not smoking and helped smokers to stop smoking. Some activities specifically targeted children and youth. A Smokeless Besançon logo featuring a flower, a smile, and the color green was developed and widely publicized via posters, T-shirts, special events, mass media, and a newsletter. Smoking bans were introduced in public places such as sporting facilities, government offices, and banks. Cigarette advertisements were limited and cigarette prices were raised to help smokers quit. A postgraduate education program on stopping tobacco addiction was organized for doctors. Various smoking cessation methods were promoted; some used group counseling; others used relaxation techniques or alternative medicines. Prevention efforts aimed at primary school students featured the Kangaroo Game, a game that assesses students' knowledge about tobacco and its harmful effects. Approaches aimed at teenagers emphasized the positive aspects of life without tobacco; for example, a poster featured a young couple kissing above the slogan "It's cool not to smoke."

### Evaluation and Results

Process evaluations and impact evaluations were conducted to monitor the program's progress. Process evaluation involved regular meetings of the technical committee and surveys developed for specific programs. Impact evaluation involved population surveys conducted every 2 to 3 years. Evaluations showed that nearly everyone had heard of the program and believed it respected smoker's rights. From 1988 to 1992, the percentage of smokers declined (from 34.6 to 33.0 percent). Over 5 years, 20 percent of smokers quit smoking, and smokers reduced their weekly consumption by one pack of cigarettes. Program activities helped to improve the quality of air in public places.

### Lessons Learned

## Lessons Learned

Anti-tobacco campaigns based solely on medical facts have been shown to be ineffective for youth because they tend not to be concerned with the risks of illness. Thus, the campaigns must instead have a positive spin. The Smokeless Besançon program emphasized the pleasures of not smoking rather than the dangers of smoking. Because of the program's success, efforts have been intensified in primary school and college settings, and partnerships have been developed with anti-tobacco organizations within and outside of Besançon.

## THE SMOKE-FREE OLYMPICS (BARCELONA)

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### Summary

The Barcelona Smoke-Free Olympics project began with a 1989 agreement between the Barcelona Olympic Organizing Committee, the City of Barcelona, the Catalan government, the Spanish Ministry of Health, and the European Office of the World Health Organization. Goals for the Smoke-Free Olympics were to protect athletes from exposure to passive smoke, to provide a smoke-free environment for Olympic Games workers and volunteers, and to strengthen the concept of health within the Olympic movement by linking the Olympics with nonsmoking. After completion of the Summer Olympic Games at Barcelona in 1992, the Barcelona City Health Department used the Smoke-Free Olympics project to reinforce actions for tobacco control in Barcelona and in the rest of the country.

### Development and Implementation

The project was inspired by the Smoke-Free 1988 Winter Olympics in Calgary, Canada. A decision from the International Olympic Committee refusing sponsorship or publicity from the tobacco industry helped lay the foundation for the program. Official communications, brochures, and posters reinforced program elements. Cigarettes were not sold in Olympic areas, and organizers and volunteers were trained to promote not smoking. Smoking was prohibited in the Olympic village, and Olympic volunteers had to make a commitment to not smoke while on duty. As part of the project, there was a campaign for smoke-free sports locally, a media campaign, a poster exhibition, and enhanced involvement in an international anti-smoking day. Anti-smoking initiatives were carried out in city schools.

### Evaluation and Results

Assessment of smoking in open-air areas was based on direct observation of signs of smoking (e.g., tobacco smell, cigarette butts); in indoor areas, these signs as well as carbon monoxide levels were monitored. Results showed that tobacco use was rare in both areas. Successes of the Barcelona Smoke-Free Olympics led to other smoking control projects with sports organizations. In addition, an educational video was produced using footage from the Olympic games. The video was designed to help prevent smoking among teenagers involved in sports. As a direct result of the Barcelona project, the next two Winter Olympic Games, in Albertville, France, and Lillehammer, Norway, were declared smoke-free.

### Lessons Learned

An initiative that is part of a major event such as the Olympic Games can be used as a springboard for local health promotion. In addition, projects such as the Barcelona Smoke-Free Olympics can have beneficial effects internationally on other smoking control programs.



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**Summary**

The Community Intervention Trial for Smoking Cessation (COMMIT) was a randomized trial designed to determine whether an organized community-level approach to smoking cessation could help smokers, especially heavy smokers, quit and remain smoke-free. The trial, which involved a broad range of smoking cessation strategies, was funded by the National Cancer Institute (NCI) of the National Institutes of Health and was carried out from 1988 to 1992.

**Development and Implementation**

COMMIT involved 11 research institutions, each of which worked with a matched pair of communities. One of each community pair was randomly assigned to implement 58 smoking cessation activities; the other community served as a control. Activities were implemented through four channels: (1) public education (including the media and community-wide events), (2) health care workers, (3) worksites and other organizations, and (4) smoking cessation resources. Activities included training of physicians and dentists on effective counseling for smoking cessation, on-site consultations to promote smoke-free policies in worksites, and the development of a smoking cessation resource guide. These were directed primarily at adult smokers, but the overall community approach included some activities directed at the young.

**Evaluation and Results**

Baseline (1988) and final (1993) telephone surveys were used to determine the prevalence of smoking behavior. Results showed no differences in smoking prevalence among heavy smokers in treatment and control communities. However, a significant decrease in smoking prevalence was seen among light to moderate smokers in treatment communities. The treatment effect was greatest for those with low educational attainment. Process evaluations identified many successes in organizing various projects and in developing specific intervention methods.

**Lessons Learned**

Carrying out a nationally sponsored research trial in many communities is a logistical challenge. In addition, obvious effects of treatment are difficult to achieve, especially in a period when there is a national trend toward smoking cessation. Process evaluations showed that considerable attention should be given to adapting intervention protocols to local needs and interests.

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### Summary

In 1988, 2 years' effort by the Coalition for a Healthy California resulted in the passage of the California Tax Initiative, also known as Proposition 99. Its intent was to increase the state tax on cigarettes to raise money for anti-tobacco education, public resources for environmental concerns, research, and treatment of tobacco-related diseases. Since passage of the initiative, more than \$100 million per year has been set aside for health education targeting school children, women, current smokers, and other populations.

### Development and Implementation

The campaign to pass Proposition 99 unfolded in four stages: (1) Formation of the Coalition for a Healthy California and writing of the initiative, (2) the petition phase, (3) the campaign phase, and (4) the appropriation phase. Various health organizations, including the American Cancer Society, the American Heart Association, and the California Medical Association, formed the coalition. More than 1 million petition signatures were gathered to place the initiative on California's November 1988 ballot. During the election campaign, the tobacco industry launched a counterattack that labeled the proposed tax as regressive, predicted it would provoke a crime wave involving gangs and bootlegging, and characterized it as representing greed by special interests. Despite these misleading arguments, Californians approved the proposition. Proposition 99, enacted into law as the Tobacco Tax and Health Protection Act of 1988, increased the tax on a pack of cigarettes from 10 to 35 cents and earmarked the revenue for anti-tobacco education, patient treatment, research on tobacco-related diseases, and public resources for environmental concerns. The initiative stated clearly that the new revenues would supplement, rather than supplant, funds for existing services. Further legislation was needed to authorize spending by agencies responsible for implementing required programs.

### Evaluation and Results

Researchers at the University of California, San Diego, assessed changes in smoking behavior using excise tax data on per capita cigarette consumption and population survey data on smoking behavior. In the first few months following passage of Proposition 99, tobacco consumption decreased by nearly 14 percent. With the implementation of education programs, the decline continued from 1988 to 1993 at three times the national rate. If this trend persists throughout the 1990's, smoking prevalence in California will be reduced by 61 percent.

### Lessons Learned

Despite well-funded efforts by the tobacco industry, the underfunded Proposition 99 campaign prevailed by taking advantage of free media coverage, galvanizing public support, and focusing on the health issues of tobacco control. In addition, volunteer spokes-persons were well prepared to challenge the tobacco industry's charges. The success of the campaign hinged on the coalition's strength throughout all stages of the

# NUTRITION/PHYSICAL ACTIVITY PROGRAMS

**O**f nine projects discussed in this section, four deal only with physical activity, two with nutrition, and three with both physical activity and nutrition. Programs like these may choose to focus on one or two risk factors to address the greatest need, to establish a base from which a larger program can grow as funds increase, or to address a single component within an ongoing comprehensive community program.

Social marketing theory holds that programs should focus on the particular needs and interests of the target population; by choosing the most relevant risk factor, one increases the likelihood of success. For example, worksite programs may begin with a focus on physical activity when this represents the highest priority. This focus can later be expanded to include other priorities.

The nine projects contribute valuable lessons for the development of organizational strategies and educational methods specific to nutrition or physical activity. Often more can be learned from organizing a project than from carrying it out. This is especially evident when the target audience encompasses a total population—for example, the population of a province, state, or one or more countries.

The projects also show that success can be attained despite limited resources. The Jump Rope for Heart program, created by the American Heart Association (AHA), serves as an example. Hundreds of state, county, and community AHA branches are found throughout the United States, but each has only a few paid staff members. The majority of AHA work is accomplished through volunteers. Participants (about 20 million students) in Jump Rope for Heart have raised more than \$345 million by asking adult sponsors for donations—a highly effective approach both to overcoming financial limitations and to encouraging community support. Incentives that contribute to this program's continued success include health for the student, pride for the sponsor, and funds for the AHA to continue cardiovascular research and education. A well-tested guide book and educational package have also contributed to program success.

The example set by the AHA underscores the importance of finding a well-respected organization from which to launch prevention programs. Nonprofit organizations can

succeed in complex tasks when they have high credibility and well-developed organizational skills. Because many governments face limited financial resources, they often must rely on the efforts of nonprofit and other nongovernmental agencies. PROEVISA, sponsored by the Pan American Health Organization; Active for Life (Great Britain), sponsored by the Health Education Authority; and Active for Life (Australia), sponsored by the Victorian Health Promotion Foundation, are all examples of successful programs supported by highly visible nongovernmental organizations.

A critical aspect of effective organization is formative research. The Scottish program Promoting Physical Activity: A Practical Approach learned this lesson when it offered incentives to encourage the sedentary to swim on a regular basis. The program's limited effectiveness could have been anticipated had focus groups been first employed to research effective marketing approaches. Learning from this lesson, the planning team for this program went on to produce an exercise policy and strategies document that had an impact throughout Scotland.

Experiences of the Physician-Based Assessment and Counseling for Exercise (PACE) program provide insight on effective organizational and educational approaches. PACE has implemented counseling strategies throughout the United States and in other countries. Its success can be attributed to careful organization by the Centers for Disease Control and Prevention (CDC). To ensure that sound educational methods were employed at the initial demonstration site, CDC joined forces with a university research team. PACE reminds us of a theme discussed in an earlier section of this document: that collaboration increases skills and knowledge available to create a successful program. PACE also has contributed to our knowledge of educational methods by validating the "stages of change" model, which evaluates the stages of a person's readiness to change and helps design interventions that are tailored to each stage.

Alberta's Food For Life...Seniors Helping Seniors also offers an important lesson for health intervention: people will respond better if instruction comes from peers. In addition to its benefits in reaching a target audience, the "train the trainers" approach is inherently cost-effective. Peer instructors must be properly trained, as they were in Food for Life. The program further improved its credibility by employing experts on nutrition as guest lecturers.

The importance of process evaluation is evident in the description of Active for Life (Australia). This program's experience provides practical information about this necessary step toward broader dissemination. The Active for Life program is but one of many activities established with tobacco tax monies (see the description of the Victorian Health Promotion Foundation).

Although most of the programs described here report success and suggest paths to replicate their success, the experience of the Common Agricultural Policy of the European Community represents a failure to be learned from. Political influence from commercial industries have impeded efforts to reduce the fat content of meat and poultry products. This conflict between health and commercial interests was described in *The Catalonia Declaration* as a significant barrier to effective action. The success of anti-tobacco efforts in the Australia state of Victoria and the U.S. state of California are evidence that this barrier can be surmounted.

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**Summary**

Food for Life...Seniors Helping Seniors is a nonprofit, community-based program established to educate seniors about the benefits of good nutrition. Volunteers take a nutrition course and use trade fairs, grocery store programs, home visits, and other strategies to address nutrition issues for seniors. Organized in 1985 by the Leduc-Strathcona Health Unit and now administered by the Lakeland Regional Health Authority, the program's overall goal is to help seniors live longer, healthier lives.

**Development and Implementation**

The program began with a pilot project in Fort Saskatchewan, where seniors have a reputation for being pro-active. A nutritionist developed teaching and training resources, a community directory of food and nutrition information, and nutrition fact sheets. The nutritionist then recruited volunteers from the community to serve as peer educators. Volunteers were trained in 10 2-hour sessions devoted to nutrition, health, volunteerism, and peer education. Initially, peer educators delivered their message via home visits to seniors in the community. To reach a larger audience, peer educators hosted nutritious dinners that included guest speakers and discussions centered on nutrition. Over 3 years, about 420 meals were served. Numerous other outreach activities followed. For example, with help from Canada Safeway Limited, Food for Life volunteers served healthy food samples and distributed recipes in Safeway grocery stores. Volunteers conducted Smart Shoppers Tours in grocery stores and produced a low-cost cookbook geared toward healthy eating. The cookbook was published with funds provided by Health Canada; 1,500 copies were distributed. Volunteers also have been actively involved in local heart-healthy restaurant programs and other nutrition education initiatives. The Food for Life Program has since been introduced in several other communities in Canada.

**Evaluation and Results**

More than 10,000 citizens have been informed through dinners, trade fairs, presentations, demonstrations, displays, food samples, and grocery store tours. Feedback indicates that 95 percent of the Food for Life members report an improved knowledge of nutrition. Materials on the program have been distributed internationally.

**Lessons Learned**

The success of Food for Life emphasizes the importance of group ownership and independence. Volunteers were included in every phase of planning and implementation, and their experience, wisdom, patience, and determination were essential to making the program work.

## PROMOTION OF HEALTH AND PREVENTION OF FOOD- AND NUTRITION-RELATED CHRONIC DISEASES PROJECT

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### Summary

The Promotion of Health and Prevention of Food- and Nutrition-Related Chronic Diseases Project, also known as PROEVISA (*Promoción de Estilos de Vida Saludable*), was initiated in October 1993. The project was developed by the Tibas Integrated Health Clinic (COOPESAIN, R.L.), and by the Institute of Nutrition of Central America and Panama of the Pan American Health Organization (INCAP/PAHO). PROEVISA has received financial and technical support from INCAP/PAHO and is funded through the private sector. Major goals of PROEVISA are to define a model for the prevention of chronic illnesses, especially cardiovascular disease (CVD), and to modify behaviors to reduce or prevent CVD among Costa Ricans using a community-level approach. Behaviors targeted by interventions include those related to diet and physical activity.

### Development and Implementation

PROEVISA was established in response to the increasingly significant problem of CVD among Costa Ricans. The project was initiated in the canton of Tibas, near San José. Development and implementation of PROEVISA has included (1) a background research phase to provide information on health status and behaviors in a sample of Tibas residents, (2) a design and implementation phase, and (3) an evaluation phase. The first phase involved the collection and analysis of data for a sample of Tibas residents. The data revealed a need to target existing detrimental health behaviors related to diet and physical activity, information that was used to design CVD interventions. An implementation committee was formed that included a project coordinator from INCAP/Costa Rica as well as professionals from COOPESAIN R.L. and from medical, health education, and physical fitness disciplines. Health clinic staff and community health promoters were trained, educational and promotional materials were developed, and community participation was encouraged in the creation of a preliminary model for promoting healthy lifestyles. Intervention activities include health fairs and school competitions promoting healthy lifestyles as well as group sessions involving participants of both sexes and various age groups. The group sessions consist of scheduled weekly meetings where participants receive professional guidance on healthy diet and exercise.

### Evaluation and Results

The evaluation of PROEVISA is both under way and being planned. Evaluations use qualitative and quantitative methods to determine the effectiveness of intervention activities in altering unhealthy behaviors and reducing risks of CVD. Effects of group sessions on blood pressure, serum lipids, physical activity, and diet are being evaluated in clinics. In the near future, home visits will be used to assess knowledge and practice of heart healthy lifestyles among group session participants.

## Lessons Learned

PROEVISA's background research has identified attitudes, behaviors, and education needs and has provided a foundation for developing intervention strategies. As interventions were implemented they also have been monitored, so that adjustments could be made as necessary. For example, the target audience for interventions has been expanded to include school children and teenagers, to help them develop healthy lifestyles earlier. It is hoped that the project can be repeated in other communities throughout Costa Rica.

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### Summary

Recent investigations have shown that moderate exercise offers protection from heart disease and may even help prevent some cancers. Active for Life, a program initiated in 1994, provides a strategic approach for promoting regular, moderate physical activity to older adults. The message is simple: Being active for life requires only 30 minutes of moderate physical activity a day. Promotional efforts take place in schools, workplaces, communities, and other settings. The program receives financial support from the Victorian Health Promotion Foundation and the Victorian Department of Human Services.

### Development and Implementation

The main impetus for creating Active for Life was an assessment of health promotion needs in Victoria. The assessment established physical activity as a priority, especially for older people, who are among the least likely to exercise regularly. The program incorporates individual awareness, knowledge, and skills; fosters supportive environments; and provides organizational, technical, and financial support to enable people to act on their decisions. An essential aspect of the program is to identify key settings where relevant promotional strategies can be developed. To this end, senior representatives from local government; schools; and multicultural, sports, and community settings agreed to participate in a Cancer/Heart Consultative Committee that helps develop strategies relevant to target groups in different settings. Implementation of activities has involved organizational programs supported by mass media, marketing, and information programs. Settings groups have been established to alter setting structures, as needed, to accommodate larger numbers of older people from all income levels and from urban and rural locations. A community grants scheme has supported development, with an emphasis on sustainability, of various physical activity and healthy eating programs.

### Evaluation and Results

An evaluation of Active for Life is under way using baseline data for risk behaviors and evaluations from each funded project. The evaluation will determine the long-term effects of the health promotion activities in older populations, including changes in awareness and behavior.

### Lessons Learned

The program's greatest challenge is to develop an evaluation system that documents the factors that have contributed to each project's success or failure. This information can be shared statewide via Internet, fax, and training and exchange workshops. Small grants have proven an effective vehicle for mobilizing specific community groups to promote and develop Active for Life programs. The grants also have helped promote physical activity among disadvantaged and disabled people.



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### Summary

Sports for Life (SFL) is a long-term, national program designed to promote regular exercise by making sports activities accessible and affordable for all Singaporeans. Introduced in September 1996 by a grassroots organization, the Singapore Sports Council (SSC), SFL provides communities with opportunities and modern facilities for participation in a wide range of sports and fitness activities. The program's overall goal, as embodied in its slogan, "It's more fun than you think," is to instill a positive attitude about sports and improve quality of life through sports participation. Specific objectives are to increase the percentage of the population who participate in sports at least once a week as well as the percentage who exercise three or more times a week.

### Development and Implementation

In 1992, SSC conducted a survey on sports participation that showed that 64 percent of adults did not participate in physical activity of any kind. This problem was especially prevalent among working adults, senior citizens, and housewives, and became the driving force behind the program's initiation. The SFL approach consists of four components designed to encourage exercise and improve health in general: (1) public education, (2) community outreach, (3) customer-focused programs, and (4) physical fitness tests. Educational strategies are designed to change attitudes about sports with the ultimate goal of changing habits. The program's educational component will be spear-headed by a S\$1.2 million (approximately US\$850,000) advertising campaign and supported through media coverage, telephone hotlines, an Internet web site, and other marketing and public relations activities. As part of community outreach, existing sports facilities are being upgraded and improved to create Regional Sports and Fitness Centers (RSFCs) in communities across the country. Customer-focused programs provide activities developed specifically for working adults, senior citizens, and housewives, including a "learn-to-play" program that teaches skills for a specific sport or game. Some games are modified to suit the abilities of a particular target group; examples include mini-tennis, soft volleyball, and petanque. This component also emphasizes family togetherness through participation in mass sporting events such as the National Jog/Walk and the Great Singapore Workout. Physical fitness tests, held monthly, include walking or running events to appraise participants' aerobic fitness and a National Physical Fitness Award Challenge to appraise participants' overall strength, flexibility, and cardiovascular fitness.

### Evaluation and Results

**Evaluation and Results**

SFL has enjoyed some initial success. About 10,000 people attended an official launch ceremony in September 1996. Since then, more than 83,000 people have participated in activities organized at RFSCs. Achievements include the promotion of family togetherness through sports participation. For example, a recent Singapore Family Fitness Festival attracted 32,000 people, and parents often bring their children as well as their own parents to physical fitness tests.

**Lessons Learned**

Results of the 1992 survey resulted in public policy changes that helped target groups with the greatest needs. The media provided an effective means for educating the public about the need to exercise regularly in improving and maintaining health. In addition, RSFCs play a critical role in bringing sports facilities into communities, attracting participants, and promoting the health benefits of sports.

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### Summary

Active for Life is a 3-year campaign launched in March 1996 by the Health Education Authority (HEA). The campaign's intent is to promote moderate physical activity as a part of everyday life. Community activities, printed materials, and television advertising are designed to reach the entire adult population of England, with special emphasis on particular groups (women aged 16–24, men aged 45–55, and people over 50 years of age) who do less than 30 minutes of physical activity in a given week. A special focus of the campaign is to promote exercise as a means for controlling weight and reducing the risk for cardiovascular disease.

### Development and Implementation

Active for Life was developed based on research showing that although more than 90 percent of the population think regular exercise is important, more than half do not exercise enough to benefit their health. The campaign supports the government's Health of the Nation strategy and emphasizes moderate physical activity—that is, exercise that elevates the heartbeat and produces a slight breathlessness. Campaign efforts are designed to increase the proportion of men and women in the population who exercise for 30 minutes at least 5 days a week. Reaching this goal involves increasing the public's knowledge of how much exercise is recommended for good health and encouraging the belief that exercise is fun and can be effectively integrated into everyday life. A campaign packet has been developed that includes ideas for contests, publicity events, and other activities to promote Active for Life in communities. The packet also contains posters, leaflets, and a kit with logos and other reproducible resources for use in preparing handouts or notices. A fictional pop star, Daley Walker, has been created to gain media attention and to attract the public to an annual Active for Life Road Show. Seminars are held annually to inform health and leisure professionals of campaign plans and target groups and to assist with disseminating campaign messages.

### Evaluation and Results

All campaign materials are pretested to ensure their appropriateness for the target audience. The larger, more expensive campaign materials (e.g., television advertising) are also posttested to assess their impact on target audiences. A tracking survey has been designed to assess health and leisure professionals' knowledge and attitudes about Active for Life as well as their confidence in giving advice on exercise. An HEA Physical Activity Panel Survey is used to monitor the effectiveness of the campaign among the public. This survey assesses awareness of campaign messages and participation in the recommended levels of physical activity. The program's strong evaluation

## Lessons Learned

framework is expected to allow the HEA to demonstrate the effectiveness of this national population-based approach in promoting physical activity. Early results show that campaign messages and products have universal appeal.

The campaign's most effective work happens at the community level, with support from the national campaign. Communicating the value of moderate physical activity without detracting from more vigorous forms of exercise has been and remains a challenge.

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### Summary

The Common Agricultural Policy (CAP) of the European Community (EC) was implemented over 30 years ago. An important objective of the policy was to ensure stable and adequate incomes for farmers, primarily through agricultural price support. The policy also was intended to prevent food shortages and to reduce dependence on tobacco imports.

### Development and Implementation

The Treaty of Rome (1958) laid the foundation for the EC and cited the need for a common agricultural policy in establishing a common market. In 1960, detailed policy proposals were submitted with the understanding that agricultural prices in the EC would be protected from world market prices to avoid excessive fluctuations. Despite good intentions, CAP has resulted in overproduction of food and wine, and in particular in fat and sugar; as a result, butterfat is sold cheaply and full-fat milk is sold to schools at a greater subsidy than skim milk. Similarly, despite large expenditures on tobacco relative to its market value, manufacturing needs for tobacco products continue to be met by imports. CAP has undergone reform, so that subsidies are no longer linked to price guarantees. With the reformed CAP, it is feasible to increase the supply and lower the price for healthier foods, such as fruits and vegetables, thereby encouraging greater consumption, and to raise the price and reduce the availability of tobacco, sugar, and fats. Because of the continuing influence of commercial industry, however, the consumption of meat and dairy products may increase.

### Evaluation and Results

No information is currently available.

### Lessons Learned

The influence of commercial interests can impede action on scientifically supported measures to improve population health. Efforts to achieve health-promoting change in agricultural policy are more likely to succeed in individual countries than in groups of countries; group action may be possible after a majority in the group has changed.

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**Summary**

As part of a larger initiative aimed at changing unhealthy behaviors, the Ayrshire and Arran Health Board started a campaign to raise awareness of the benefits of exercise and to increase participation in physical activity. Objectives included formulating a physical activity campaign that the public could readily access, monitoring participation, and evaluating participants' satisfaction. The campaign focused on swimming and promotional activities included newspaper coverage and coupons allowing half-price access to area swimming pools. Promotions began in 1991 and were repeated annually for 3 years.

**Development and Implementation**

Research conducted locally by the Advertising Research Unit at Strathclyde University showed that the public favored projects that encourage healthy lifestyles over warnings about unhealthy behaviors. The research also showed that the public wanted to learn about the benefits of physical activity, to be encouraged to participate in health activities, and to receive practical support for participation. In planning the campaign, swimming became the main focus largely because the benefits of this exercise can be achieved by people in all age groups and all levels of ability. Representatives of swimming pools agreed to participate in the program after carefully considering its effects on revenue, appropriate timing for promotions, and other business issues. Local newspapers were contacted and asked both to print a coupon along with a press release on the benefits of exercise. Other means of promotion included posters for display in general practitioner offices.

**Evaluation and Results**

The program was monitored by keeping track of coupon usage and newspaper coverage. In addition, in the third year, display stands were staffed at pools in each local authority area; staff interviewed the public to determine their reasons for coupon use or nonuse. Evaluations showed that, initially, nonfrequent swimmers made use of the coupons, but by the third year regular swimmers had become the main users. The program did not seem to motivate sedentary people to become more active.

**Lessons Learned**

After the swimming promotion program was evaluated, health educators and leisure service providers agreed that a more comprehensive and coordinated approach to conducting a health-related physical activity program was needed. A working group consisting of representatives from local and regional authorities, the Scottish Sports Council, the Sports Association for the Disabled, teaching institutions, and National Health Service trusts was established to produce a strategic document entitled *Exercise Policy—Guidelines and Recommendations*. The document has been well received in Scotland and elsewhere, and has guided the continued promotion of physical activity programs in Ayrshire and Arran.

## JUMP ROPE FOR HEART

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### Summary

Jump Rope for Heart is an educational fund-raising program designed to help students and others learn about cardiovascular fitness and develop a lifetime commitment to physical activity. The American Heart Association (AHA) together with the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) have conducted the program since 1979. Goals of Jump Rope for Heart are to teach the benefits of regular exercise and healthy lifestyles at elementary schools; provide educational materials to schools; provide healthy, enjoyable activities for students, teachers, other school staff, and community members; and raise funds to support AHA and AAHPERD activities.

### Development and Implementation

Jump Rope for Heart began as a Jump Rope-A-Thon held in an elementary school in Milwaukee, Wisconsin. This event led to pilot testing by the AHA in other locations. Jump Rope for Heart then became a national special event in 1980, and currently, all 50 states, the District of Columbia, and Puerto Rico participate in the program. Participants obtain sponsors from family members and the community. In addition to the rope jumping event, the program provides a range of educational packages. Among these are the *FITT Kit*, *Jump for the Health of It: New Twists*, and *Just Jump '96*, each featuring curriculum guides, videos, wall charts, and jump rope skills cards with teaching hints. Other packages, including *Heart Journey* and *Racing with the Wind*, encourage personal responsibility for developing healthy lifestyles.

### Evaluation and Results

Jump Rope for Heart has benefited approximately 25 million students and raised more than \$350 million. AHA, AAHPERD, and AAHPERD's state associations receive funds generated by the program to support cardiovascular research and education programs.

### Lessons Learned

One factor important to the continued success of Jump Rope for Heart is its effective promotion to various audiences. A guide providing tips for appealing to students and gaining support from parents, teachers, and policymakers is available for event coordinators. Similar guides help with organization and publicity, other elements fundamental to program success. Achievements of Jump Rope for Heart have encouraged and helped finance development of similar school-based programs, such as Hoops for Heart, a basketball fundraiser also conducted as a joint effort of AHA and AAHPERD. A new school-based AHA program, HeartPower!, provides strategies and materials to promote lifelong healthy habits to their students.

## PHYSICIAN-BASED ASSESSMENT AND COUNSELING FOR EXERCISE

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### Summary

The Physician-Based Assessment and Counseling for Exercise (PACE) program provides a comprehensive approach to physical activity counseling that physicians, nurses, and other health professionals can use to encourage their patients to exercise. The primary goal of PACE is to promote regular physical activity by sedentary adults. Initiated in 1990, PACE is a nonprofit project carried out with support from San Diego State University. The project has received funding from the Centers for Disease Control and Prevention and the Association of Teachers of Preventive Medicine.

### Development and Implementation

One of the *Healthy People 2000* national health promotion objectives is to increase the proportion of primary care physicians who routinely counsel their patients about physical activity to at least 50 percent. The PACE program is designed to help reach this goal. Interventions were developed based on the stages of change model, which postulates that people make health behavior changes in stages and that different interventions are needed at each stage. As part of the intervention, patients complete a one-page assessment questionnaire. Responses are used to determine each patient's stage of change for physical activity and to guide selection of an exercise protocol. Physicians then review the protocols with patients and provide stage-appropriate advice to encourage moderate physical activity. PACE materials include a *Physician's Manual*, a reference that describes benefits of physical activity and provides guidance on counseling, and three interactive counseling protocols designed to tailor advice to different patient needs. Two new PACE interventions began in late 1996. The first promotes a combination of nutrition and physical activities for adult patients. The second consists of nutrition and physical activity strategies for physicians and other health care providers to use with adolescent patients.

### Evaluation and Results

One efficacy trial matched intervention physicians with control physicians based on medical practice variables. Intervention physicians delivered 3–5 minutes of counseling to healthy but sedentary patients, and a health educator made a booster phone call to each patient to answer questions and discuss progress. Self-reported physical activity and information on stage of change were determined at baseline and 4–6 weeks following the intervention. Results showed that patients who received physical activity counseling increased walking significantly more than patients who did not receive such counseling. Other studies have shown that primary care physicians, their staff, and patients find PACE materials acceptable and easy to use.



## Lessons Learned

Lack of time and training in behavioral counseling may prevent physicians from counseling patients about physical activity. PACE materials and training afford primary care providers an effective, time-efficient approach to modifying behavior of sedentary patients. PACE interventions have been applied by physicians, physicians' assistants, health educators, exercise physiologists, and other health care professionals across the United States and internationally.



# BLOOD PRESSURE/ CHOLESTEROL PROGRAMS

**T**hese seven programs vary widely in scope, from clinical practice to worksite, community, and national campaigns. All of the programs specifically target people at high risk for hypertension or hypercholesterolemia. Several include tobacco use among the criteria used to identify high-risk individuals, and two U.S. national campaigns use a general population strategy in addition to a high-risk focus. In general, these programs follow a medical rather than a public health model. In this document, these models should be viewed as components of broader programs.

Examples throughout this chapter identify the need to train teams of nurses, doctors, and other health professionals in systematic methods of screening, follow-up, and therapy. The Brimex Clinic in Mexico City, for instance, succeeded in screening and following a low-income population by creating an interdisciplinary team of doctors, nurses, nutritionists, physical therapists, and volunteers. The worksite program carried out in Electrostal City (Russia) and the National Primary Care Facilitation Programme have both established a central role for nurses to manage and implement treatment guidelines. Many of the programs presented have benefited from using guidelines and protocols developed by existing international and national professional groups. This groundwork provided a starting point that enabled a more aggressive approach to cholesterol and blood pressure management. Nonpharmacologic management of diet, exercise, and obesity proved challenging, was only partially achieved by the programs described here, and identified a need for training health professionals in behavior change methods.

Lessons derived from the National High Blood Pressure Education Program and the National Cholesterol Education Program differed from those learned from clinic, community, and worksite programs. The main lesson was that a national governmental organization can form broad coalitions with a relatively small budget. Success in these U.S. projects was achieved by enlisting the aid of many professional organizations, including private sector and nonprofit agencies in forming a coordinating council for

creating policy. The government agency—the National Heart Lung and Blood Institute (NHLBI)—then directed program implementation. Positive interactions between national and local campaigns also contributed to success: NHLBI organized local activities in communities throughout the country and furnished them with print and television educational materials that incorporated advanced thinking in behavior change methods. These materials were supplemented by locally generated campaign activities that catered to the unique needs of the community. The combination of national materials and local activities generated greater impact than either approach would have generated alone.

## THE NORTH KARELIA CHOLESTEROL PROJECT

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### Summary

The North Karelia Cholesterol Program was a direct outgrowth of the North Karelia Project. Since the mid-1980's, North Karelia has been a national demonstration area for innovations in chronic disease prevention and health promotion. The primary focus of the Cholesterol Program was to change the dietary practices of the population.

### Development and Implementation

In the 1960's, saturated fats accounted for 23 percent of all calories consumed in Finland. To alter this unhealthy balance, the North Karelia project included changes in diet as a primary focus. The project involved the local community and encouraged local organizations and businesses to set up and promote health education. Several initiatives were undertaken to promote healthier eating habits, with the goal of lowering serum cholesterol levels. Cholesterol screenings were recommended to all people. Competitions to lower cholesterol were held in 40 villages. Health education campaigns alerted people to the importance of switching from whole to skim milk and from use of butter to soft margarine (or vegetable oils in cooking). Health education campaigns also encourage substituting fresh berries for dairy products. These changes caused some economic problems for local dairy farmers; in response, in 1985 the Ministries of Finance and Agriculture funded a major collaborative effort to promote the domestic cultivation and consumption of currants and strawberries. Within 5 years, consumption of local berries was up and many dairy farmers had become berry farmers. Numerous activities related to diet have been conducted in concert with the food industry and supermarkets. The result has been production of low fat dairy products by the dairy industry, low fat sausages by the sausage industry, and domestic rape seed oil by the vegetable oil industry.

### Evaluation and Results

Methods for evaluating the impact of various activities included baseline and subsequent measurements of serum cholesterol in random samples of the population. From 1972 to 1992, serum cholesterol levels decreased by 13 percent among men and by 18 percent among women. These declines were estimated to reduce mortality from ischemic heart disease by 26 percent in men and by 35 percent in women. During the same time period, the proportion of men with normal cholesterol levels increased from 6 to 21 percent and the proportion of men with high cholesterol levels dropped from 60 to 28 percent. Similar findings were recorded for women: the proportion with normal cholesterol levels grew from 7 to 33 percent and the proportion with high cholesterol levels fell from 57 to 17 percent. In the first cholesterol-lowering competition, the winning village reduced overall cholesterol levels by 11 percent in 2 months.

## Lessons Learned

Among many lessons learned was the importance of working closely with all relevant community organizations and with the full participation of all individuals. Achievements observed in North Karelia are partly attributable to program efforts to always involve the local community, encourage local organizations and businesses to organize and promote health, and provide overall guidance without meddling. Successful programs such as this combine a sound theoretical framework with hard work, dedication, persistence, and daily interactions within the community.

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### Summary

In March 1995, a project was initiated at the British-Mexican (Brimex) Clinic, a beneficiary institution of the ABC Hospital that provides care for people with limited economic resources in a Mexico City suburb. Goals of the Brimex Clinic Project include evaluating the prevalence of hypercholesterolemia and other major cardiovascular risk factors and determining the effect of interventions on blood cholesterol levels on persons who received care at the clinic. The project is one of numerous activities supported by the Mexican Association for the Prevention of Arteriosclerosis and Its Complications.

### Development and Implementation

In the first months of the study, an interdisciplinary group of doctors, nurses, nutritionists, physical therapists, and volunteers was assembled and given instruction about cardiovascular risk factors and their detection, treatment, and prevention. Once staff were trained, all patients greater than 20 years of age who had received treatment at the clinic for any type of pathology were called in for study. Cholesterol levels, blood pressure, and body fat levels were determined and information on tobacco use was obtained for each patient. All patients who had total cholesterol levels of 200 mg/dL or greater and had other major cardiovascular risk factors were asked to participate in a program on diet management, tobacco use, hypertension, and aerobic exercise, and received brochures describing each of these topics. Moreover, patients whose cholesterol levels were above 240 mg/dL received additional treatment at the clinic.

### Evaluation and Results

Patients were observed over a period of 3.1 months, and cholesterol levels were determined at the end of this period. Among patients whose cholesterol levels were greater than 240 mg/dL at baseline, diet and exercise was associated with a 20.4 percent reduction in blood cholesterol (to an average of 200 mg/dL).

### Lessons Learned

An interdisciplinary team of health professionals and volunteers can more effectively address the treatment needs of clinic patients with one or several cardiovascular risk factors.

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### Summary

In fall 1985, the National Heart, Lung, and Blood Institute (NHLBI) established the National Cholesterol Education program (NCEP) to reduce the prevalence of high blood cholesterol in the United State. and to thereby help reduce illness and death due to coronary heart disease (CHD). Educational efforts of the NCEP are directed at health professionals, patients, and the public. These efforts are designed to raise awareness of high blood cholesterol and increase understanding of ways to lower cholesterol to prevent and treat CHD. The NCEP encourages the public to reduce fat and cholesterol consumption and helps identify and treat those whose elevated cholesterol levels place them at increased risk for CHD.

### Development and Implementation

In 1984, results of an NHLBI-sponsored study showed for the first time that reducing blood cholesterol levels significantly reduces the risk for CHD. Later the same year, an NIH consensus conference recommended a nationwide effort to lower cholesterol levels and urged establishment of a national education program. In early 1985, representatives from relevant organizations met in a series of planning workshops to establish issues and priorities for program development. These participants formed the nucleus of the NCEP Coordinating Committee, which consists of representatives from major medical and health professional associations, voluntary health organizations, community programs, and governmental health agencies. The committee recommends program directions and policies, helps develop activities that promote cholesterol education nationwide, and fosters the implementation of cholesterol education initiatives by member organizations. The NCEP uses two main strategies for reducing the prevalence of high blood cholesterol levels. A population strategy attempts to lower average blood cholesterol levels by recommending reductions in saturated fat, total fat, and cholesterol intake by the general public. A high-risk or clinical strategy is designed to detect and treat people with high blood cholesterol levels. The NCEP implements these approaches in partnership with member organizations of the coordinating committee through promotional activities and educational and research materials directed at physicians, other health professionals, patients, and the public. Examples include treatment guidelines, position papers, reports on scientific issues, videotapes, kits, posters, conferences, mass media campaigns, and designation of September of each year as National Cholesterol Education Month.



## Evaluation and Results

NHLBI coordinated Cholesterol Awareness Surveys (CASs) of physicians and the public in 1983, 1986, 1990, and 1995. The percentage of persons who had ever had their cholesterol levels checked increased from 35 percent in 1983 to 75 percent in 1995. Over the same time period, the proportion who had been informed of their cholesterol level increased from 21 to 65 percent. In addition, the 1995 CAS showed that critical elements of the NCEP guidelines for cholesterol detection and treatment have become established medical practice. Other national surveys indicate that the public's intake of saturated fat, total fat, and cholesterol has declined; that blood cholesterol levels and the prevalence of high blood cholesterol levels have dropped significantly; and that CHD mortality in the U.S. population has declined. Efforts of the NCEP and member organizations of the coordinating committee have substantially improved professional and public knowledge, attitudes, and practices concerning high blood cholesterol and heart disease. Overall, progress indicators show a significant effect for cholesterol education over the past decade.

## Lessons Learned

Two principles have guided efforts of the NCEP from its inception. The first is to base recommendations and messages on strong scientific evidence of cholesterol's role in CHD. The second principle is to rely on partnership in promoting the implementation of NCEP guidelines and strategies. With over 40 member organizations, the NCEP Coordinating Committee embodies the partnership principle and has provided effective leadership in guiding the program.

## THE CIVIL SERVANTS HYPERTENSION CONTROL PROGRAM AND THE MAMPROBI CARDIOVASCULAR DISEASE PROGRAM

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### Summary

Although infectious disease and malnutrition receive considerable attention as significant health problems in sub-Saharan Africa, a few programs have systematically addressed cardiovascular disease in general and hypertension in particular. Among these are the Civil Servants Hypertension Control Programme and the Mamprobi Cardiovascular Disease Program. The first program studied civil servants in intervention and reference communities in urban areas; the second was a general population study. Both were conducted, beginning in the early 1970's, by the Ministry of Health of Ghana and the University of Ghana Medical School in collaboration with the World Health Organization (WHO). Seed money for the studies came from WHO; the Ministry of Health of Ghana provided funds for investigations and drug therapy for patients. The Civil Servants program ended in 1981 and the Mamprobi program ended in 1986.

### Development and Implementation

Concern about hypertension in Ghana arose with findings from postmortem and clinical reports in the 1950's and 1960's; by the early 1970's, there was a clear need for hypertension control programs, at least in urban areas. Once the Civil Servants and Mamprobi programs were established, the study populations were analyzed to determine demographic, epidemiologic, and health care service information. Hypertensive individuals were identified, given medical treatment, and followed over time. Educational activities, including a radio program in three languages and two television talk shows, also were developed in conjunction with the programs.

### Evaluation and Results

For the Civil Servants study, a number of parameters (including blood pressure distribution and the prevalence and incidence of hypertension and hypertension-related morbidity) were determined among a sample of 5,000 civil servants in initial and follow-up surveys conducted 7 years apart. In addition, a subsample of about 700 persons was studied to determine the cost of screening, evaluating, and treating hypertensive patients and to provide other detailed information. The Mamprobi study involved a survey to determine blood pressure distribution in a general population of 50,000 people at baseline and 5 years later. Results of both studies revealed that about 10–13 percent of those sampled had hypertension and that one-third of hypertensive patients were over 40 years of age. In addition, only about one-third of the civil servants were aware that they had hypertension, and only about one-sixth were receiving treatment for this condition. However, there was a high level of awareness of hypertension as a significant health problem. The cost of the studies was high—US\$60 per person, as was the cost of treatment, which amounted to 7–45 percent of the patient's salary. Unfortunately, for various reasons, it was not possible to evaluate the impact of either program.

## Lessons Learned

The two programs established that among many health problems in Ghana, hypertension merits significant attention. However, obstacles to program implementation were considerable. For example, there was no permanent provision for the programs in the Ministry of Health budget; once funds ran out, the programs ceased. In addition, although project directors were highly committed, many had heavy academic and clinical responsibilities that interfered with their participation in the programs. To obtain funds and gain support for continued activity, leaders are needed who can motivate the public to encourage on their representatives in parliament to provide policy support for such programs.

## THE COUNTRYWIDE INTEGRATED NONCOMMUNICABLE DISEASES INTERVENTION PROGRAMME IN ELECTROSTAL CITY, RUSSIA

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### Summary

Since 1987, a Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) project for preventing and controlling hypertension in a workplace setting has been conducted in Electrostal City, near Moscow, under the supervision of the National Research Centre for Preventive Medicine and with the sponsorship of the Ministry of Health and Medical Industry of the Russian Federation as well as city and plant administrations. The purpose of the project is to reduce the prevalence of and risk factors for hypertension among 13,000 employees at an industrial plant in the city. Risk factors targeted include smoking, overweight, stress, and physical inactivity.

### Development and Implementation

The project began with an epidemiologic study that showed that up to 27 percent of men and 25 percent of women had high blood pressure. A special training course on detection, registration, follow up, and pharmacologic and nonpharmacologic treatment of hypertension was developed. Health care units were established in almost every department of the plant; at these health units, trained staff (mostly nurses) introduced the program to employees. Intervention strategies, including lifestyle counseling and nonpharmacologic approaches to reducing risk factors, were directed at all employees and at individuals and groups at high risk. The project received considerable attention in Electrostal City and from city authorities and the Department of Health Care.

### Evaluation and Results

Evaluations assessed levels of risk factors, determined rates of absenteeism due to hypertension, and established the prevalence of morbidity and mortality due to coronary heart disease. Over a 5-year period, project efforts achieved a 25 percent reduction in the prevalence of hypertension and a decrease in the prevalence of some contributing risk factors. In addition, hypertension was under control in 73 percent of people diagnosed with the condition, and 30 to 35 percent of hypertensives maintained systolic pressure at less than 160 mmHg, diastolic pressure at less than 90 mmHg, or both. Absenteeism due to hypertension and related conditions decreased by 30 percent.

### Lessons Learned

Electrostal City authorities expressed the desire to repeat the CINDI approach at the community level. Accordingly, additional projects have been started. One is a program for preventing cardiovascular disease complications in diabetics; another is a program for preventing noncommunicable diseases that reaches people at risk through general practices. CINDI projects in Electrostal City have succeeded in organizing and mobilizing communities and building coalitions. As a result, local administration and health care authorities have provided financial support for the projects.

## **HYPERTENSION CONTROL: DETECTION AND TREATMENT (MIRNY YAKUTSK SAHA, RUSSIA)**

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### **Summary**

In 1991, the Institute of General Pathology and Human Ecology initiated a program of hypertension control as part of a larger Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme being conducted in the Mirninsky region of Yakutsk SAHA. The program's purpose is to use individual-, group-, and community-level approaches to control hypertension and thereby decrease morbidity and mortality due to strokes, myocardial infarction, and other cardiovascular diseases.

### **Development and Implementation**

From 1989 to 1994, mortality due to diseases of the circulation, collectively the most common cause of death in the Mirninsky region, increased by 21 percent. In 1991, screening of newcomers to the region (which was conducted according to specifications of the World Health Organization's CINDI program) showed a high prevalence of hypertension among workers at factories. These findings became the impetus for initiating a program of hypertension control and treatment. Program development included three stages. In the first stage, the influence of risk factors and extreme northern climatic conditions on hypertension was assessed. The second stage, which is ongoing until 2000, involves the development of primary and secondary prevention programs; the third stage involves implementation of these programs. Prevention approaches include training programs for medical professionals and for patients with hypertension. Prevention approaches for hypertensive patients also include Tsi-gun therapy (an Eastern regimen of exercises used to control blood pressure) and psychotherapy designed to match individual psychological characteristics.

### **Evaluation and Results**

Evaluation of the program is in progress. Results are not yet available.

### **Lessons Learned**

As for the larger CINDI program, financing for the hypertension control program is insufficient. Limited financing precludes the purchase of an adequate supply of drugs for controlling hypertension.

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### Summary

In 1972, the National Heart, Lung, and Blood Institute created the National High Blood Pressure Education Program (NHBPEP) as a means for informing the U.S. population about hypertension and ways to avert or manage the disease. Two main goals of the NHBPEP are to prevent high blood pressure and to reduce the morbidity and mortality associated with high blood pressure. Among specific populations targeted by the NHBPEP are the elderly, minorities, people at high risk for hypertension, and people of low socioeconomic status.

### Development and Implementation

The NHBPEP Coordinating Committee, composed of more than 45 professional organizations, serves as the Board of Directors for the program. The committee establishes policies and priorities for the program, considers future challenges, and facilitates collaboration among member and community organizations. The committee also has helped to devise strategies for controlling high blood pressure; to develop guidelines for preventing, detecting, evaluating, and treating this disease; and to disseminate NHBPEP information and educational materials. The NHBPEP uses a multifaceted approach that involves (1) preventing hypertension through campaigns directed at the general population and high-risk groups; (2) improving hypertension control through education of patients and health professionals; (3) improving hypertension control among elderly, minority, poor, or underserved populations; and (4) reducing stroke mortality in special populations (such as older women) and in specific geographic areas (such as the Southeastern United States) through intensified program efforts.

### Evaluation and Results

Recent reports suggest progress in reducing blood pressure in the U.S. population. Between 1960 and 1991, mean systolic pressure has decreased by 10 mmHg and mean diastolic pressure has decreased by 5 mmHg. Furthermore, the reduction in blood pressure over this period has been associated with a 50 percent decrease in death rates from coronary heart disease and a 60 percent decrease in stroke deaths. These trends suggest that NHBPEP's messages are being heard and are saving lives.

### Lessons Learned

Research has identified numerous challenges facing the NHBPEP. For example, hypertension is more prevalent in older than in younger populations, and congestive heart failure is especially prevalent among older women. Future activities to counter these problems include a mass media campaign that encourages people who have or are at risk for hypertension to adopt lifestyle changes and comply with treatment. A continuing education program for health professionals designed to translate research results to practice is also planned.

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