Changing Trends in Control of Hypertension

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PREMATURE DEATH AND ILLNESS associated with high blood pressure have decreased—in some instances plummeted—during the past 5 years, but the number of hypertensive persons whose blood pressure is poorly controlled or not controlled is increasing. Although recent detection and treatment efforts have increased the number of aware hypertensive persons and led many of them to treatment, the same efforts have also increased the number of persons who have difficulty either finding or staying on adequate therapy. These seemingly contradictory trends must be central considerations in planning the continuing national effort to control high blood pressure.

The National High Blood Pressure Education Program (NHBPEP) was initiated in 1972, and it is coordinated by the National Heart, Lung, and Blood Institute of the National Institutes of Health. Because aware, but uncontrolled, hypertensives represent the greatest challenge to continued progress in hypertension control, the NHBPEP has evaluated recent data on the status of the disease and has shifted its focus toward addressing this challenge. The program is now emphasizing three major areas:

1. Education of health professionals to improve the medical community's approaches to patient management.

2. Public and patient education efforts stressing long-term therapy maintenance and the correction of misconceptions that seem to interfere with adherence to such maintenance.

3. Identification and promotion of new opportunities and approaches for achieving long-term therapy and maintenance of control.

The following text explains the rationale behind the national shift in focus of hypertension control efforts and reviews statistics that show a decline in the mortality rate of hypertension-related cardiovascular diseases. trends in hypertension control data, and some pertinent factors related to long-term maintenance that affect public health efforts to combat the disease.

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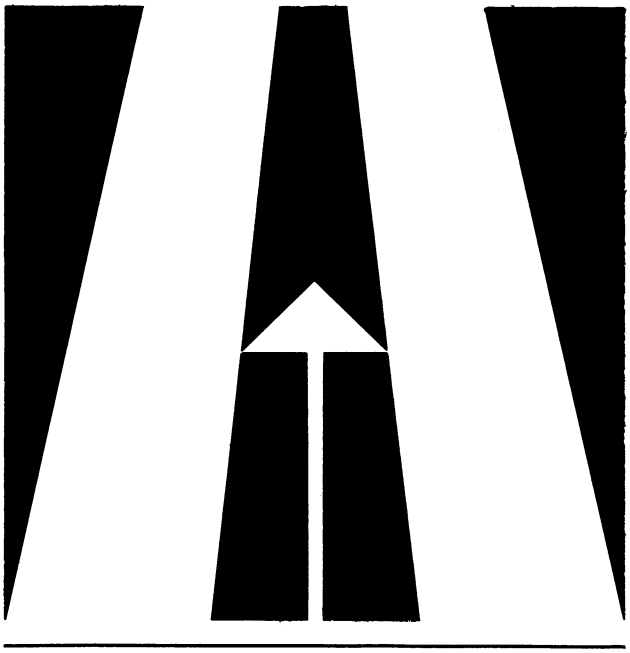
Death Rates from Cardiovascular Diseases

Hypertension control efforts to date appear to have contributed to observed declines in death rates from cardiovascular diseases. While mortality rates from cardiovascular diseases have been on a downward trend since 1950, more than one-third of the total 30 percent decline in the cardiovascular death rate has occurred since 1972, when a nationwide effort was launched against hypertension (fig. 1). Perhaps of greater significance in the impact of national control efforts is the sharp decline in deaths from hypertensive disease, stroke, and coronary heart disease, which are known to be linked to high blood pressure. The death rate for stroke, for example, decreased 9 percent from 1965 to 1970 and 18 percent from 1970 to 1975. In the past 5 years, deaths from hypertension-related diseases have continued to decline at a much sharper rate than those categories of cardiovascular diseases not related to hypertension (fig. 2).

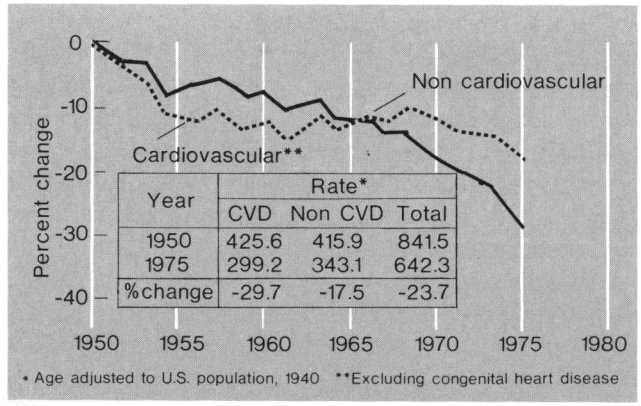
Also, mortality rates from stroke, hypertensive disease, and coronary heart disease—the major hypertension-related cardiovascular diseases—are declining faster among younger than among older age groups (table 1). This trend suggests an overall improvement in the prevention of early and premature death.



Trends in Hypertension Control Data

The decline in mortality rates from hypertension-related diseases reflects encouraging trends in some important hypertension control activities. The most recent surveys available for comparison suggest that general public awareness and detection efforts have been effective in increasing the number of aware hypertensives seeking treatment. Representative national surveys in 1971–72 and 1973–74 show an increase in the number of hypertensives aware of their condition from 51 to 56 percent. Data from screening by the National Heart, Lung, and Blood Institute in 14 metropolitan areas in 1973–74 indicate a

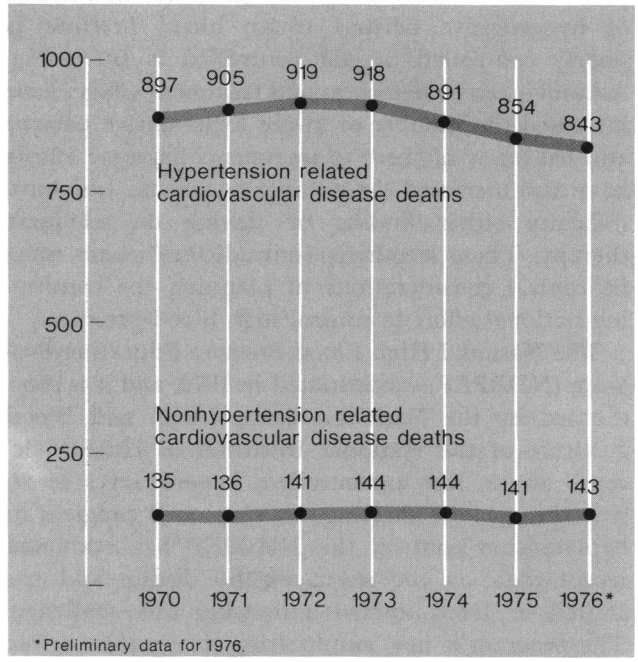
Figure 1. Percentage decline in death rates since 1950 for cardiovascular and noncardiovascular diseases



Year	Rate*		
	CVD	Non CVD	Total
1950	425.6	415.9	841.5
1975	299.2	343.1	642.3
%change	-29.7	-17.5	-23.7

SOURCE: "Vital Statistics of the United States, 1950–1967" and unpublished data for 1968–75, Division of Vital Statistics, National Center for Health Statistics.

Figure 2. Decline in hypertension and nonhypertension-related cardiovascular diseases, 1970–1976 (in thousands)



SOURCE: "Vital Statistics of the United States, 1970–1976," Division of Vital Statistics, National Center for Health Statistics.

much higher awareness, an increase to 70 percent. Data from the Community Hypertension Evaluation Clinic Program, based on large-scale screening primarily in suburban areas, show an even greater rate of awareness (table 2).

Another dimension of awareness is reflected in an almost 50 percent increase in total visits and first visits to physicians for hypertension-related reasons from 1971 through 1976. During the same years, total visits for all causes remained roughly the same (fig. 3).

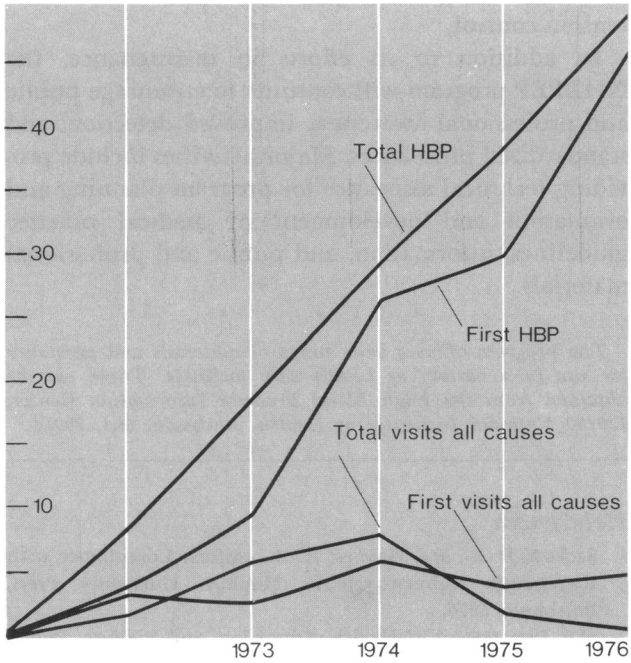
However, awareness does not necessarily imply adequate control of hypertension. The percentage of hypertensives whose blood pressure was adequately controlled actually showed a decline in the two representative national samples. On the other hand, data from the two larger-scale screening studies indicate much higher control rates. Because the data currently available offer conflicting evidence of control levels, we look to more recent forthcoming data to resolve that issue. But it is clear that substantial numbers of aware hypertensives have inadequately controlled blood pressures or are not receiving any treatment (table 2).

Table 1. Percentage decline in death rates for selected cardiovascular conditions, United States, 1970–75, by age groups

Age group (years)	Hypertensive disease	Stroke	Coronary heart disease
15–24	0	12.5	33.3
25–34	55.6	22.2	28.6
35–44	55.6	25.0	19.3
45–54	43.4	22.6	13.8
55–64	32.7	20.8	14.3
65–74	31.1	21.1	16.4
75–84	32.4	14.2	12.0
84 and over	29.3	11.9	8.4
Total	35.4	17.8	14.0

NOTE: Data computed by the National Heart, Lung, and Blood Institute from unpublished data for 1970–75 of the Division of Vital Statistics, National Center for Health Statistics.

Figure 3. Percentage increase since 1971 of patient visits—total and first—for hypertension/hypertensive heart disease and for all causes



SOURCE: Computed by the National Heart, Lung, and Blood Institute from unpublished data from the National Disease and Therapeutic Index, a syndicated service of IMS America, Ltd., Ambler, Pa.

Some Factors Related to Maintenance

The regimen-adherence problem in high blood pressure is complex, and several factors are related to nonadherence. The Health Interview Survey, conducted by the National Center for Health Statistics in 1974, uncovered some disturbing indications about self-reported compliance among hypertensives. The following definition of hypertensives was used for the purposes of the Health Interview Survey:

Table 2. Estimates of awareness and control status of hypertension, 1971–75

Status	1971–72 HANES [1]	1973–74 HANES [2]	1973–74, 14 metropolitan areas [3]	1973–75, suburban [4]
Not aware	49.1	43.5	29.0	27.6
Adequate control	16.5	14.9	29.3	44.9
Inadequate therapy	20.0	21.6	19.0	16.7
Aware, no therapy	14.4	20.0	22.7	10.8
Approximate sample size	10,000	10,000	160,000	1 million
Ages represented	18–74	18–74	30–69	All

[1] Health and Nutrition Examination Survey, the first of a 3-stage representative national probability sample by the National Center for Health Statistics; data not yet published.

[2] Extrapolated by the National High Blood Pressure Education Program from 1971–74 total data on the first 2 stages and 1971–72 estimates to approximate second-stage results. National Center for Health Statistics: Blood Pressure of Persons 6–74 Years of Age in the United States. Advance Data No. 1, Oct. 18, 1976.

[3] Hypertension Detection and Follow-up Program. Initial screening data in 14 metropolitan areas where National Heart, Lung, and Blood Institute awarded grants. Sample emphasized women, blacks, older persons, and high and low socioeconomic scale. (see: Hypertension Detection Follow-up Program Cooperative Group: The Hypertension Detection and Follow-up Program. Prev Med 5: 207–215 (1976)).

[4] Community Hypertension Evaluation Clinic Program. Approximately 1 million unselected persons tested at largely suburban shopping centers (see: Stamler, J., et al.: Hypertension Screening of 1 Million Americans. JAMA 235: 2299–2306, May 24, 1976).

NOTE: All surveys measured blood pressure by the same criteria and asked questions to determine control status.

Hypertensives are individuals who were once told they had HBP and/or:
—still have it
—don't know if they have it
—say they don't know but are still prescribed pills
—say they "had" it but now it's under control

Almost 30 percent of the hypertensives interviewed stated that they seldom or never took their prescribed medication. Among black respondents, the noncompliance rate was 33 percent (table 3).

The survey findings also suggest problems with patient understanding and with physician-patient communication. For example, 33 percent of those interviewed reported that they stopped taking their medication "on the advice of their physician," and another 28 percent stopped because they believed they "no longer had" high blood pressure (table 4). These responses were unexpected. They indicate that traditionally assumed reasons for stopping treatment —cost and side effects—were perhaps not as important as the patients' perceptions of their disease and their communication with their physicians.

Table 3. Percentage of hypertensives who self-reported extent of compliance with prescribed medication, 1974

Extent of compliance	*Total (16.7 million)*	*White (14 million)*	*Black (2.4 million)*	*Male (5.8 million)*	*Female (10.9 million)*
All the time	64.1	67.1	54.2	63.8	64.2
Often	5.4	5.0	4.2	5.7	4.6
Occasionally	4.1	3.6	4.2	3.4	4.6
Never	25.2	23.6	33.3	25.9	24.8
Total	99.3	99.3	99.9	98.8	98.2

NOTE: Data computed by the National Heart, Lung, and Blood Institute from unpublished data furnished by the Division of Health Interview Statistics, National Center for Health Statistics.

Table 4. Percentage of hypertensives no longer taking medication, by reasons for stopping, 1974

Reason	*Total*	*White*	*Black*	*Male*	*Female*
Physician's advice	33	36	22	32	34
No longer has high blood pressure ...	28	28	27	26	29
Side effects	7	6	7	7	7
No need	6	6	7	9	5
No refill	4	3	6	3	5
Too expensive	2	2	5	1	2
Other	22	21	28	26	21
Unknown	3	3	2	4	3

NOTE: Data computed by the National Heart, Lung, and Blood Institute from unpublished data furnished by the Division of Health Interview Statistics, National Center for Health Statistics.

Reports of other studies point to such factors as complexity of the medical regimen, family support, and personal skills in taking medication, particularly in combination with others, as having a significant bearing on compliance (*1, 2*).

NHBPEP's Response to Current Trends

The preceding observations have led the NHBPEP to intensify its efforts in patient and professional education. A sizable effort is aimed at overcoming patients' misconceptions about their disease and at assisting health professionals to review the effectiveness of their communication with patients.

The NHBPEP education effort is often seen as a model for other national health education programs. A review of current trends in disease control is appropriate at significant intervals and should lead to a reevaluation of emphasis in program activities. This review of disease control data at all levels—local, regional, and national—is imperative if health planners are to maintain the utility of their programs.

The implications of the NHBPEP's recent shift in focus are far reaching because the program involves numerous Federal agencies, almost all State health departments, more than 150 private-sector organizations, professional societies and associations, voluntary health organizations, certifying and accrediting bodies, pharmaceutical companies, labor and management groups, and insurance companies. Hundreds of community high blood pressure efforts allied with the NHBPEP are engaged in every facet of hypertension control.

In addition to its efforts in maintenance, the NHBPEP program will continue to encourage public and professional awareness, improved detection, and standardized procedures. Major activities include providing technical assistance for program planning and evaluation and development of medical practice guidelines, information, and public and professional materials.

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The program offers a wide range of materials and assistance for use in a variety of health care facilities. These can be obtained from the High Blood Pressure Information Center, 120/80 National Institutes of Health, Bethesda, Md. 20014.

References

1. Sackett, D. L., and Haynes, R. B., editors: Compliance with therapeutic regimens. Johns Hopkins University Press, Baltimore, 1976.
2. U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, National Library of Medicine: Patient compliance in therapy. January 1973–September 1975. Literature search No. 75–12.