

born Mexican women were less likely to be smokers than are their U.S.-born counterparts.

Other measures of outcome for Hispanic-origin births by nativity of mother were generally consistent with the findings for low birth weight (table 3). That is, births to foreign-born Hispanic women were less likely than births to U.S.-born Hispanic women to have been preterm (less than 37 weeks of gestation) or the infants to have had low 1- and 5-minute Apgar scores.

Summary. It has long been recognized that it is not appropriate to consider the Hispanic population as a single monolithic ethnic group, and that there are

substantial differences among the Mexican, Puerto Rican, Cuban, and other Hispanic populations. It is further evident from the data presented here that the mother's nativity is an additional differentiating factor, affecting a variety of socioeconomic and demographic characteristics of the mother as well as the outcome of her pregnancy.

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Meeting the 1990 Hypertension Objectives for the Nation —a Progress Report

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Synopsis

The National High Blood Pressure Education Program (NHBPEP) effort got underway in 1972 following hypertension research findings and continues to be influenced and, when necessary, redirected, by further findings. Its coordinating committee is composed of representatives from 32 national organizations, and the program itself includes several Federal agencies, all State health departments, and more than 2,000 community-based programs.

The goals of NHBPEP and the 1990 prevention objectives for the nation center around the same basic theme: high blood pressure is a serious condition leading to major diseases and premature death. It can be easily detected and effectively brought under control.

In the summer of 1984, Admire and co-workers provided a general review and status report of the 1990 Hypertension Objectives and the progress made in meeting those objectives. In the remarkably short period of time since that review, there is even more progress to report.

There is good evidence of progress in preventing disease and premature death from hypertension, in bringing hypertension under long term control, and in giving Americans a better understanding of the consequences of uncontrolled high blood pressure. There is also evidence in the fact that while visits to physicians generally have increased only slightly, hypertension visits have increased more markedly. And there is evidence that stroke mortality continues to decline in an almost linear fashion.

WHEN THE NATIONAL HIGH BLOOD PRESSURE Education Program (NHBPEP) effort began in 1972, there were many gaps in public and professional understanding of high blood pressure.

A national consumer food survey conducted in 1982 by the Food and Drug Administration and the National Heart, Lung, and Blood Institute regarding the public's knowledge of high blood pressure provides an opportunity to compare changes from similar surveys conducted in 1973 (1) and 1974 (2). Table 1 shows that in 1973 less than one-fourth of

respondents knew that "hypertension" was the same as "high blood pressure," while in 1982, more than one-half knew it.

More than a decade ago, a large portion of the public believed that "hypertension" was the same as "nervous tension" and many hypertensives were taking blood pressure medication only when they were tense or emotionally upset. Compliance with a medical regimen was inadequate and convincing hypertensives to remain on therapy was difficult—as it is today.

NHBPEP launched its campaign to inform the public that hypertension was the same thing as high blood pressure, that hypertension was not caused by worry or anxiety, and that people suffering from hypertension should maintain their therapy constantly.

The message appeared to get through, more successfully to those with higher education levels, but to some extent to everybody. In 1973, some 40 percent of respondents indicated that they believed emotional pressure, worry, or anxiety was the single most important cause of high blood pressure. In 1982, that percentage dropped to 28. At the same time, the percentage of hypertensives on medication increased, as did control rates for the disease (3).

The public also got the message that hypertension is the major cause of stroke. Compared to 1973, twice as many respondents in 1982 were able to identify high blood pressure as the major cause of stroke, and three times as many were able to identify high blood pressure as a major cause of a heart attack or heart trouble. Responses that high blood pressure was usually evidenced by dizziness and vertigo decreased fourfold and responses that headaches were a result of high blood pressure declined almost fivefold. Table 2 describes the respondents' perception of illnesses or symptoms caused by high blood pressure.

Awareness and understanding were only part of the challenge. Getting hypertensives to sources of care was also part of the initial emphasis. Physician visits for hypertension have increased remarkably, while visits to physicians for all causes have increased only slightly since 1970. Figure 1 describes the percent change since 1970 in physician visits for all causes and for hypertensive disease (hypertension and hypertensive heart disease).

A large share of the accelerated decline in stroke mortality must be attributed to the fact that Americans are more knowledgeable about high blood pressure, are making more physician visits, are staying on their therapy, and are controlling their blood pressure. Figure 2 shows that since the inception of NHBPEP, stroke mortality has declined almost 5 percent per year, whereas from 1968 to 1972, stroke mortality was declining approximately 1.5 percent per year.

Activities Supporting 1990 Objectives

Public information. NHBPEP has relied heavily on the use of mass media, publications, and interpersonal communications to get its message across.

Table 1. Percent of respondents indicating that "hypertension" means "high blood pressure"

<i>Educational level</i>	1973	1979	1982
Total	24	32	55
Not a high school graduate	17	23	35
High school graduate	26	34	56
College graduate and over	38	45	72

SOURCES: 1973 data: Reference 2. 1979 data: Reference 3. 1982 data represent unpublished survey results of the FDA-NHLBI Consumer Food Survey.

Table 2. Percent of respondents who felt that high blood pressure causes the following illnesses or symptoms

<i>Illnesses or symptoms</i>	1973	1979	1982
Stroke	29	38	66
Heart attack, heart trouble	24	37	77
Kidney problems	3	11	8
Dizziness, vertigo	12	5	3
Headaches	9	5	2

SOURCES: 1973 data: Reference 2. 1979 data: Reference 3. 1982 data represent unpublished survey results of the FDA-NHLBI Consumer Food Survey.

The aforementioned public knowledge surveys have provided a foundation for NHBPEP information campaigns.

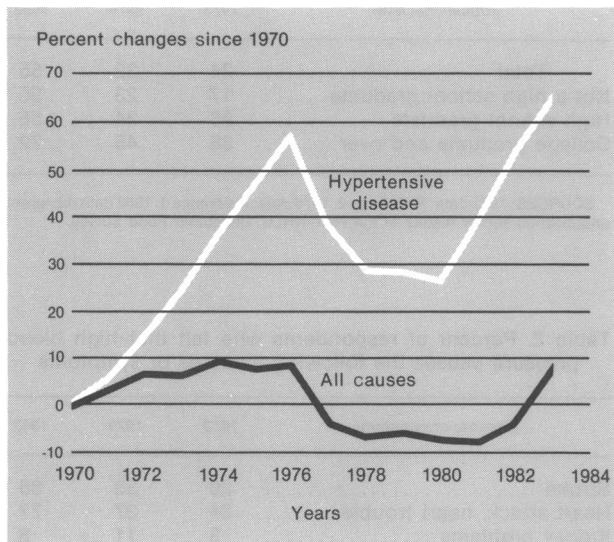
These campaigns consist of the distribution of public service announcements, posters, subway-bus cards, booklets, and newsletters. Much of this material is re-disseminated by Federal, State, and community organizations to their constituencies.

The public service announcements receive considerable air time on radio and television. According to Broadcast Advertisers Report, which monitors PSA use in 75 major U.S. TV markets, high blood pressure spots have actually averaged three times more use during some campaigns than other public education efforts.

Many organizations produce and distribute their own materials. A Tennessee insurance company developed 1 million brochures dealing with blacks and high blood pressure; a pharmaceutical company printed 200,000 copies of a report designed to help physicians and community groups detect, evaluate, and manage hypertensive patients; another pharmaceutical firm produced 70,000 brochures with answers to hypertensives' questions; the same company also provided 100,000 posters for high blood pressure month.

The Food and Drug Administration of the Public Health Service, whose regulation now requires two-thirds of all packaged food to bear a sodium

Figure 1. Percent change since 1970 in physician visits for all causes and for hypertensive disease (hypertension and hypertensive heart disease)



SOURCE: National Disease and Therapeutic Index, IMS America.

Recommendations for Classification of Blood Pressure for Persons Aged 18 and Older

Diastolic blood pressure (mm Hg)	Category ¹
Less than 85	normal blood pressure
85 to 89	high normal blood pressure
90 to 104	mild hypertension
105 to 114	moderate hypertension
115 or higher	severe hypertension
Systolic Blood Pressure (mm Hg) when DBP less 90 mm Hg	
less than 140	normal blood pressure
140 to 159	borderline isolated systolic hypertension
160 or higher	isolated systolic hypertension

¹ A classification of borderline isolated systolic hypertension (SBP 140 to 159 mm Hg) or isolated systolic hypertension (SBP 160 mm Hg or higher) takes precedence over a classification of high normal blood pressure (DBP 85 to 89 mm Hg) when both occur in the same individual. A classification of high normal blood pressure (DBP 85 to 89 mm Hg) takes precedence over a classification of normal blood pressure (SBP 140 mm Hg or less) when both occur in the same person.

content label, has produced and distributed "Salt and High Blood Pressure," a brochure to help hypertensives recognize the sodium content in food. FDA has also produced radio, television, and

print public service announcements that encourage hypertensives to reduce salt intake.

Professional education. Since its inception, NHBPEP has sponsored efforts to increase the knowledge and awareness of care providers with regard to hypertension. Task forces defining the roles and skills of physicians, nurses, pharmacists, and dentists have been developed, and consensus documents on these topics have been produced. There has even been a document describing interdisciplinary roles among health professionals.

One of the most important documents produced by NHBPEP has been the Joint National Committee Report on Detection, Evaluation, and Treatment of High Blood Pressure. NHBPEP's coordinating committee published the third such report (JNCIII) in May 1984 (4). It updates two earlier reports and provides new guidance to practicing physicians and other health professionals in the care of hypertensive patients. It also provides guidelines for professionals participating in many community blood pressure control programs.

In addition, JNCIII describes new classifications of hypertension according to blood pressure level: borderline isolated systolic, isolated systolic, and high normal blood pressure. And it provides recommendations for managing these types. They are described in the accompanying box.

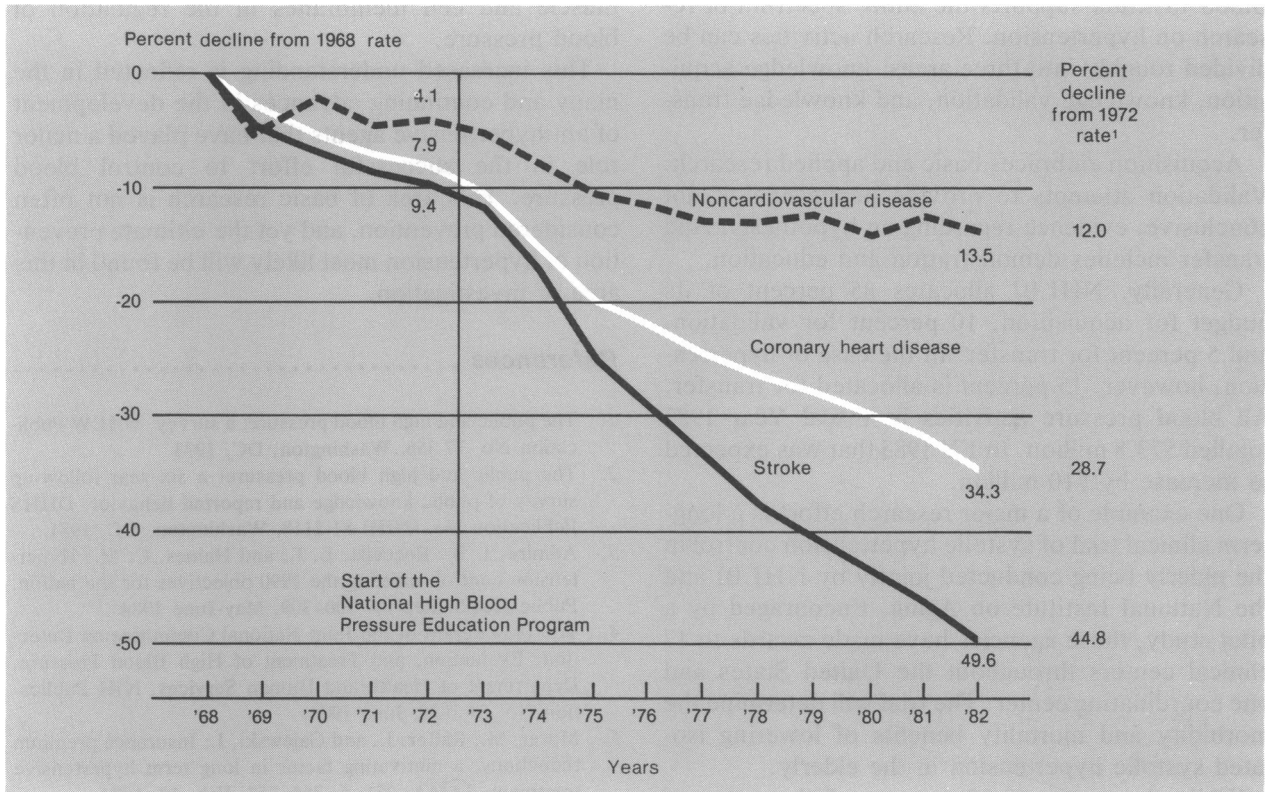
In the area of treatment, JNCIII concludes that a diastolic pressure of 95 mm Hg or greater, with or without target organ damage, requires medication. At the same time, it reemphasizes the efficacy of nonpharmacologic therapy and discusses new methods of treatment, such as diet, weight reduction, sodium restriction, use of alcohol, saturated and unsaturated fats, exercise, and behavior modification.

Copies of the report have been distributed to physicians, nurse clinicians, and community programs.

In other professional education support activities, NHBPEP provides technical assistance to areawide planning groups that develop continuing education programs and yearly regional conferences for health professionals. The program sponsors its own biennial national conference at which the latest research, policy issues, and community programs evaluation approaches are presented and discussed.

Other activities include events such as forums on hypertension control in minority populations and workshops on the treatment of hypertension in the elderly and in children. And NHBPEP works with professional groups and institutions such as the

Figure 2. Percent of mortality decline; age-adjusted death rates for all ages, United States 1968-82



$$^1\text{Percent change} = \frac{1972 \text{ rate} - 1982 \text{ rate}}{1972 \text{ rate}}$$

American Academy of Family Physicians, the New Jersey College of Medicine and Dentistry, and the Department of Nephrology, the Johns Hopkins Medical School, on workbooks, conferences, and continuing education.

Service delivery and State grants. Another part of the Public Health Service, the Health Resources and Services Administration (HRSA), provides care for hypertensives through community health centers, migrant health centers, rural health initiatives, and the National Health Service Corps. HRSA's Indian Health Service also has professional education programs on hypertension. And HRSA provides hypertension care to Federal employees.

Through the block grant mechanism, PHS's Centers for Disease Control provide resources to help States develop their own blood pressure control programs and services.

Technical assistance. NHBPEP and CDC provide technical assistance for hypertension programs to States over and above block grant funds. Many

States are supplementing this assistance with State funds to widen their hypertension services.

Technical assistance is also provided to a number of private companies expressing an interest in developing a blood pressure control program for their employees. The incentive for many companies is economic and the source of much of that incentive is insurance companies. A survey of the nation's leading insurance companies by representatives from three NHBPEP coordinating committee member organizations, which was published in the *Journal of the American Medical Association* (5), disclosed that most companies offer reduced premiums for controlled hypertension. The chairman of the coordinating committee then wrote to the 50 largest companies urging them to inform their policyholders of the incentives and benefits of controlling hypertension.

NHBPEP provided technical assistance to six insurance companies to help them develop an appropriate educational effort. Ten other companies responded that they were interested enough to develop their own programs.

Research support. The National Heart, Lung, and Blood Institute supports the entire spectrum of research on hypertension. Research activities can be divided roughly into three areas: knowledge acquisition, knowledge validation, and knowledge transfer.

Acquisition embraces basic and applied research. Validation attempts to provide persuasive, if not conclusive, evidence regarding an hypothesis. And transfer includes demonstration and education.

Generally, NHLBI allocates 85 percent of its budget for acquisition, 10 percent for validation, and 5 percent for transfer. In the case of hypertension, however, 15 percent is allocated for transfer. All blood pressure activities in Fiscal Year 1983 totalled \$73.8 million. In FY 1985 that was expected to increase by \$10 million.

One example of a major research effort is a long-term clinical trial of systolic hypertension control in the elderly being conducted jointly by NHLBI and the National Institute on Aging. Encouraged by a pilot study, these agencies have made awards to 17 clinical centers throughout the United States and one coordinating center. The trial will determine the morbidity and mortality benefits of lowering isolated systolic hypertension in the elderly.

While the cause of 95 percent of the cases of hypertension remains unknown, data regarding cardiac, nervous system, renal, humoral, genetic, and environmental factors are growing. There is increased knowledge of the roles of the autonomic nervous system, the central nervous system, the

renin angiotension system, and vascular smooth muscle and cell membranes in the regulation of blood pressure.

This increased understanding is reflected in the many and continuing advances in the development of antihypertensive agents that have played a major role in the successful effort to control blood pressure. This area of basic research is not often considered prevention, and yet the ultimate prevention of hypertension most likely will be found in this area of investigation.

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Cognitive Measure Stability in Siblings Following Early Nutritional Supplementation

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Synopsis

Cognitive data were obtained on 19 of the 21 pairs of siblings who had been in the authors' earlier study of behavioral outcomes associated with participation in the Special Supplemental Food Program for Women, Infants, and Children (WIC). The timing of WIC participation differed for the members of the sibling pairs, beginning in the perinatal period for one sibling and after 1 year of age for the other. The perinatally supplemented siblings received WIC services for an average of 22 months longer than the siblings whose supplementation began at 1 year of age.

The present study determined that enhancements in IQ scores proved stable on blind retesting 32