do not appear to have a high priority on the Federal agenda.

Several strategies related to the Federal role in adolescent health were discussed in conjunction with Major Option 2 (see table 6). An additional option is presented in table 26.

Table 26-Specific Options Related to the Role of Federal Agencies in Adolescent Health (ch. 19)

Option 2: Support Federal research and data collection
• **Stipulate that certain rigorous methodological criteria be met for demonstration projects, especially in topic areas that currently receive high** levels of resources (e.g., prevention of drug and alcohol abuse, pregnancy prevention).

SOURCE: Office of Technology Assessment, 1991.

Barriers and Opportunities to Change

Both barriers and opportunities become apparent in considering the potential for change in approaches to adolescent health. This analysis focuses on barriers and opportunities particular to national public policy, but many of the same points are relevant to actions that can be taken by the numerous actors responsible for adolescent health: parents, schools, community leaders, State and local governments, private sector organizations, and adolescents themselves.

Although they are for the most part interrelated, the primary barriers to change can be characterized as having to do with characteristics of the contemporary health service delivery system, with the Federal budget deficit, and with science policy. Barriers related to attitudes toward adolescents were discussed earlier (see "A New Approach"). Opportunities include the renewed attention to adolescent health concerns in a variety of public and private initiatives and concerns about the changing nature of the workforce and the country's economic future.

Barriers to Change

Health Care System

Brindis and Lee recently summarized the important factors that shape health-related American public policy (25). These factors—which Brindis and Lee summarized as ''the American character' —include such American ideals as individualism, freedom of choice, the right to bear arms, freedom of expression, capitalism, and competition, as well as attitudes about dominance of the private sector and the marketplace and the limited role of government in solving economic and social problems. According to Brindis and Lee, the American character 'is a key factor affecting choices available to policymakers, including choices about adolescent health.

The American values that shape public policy have also helped to shape the American health care system, which has emerged as pluralistic and dominated by the private sector (25). Two other concepts that can be used to characterize the current health care delivery system are stance and concept (332). The health care delivery system takes a "waiting" rather than a "seeking" stance (332):

> The waiting mode is characterized most strongly by professionals physically remaining within a service system and, indeed, waiting for clients, generally with chronic problems, to come to them. ... The seeking mode describes a style where professionals are usually physically operating outside the service system and seeking to intervene in problems before they become chronic. However, in practice, it is acknowledged that waiting/seeking is best thought of as a continuum, and less as a dichotomy.

Consistent with the waiting stance, most health care interventions (including preventive interventions) are focused on the individual or interpersonal levels, rather than organizational/institutional or environmental levels.

As discussed above, adolescents face issues common to other age groups, and other barriers unique to them (see table 1 in "Major Findings' '). Unique barriers include legal barriers to access, lack of confidentiality, lack of income that would support payment for the health and related services that they might choose,[202] and lack of the information that would make them effective consumers of health

[202] Although adults may lack the income it would take to gain access to needed or desired health care services, the social status of adults is such that they have greater opportunities to earn income than adolescents do. Depending on their age and other circumstances (the cost of the care being sought), adolescents' opportunities to earn a sufficient income to support themselves and gain independent access to health services are limited by restrictions on their ability to work (e.g., because of child labor laws) and low earning levels (e.g., typically minimum wage or, perhaps appropriately, entry level wages). In addition, adolescents are typically not eligible to get credit on their own until they reach the age of majority (18 in most States; see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking,' in Vol. III). Some adolescents, of course (e.g., those who do have a relatively high paying job, who save money obtained through gifts, or who receive a generous allowance, or otherwise have an independent source of funds), would have enough income to gain access to at least some health care services.

care. In addition, adolescents may be particularly affected by the tendency of the health care financing system to emphasize treatment for full-blown clinical problems over secondary prevention through early intervention for subclinical problems. Many of the services that adolescents need are low-technology, time-intensive services that are generally not well-supported by current financing mechanisms, and thus not profitable to provide. Although the nature of financing health care is changing somewhat in the direction of increasing support for cognitive services,[203] the financial predominance of high technology interventions does limit the amount of change that could be expected in the delivery of health services to adolescents,[204] unless an extraordinary effort is expended to manage the health care of adolescents differently from that of other age groups.

Federal Budget Deficit

In part as a result of the Federal budget deficit—estimated to be $220 billion at the end of fiscal year 1990 (316)--Federal social policy expenditures are generally in a ''no-growth' phase. Although there was by some accounts a substantial increase in discretionary domestic spending between 1989 and 1990[205206] (212), the Budget Enforcement Act of 1990 (Title XIII of OBRA-90) established spending limits on discretionary spending for 5 fiscal years (from fiscal years 1991 through 1995) (215). For the category of domestic spending for fiscal years 1991 to 1993, the limits were such that discretionary programs would grow only at the expected rate of inflation.[207] Thus, by law, domestic discretionary spending can rise from $198.3 billion to $210.1 billion (6 percent) between fiscal years 1991 and

[203] In OBRA-89, Congress, following the recommendation of the Physician Payment Review Commission, adopted a' 'resource-based' fee schedule as the basis for paying physicians for Medicare Part B (outpatient) services. This will increase payments for primary care services and reduce some payments for technical services (e.g., surgery), Primary care services tend to involve more interpersonal interaction than do high technology services. The new payment method is expected to increase Medicare revenues to specialities for which primary care services are a substantial part of practice, such as family practice and internal medicine (170). At present, changes following the recommendations of the Commission apply only to the Medicare program. However, the Commission has recently been mandated to consider physician payment under Medicaid (170). In addition, health care financing changes adopted by the Federal Government sometimes act as a catalyst for change in the private health insurance sector.

[204] For example, although such innovations as school-linked health centers have begun to address some of the needs of adolescents without any source of payment for services (i.e., without health insurance (see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents, in Vol. III)), it has been observed that at least some school-linked health centers tend to follow the prevailing 'waiting' model of providing health care services (e.g., not providing sufficient outreach) (105). Some have observed that school-linked health centers work best when they are integrated into the "life" of the school (e.g., 29). In addition, the Center for Population Options' study of school-linked health centers located in schools observed that cost-saving measures engaged in by school-linked health centers lead to heavy staff turnover, reducing the continuity of the relationships that can be developed between the staff and students (105).

[205] *Discretionary* domestic social welfare programs (including health programs) consist mostly of grants to States for education, training, employment, and social services, certain health care services, and some food assistance programs (47,21 8). Domestic discretionary programs include *social programs* such as Head Start, the Job Training Partnership Act, Compensatory Education, Student Financial Assistance, Handicapped Education, Alcohol, Drug Abuse, and Mental Health programs, Special Supplemental Food Program for Women, Infants, and Children, the Child Care Development Block Grant, Vocational and Adult Education, low-income housing, and *nonsocial* programs such as Highways, the Federal Aviation Administration, the National Aeronautics and Space Administration, the Drug Enforcement Task Force, the Federal Prison System, and the Drug Enforcement Administration (2 12,21 8). The largest social welfare programs are legal entitlements (218).

[206] Firm estimates of discretionary *social* spending for fiscal year 1990 (for the purposes of comparing such spending to fiscal year 1991 and beyond) are not available. The Office of Management and Budget estimated an 11.7-percent increase in *overall social welfare spending* between 1990 and 1991 (not adjusted for inflation), compared to the 8.9-percent increase that occurred between 1989 and 1990 (318). (The Congressional Research Service included m the total for social welfare spending the following categories and estimated the following changes between 1989 and 1990, adjusted for inflation: social security (1,8-percent increase); Medicare (9. (j-percent increase); income security (3.8-percent increase); health (14.4-percent *increase* [includes Medicaid]; education, training, employment and social services (2.7-percent decrease); and veterans' benefits (7.8-percent decrease) [218],) The House Budget Committee reported the following fiscal year 1991 increases in budget authority over fiscal year 1990 levels for selected domestic *discretional* programs: Head Start ($400 million); Job Training Partnership Act ($ 143 million); Compensatory Education ($857 million); Handicapped Education ($390 million); Alcohol, Drug Abuse, and Mental Health Administration ($256 million); Assisted Housing ($1,801 million); Special Supplemental Food Program for Women, Infants, and Children ($224 million) (2 12).

[207] For fiscal years 1994 and 1995, the limits on new budget authority and outlays are established only for total discretionary spending (215). In the fourth and fifth years of the 5-year accord enacted into law under OBRA-90, "the $115 billion in savings would be allocated between military and nonmilitary accounts by House and Senate appropriations committees' (237).

1992 and from $210.1 billion to $221.7 billion (5.5 percent) between fiscal years 1992 and 1993 (215).[208 209]

The fact that the Budget Enforcement Act wrote into law *separate* spending limits for military, domestic, and foreign aid discretionary spending programs for 1991, 1992, and 1993, means that spending increases in any one domestic category would essentially have to come from decreases in another domestic category.

Of primary concern in deficit reduction are efforts to reduce spending on health care (e.g., 238).[210] As a result of an aging population, advances in technology, and other factors (222), national health expenditures continue to increase, from 7 percent of the gross national product in 1970 to 11.1 percent of the gross national product in 1987 (254,261).[211]

Limitations of Prevailing Approaches to Program Design and Evaluation

Another barrier to progress in improving interventions designed to enhance adolescent health can be found in current approaches to program design and evaluation. Cook and his colleagues are preparing a critique of the current approach as it applies to social science research in general, and adolescent health evaluation research in particular, for the forthcoming Carnegie Corporation-sponsored volume, Ado*lescent Health Promotion (41),* and their comments will provide a useful framework for thinking about theoretical development in adolescent health services, program design, and evaluation.

Cook et al. argue that the design, implementation, and evaluation of services for many complex, socially determined, adolescent health problems are not amenable to the almost universally accepted medical framework. According to Cook et al., the use of the randomized clinical trial-the preferred approach in the medical and health sciences field—as the model for evaluation is inappropriate because it "seeks to identify the consequences of a small number of manipulanda [variables] taken individually or as a small number of statistical interactions. . .The [randomized clinical trial] model does not attempt to develop a complete causal model of any outcome' (41). Instead, Cook and his colleagues propose a theory of evaluation predicated on the "primacy of causal explanation. " If this theory were followed, evaluation research would be used to simultaneously **evaluate** prevention and treatment interventions and develop complex models of the causes of behaviorally and socially related adolescent health problems.

It is important to note that Federal programs currently fund, and as a correlate, individual investigators typically design, studies that follow the medical model. Maintaining this framework for funding for a limited set of conceptualizations of adolescent health will not advance the field very much.

Opportunities To Change

Renewed Attention to Adolescent Health Concerns

At the same time that general attitudes toward adolescents continue to be unsympathetic, a number of public and private initiatives have begun to change the terms of the debate about adolescent health. These include private foundations such as the Carnegie Corporation of New York and its Carnegie Council on Adolescent Development (28,29,51,62,137), the MacArthur Foundation (funding studies in successful adolescence in high-risk environments), the Robert Wood Johnson Foundation (180), the Ford Foundation (66), the Annie E. Casey Foundation, the Charles Stewart Mott Foundation

[208] The spending limits shown reflect the adjustments (e.g., for Internal Revenue Service tax compliance funding) that the Office of Management and Budget was authorized to make when it submitted its final 'sequestration report' for fiscal year 1991; these adjustments were made after the adjournment of the 101st Congress, 2d session, on Oct. 27, 1990 (215; also see, Title XIII, Public Law 101-508). For updates of the Office of Management and Budget adjustments, which in the aggregate increased the domestic caps by very small amounts, see the President's Budget for fiscal year 1992 (318). It may be important to note that the discretionary caps were set in terms of dollar amounts and not percentages as a function of inflation.

[209] Defense spending was projected to decrease 0.7 percent between fiscal years 1991 and 1992, and another 1 percent between fiscal years 1992 and 1993. Even so, discretionary defense spending would remain greater than discretionary domestic spending ($297 billion in fiscal year 1991).

[210] For example, OBRA-90 pared Medicare $42.4 billion over 5 years, with an anticipated $10 billion co@ from increased costs to beneficiaries, and the remainder coming from reduced reimbursements to physicians and hospitals. Spending for Medicaid was projected to be cut $607 million over 5 years by requiring drug companies to offer price discounts to those in the program.

[211] ~ 1988, expenditures for health care in the United States were estimated to total $539.9 billion, a 10-percent increase from the previous year (254). Eighty-eight percent of this amount was for so-called personal health care-including 39 percent for hospital care, 19 percent for physician services, 8 percent for nursing home care, and 22 percent for other personal health care (other professional services, home health care, drugs and other medical nondurable, vision products and other medical durables, and other), and 12 percent was for research, construction, program administration, the net cost of private health insurance, and public health activities (254).

(31,32,33,131,167), The Edna McConnell Clark Foundation (118), the W.T. Grant Commission (330), the Lilly Endowment (e.g., the Youth as Resources program (155)), the Milton S. Eisenhower Foundation (138) and the W.K. Kellogg Foundation (334).

Several States have developed special youth initiatives (52), and some State coordination efforts were supported by the short-lived Federal initiative, Youth 2000 (314).

On the Federal level, the Centers for Disease Control in DHHS now has a Division of Adolescent and School Health, and has provided substantial funding for the development of a Youth Behavioral Risk Factor Survey. The National Institute on Child Health and Human Development (within DHHS' National Institutes of Health) is developing plans for an adolescent program (3). In 1990, adolescent health was the theme of the DHHS-sponsored Child Health Day, The President's Budget for 1992 noted that Federal spending to benefit children (no ages specified) has grown far less quickly than spending on adults; it estimated that Federal spending on children has been essentially level (at about $100 billion in 1992 dollars) from 1976 to 1989, while Federal spending on adults rose from less than $100 billion in 1960 to about $525 billion in 1989 (1992 dollars) [212] (3 18). A major theme of the President's budget message was "Focusing on Prevention and the Next Generation' (318).

Separate estimates for spending on adolescents were not provided in the 1992 budget proposal, however, and many of the proposed funding increases focused primarily on younger children (e.g., programs to reduce infant mortality, childhood immunizations, prevention of lead poisoning).[213] The focus of the entire prevention initiative was on "individual behavior and personal responsibility' and ''fostering a climate of personal responsibility" (318). In total, the administration estimated that its proposed budget would result in an increase of 9.5 percent for programs serving children; however, many of these programs (77 percent of the overall spending on children) are mandatory (entitlement) programs; thus, increases in discretionary spending are quite limited (3 18). Nevertheless, the recognition that children have been underbenefitted relative to other age groups can be considered encouraging.

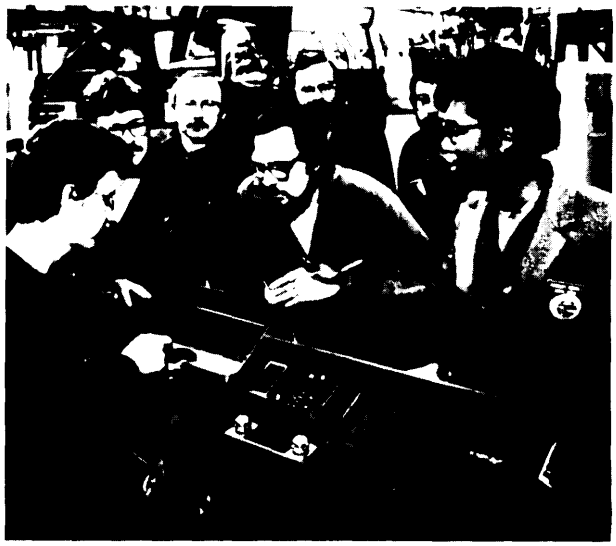


Photo credit: UAW-Ford National *Education, Development and Training Center*

Several private and public adolescent health initiatives have been stimulated by concerns about the changing demographics of the country, including the changing nature of the workforce and the implications of these ohanges for the country's economic future.

Concerns About the Changing Nature of the Workforce and the Country's Economic Future

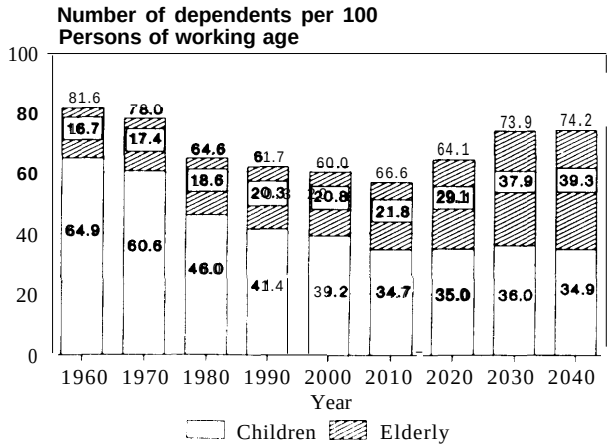
Several, if not most, of the private and public adolescent health initiatives, including this Report, have been stimulated at least in part by concerns about the changing demographics of the country, including the changing nature of the workforce and implications of these changes for the country economic future. The U.S. population is becoming older, and more culturally and ethnically diverse (240,242,328). The outlines of the impact of the change in age ratio on the Nation's economic future can be seen in the changing dependency ratio[214] (see figure 25). Beginning in the year 2010, increases in

[212] The sources of these estimates (including types of programs) were not provided, and OTA did not attempt to evaluate their accuracy.

[213] finding increases with a potentially more direct application to adolescent needs included injury prevention programs (a 13-percent increase, from $1,683- to $1,907 -million, although this included transportation safety programs such as the Federal Aviation Administration and the Coast Guard); family planning (a 5.2-percent increase, from $399- to $420-million, affecting the Public Health Service family planning grants and the Medicaid program); and smoking cessation (a 7.7-percent increase, from $90- to $97-million, affecting the National Institutes of Health, the Alcohol, Drug Abuse, and Mental Health Administration and the Centers for Disease Control).

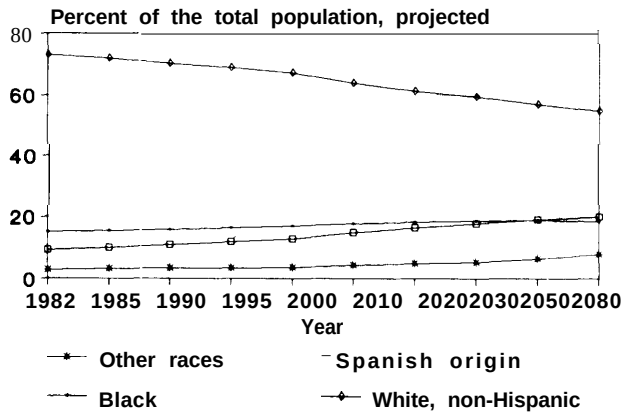
[214] The dependency ratio is the number of children and elderly people per every 100 people of working age.

Figure 25-Changes and Projected Changes in the Number of Dependents per 100 Persons of-Working Age, 1960 to 2040



SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Commerce, Bureau of the Census, *Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080,* Current Population Reports Series P-25, No. 1018 (Washington, DC: U.S. Government Printing Office, January 1989).

Figure 26-Projected Changes in the Racial and Ethnic Makeup of the U.S. Population Under Age 18, 1982 to 2080



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Projections of the Hispanic Population: 1983 to 2080,* Current Population Reports, Population Estimates and Projections, Series P-25, No. 995 (Washington, DC: U.S. Government Printing Office, January 1986).

the number of elderly dependents and decreases in the numbers of working age individuals will cause the overall dependency ratio to rise.[215]

The overall, child-dependent, and working-age populations are changing in racial and ethnic makeup, as well. In 1982, approximately 73 percent of the U.S. population was white, non-Hispanic; by the year 2010, the proportion is expected to decline to 64 percent; and by the year 2080, only 43 percent of the U.S. population is expected to be white, non-Hispanic (246).[216]

While the greatest impact on the dependency ratio will be occurring in the proportion of nonworking elderly, most of the increases in Hispanic and/or nonwhite populations will be occurring as a result of higher fertility (72). Thus, large increases in the proportion of Hispanic and/or nonwhite children have been projected. The Hispanic[217] and/or nonwhite population below age 18 is expected to grow from 26 percent in 1989 (246), to 33 percent in the year 2000, and to 45 percent by the year 2080 (see figure 26) (246).[218]

White participation in the labor force is expected to grow more slowly than that of blacks, Asians and others, and Hispanics, reflecting slower rates of population growth and an older age structure among non-Hispanic whites (72). In the year 2000, for example, only 31.6 percent of new entrants to the workforce will be white, non-Hispanic, males,[219] while such males will represent nearly half (an estimated 48.2 percent) of those leaving the workforce (72).[220] By the year 2000, 26 percent of the labor force is expected to be Hispanic and/or nonwhite (see figure 27) (72). Forty-seven percent of the labor force is expected to be female (72).

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[215] Since 1970, when there were 81.6 dependents (children and elderly people) for every 100 people of working age, the dependency ratio has been declining, largely because of a rather precipitous decline in the child dependency ratio.

[216] Although somewhat old, these are the latest available Census projections. Available data from the 1990 Census support the gist Of these probations, however (248).

[217] Persons of Hispanic origin may be Of any race.

[218] These projections are from a 1986 Census report, and thus may be somewhat dated. However, these are the latest available projections that break out individuals of Hispanic origin. The 1989 Census report on projections only reports data for whites, blacks, and total population (242).

[219] Between 1988 and 2000, 15 percent of new entrants are expected to be Hispanics, 13 percent are expected to be black, 6 percent are expected to be Asian, and 35 percent are expected to be white, non-Hispanic wornen (72).

[220] The proportion of white males in the workforce is a traditional benchmark, at least in part because male participation has been less subject to changes as a result of societal forces (e.g., choice, the availability of child care, or discrimination).