VITAL & HEALTH STATISTICS

Adult Health Practices in the United States and Canada

The prevalence levels of 12 health practices in the United States and Canada are compared in this study: smoking; drinking status; average daily alcohol consumption; physical activity; eating breakfast; use of seatbelts and child safety restraints; ownership of smoke detectors; recency of blood pressure checks, breast examinations, and Pap tests; and practice of breast self-examination. Data for two additional variables—drinking and driving and blood pressure awareness—are shown for the two countries, but the statistics cannot be strictly compared. Data are presented for four age groups by sex and for three levels of education. Trends in smoking and seatbelt use between 1979 and 1985 are also discussed.

Comparative and International Vital and Health Statistics Reports Series 5, No. 3

National Center for Health Statistics

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Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.5
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision (more than 30 percent for United States or 33 percent for Canada relative standard error)
#	Figure suppressed to comply with confidentiality requirements

Acknowledgments

Adult Health Practices in the United States and Canada

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Introduction

Objectives

This report compares the 1985 prevalence levels of several important health practices in the United States and Canada and trends in two practices between 1979 and 1985 in both countries. The comparison is mainly a descriptive one, although in many instances it is possible to suggest possible reasons underlying differences in prevalence rates. The objective for presenting these data is to provide a new perspective for those engaged in health promotion.

Systematic comparisons in health practices between two countries have not previously been available. Because there are important similarities in the data collection methods and in the populations under study in this report, the comparisons reported here should be little affected by systematic error. Thus it should be possible, at least at a general level, to compare the impact on health practices of policies and programs in the two countries (for example, a universal public health insurance system, seatbelt legislation, and high blood pressure education). Another advantage of intercountry comparison is that it allows examination of demographic trends, such as the relationship between education level and health practices, in two populations. (The relationship between level of education and health practices is not only confirmed, but shown to be much stronger in the United States.) Finally, these U.S.-Canada comparisons of health practices should suggest important avenues for further research with practical application. For example, there is no ready explanation for the higher Canadian consumption of alcohol and tobacco, suggesting that ethnocultural factors may deserve further examination.

Scope of the report

The prevalence levels of 12 health practices are compared in this study: smoking; drinking status; average daily alcohol consumption; physical activity; eating breakfast; use of seatbelts and child safety restraints; ownership of smoke detectors; recency of blood pressure checks, breast examinations, and Pap tests; and practice of breast self-examination. These are all the practices for which comparable data exist for 1985, the date of the most recent comprehensive survey in each country. Data for two additional variables—drinking and driving and blood pressure awareness—are shown for the two countries, although the statistics cannot be strictly compared because the questions in the two surveys measured slightly different aspects of the behavior. By virtue of their relationship to morbidity and mortality, these are the most important health practices to study. For most practices, prevalence is presented for four age groups for each sex and for three levels of education.

Trend data for 1979 and 1985 are provided for smoking and seatbelt use. These practices are the only ones for which comparable data exist for the same two time points in the United States and Canada.

Highlights

- There were fewer smokers per capita in the United States than in Canada in 1985. Thirty percent of U.S. adults smoked cigarettes, compared with 35 percent in Canada. This difference was especially pronounced among the young (ages 18-24 years) of both sexes. Between 1979 and 1985, most age-sex groups in both countries had reduced their levels of smoking.
- There was a higher proportion of drinkers in Canada (82 percent) than in the United States (65 percent); this difference was most marked among women (78 and 56 percent, respectively). Canadian drinkers were also more likely than Americans to have an average of two drinks or more (1 ounce or more of ethanol) daily.
- Participation in regular sports or exercise was claimed by 40 percent of adult Americans. This was 13 percentage points lower than the prevalence of regular activity in Canada.
- Regular use of seatbelts and car restraints in the United States in 1985 was less than half that of Canada. The largest international difference was among those with less than a high school education. Canadians in this category were three times more likely to use seatbelts than their U.S. counterparts. Both countries showed marked improvements between 1979 and 1985 in the proportion of the population usually wearing seatbelts, increasing by 16 and 18 percentage points in the United States and Canada, respectively.
- A smaller percent of Americans than Canadians owned smoke detectors in 1985: 69 compared with 77 percent.
- About three-quarters of adults in both countries had had a blood pressure check within the past 12 months. Both populations displayed fairly high levels of basic knowledge about hypertension.
- About 50 percent of women in the United States had had a breast examination by a doctor or nurse within the past 12 months; the corresponding figure for Canada was 69 percent.
- U.S. women were less likely than Canadian women (32 and 41 percent, respectively) to practice breast self-examination on a monthly basis.
- The prevalence of Pap smear tests within the last 3 years was similar in both countries, at about three of every four women.
- Although prevalence rates often vary between the United States and Canada, relationships between health practices and level of education were similar in the two countries. Educational differences in health practices were particularly strong in the United States. Good health habits—not smoking; regular physical activity; use of seatbelts and car restraints; ownership of smoke detectors; and regularity of breast examination, Pap smear, and breast self-examination—were more common among better educated groups in both countries. Of good health habits, only blood pressure checks were unrelated to level of education. Current drinking was the only apparently unhealthy habit found to be associated with more education.
- Age-sex patterns also showed similarity between the United States and Canada. In both countries, women and older adults were likely to have somewhat better health habits than were men and younger adults. The exceptions, however, may be important, such as the lower rates of seatbelt use by older compared with middle-aged Americans and the similarity in drinking prevalence among young Canadian men and women.

Methods

In this report, prevalence data from two 1985 health practice surveys are compared for the United States and Canada. Furthermore, these data and data from similar surveys conducted in 1979 are used to compare trends in both countries. The major concern when making the international comparisons was to ensure that there was sufficient similarity in the methods of the surveys to rule out any systematic bias. A brief description of the techniques employed in the four surveys is provided in this section, with additional details in appendix I. Definitions of terms used in this report are provided in appendix II. Question wording is described in the appropriate section of the results, and the instruments for the 1985 surveys are reproduced in appendix III.

Sources of 1985 data

The principal sources of data for this study were two large population surveys carried out at approximately the same time, with similar methods and subject matter and nearly identical sample designs (NCHS, 1986a; Health and Welfare Canada, in press). The U.S. data are from the 1985 National Health Interview Survey (NHIS) of Health Promotion and Disease Prevention (HPDP). NHIS is conducted by the National Center for Health Statistics, with field work carried out by the U.S. Bureau of the Census. The Canadian data originate from Canada's Health Promotion Survey, carried out by Statistics Canada for Health and Welfare Canada. Both surveys were intended to monitor health practices in their respective populations and to provide data for planning health promotion activities; both are scheduled to be repeated in 1990.

A number of important similarities exist between the U.S. and Canadian surveys. These arose not so much from coordinated planning as from shared objectives and a common understanding about the best means to collect data on these topics. The most important area of similarity involves the target populations. In both cases these were the adult, national, civilian noninstitutionalized populations. One adult per family was selected in the U.S. survey, and one per household was selected in Canada. Response rates were high for both surveys—90 percent in the United States and 82 percent in Canada.

In the United States, 33,630 persons age 18 years and over living in approximately 35,000 NHIS sample households participated. In Canada 11,181 persons age 15 years and over living in 13,649 households were interviewed. Data presented in this report have been weighted to reflect the 1985 populations in the two countries, and these weights have been adjusted to take into account persons selected but not participating in the survey. The average weight (or number of persons represented by each sample person) is 5,085 for the U.S. survey and 1,752 for the Canadian survey.

The principal difference between the methods of these two surveys was in the data collection process. Although the survey respondent was interviewed at home in both cases, the interview was conducted in person in the United States and by telephone in Canada. This has two implications for the results, both of them probably minor in impact. First, some survey practitioners believe that greater candor and accuracy are obtained in telephone responses (Marcus and Crane, 1986). However, the survey subject matter was not found to be particularly sensitive for most people, and any advantages or disadvantages of telephone data collection are likely to be minor. Second, the telephone technique used in Canada naturally excluded households without telephones. This amounts to only 3 percent of households. The inhabitants of these households were disproportionately young, unemployed males (Health and Welfare Canada, 1985). Because the data in this report are presented by sex and age group and because sample weights are adjusted for these and other characteristics, the impact on the comparisons should be minimal.

All data presented in this report are from the public use microdata tapes available from the respective survey sponsors (Health and Welfare Canada, 1985; NCHS, unpublished). Where differences are described in the results section, these have been assessed by t-test and are significantly different with $p < .05$. Appendix I describes how the standard errors were calculated for this purpose.

Sources of 1979 data

Health surveys had been carried out routinely in the United States prior to 1985 and at irregular intervals in Canada. Only a limited number of surveys have collected information consistently over time, and only in 1979 were there surveys in the United States and Canada that collected data on health behaviors similar to those found in the 1985 surveys. (In the United States, the 1977 and the 1983

National Health Interview Surveys also included questions on health practices.)

Wave I of the National Survey of Personal Health Practices and Consequences (NCHS, 1981, 1982) was a telephone survey of 3,025 persons who constituted a probability sample of U.S. adults ages 20-64 years living in households. Data collection was carried out by a research contractor in the spring of 1979, and the response rate was about 81 percent. The disproportionately high number of women in the responding sample does not present a problem for this report because the data are shown separately for each sex.

The Canadian data for 1979 are from the Canada Health Survey (Health and Welfare Canada and Statistics Canada, 1981; Statistics Canada, unpublished). This was a multimethod survey, employing an in-person interview, self-completed questionnaire, physical measurements, and blood sampling, carried out in the home. The data reported here are from the self-completed questionnaire; questionnaires were completed by 23,791 persons ages 15 years and over (15,239 ages 20-64 years). Data collection extended from July 1978 through March 1979, and the design consisted of a national probability sample of households in which all members within the appropriate age limits were selected for participation. The response for the questionnaire was 87 percent of those in interview households.

Differences in the national populations

Although data in this report are presented by age, sex, and educational level, it is important to compare the composition of the U.S. and Canadian populations for characteristics that may affect the comparisons of health practices.

Table A shows the distribution of the two national populations by age-sex groups and educational levels. The education distributions of the two countries are quite different: Overall, Canadians were about 10 percentage points less likely to have a high school diploma. The proportion with college or university education, however, was very similar (about 37 percent) in the two countries. This applies equally to men and women, but not to all age groups. Young Americans (ages 18-24 years) are less likely than their Canadian age peers to be college educated, while the reverse holds for ages 35-64 years—a fact to be remembered when making age-specific comparisons between the two countries.

When interpreting educational differences shown in this report, the age composition of each of the education

groups should be kept in mind (table B). Americans with less than a high school education are skewed toward the older age groups, relative to their Canadian counterparts, who have a higher proportion in the middle age groups. Among college graduates, the Canadians have somewhat higher proportions in the younger age groups than do American graduates.

In addition to these differences in age and education, there are other contrasts between these two countries that serve as a context for interpreting the results in this report. Some of these are shown in table C. The United States is the fourth most populous nation on earth, with a population almost 10 times that of Canada. Moreover, because the land mass of Canada is the second largest in the world, the difference in population density is vast—Canada's being one-fifteenth that of the United States.

Differences in ethnocultural characteristics between the United States and Canada are also apparent. Twelve percent of U.S. adults are black and 85 percent are white; in

Table A. Population comparison: percent distribution of adults by educational levels, according to sex and age: United States and Canada, 1985

| | Total | | High school | | | | College or university | |
| | | | Not completed | | Completed | | | |
Sex and age	United States	Canada	United States	Canada	United States	Canada	United States	Canada
				Percent distribution				
All persons 18 years and over	100.0	100.0	24.3	34.4	39.0	28.7	36.7	36.9
Men								
All ages	100.0	100.0	23.8	33.3	35.7	27.0	40.5	39.7
18-19 years........................	100.0	100.0	30.0	32.6	53.7	32.3	16.3	35.1
20-24 years........................	100.0	100.0	14.5	19.9	42.4	30.3	43.1	49.9
25-34 years........................	100.0	100.0	12.1	19.3	38.5	31.6	49.4	49.1
35-44 years........................	100.0	100.0	14.0	26.0	34.3	33.5	51.6	40.5
45-54 years........................	100.0	100.0	26.9	40.5	32.2	20.4	40.9	39.2
55-64 years........................	100.0	100.0	34.5	53.1	33.4	19.1	32.2	27.8
65-74 years........................	100.0	100.0	45.1	59.4	31.0	17.1	23.9	23.4
75 years and over....................	100.0	100.0	64.7	66.3	17.2	16.3	18.2	17.4
Women								
All ages	100.0	100.0	24.7	35.5	42.0	30.2	33.3	34.2
18-19 years........................	100.0	100.0	30.2	14.7	54.8	46.4	15.0	38.9
20-24 years........................	100.0	100.0	14.6	17.2	43.6	31.4	41.8	51.4
25-34 years........................	100.0	100.0	13.4	18.3	42.6	35.9	44.1	45.8
35-44 years........................	100.0	100.0	15.5	31.5	43.4	31.5	41.1	37.0
45-54 years........................	100.0	100.0	25.3	49.2	45.4	28.3	29.3	22.6
55-64 years........................	100.0	100.0	31.7	53.8	43.9	28.4	24.4	17.8
65-74 years........................	100.0	100.0	42.7	60.7	37.1	18.5	20.2	20.8
75 years and over....................	100.0	100.0	57.8	66.0	23.9	14.5	18.3	19.4

Table B. Population comparison: percent distribution of adults by age, according to educational levels: United States and Canada, 1985

| | Total | | High school | | | | College or university | |
| | | | Not completed | | Completed | | | |
Age	United States	Canada	United States	Canada	United States	Canada	United States	Canada
					Percent distribution			
All person 18 years and over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
18-19 years	4.3	4.4	5.3	3.0	5.9	6.0	1.8	4.3
20-24 years	11.8	13.0	7.1	7.0	13.0	13.9	13.6	17.8
25-34 years	23.8	24.2	12.5	13.2	24.8	28.5	30.3	31.2
35-44 years	18.4	19.2	11.2	16.0	18.4	21.2	23.1	20.2
45-54 years	13.1	13.7	14.0	17.9	13.1	11.6	12.4	11.4
55-64 years	12.9	12.4	17.5	19.2	12.9	10.3	9.9	7.6
65-74 years	9.7	8.8	17.5	15.3	8.6	5.5	5.8	5.2
75 years and over	6.0	4.3	14.9	8.3	3.3	2.3	3.0	2.2

Table C. Selected population characteristics: United States and Canada

Characteristics[1]	United States	Canada
Total resident population	238,740,000	[2]25,354,000
Population density, persons per square kilometer	39.3	2.5
Average annual population growth rate, percent, 1980-85—U.S.; 1981-86—Canada	0.9	0.8
Per capita income, U.S. dollars	$13,850	$11,579
Life expectancy at birth:		
Males	71.2	71.3
Females	78.2	79.6
Infant mortality, deaths per 1,000 live births	10.6	7.9
Elderly dependency ratio, 1981	14.3	17.3
Percent of all deaths due to:		
Heart disease	37	26
Cancer	22	26
Traffic accidents	2	3
Physicians per 10,000 population	21.3	18.6
Per capita health care expenditures, U.S. dollars: 1983—U.S.; 1981—Canada	$1,504	$1,001

[1]Data are for 1985 unless otherwise indicated.
[2]1986.

Canada, the white population accounts for over 98 percent of the total. Although the majority of the white population in both countries derives from Europe, in Canada 25 percent speak French as their first language and the country is officially bilingual. Partly as a consequence of this large population of French background, a larger proportion of Canadians than Americans is Roman Catholic (47 and 33 percent, respectively) and a smaller proportion is Protestant (41 and 50 percent, respectively).

Despite these differences in population composition, both countries have been similarly exposed to demographic forces such as aging of their populations and increases in the elderly dependency ratios over the last 25 years (Statistics Canada, 1987). There are also similarities in the organization of the health care systems, based on a fee-for-service method of payment that is conducive to the use of highly technical and specialized services. A major difference, however, is the existence of a universal health insurance system in Canada that provides coverage for hospital and physician care. As a percent of gross national product, in 1985 Canada spent 8.8 percent on health care; the comparable figure for the United States was 10.7 percent.

Life expectancy at birth is the same for males in both countries, but is 1.4 years higher for females in Canada than in the United States (table C). The increase for both sexes over the past 5 years has been greater in Canada, where the infant mortality rate is also lower, by 2.7 per 1,000 live births (Statistics Canada, 1987). The major causes of death are heart disease and cancer in both countries; however, heart disease accounts for a higher proportion of all deaths in the United States and cancer is less common than in Canada.

Prevalence of health practices, 1985

Consistency of definition was the overriding consideration in carrying out the analyses for this study. As a result, the findings for either survey in this report may be less detailed than those available elsewhere and represent just a fraction of the variables covered by each survey. However, it is possible to make comparisons on several important health practices.

A common format has been adopted for the presentation of results. For most of the health practices, a figure compares the prevalence of the principal category of interest for four age groups for men and women in the United States and Canada. A detailed table provides the data for additional categories and for three levels of education. In a few cases, text tables are used where a figure is not appropriate for displaying the data, and there is no corresponding detailed table. Where differences are noted and discussed in the text, these have been found statistically significant (probability of the differences being due to sampling error is no greater than 5 percent, and is usually no larger than 1 percent). The method for testing the difference between proportions is explained in appendix I.

All data are, of course, cross-sectional in nature. Thus the frequently observed associations between health practices and chronological age may be due to maturation processes, generational effects, selective survival, or a combination of these and other factors. The current data are not adequate for distinguishing among these possible explanations.

Smoking

Of all the health practices one might consider studying in a population, cigarette smoking is undoubtedly the most important. Although substantial declines have been reported in recent years (Collishaw, 1987; NCHS, 1986b), smoking remains the number one cause of preventable death and disease (Richmond, 1979). A comparison of rates in the United States and Canada may shed some light on the relative success of policies employed to limit smoking in these two countries.

Current smokers were more prevalent in Canada (35 percent) than in the United States (30 percent). The United States had a smaller proportion of smokers in most age groups for both sexes and at all three levels of education (table 1). The most pronounced differences were among women and those 18-24 years of age (figure 1). Young men and young women were more likely to be current smokers
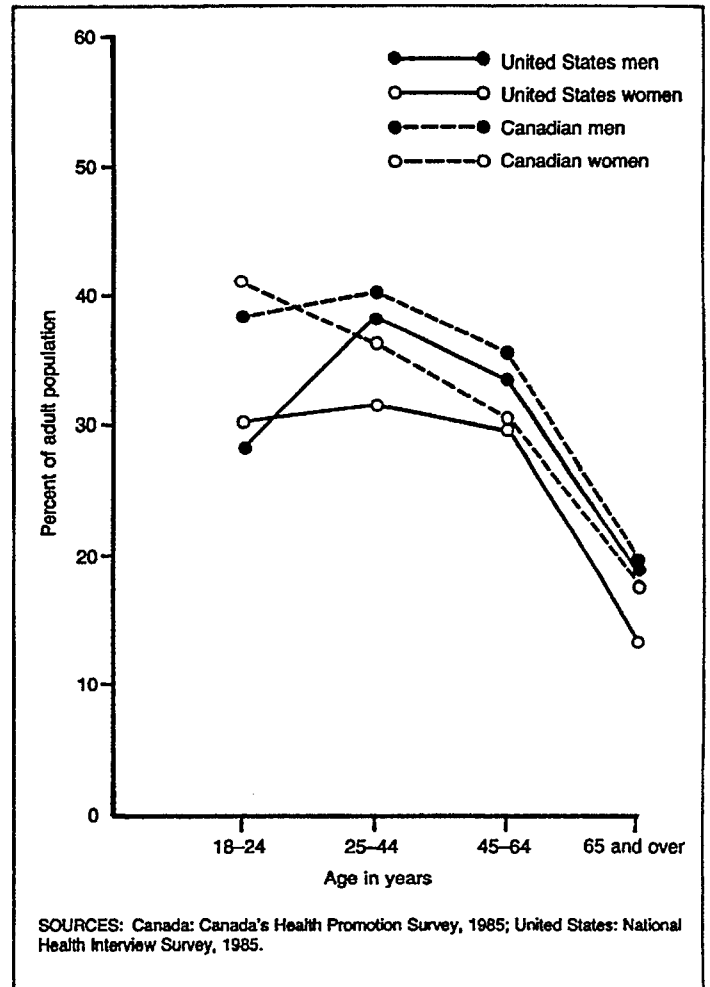
Figure 1. Percent of the adult population who were current cigarette smokers, by age: United States and Canada, 1985

SOURCES: Canada: Canada's Health Promotion Survey, 1985; United States: National Health Interview Survey, 1985.

in Canada than in the United States, by about 10 percentage points.

Despite these systematic differences between the populations of the two countries, the relationships between smoking, age, and sex were similar in both countries. Overall, men were more likely than women to be smokers, except at 18-24 years of age; in this group women were more likely to smoke than men in the United States and in Canada. Also seen in both countries was a drop in the proportion of smokers with increasing amounts of education, although in Canada the drop was observed only in the college-educated group. The highest rate of smoking by

men was at ages 25-44 years in both countries, after which there was a steady decline. Among women, however, there was a noteworthy difference. Although female smokers were about equally prevalent in all age groups up through age 64 years in the United States, in Canada they were more prevalent at ages 18-24 years, and progressively less prevalent in older age groups. In fact, young Canadian women had the highest proportion of smokers (41 percent) of any age-sex group in the two countries.

Discussion—For both surveys virtually identical questions were used, with the exception that more detail was collected on nonsmokers in the United States. The questions are well established, having been used with minor variations in both countries for many years. The more favorable rates in the United States may be attributable to more antismoking public education, the profile given this issue by the U.S. Surgeon General, and more extensive restrictions on smoking in public places such as restaurants and airplanes. In both countries similar prohibitions exist on advertising tobacco products in the mass media. The fact that more women than men smoke only at ages 18-24 years suggests that the recent targeting of young women by cigarette manufacturers (Ernster, 1985) is experiencing some success in both countries.

Alcohol use

The use of alcohol may be second only to smoking in the attention it receives from regulators and health educators. As with smoking, a comparison of the prevalence of alcohol consumption in the United States and Canada may reveal something about the effectiveness of each country's control measures.

For this purpose, individuals were classified as current drinkers, lifetime abstainers, and former drinkers (see appendix II for definitions of terms). As table 2 shows, current drinkers were substantially more common in Canada (82 percent) than in the United States (65 percent), a difference that was found in every age-sex group.

Female drinkers contributed disproportionately to this intercountry difference because they were more prevalent in Canada by 23 percentage points. In contrast, the prevalence of male drinkers in Canada was 10 percentage points higher than in the United States. Young women (ages 18-24 years) accounted for the largest difference between countries; they were 27 percent more likely to be current drinkers in Canada than in the United States (91 versus 64 percent) (figure 2).

In the United States and Canada, drinking was more likely among persons under age 45 years, males, and the well educated (table 2). Both sex differences and educational differences in drinking prevalence were greater in the United States than in Canada.

Most Americans who were not current drinkers described themselves as lifetime abstainers (27 percent), rather than former drinkers (8 percent) (table 2). In Canada, the lifetime abstainers accounted for a much smaller proportion of the population than in the United States and
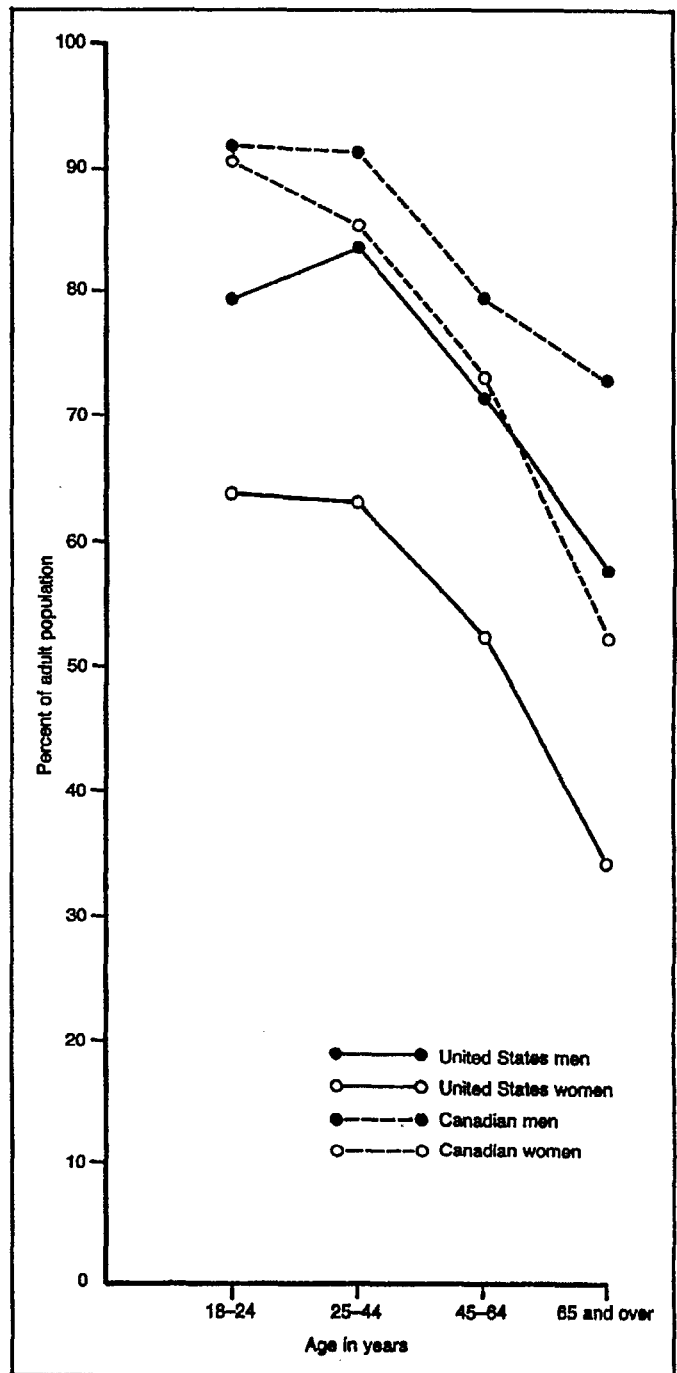
Figure 2. Percent of the adult population who were current drinkers, by age: United States and Canada, 1985

were actually outnumbered by the former drinkers. Men in the two countries were about equally likely to be former drinkers (9 percent), whereas Canadian women were about twice as likely as their U.S. counterparts to have given up drinking (12 and 6 percent, respectively).

Canada not only had a higher proportion of current drinkers, but Canadian drinkers were slightly more likely to be heavier drinkers (14 percent), averaging two drinks or more daily, than their U.S. counterparts (12 percent) (table 3). In the United States, the largest proportion of heavier drinkers was among those with less than a high school education; in Canada, high school graduates consumed the
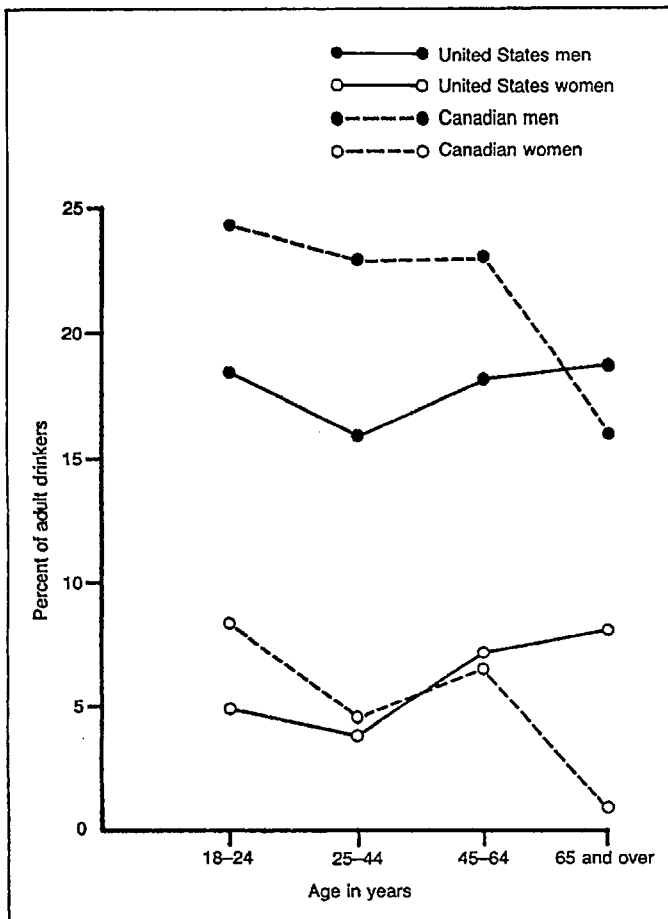
Figure 3. Percent of adult drinkers who on the average consumed 1.0 ounce or more daily of absolute alcohol (2 drinks or more), by age: United States and Canada, 1985

Figure 4. Percent of adult drinkers who drove after drinking, by age: United States and Canada, 1985

highest average daily amount of alcohol (table 3). However, in neither country was heavier consumption typical; 86-88 percent of drinkers average less than two drinks daily. (See also figure 3.)

Drinking and driving is a problem that has received a vast amount of publicity in the United States and Canada in recent years, yet adequate population statistics on the extent of this practice have not been readily available. Although health surveys are now starting to collect this information, it is not yet in a consistent form that permits ready comparison. Questions in the two 1985 surveys, though different, shed some light on the prevalence of drinking and driving in the two countries.

Seventeen percent of U.S. adults admitted in 1985 to driving within the past year after "they perhaps had too much to drink" (table 4). In Canada, 25 percent reported they had driven in the past month "within two hours of drinking any amount of alcohol." Strict comparisons of prevalence rates are ruled out by the different wording of the questions. However, in both countries, drinking and driving was more prevalent among men than women and among younger adults than older persons. The only exception to this age pattern was among Canadian men; for this group, drinking and driving was most prevalent among those ages 25-44 years (figure 4). In both countries, driving

after drinking was least likely to be reported by those with less than a high school education.

Discussion—Question wording on type of drinker varied in the two surveys, producing a stricter definition of lifetime abstainer in Canada (no drinks ever) than in the United States (never had 12 or more drinks in any one year). This undoubtedly explains some, but probably not all, of the 20 percentage point greater prevalence of lifetime abstainers in the United States. More important, the definitions of current drinker are comparable in the two surveys (at least one drink in the past 12 months). There are no obvious differences in policies or programs to explain the 17 percentage point higher prevalence of current drinkers in Canada. However, the higher drinking prevalence in Canada parallels the findings for smoking—the young have among the highest prevalence levels. This is not surprising, considering the consistent associations between smoking and drinking reported elsewhere (Berkman and Breslow, 1983; Stephens, 1986).

Estimates of average daily consumption are based on reports for the last 14 days in the United States compared with the last 7 days in Canada and are limited to current drinkers in both cases. Other things being equal, this should mean that the proportion of drinkers in the "none" category should be lower in the United States. As shown in table 3, the proportion of drinkers in the "no ounces" category was 16 percentage points lower in the United States than in Canada. Distribution across the lighter, moderate, and heavier categories is less likely to be affected by this difference in the reporting period. The 14-day

reference period probably means the U.S. data are more stable, but the impact on aggregate statistics should be minor.

In the case of drinking and driving, the prevalence rates cannot be compared because the questions were markedly different. The U.S. definition was stricter because it referred to impaired driving, which the Canadian one did not. Further, the reporting period in the U.S. question was one year, compared with the last month in Canada. Although these differences would affect prevalence levels, a comparison of the demographic patterns was reasonable because the behavior under examination was similar in both surveys.

Physical activity

Leisure-time exercise is a practice with a wide variety of possible health benefits (Powell and Paffenbarger, 1985) and one that has apparently been taken up with enthusiasm in both the United States and Canada (Stephens, 1987). In the United States, the President's Council on Physical Fitness and Sports was initiated in 1956 to promote physical fitness of all Americans (President's Council on Physical Fitness and Sports, 1987). In Canada, the PARTICIPaction organization has been promoting exercise since 1971 (Contemporary Research Centre, Ltd., 1982).

Although detailed statistics on the prevalence of rigorously defined activity have recently been published for the United States and Canada (Schoenborn, 1986; Stephens, Craig, and Ferris, 1986a), they are not available for both countries for the same year. As a result, figure 5 and table 5 show summary indicators for 1985 that are reasonably comparable.

In the United States, 40 percent of adults claimed that they exercised or played sports regularly, compared with 53 percent in Canada who reported vigorous activity for at least 15 minutes three times or more per week (table 5). This tendency of Canadians to be more active was true of most age-sex groups, especially for those 45 years of age and over (figure 5).

In Canada, there was only a small difference between the sexes in the reported prevalence of activity at ages 18-24 years, while in the United States, men were much more likely than women to be active at this age. In Canada, women were more likely than men to be active at ages 45-64 years. Both populations are characterized by a decline in physical activity with increasing age, with the notable exception of an increase for Canadian men at age 65 years and over.

In both countries, leisure-time activity increased with higher levels of education (table 5). This was especially the case in the United States, where there was a two-fold difference in the prevalence of activity between the lowest and the highest educational levels. In Canada, this gradient was much less steep.

Discussion—The physical activity questions are worded differently in the two surveys. Although the Canadian question appears to be stricter, it is not certain that this is the case. A more rigorous definition of physical activity
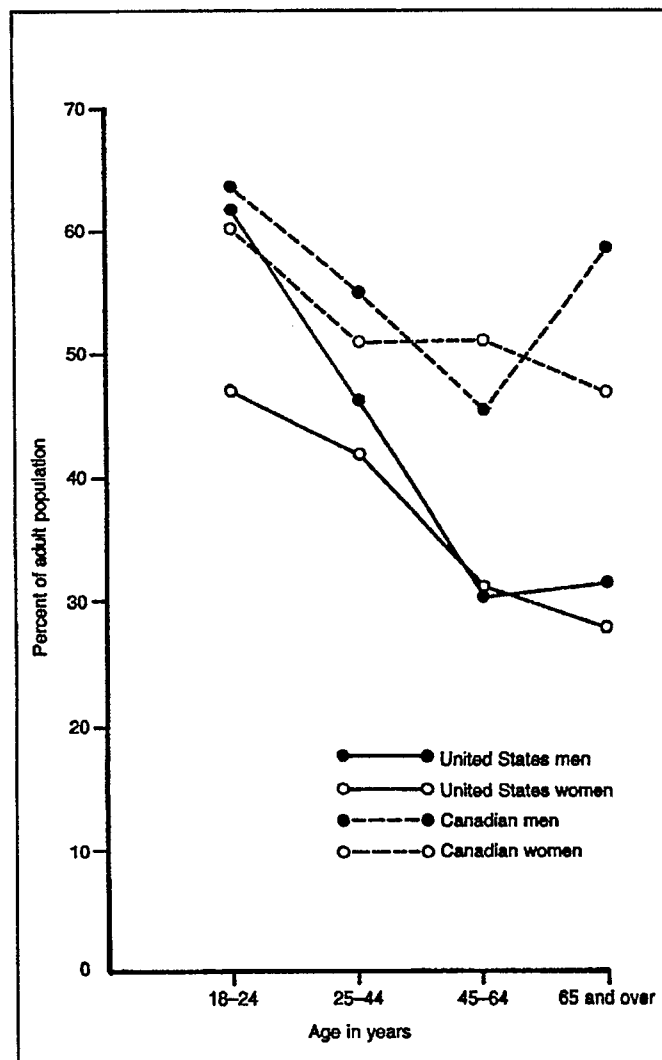
Figure 5. Percent of the adult population who were regularly active in leisure time, by age: United States and Canada, 1985

based on caloric expenditure was calculated from a detailed inventory of activities (Stephens, Jacobs, and White, 1985). By this approach, 27 percent of U.S. adults qualified as active in 1985—expending 3 kilocalories or more per kilogram of body weight daily (Schoenborn, 1986). The comparable figure in Canada in 1981 was 25 percent (Stephens, Craig and Ferris, 1986a), and this is likely to have increased during the period 1981-85, judging by trends documented elsewhere (Stephens, 1987). Moreover, 27 percent of Canadians age 15 years and over expended 4.5 kilocalories or more daily on physical activity in 1985, according to the nationwide General Social Survey (Statistics Canada, 1987). All of this suggests that the general conclusion, if not the precise quantities, of figure 5 is correct, even though physical activity tends to be higher in June, when the Canadian data were collected.

Daily breakfast

Although eating a good breakfast on a regular basis is a health practice that receives little attention from health
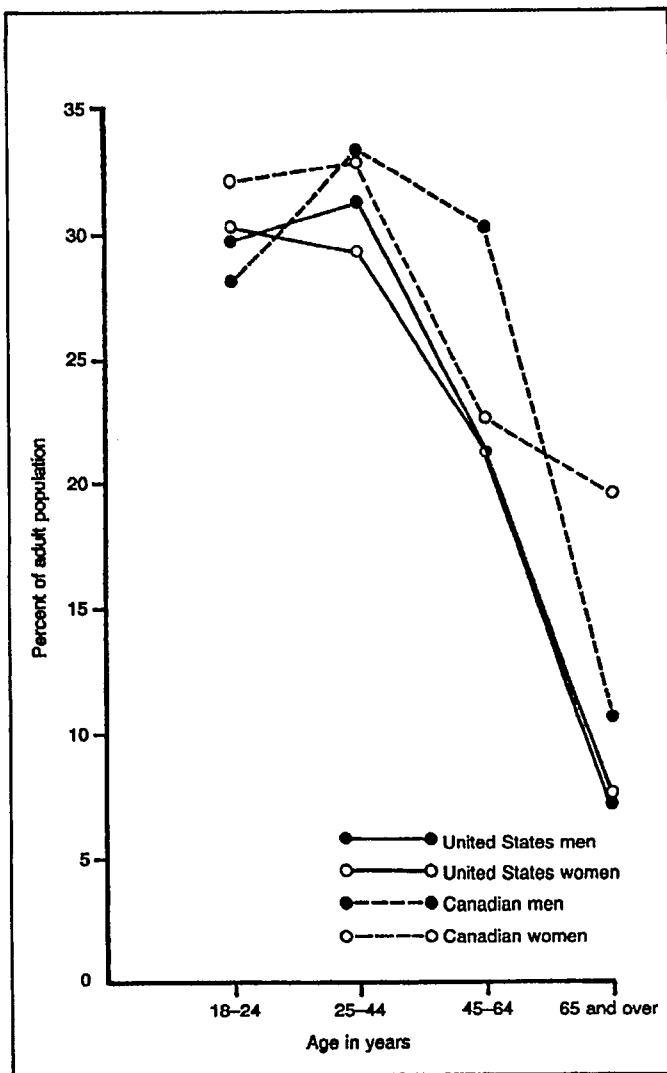
Figure 6. Percent of the adult population who rarely ate breakfast, by age: United States and Canada, 1985

on those who generally missed breakfast—the category that can be most readily compared.

Americans were less likely than Canadians to skip breakfast (24 percent versus 29 percent, respectively). This difference was found across most age-sex groups, although some were not statistically significant. U.S.-Canadian differences were most pronounced for men ages 45-64 years and women age 65 years and over.

In both countries, younger people (ages 18-44 years) were more likely to miss breakfast than were middle-aged or senior adults. In the United States, there was virtually no male-female difference in the prevalence of this practice at any age. In Canada, men and women differed somewhat in their breakfast habits, and these sex differences varied with age. In the youngest and oldest age groups, women were more likely than men to skip breakfast. Among Canadians ages 45-64 years, skipping breakfast was more prevalent among men, but no sex difference was found for persons ages 25-44 years. The relationship between skipping breakfast and level of education found in Canada did not occur in the United States (table 6).

Discussion—The Canadian definition specifically eliminates a breakfast consisting of coffee only. This may account for the 4-percentage-point difference between the United States and Canada in missed breakfasts.

Seatbelts and child restraints

Motor vehicle accidents are the fourth leading cause of death in the United States (NCHS, 1985a) and the seventh-ranked cause in Canada (Statistics Canada, 1985). These stark facts have led to the heavy promotion of seatbelt and child restraint use through public education and, more recently, through legislation.

Regular seatbelt use in the United States in 1985 was less than half that of Canada. Slightly more than one-third of American adults reported wearing their seatbelts "usually," compared with more than three-quarters of Canadians (table 7). Large differences were found for all age groups, both sexes, and all educational levels. The largest contrast is for those who have not completed high school: For these, the prevalence of regular seatbelt use in Canada was three times that of the United States.

United States-Canada comparisons of adults who reported never wearing seatbelts mirrored those for regular users. About one-third of U.S. adults, compared with 13 percent in Canada, reported in 1985 that they never wore a seatbelt.

Despite these large differences, there were similar demographic patterns in the two countries (figure 7). Women were more likely than men in all age groups to be regular seatbelt users, a discrepancy that diminished steadily with increasing age in the United States, but not Canada. In both countries, the young (18-24 years of age) were least likely to wear seatbelts, although the steady increase in prevalence of seatbelt use with age in Canada was not seen in the United States.

promoters, it is nevertheless associated with better health including lower levels of mortality (Berkman and Breslow, 1983). Whether this is due to the salutary effects of breakfast alone, or whether a regular breakfast is indicative of generally good nutritional habits is not clear, but it is associated with good health independent of other practices such as smoking, drinking, and exercise.

Collecting detailed data on dietary habits is complex and difficult, and the approaches adopted to assess breakfast consumption in the United States and Canada in 1985 were slightly different. The U.S. survey asked about the frequency of breakfast, and the Canadian study obtained the weekly frequency of five broad classes of breakfast foods. This allowed a breakfast consisting of only coffee to be eliminated from consideration, a qualification not routinely possible with the U.S. data. (In the U.S. survey, a coffee-only breakfast was disregarded only when the interviewer was specifically asked whether or not coffee alone should be considered breakfast.) Because of this difference in the definition of breakfast, as well as in the frequency categories provided to respondents, figure 6 concentrates
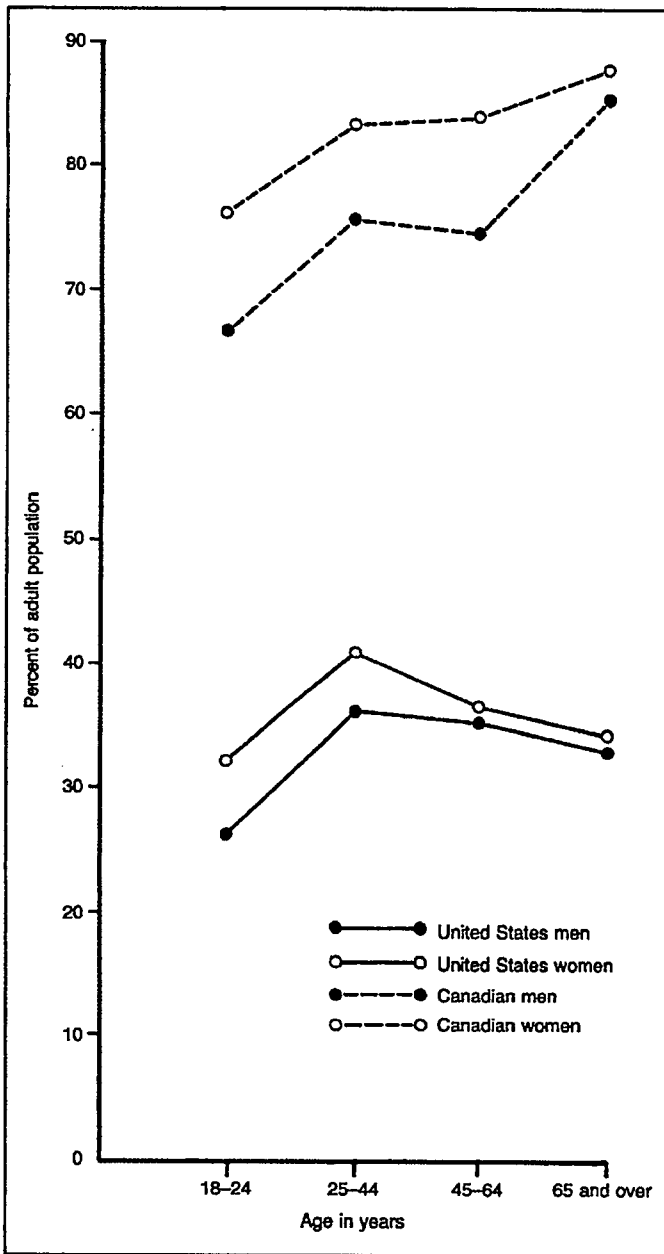
Figure 7. Percent of the adult population who usually wore seatbelts, by age: United States and Canada, 1985

Like the findings for seatbelts, the use of child restraints (table D) was higher in Canada than in the United States. Almost all Canadian parents (91 percent) claimed to

usually insist upon their children being buckled up, compared with half (52 percent) of U.S. parents. There was a sharp increase in the use of child restraints with increasing education in the United States, which did not hold in Canada.

Discussion—The survey questions asking about the use of seatbelts were nearly identical. Response categories differed only slightly and are unlikely to have affected the results (see appendix II for definitions). A much more important explanation for the two-fold difference in prevalence is the existence of seatbelt legislation in Canada and its absence in the United States in 1985. Approximately 90 percent of the Canadian population was subject to such legislation at the time of the survey, and it was routinely enforced with substantial fines for noncompliance. The first such legislation was introduced in the United States in 1985, and it was not initially enforced. It is possible that the Canadian prevalence levels might be inflated because of reluctance to admit breaking the law. Observational studies of seatbelt use suggest that the prevalence is somewhat lower than self-reported (Arora, 1981).

Smoke detector ownership

The smoke alarm offers an effective and inexpensive measure of protection against residential fires, which account for thousands of injuries and deaths annually, as well as millions of dollars' worth of property damage. The U.S. and Canadian surveys asked similar questions about ownership of smoke detectors, obtaining the information from a responsible adult member of the household. Because the Canadian survey did not identify the number of smoke detectors nor their working status, the findings are presented simply to show ownership of one or more devices. Although smoke detector ownership is a household rather than a personal characteristic, these data are presented by respondent characteristics because of lack of comparable household data for the two surveys.

Smoke detector ownership in the United States was lower (69 percent) than in Canada (77 percent) (table 8), a difference found at all age levels and most pronounced for ages 18-24 years (figure 8). In both countries, the highest rate of ownership was for ages 25-44 years.

There was a definite increase in the prevalence of ownership with higher levels of education in the United

Table D. Safety restraints: percent distribution of children by frequency of restraint use, according to parents' educational levels: United States and Canada, 1985

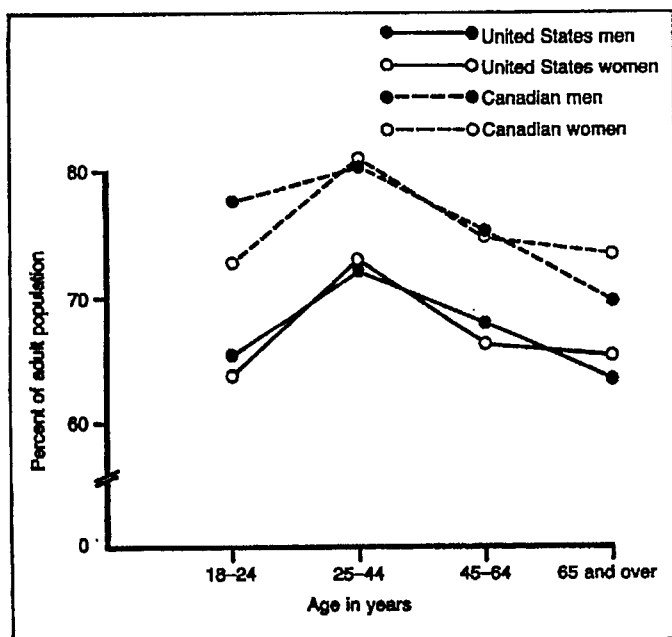| Educational level	Total		Usually		Sometimes		Never	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada
	Percent distribution							
All educational levels	100.0	100.0	52.1	91.3	28.9	3.4	19.0	5.3
High school:								
Not completed	100.0	100.0	34.9	89.6	30.2	3.1	35.0	7.3
Completed	100.0	100.0	46.6	92.2	30.4	2.4	23.0	5.4
College or university	100.0	100.0	61.3	91.8	27.3	4.4	11.4	3.8

Figure 8. Percent of the adult population who owned 1 smoke detector or more, by age: United States and Canada, 1985

States; this was inconsistent in Canada, although the lowest levels of ownership were among those with less than a high school education.

Discussion—Although the U.S. survey collected more detail about smoke detector ownership, the basic question was very similar to the Canadian version. The comparison shown here is for the number of smoke detectors owned, regardless of their state of repair. Comparison of these data with previously published data for the United States suggest that approximately 9 percent of installed detectors are not working (NCHS, 1986a). This proportion is probably similar in Canada, although the information was not obtained there. If there is a difference that requires explaining, it is the 13-percentage-point higher level of ownership by Canadian men ages 18-24 years. This may result from the installation of smoke detectors in college dormitories or the fairly widespread requirement for the devices in apartment buildings. The lack of a uniform national standard for smoke detector installation in either country leaves such attempts at explanation in the realm of speculation. This difference may also result from the fact that, at this age, more Canadians than Americans were college educated (table A), a factor that is positively associated with ownership.

Most recent blood pressure check

Hypertension is a condition affecting 31 percent of Americans ages 18-74 years (Subcommittee on Definition and Prevalence of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure, 1985) and 23 percent of Canadians ages 20-69 years (Stephens, Craig, and Ferris, 1986b). Because hypertension is only detected with a blood pressure check, public educa-

tion and medical practice have urged regular measurement for several years.

Both U.S. and Canadian surveys asked similar questions concerning the respondent's most recent blood pressure check. Overall, the prevalence of blood pressure checks within the past 12 months was slightly lower in the United States (74 percent) than in Canada (76 percent) (table 9). However, this difference was only statistically significant for women, and was not equal across age groups (figure 9). Young U.S. men were 11 percentage points more likely than their Canadian counterparts to have had a check within the past year. For older groups, it was the Canadians who were more likely to have had a recent check; this was particularly true of women. In both countries, the likelihood of a recent blood pressure check increased with age. An exception was U.S. women ages 25-44 years who were less likely than women of other ages to have had a blood pressure checkup within the past year.

Approximately three-fourths of individuals in the United States and in Canada at all three educational levels had had a blood pressure check within the past 12 months.

Discussion—The questions on time since last blood pressure check were nearly identical in the two surveys. Because there is no Canadian equivalent to the U.S. National High Blood Pressure Education Program, the near-equality in prevalence rates is surprising. It may be that the existence of universal health insurance in Canada compensates for the absence of a national high blood pressure education program in that country. Additionally, because
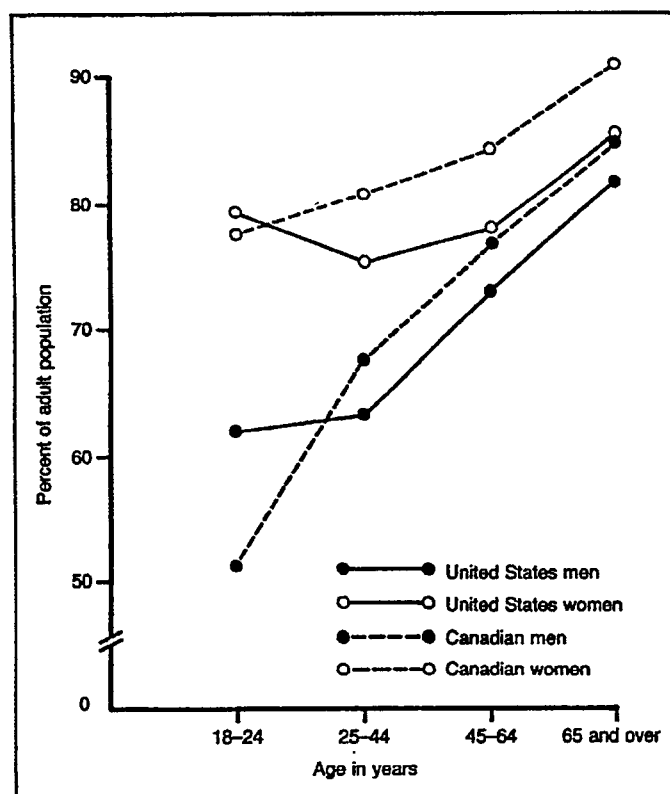

Figure 9. Percent of the adult population with a blood pressure test within the past 12 months, by age: United States and Canada, 1985

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virtually all Canadians have U.S. television programming available, and U.S. magazines are widely distributed in Canada, some of the impact of the U.S. education program may also be felt north of the border.

Blood pressure awareness

Knowledge of the importance of hypertension and of the need for regular checks is seen as important in the United States and Canada because monitoring and control depend heavily on individual initiative. Each country gained important insights into the level of public knowledge through their 1985 surveys, although the questions measured different aspects of awareness.

More than two-thirds of U.S. adults were aware that high blood pressure definitely increases the chances of heart disease (table E). This high prevalence of knowledge was true for men and women, and for all age groups under 65 years. Among U.S. men and women ages 65 years and over, a somewhat lower but still substantial proportion (58-59 percent) was aware of the heart disease risk associated with high blood pressure. U.S. adults with a college education were 20 percentage points more likely to appreciate the hazards of hypertension than those with less than a high school diploma.

An important feature of hypertension is the lack of overt symptoms. Thus Canadian adults were asked to consider the statement, "You only need to have your blood pressure checked if you think you have a problem." Over 80

Table E. Blood pressure awareness: percent of adults in the United States who were aware that hypertension increases the chances of heart disease and percent of adults in Canada who were aware of the need for blood pressure testing in absence of symptoms, by sex, age, and educational levels: 1985

	Blood pressure awareness	
Sex, age, and educational level	Increased chances of heart disease in United States	Testing in absence of symptoms in Canada
	Percent	
All persons 18 years and over. . .	68.4	80.7
Men		
All ages.	68.0	78.2
18-24 years	65.3	75.5
25-44 years	71.9	81.8
45-64 years	68.1	77.4
65 years and over	58.6	70.8
Women		
All ages.	68.9	83.2
18-24 years	67.2	87.0
25-44 years	72.9	85.8
45-64 years	70.9	79.8
65 years and over	58.0	77.3
Educational level		
High school:.		
Not completed	56.6	75.8
Completed	68.8	81.2
College or university.	76.2	85.3

percent were aware of the need for blood pressure testing in the absence of symptoms (table E). Women were more likely than men (83 and 78 percent, respectively) to have the correct view on this item. Differences among the age groups were not large, although the oldest men were least likely to see the need for a check in the absence of any complaint (71 percent). As is true of the blood pressure knowledge question on the U.S. survey, correct answers were directly related to level of education, although the difference between the lowest and highest educational levels was only 10 percentage points in Canada, in contrast to the 20-percentage-point difference in the United States.

Breast examination

At the time these surveys were conducted, breast cancer was the leading form of cancer among women in the United States (NCHS, 1985a) and Canada (Statistics Canada, 1987), accounting for about one-quarter of all female cancer. Periodic breast examination by a physician or nurse is widely recommended as an effective technique for early detection. Both surveys asked women to report on their most recent breast examination by a "doctor or other health professional" (United States) or by a "doctor or nurse" (Canada). The U.S. survey identified the interval since the most recent examination, and the Canadian survey simply determined whether the examination was within the past 12 months.

The prevalence of breast examination within 12 months was lower in the United States (50 percent) than in Canada (69 percent) (table 10). A substantial difference between the two countries was characteristic of all age groups. Furthermore, there was a similar decrease in the probability of a recent test with increasing age in both countries (figure 10). There was a tendency in both countries for the prevalence of a recent breast examination to increase with higher levels of education. In the United States and in Canada, college-educated women were about 15 percentage points more likely than those with less than a high school education to have had a breast examination within the past 12 months.

Discussion—Although the questions on breast examination were similar, the U.S. survey collected more detail and the response categories were worded slightly differently. However, the shortest interval was similarly described—"less than 1 year" in the U.S. survey and "within the past 12 months" in the Canadian questionnaire. Recall and other errors are likely to have been similar in both surveys, suggesting that a substantial difference existed in prevalence of recent breast examination in the two countries.

Despite controversy about its efficacy, breast self-examination (BSE) is widely promoted in the United States and Canada (Baines, Wall, Risch, et al., 1986). Both surveys asked women to report how often they perform BSE. Monthly BSE was less common among U.S. women (32 percent) than their Canadian counterparts (41 percent)
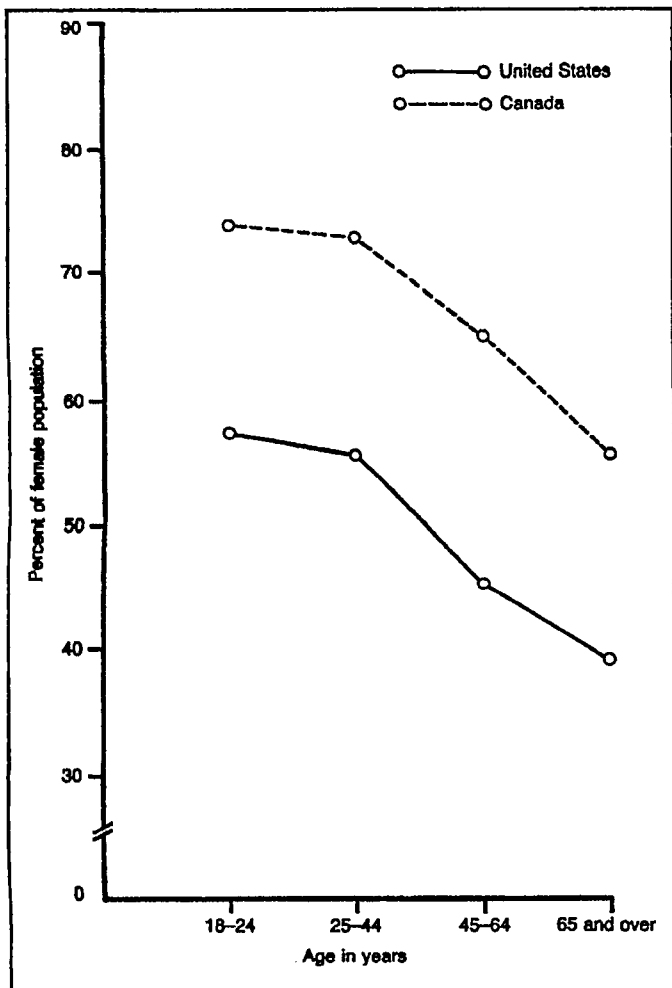
Figure 10. Percent of the adult female population with a breast examination within the past year, by age: United States and Canada, 1985

existed between prevalence of this practice and amount of education; but in each case, the difference between the least and most educated women was only 5 percentage points. The prevalence of women who never perform BSE or only do it less often than every 3 months mirrored the results reported above. The proportion of both groups was higher in the United States.

Discussion—The line of questioning on BSE was slightly different in the two surveys. In the United States, women were first asked if they knew how to perform BSE. Frequency was determined only for those professing knowledge. In the Canadian survey, all women were asked about the frequency with which they performed BSE regardless of knowledge. Thus, the U.S. data in table F combine "don't know how" with "never." This treatment of the data is unlikely to affect the proportions reporting monthly BSE, suggesting that BSE has been more successfully promoted in Canada.

Most recent Pap smear

Although less frequent than cancer of the breast, cancer of the cervix is a significant cause of morbidity and mortality. Early detection by regular Papanicolaou (Pap) smears is the commonly advocated protective measure, although there is no consensus about the optimal frequency (American Cancer Society, 1980; American College of Obstetricians and Gynecologists, 1980; Canadian Task Force on the Periodic Health Examination, 1979). Both surveys asked women to report the interval since their most recent Pap smear.

Annual cytologic screening is recommended by the American College of Obstetricians and Gynecologists (1980). For this interval, the prevalence of testing was slightly higher in the United States (63 percent) than in Canada (61 percent) (table 11). In both countries, women ages 25-44 years were most likely to have had a Pap smear within the past year. Women who had never had a test were more prevalent in Canada, but the proportions were small in both countries.

(table F). This was true at all age levels, especially ages 18-24 years where the prevalence of breast self-examination was 38 percent in Canada compared with 24 percent in the United States. In both countries, a positive relationship

Table F. Breast examination: percent distribution of women by frequency of breast self-examination, according to age and educational levels: United States and Canada, 1985

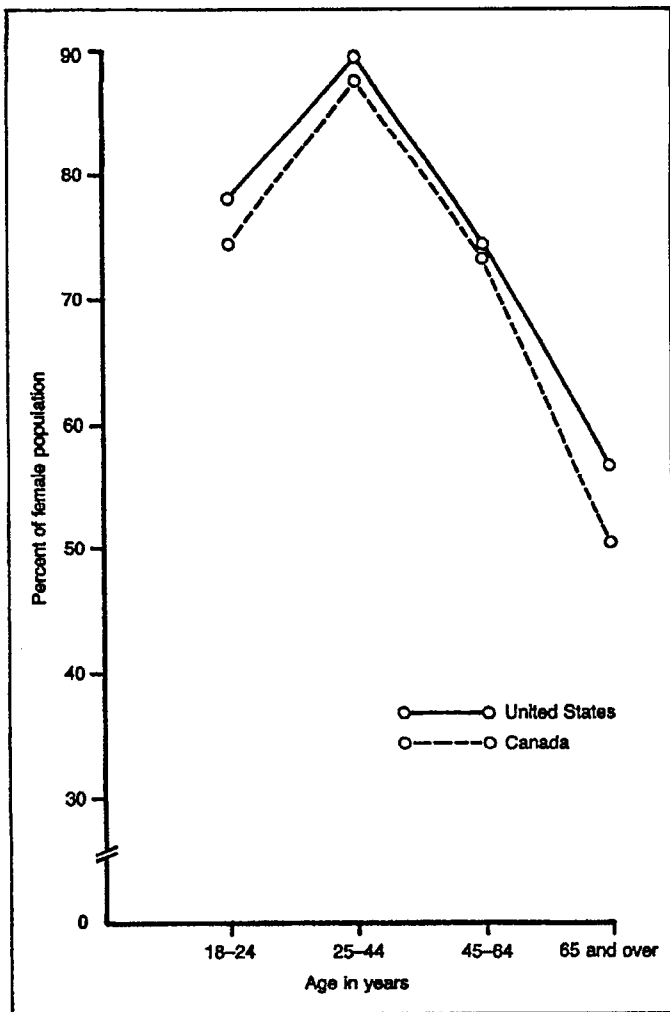| Age and educational level	Total		Monthly		At least once every 3 months		Less often		Never	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada	United States[1]	Canada
					Percent distribution					
All ages	100.0	100.0	32.1	40.5	18.9	19.8	21.5	17.8	27.4	22.0
18-24 years.	100.0	100.0	23.9	38.1	17.2	11.6	22.1	21.6	36.8	28.6
25-44 years.	100.0	100.0	33.5	39.6	21.3	23.7	24.7	17.0	20.4	19.8
45-64 years.	100.0	100.0	36.9	45.6	19.1	22.3	19.2	15.8	24.8	16.3
65 years and over.	100.0	100.0	29.1	36.7	14.4	13.2	16.3	19.0	40.2	31.0
Educational level										
High school:										
Not completed	100.0	100.0	29.3	38.1	13.6	20.0	18.4	17.0	38.9	24.9
Completed.	100.0	100.0	32.0	40.3	19.3	18.0	23.5	18.4	25.3	23.3
College or university	100.0	100.0	34.3	43.7	22.3	21.0	21.4	17.7	21.9	17.6

[1]Includes "don't know."

Figure 11. Percent of the adult female population with a Pap smear within the past 3 years, by age: United States and Canada, 1985

In both countries, better educated women were more likely to have had a Pap smear within the past year than women with fewer years of schooling. This gradient with education was steeper in the United States (21-percentage-point difference between the least and most educated groups) than in Canada (16-percentage-point difference).

Figure 11 shows the prevalence of Pap smears within the past 3 years, the interval recommended for most women by the American Cancer Society (1980) and the Canadian Task Force on the Periodic Health Examination (1979). As was true of the 1-year interval, there is a slightly greater tendency of American women in each age group to have had a Pap smear within 3 years compared with Canadian women the same age.

Discussion—The questionnaire items on Pap smears were similar in the two surveys, as were those about breast examination, but the response options differed between the United States and Canada. For U.S. women, the category "within 12 months" in table 11 includes women who answered "1 year" (17 percent) and "in the last year" (46 percent). Canadian women who had been recently tested had to choose between reporting "within the past year" and "last 2-3 years." For this reason, the more reliable comparison is for the cumulative total of women tested within the past 3 years, as shown in figure 11. The differences revealed here, although statistically significant, are minor in real terms, and suggest that women in both countries have been equally sensitized to the need for regular screening, particularly in the age group 25-44 years.

Trends in selected
health practices,
1979-85

Although the previous section of this report provided comparable data on many important health practices, some limitations were encountered because of lack of comparable data. This problem is much more severe when the desire is for international comparisons at more than a single time point. Nevertheless, data are available for both countries for 1979 to describe smoking and seatbelt use. Although limited in scope, such comparisons are useful for making inferences not only about changing situations but also about the possible reasons for such changes. Unfortu-

nately, the education variable for the Canadian survey in 1979 does not provide the same categories as for the U.S. survey, and the data for the United States for 1979 are available only for persons 20-64 years of age.

Smoking

Figure 12 shows the changing prevalence of current smokers in three age groups similar to those shown in earlier tables. Most groups show a decrease from 1979 to
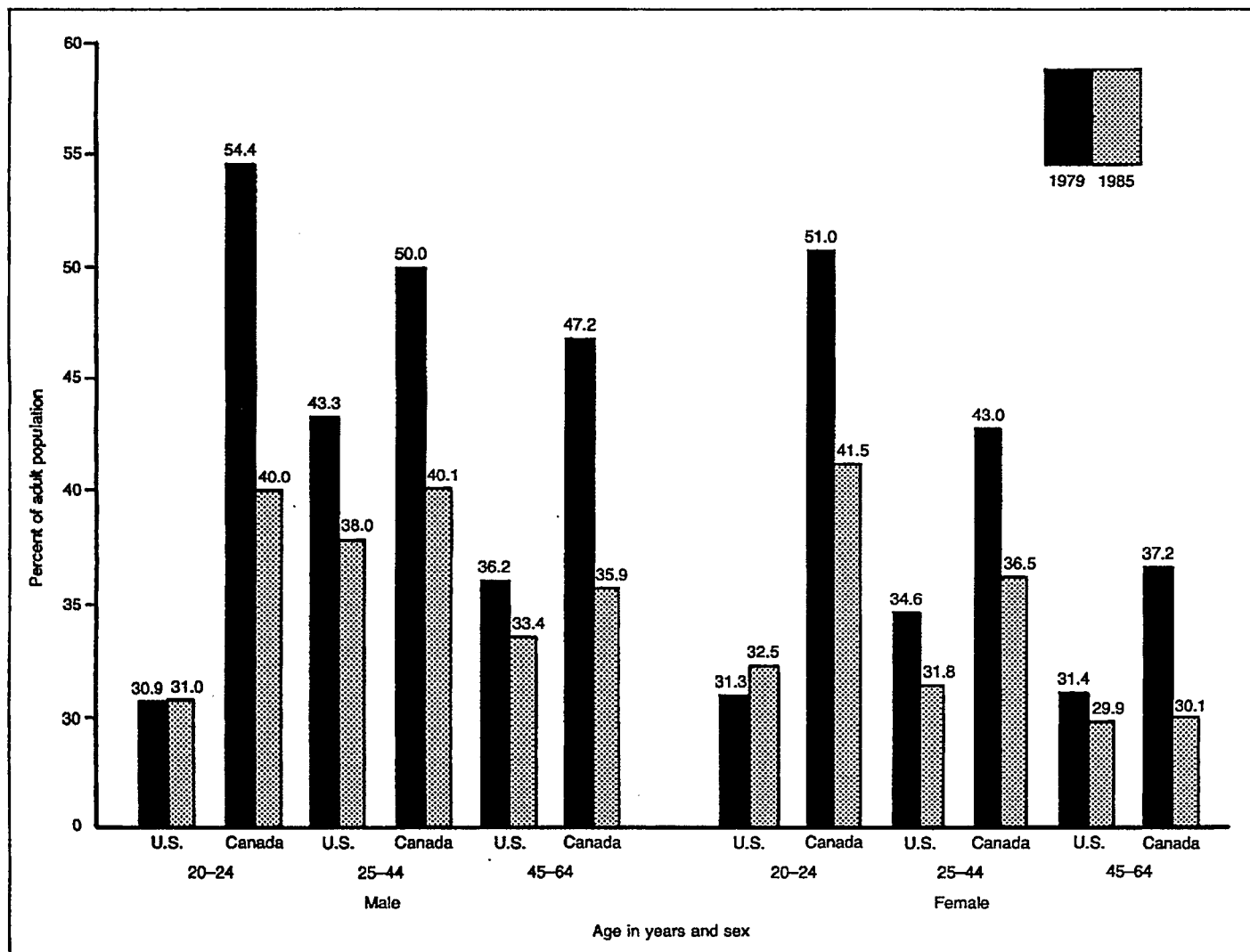

Figure 12. Changes in percent of the adult population who were current smokers, by age and sex: United States and Canada, 1979 and 1985

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1985; overall, this change is greater in Canada (9 percentage points) than in the United States (2 percentage points) (table 12). However, initial prevalence was much higher in Canada (46 percent) than in the United States (35 percent). In 1979, substantially higher levels of smoking were found among Canadians than among Americans in all age-sex groups.

The largest decrease between 1979 and 1985 in the prevalence of smoking was among the youngest group of Canadians (14 percentage points for men and 10 percentage points for women). U.S. men and women of the same age did not change their smoking. In the United States, the greatest reductions in smoking prevalence were among those 25-44 years of age.

Discussion—The 1979 data on smoking are based on survey questions similar to those used in 1985, thus question wording and response categories should not be a source of bias in these trends. Survey administration techniques differed, as noted earlier—telephone interviewing for the 1979 U.S. and 1985 Canadian surveys, self-administration for the 1979 Canadian data, and in-person interviewing for the 1985 U.S. questions on
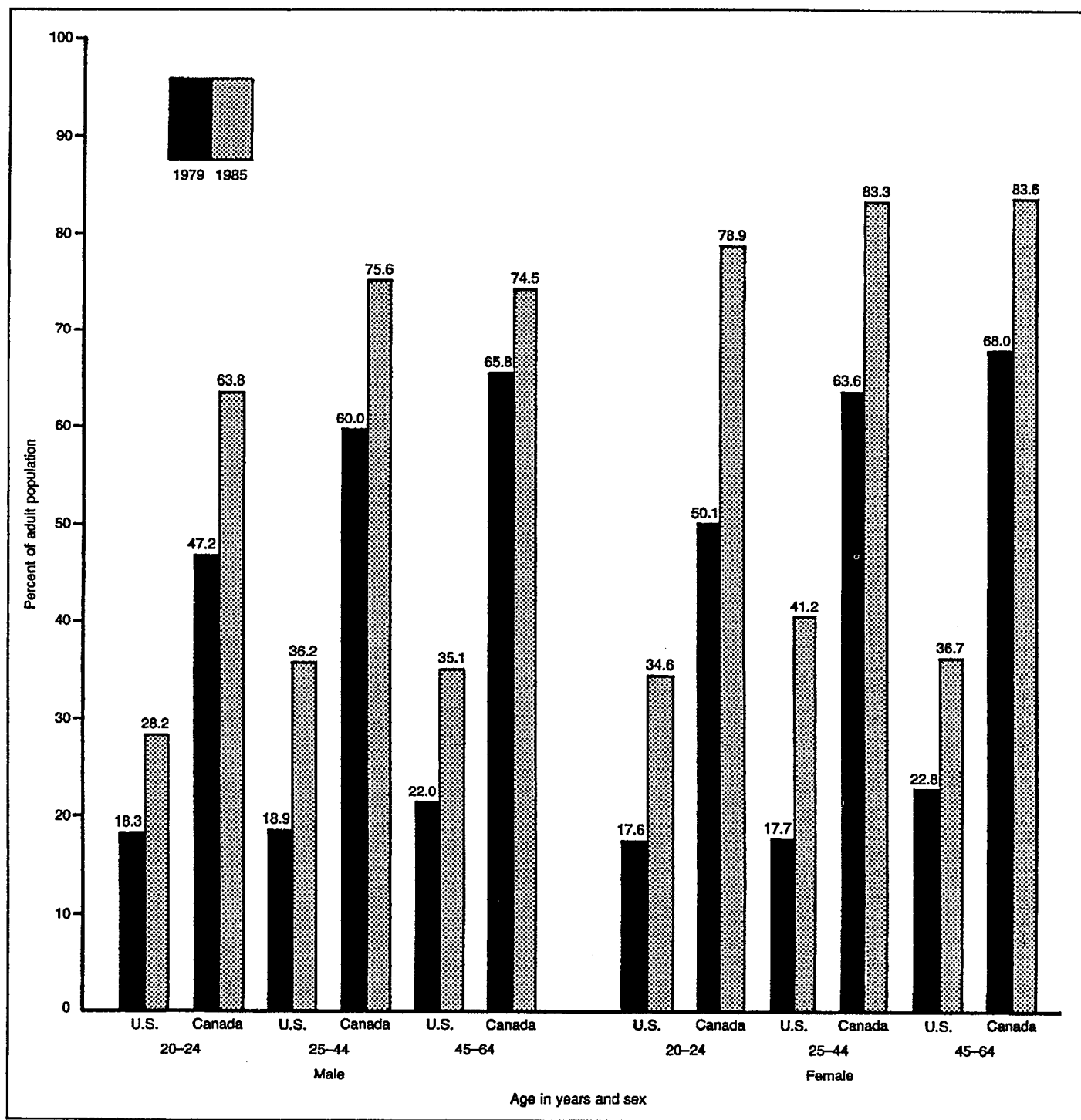

Figure 13. Changes in percent of the adult population who usually wore seatbelts, by age and sex: United States and Canada, 1979 and 1985

smoking. There is no reason to suspect that these variations would have a systematic impact on the results. The prevalence for smoking in Canada in 1979 (46 percent of adults) is higher than other Canadian smoking statistics for the period, but these other statistics evidently were biased downward by proxy reporting (Health and Welfare Canada and Statistics Canada, 1981, p. 48). The decline in smoking between 1979 and 1985 reported here is entirely consistent with longer term trends reported elsewhere and trends based on more data points (Collishaw, 1987; NCHS, 1986b). It is apparent that the antismoking campaigns in the United States and Canada have had an impact. The appearance of greater impact in Canada may be a statistical artifact resulting from the higher initial prevalence.

Seatbelt use

There were sharp increases in the use of seatbelts in the United States and Canada between 1979 and 1985 (table 13). The prevalence of those reporting "usual" use almost doubled (20 to 36 percent) in the United States; in Canada, the rate of increase was more modest but the absolute gain was also impressive (61 to 79 percent).

Figure 13 shows that all age-sex groups increased their frequency of seatbelt use. In both countries, the largest gains were registered by women, especially those ages 25-44 years in the United States and ages 20-24 years in Canada.

In the United States and Canada, there were large reductions over this period in the proportions reporting that they never wore seatbelts (table 13). In the United States, increases were found in occasional use and usual use between 1979 and 1985. In Canada, the proportion of people who were occasional users grew relatively little, which may suggest that most people who started to wear seatbelts did so on a regular basis.

Discussion—There are no meaningful differences between 1979 and 1985 in the wording of questions on seatbelt use in either the United States or Canada; methods of administration varied as explained for smoking trends. Thus, the increases in reported seatbelt use in both countries cannot readily be attributed to methodological sources. As is true of the 1985 data for Canada, reported use may be inflated because of respondents' hesitation to admit breaking the law. The reason why this reluctance should have been greater in one year than the other is not obvious. The increase in seatbelt use from 1979 to 1985 is more readily explained by extensive public education efforts in the United States and by new provincial legislation covering an additional 10 percent of the Canadian population. Canadian data for the use of child restraints in 1978 (Verreault, Stulginskas, Keyl, et al., 1982) suggest increases in use paralleling that for seatbelts.

Discussion of results

General methodological issues

One difference in survey methods has been noted in the earlier discussion of specific results. As described in the methods section, the U.S. National Health Interview Survey of Health Promotion and Disease Prevention was conducted by personal interview in the respondent's home; Canada's Health Promotion Survey was conducted by interview over the telephone. Some might claim that the comparative anonymity of the telephone interview is more conducive to candid answers (Marcus and Crane, 1986). However, because the subject matter of the surveys was not particularly sensitive, with the possible exception of questions on alcohol use, this difference in data collection techniques should not have had a systematic impact on the results.

Nor is there any indication that either 1985 survey suffered in any significant manner from bias in the sample design or response to request to participate in the survey. Both surveys covered the civilian noninstitutionalized household populations of their respective countries, and the response rates were high in both instances—90 percent in the United States and 82 percent in Canada.

The survey's sponsor was clearly identified to participants as the national health department in both surveys, and assurances of confidentiality were provided. In short, while the usual nonsampling errors related to recall and social desirability might have affected some responses to some questions in both surveys, this is not likely to have occurred in a fashion that would systematically influence the comparisons.

There are some differences, noted earlier, in the population structure of the United States and Canada. One of these is racial and ethnocultural composition, and the other is a slightly higher level of education in the United States. Because most good health practices become more common with increasing amounts of education, the difference between the educational levels of the two populations may contribute to the higher prevalence of some good practices in the United States compared with Canada. This effect is probably minor, considering the small magnitude of the differences in education and the imperfect associations between health practices and education level. It is more difficult to assess the importance of the higher proportion of black persons in the United States or of Roman Catholics in Canada. Because the health practices described in

this report constitute part of a "lifestyle," it is likely that these are influenced by cultural factors and not merely level of education. The nature of this influence requires further study.

Notwithstanding these differences in population composition and in the techniques used to collect data, there appear to be differences in the prevalence of several health practices that cannot be dismissed as statistical artifacts. There are also consistent patterns of relationships between health practices, education, and age that appear to be valid.

Summary of U.S.-Canada differences

Table G summarizes the prevalence of 12 health practices among U.S. and Canadian adults of all ages. The figures that are italicized indicate in which country good health practices were more common. Treating differences of less than 5 percent as equal for all practical purposes, reveals that three good practices (not smoking, not drinking alcohol, and not skipping breakfast) were more common in the United States, six were more frequent in Canada (regular physical activity, using seatbelts and child restraints, owning smoke detectors, having a breast examination within the past year, and performing breast self-examination at least monthly), and three were equal (having a recent blood pressure checkup, having a recent Pap smear, and being a heavier alcohol drinker).

Table G. Summary of health practices in the United States and Canada, 1985

Practice	United States	Canada
	Percent	
Regularly smoke	30	35
Currently drink	65	82
2 drinks or more daily average	12	14
Regularly active physically	40	53
Rarely eat breakfast	24	29
Usually wear seatbelts	36	79
Children usually wear restraints	52	91
Own 1 smoke detector or more	69	77
Blood pressure checked within 1 year	74	76
Breast examination within 1 year	50	69
Pap smear within 3 years	78	76
Perform breast self-examination at least monthly	32	41

Such a summary gives equal weight to all the practices, an approach that is not very meaningful because there are wide variations in the contributions the practices make to averting disability and premature death. In this regard, the data reveal that each country was relatively exposed to a different significant hazard—a higher proportion of smokers in Canada and less frequent use of seatbelts and child restraints in the United States. It is notable that both countries have made important moves in these areas since 1985. In Canada, legislation has been introduced to sharply curtail tobacco advertising; in the United States, there has been rapid expansion of seatbelt legislation since the first law was introduced in 1985, and it appears to be having the desired effect on seatbelt use (Pace, Thailer, and Kwiatkowski, 1986).

The summary in table G suggests the following conclusions about health practices in the United States and Canada in 1985:

1. Practices related to consumption are healthier in the United States, whether the consumption is noxious (tobacco and alcohol) or beneficial (breakfast).
2. Safety-related practices (seatbelt use, car restraint use, and smoke detector ownership) are more common in Canada.
3. Self-care practices (physical activity and breast self-examination) are followed by a higher proportion of the population in Canada.
4. Two out of three disease-prevention practices that require the participation of a health care professional (blood pressure check and Pap smear) are about equally common in the United States and Canada.

This last finding is perhaps the most surprising of all because there is no cost disincentive to these practices in Canada because of its universal health care insurance. In the United States in 1985, the proportion of population enrolled in health maintenance organizations (the closest equivalent to the Canadian system) was less than 10 percent of the total (NCHS, 1986c). This suggests that free care is not the only effective means to encourage the regular use of preventive services, a conclusion also reached in the Rand Health Insurance Experiment (Lurie, Manning, Peterson, et al., 1987).

In a more general sense, these U.S.-Canada comparisons suggest that universal health insurance may be unrelated to personal health behaviors. It has been argued that such insurance, being equitable by definition, may be less likely to promote good health habits than a system with differential premiums based on actual behavior, such as not smoking (Fielding, 1977). Whatever the impact of health insurance on health practices, it is apparent from several examples in this report (the reduction in smoking and increase in seatbelt use over a period of time in both countries, the relatively high rate of regular physical activity in Canada, and the large proportion of both populations with a recent blood pressure check) that the health practices in a population can be favorably affected by deliberate health promotion efforts.

Demographic patterns in health practices

Although prevalence levels vary between the United States and Canada on a number of health behaviors, the relationships between sociodemographic characteristics and good health practices are generally similar in the two countries. Most striking in this regard is the association between level of education and good health practices, which exists for most of the practices examined in this report, including smoking; type of drinker; level of physical activity; use of seatbelts and child restraints; ownership of smoke detectors; and regularity of breast examination, Pap smear, and breast self-examination. The prevalence of recent blood pressure checks is equal across all educational levels in both countries. Typically, good health practices are most characteristic of the college-educated group and least frequent among those adults who have not completed high school; an important exception to this was alcohol consumption.

This persistent association may reflect inequality of access to health information or services; barriers to acting upon health knowledge; a sense of helplessness or lack of control (Bandura, 1986); a lack of social support (Berkman and Breslow, 1983); or other factors of an economic, social, or psychological nature. All of these have been implicated in other studies of health behavior, but none can be examined here because comparable data are lacking. However, it is apparent that this association between health behavior and educational level is generally stronger in the United States than in Canada. Moreover, if age were taken into account in comparing education groups, this would further steepen the education gradient in the United States compared with Canada.

There is also striking consistency in the age-sex relationships across a number of health behaviors in the United States and Canada. For example, even though prevalence levels of smoking and drinking are higher in Canada, in both countries young women are more likely to smoke than young men, and men of all ages are more likely than women to drink, especially to drink more heavily. Similarly, although physical activity is more common in Canada than in the United States, in both countries women are more likely than men to be active at ages 45-64 years, and the proportion of men who are active increases at ages 65 years and over, reversing a steady decline from younger years. Although a smaller proportion of Americans in every age group own smoke detectors, the highest rate of ownership in both countries is for ages 25-44 years. The stability of these patterns is undoubtedly due to similar cultural influences in the two countries, especially the role of the mass media and their treatment of health issues. This is accentuated by the fact, noted earlier, that most Canadians have access to U.S. television programming, read U.S. magazines, and are familiar with U.S. popular culture.

Because patterns of health behavior are so consistent from one practice to the next and from one country to the other, the rare exceptions are instructive. These exceptions

suggest that extraordinary factors may be at work and that these may deserve the attention of health promotion professionals. For example, a fair generalization is that the practices of women are more healthful than those of men of the same age, and this is about equally true in both countries. One exception, particularly in the United States, was the tendency for women to be less physically active than men. A more striking exception is the higher prevalence of smoking among young women compared with men, as noted earlier, and the fact that young Canadian women were as likely as men of the same age to be current drinkers. The potential role of advertising in changing the smoking habits of young women has already been noted.

A second generalization is that good health practices are positively associated with age. This is true of the prevalence of smokers and current drinkers, driving after drinking, regular breakfast, and blood pressure tests. These associations may be a result of generational differences, maturation over time, selective survival, or some combination of these and other factors. With the cross-sectional data available for this study, a definitive explanation is not possible. However, the use of seatbelts is less common among older Americans than younger ones, and the ownership of smoke detectors declines with age in both countries. This implies that health promotion efforts related to safety should not be restricted to the young.

The value of comparative studies of national populations

In addition to what it may reveal about the health practices of Americans and Canadians, this study demonstrates the value of comparisons between populations. These benefits would be realized in any comparative study based on data from reasonably similar populations collected by reasonably similar means.

In the present case, it is possible to identify six distinct outcomes of this comparative analysis:

1. *Identification of important issues*—A theme of this report has been the consistency of patterns in the relationship of health practices to age, sex, and education. Because of these strong patterns, which transcend national borders and which are found despite differences in overall prevalence levels, exceptions deserve further attention. Exceptions to well-established patterns suggest extraordinary forces at work, often to the detriment of a specific group. Cases in point are smoking by young women, drinking by young Canadian women, and safety-related practices by those ages 65 years and over. Each of these is an area deserving attention by those responsible for health promotion policy and programs.

2. *Identification of probable cause*—For some of the practices studied here, there appear to be clear explanations for different prevalence levels because they correspond in plausible ways to known differences between the two countries. The best example is the large difference in the prevalence of seatbelt and child restraint use, corresponding to the differences in legislation that prevailed in 1985. Unfortunately, practices that differed markedly and for which there were clear explanations were relatively few in number. Nevertheless, where clear explanations were found, they provide important guidance for health promotion planning.

3. *Identification of uncertain cause*—Some other practices studied here were found to be different in the United States and Canada, with no obvious reason. Examples include smoking, alcohol consumption, and ownership of smoke detectors. These differences do not appear to result from methodological factors, yet there are no apparent policy or program differences to explain these findings. Further study of U.S. and Canadian regulations potentially having an impact on these behaviors is needed. With regard to alcohol and tobacco consumption, factors that should be investigated include aspects of availability such as legal age, pricing, bar and store hours, marketing practices including advertising, and government's role in retailing. To explain the differences in the ownership of smoke detectors, a study of municipal, State, and provincial regulations would be invaluable.

4. *Need to examine impact of ethnocultural differences*—Despite basic similarities in the populations of the U.S. and Canada, there are distinct differences in racial, ethnic, and religious composition. A full examination of these differences and their possible relationship to health practices is beyond the scope of this report. However, it is apparent that this would be a complex topic. For example, one might be tempted to attribute the higher overall prevalence of smoking in Canada to the fact that the French-speaking population is more likely to smoke than English Canadians (Health and Welfare Canada, in press). Because there is a high correlation between smoking and drinking (Stephens, 1986), the fact that about one-fourth of the Canadian population is French-speaking (Statistics Canada, 1987c) should also account for the higher overall prevalence of current drinkers in Canada. Unfortunately for this theory, there is a lower, not a higher than average, proportion of current drinkers among French-Canadians (Health and Welfare Canada, in press). Further examination of this issue of ethnocultural differences may lead to important insights into the best strategies for health promotion in different populations.

5. *Need to reduce operational inconsistencies*—In a number of areas in this report, U.S.-Canada comparisons were made difficult by minor inconsistencies in operational definitions of key terms. Sometimes this resulted from the wording of questions, such as for driving after drinking; at other times, it resulted from using different response categories for the same question, such as the time intervals to report most recent Pap smear and breast examination. Other minor variations can inhibit comparisons, such as the different definitions for lifetime abstainer or the different reporting period for calculating average alcohol consumption. Interviewers in both countries (or in different States, provinces, or municipalities) would do well to minimize these differences before conducting further surveys. Greater uniformity of approach would ensure that any future report on trends over time would not be restricted to examining just two practices, as this report was.

6. *Identification of needed operational refinements*—The comparisons in this study have been informative in another way. For some practices, refinements are possible that would produce more unambiguous findings. This would be an important feature of any future survey, regardless of any wish to compare practices in different populations. Two questions for which improvements are possible are the Canadian question on smoke detectors and the U.S. question on breakfast. Judging from the results presented earlier, it is important to be able to qualify smoke detectors as in working order and breakfast as consisting of more than just coffee, and to be able to do this on a routine basis.

Conclusion

This comparative study of health practices among the U.S. and Canadian adult populations has revealed some important differences in prevalence levels. Inconsistences in survey methods and differences in population composition may qualify, but almost certainly do not vitiate, these conclusions. This suggests that specialists may profit from examining program and policy developments in both countries. The challenge for health promotion implied by this study is to find methods for encouraging healthy behavior in populations despite strongly entrenched patterns associated with age, sex, and education.

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List of detailed tables

Table 1. Cigarette smoking: percent distribution of adults by smoking status, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Current smoker		Nonsmoker[2]	
	United States	Canada	United States	Canada	United States	Canada
			Percent distribution			
All persons 18 years and over	100.0	100.0	30.1	34.6	69.9	65.4
Men						
All ages	100.0	100.0	32.6	36.3	67.4	63.7
18-24 years.	100.0	100.0	28.0	38.3	72.0	61.7
25-44 years.	100.0	100.0	38.0	40.1	62.0	59.9
45-64 years.	100.0	100.0	33.4	35.9	66.6	64.1
65 years and over	100.0	100.0	19.6	19.7	80.4	80.3
Women						
All ages	100.0	100.0	27.9	32.9	72.1	67.1
18-24 years.	100.0	100.0	30.4	41.1	69.6	58.9
25-44 years.	100.0	100.0	31.8	36.5	68.2	63.5
45-64 years.	100.0	100.0	29.9	30.1	70.1	69.9
65 years and over	100.0	100.0	13.5	18.0	86.5	82.0
Educational level						
High school:						
Not completed	100.0	100.0	35.4	38.7	64.6	61.3
Completed.	100.0	100.0	33.5	38.7	66.5	61.3
College or university	100.0	100.0	23.1	27.9	76.9	72.1

[1]Total excludes unknowns.
[2]Although the U.S. survey made distinctions between former smokers and life-long nonsmokers, this detail was not obtained in the Canadian survey.

Table 2. Alcohol use: percent distribution of adults by type of drinker, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Lifetime abstainer[2]		Former drinker		Current drinker	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada
				Percent distribution				
All persons 18 years and over	100.0	100.0	27.2	7.3	7.6	10.4	65.2	82.3
Men								
All ages	100.0	100.0	14.6	4.3	9.3	9.2	76.1	86.5
18-24 years.	100.0	100.0	18.6	2.1	2.2	5.4	79.2	92.5
25-44 years.	100.0	100.0	10.9	2.7	5.8	5.5	83.3	91.7
45-64 years.	100.0	100.0	14.4	5.9	13.8	14.6	71.8	79.5
65 years and over.	100.0	100.0	22.0	10.2	20.3	16.6	57.6	73.1
Women								
All ages	100.0	100.0	38.4	10.1	6.1	11.6	55.5	78.3
18-24 years.	100.0	100.0	33.7	3.1	2.2	5.7	64.1	91.2
25-44 years.	100.0	100.0	31.9	6.6	4.9	7.9	63.2	85.5
45-64 years.	100.0	100.0	39.4	12.8	8.0	13.9	52.5	73.3
65 years and over.	100.0	100.0	56.2	23.4	9.7	24.4	34.1	52.2
Educational level								
High school:								
Not completed	100.0	100.0	40.5	12.7	12.7	15.9	46.8	71.4
Completed.	100.0	100.0	27.0	5.1	6.9	8.8	66.1	86.2
College or university	100.0	100.0	18.5	4.0	5.0	6.5	76.5	89.5

[1]Total excludes unknowns.
[2]In the United States, never had 12 drinks or more in any year. In Canada, no drinks ever in a lifetime.

Table 3. Alcohol use: percent distribution of current drinkers by average amount of absolute alcohol consumed daily, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		None		Lighter (.01-.21 oz.)		Moderate (.22-.99 oz.)		Heavier (1.0+ oz.)	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada	United States	Canada
	Percent distribution									
All persons 18 years and over	100.0	100.0	21.6	37.4	37.1	17.2	29.5	31.1	11.8	14.3
Men										
All ages	100.0	100.0	17.9	29.0	30.9	14.6	34.0	33.9	17.2	22.5
18-24 years.	100.0	100.0	15.4	34.7	28.2	11.5	38.1	29.6	18.3	24.2
25-44 years.	100.0	100.0	15.9	25.3	31.9	14.9	36.2	37.0	16.0	22.9
45-64 years.	100.0	100.0	21.0	25.7	31.3	15.2	29.6	36.1	18.1	23.0
65 years and over.	100.0	100.0	24.4	44.0	29.5	17.3	27.8	22.5	18.4	16.2
. Women										
All ages	100.0	100.0	26.1	46.3	44.7	20.0	24.0	28.1	5.3	5.6
18-24 years.	100.0	100.0	23.3	39.1	·41.6	23.0	30.2	29.4	5.0	8.5
25-44 years.	100.0	100.0	25.3	44.5	47.5	20.5	23.3	30.5	3.8	4.4
45-64 years.	100.0	100.0	27.3	54.0	43.9	15.7	21.6	23.7	7.2	6.7
65 years and over.	100.0	100.0	31.1	49.5	39.3	22.0	21.7	25.4	7.9	*
Educational level										
High school:										
Not completed	100.0	100.0	26.9	43.1	33.7	15.5	24.9	28.7	14.5	12.7
Completed.	100.0	100.0	23.9	36.9	36.6	16.0	27.8	31.1	11.7	16.0
College or university	100.0	100.0	17.3	33.5	38.9	18.9	32.9	33.2	10.8	14.4

[1]Total excludes unknowns.

NOTE: Daily consumption is averaged over the last 2 weeks in the United States and 7 days in Canada.

Table 4. Alcohol use: percent distribution of adult drinkers by frequency of driving after drinking, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		No occasions[2]		1 or more occasions	
	United States	Canada	United States	Canada	United States	Canada
	Percent distribution					
All persons 18 years and over	100.0	100.0	83.1	74.9	16.9	25.1
Men						
All ages	100.0	100.0	77.6	65.1	22.4	34.9
18-24 years.	100.0	100.0	62.5	62.6	37.5	37.4
25-44 years.	100.0	100.0	73.1	57.8	26.9	42.2
45-64 years.	100.0	100.0	89.0	72.8	11.0	27.1
65 years and over	100.0	100.0	97.5	87.8	2.5	12.2
Women						
All ages	100.0	100.0	90.1	86.9	9.9	13.1
18-24 years.	100.0	100.0	80.7	82.6	19.3	17.4
25-44 years.	100.0	100.0	88.2	85.8	11.8	14.2
45-64 years.	100.0	100.0	97.5	90.7	2.5	9.3
65 years and over	100.0	100.0	99.6	93.1	0.4	6.9
Educational level						
High school:						
Not completed	100.0	100.0	86.7	80.2	13.3	19.8
Completed.	100.0	100.0	82.9	75.1	17.1	24.9
College or university	100.0	100.0	82.0	71.4	18.0	28.6

[1]Total excludes unknowns.

[2]United States: driving "when you perhaps had too much to drink" in the past year; Canada: driving in the past month, "within 2 hours of drinking any amount of alcohol."

Table 5. Physical activity: percent distribution of adults by participation in regular physical activity, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Regularly active[2]		Not regularly active	
	United States	Canada	United States	Canada	United States	Canada
			Percent distribution			
All persons 18 years and over	100.0	100.0	40.0	53.3	60.0	46.7
Men						
All ages.	100.0	100.0	42.7	54.6	57.3	45.4
18-24 years.	100.0	100.0	62.1	63.8	37.9	36.2
25-44 years.	100.0	100.0	46.3	55.0	53.7	45.0
45-64 years.	100.0	100.0	30.4	45.9	69.6	54.1
65 years and over	100.0	100.0	31.9	58.6	68.1	41.4
Women						
All ages.	100.0	100.0	37.6	52.0	62.4	48.0
18-24 years.	100.0	100.0	47.3	60.4	52.7	39.6
25-44 years.	100.0	100.0	41.9	51.0	58.1	49.0
45-64 years.	100.0	100.0	31.8	51.1	68.2	48.9
65 years and over	100.0	100.0	27.6	47.2	72.4	52.8
Educational level						
High school:						
Not completed	100.0	100.0	24.4	45.3	75.6	54.7
Completed.	100.0	100.0	37.7	55.4	62.3	44.6
College or university	100.0	100.0	52.8	58.8	47.2	41.2

[1]Total excludes unknowns.
[2]United States: answered yes to "Do you exercise or play sports regularly?"; Canada: reported vigorous activity of at least 15 minutes duration 3 times or more weekly.

Table 6. Eating breakfast: percent distribution of adults by regularity of eating breakfast, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Daily in United States	5-7 per week in Canada	Sometimes in United States	2-4 per week in Canada	Rarely in United States	0-1 per week in Canada
	United States	Canada						
				Percent distribution				
All persons 18 years and over	100.0	100.0	55.4	30.2	20.2	41.3	24.3	28.5
Men								
All ages	100.0	100.0	54.4	29.0	20.4	42.1	25.2	28.9
18-24 years.	100.0	100.0	43.1	30.6	27.0	41.3	29.8	28.1
25-44 years.	100.0	100.0	43.7	23.2	25.0	43.7	31.4	33.1
45-64 years.	100.0	100.0	62.3	29.4	16.3	40.4	21.4	30.2
65 years and over.	100.0	100.0	86.7	47.2	6.0	41.0	7.4	11.7
Women								
All ages	100.0	100.0	56.4	31.5	20.0	40.5	23.6	28.1
18-24 years.	100.0	100.0	39.4	23.9	30.5	43.9	30.1	32.2
25-44 years.	100.0	100.0	46.0	26.8	24.6	40.5	29.4	32.7
45-64 years.	100.0	100.0	62.5	35.7	16.2	41.7	21.4	22.6
65 years and over.	100.0	100.0	86.4	46.3	6.0	34.2	7.6	19.5
Educational level								
High school:								
Not completed	100.0	100.0	59.2	27.8	18.1	39.1	22.6	33.1
Completed.	100.0	100.0	51.7	29.5	21.8	39.8	26.5	30.7
College or university	100.0	100.0	56.8	33.2	19.9	44.4	23.3	22.4

[1]Total excludes unknowns.

Table 7. Seatbelt use: percent distribution of adults by regularity of seatbelt use, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Usually		Sometimes		Never	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada
				Percent distribution				
All persons 18 years and over	100.0	100.0	35.8	78.9	32.1	8.4	32.2	12.7
Men								
All ages	100.0	100.0	33.8	74.9	32.5	9.3	33.7	15.8
18-24 years.	100.0	100.0	26.6	66.7	36.0	11.4	37.4	21.9
25-44 years.	100.0	100.0	36.2	75.6	32.5	9.2	31.3	15.1
45-64 years.	100.0	100.0	35.1	74.5	32.0	9.8	33.0	15.7
65 years and over.	100.0	100.0	32.6	85.3	29.2	5.1	38.2	9.6
Women								
All ages	100.0	100.0	37.5	82.8	31.7	7.6	30.8	9.6
18-24 years.	100.0	100.0	32.4	76.1	37.1	12.5	30.5	11.4
25-44 years.	100.0	100.0	41.2	83.3	31.2	7.4	27.6	9.3
45-64 years.	100.0	100.0	36.7	83.6	31.4	7.6	31.9	8.8
65 years and over.	100.0	100.0	34.5	87.6	28.5	2.3	37.0	10.1
Educational level								
High school:								
Not completed	100.0	100.0	24.8	75.0	28.9	9.3	46.2	15.7
Completed.	100.0	100.0	30.9	78.4	34.3	8.2	34.9	13.4
College or university	100.0	100.0	48.1	83.2	31.8	7.8	20.1	9.0

[1]Total excludes unknowns.

Table 8. Smoke detectors: percent distribution of adults by ownership of smoke detectors, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Own none		Own 1 or more	
	United States	Canada	United States	Canada	United States	Canada
			Percent distribution			
All persons 18 years and over	100.0	100.0	31.4	22.8	68.6	77.2
Men						
All ages.	100.0	100.0	31.2	22.4	68.8	77.6
18-24 years.	100.0	100.0	34.7	22.1	65.3	77.9
25-44 years.	100.0	100.0	27.7	19.5	72.3	80.5
45-64 years.	100.0	100.0	32.3	24.1	67.7	75.9
65 years and over	100.0	100.0	36.4	30.1	63.6	69.9
Women						
All ages.	100.0	100.0	31.6	23.1	68.4	76.9
18-24 years.	100.0	100.0	36.2	27.2	63.8	72.8
25-44 years.	100.0	100.0	27.2	19.4	72.8	80.6
45-64 years.	100.0	100.0	33.5	24.8	66.5	75.2
65 years and over	100.0	100.0	34.9	26.5	65.1	73.5
Educational level						
High school:						
Not completed	100.0	100.0	43.1	28.4	56.9	71.6
Completed.	100.0	100.0	31.3	19.0	68.7	81.0
College or university	100.0	100.0	23.7	20.4	76.3	79.6

[1]Total excludes unknowns.

Table 9. Blood pressure: percent distribution of adults by time since last test, according to sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	Total[1]		Less than 12 months		1-2 years		Over 2 years		Never	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada	United States	Canada
	Percent distribution									
All persons 18 years and over	100.0	100.0	73.8	76.4	19.2	11.0	6.6	9.5	0.3	3.1
Men										
All ages	100.0	100.0	68.4	69.4	22.5	12.5	8.7	13.3	0.5	4.8
18-24 years.	100.0	100.0	62.2	51.4	25.8	17.9	10.6	19.9	*	10.8
25-44 years.	100.0	100.0	63.4	67.7	26.4	14.0	9.9	14.6	*	3.7
45-64 years.	100.0	100.0	73.2	77.4	19.5	8.7	7.1	10.3	*	*
65 years and over.	100.0	100.0	82.2	85.6	12.1	7.5	5.7	4.8	*	*
Women										
All ages	100.0	100.0	78.7	83.2	16.4	9.5	4.8	5.8	0.2	1.5
18-24 years.	100.0	100.0	79.4	78.0	17.5	12.5	2.6	5.4	*	*
25-44 years.	100.0	100.0	75.8	81.2	19.2	11.7	4.8	6.1	*	1.0
45-64 years.	100.0	100.0	78.1	84.6	15.8	7.7	6.1	6.9	*	*
65 years and over.	100.0	100.0	85.7	91.7	9.5	3.2	4.7	3.8	*	*
Educational level										
High school:										
Not completed	100.0	100.0	74.0	77.8	17.1	9.1	8.4	9.0	*	4.2
Completed.	100.0	100.0	73.0	76.9	19.9	10.6	6.7	9.9	*	2.7
College or university	100.0	100.0	74.6	74.4	19.9	13.4	5.3	9.7	*	2.4

[1]Total excludes unknowns.

Table 10. Breast examination: percent distribution of women by time since last breast examination, according to age and educational levels: United States and Canada, 1985

Age and educational level	Total[1]		Within 12 months		1 year ago		2 years or more	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada
	Percent distribution							
All ages	100.0	100.0	50.3	68.6	17.8	. . .	31.9	31.4
18-24 years.	100.0	100.0	57.5	73.9	15.2	. . .	27.3	26.1
25-44 years.	100.0	100.0	55.5	72.9	20.3	. . .	24.2	27.1
45-64 years.	100.0	100.0	45.2	65.2	17.8	. . .	37.0	34.8
65 years and over.	100.0	100.0	39.0	55.9	14.1	. . .	46.9	44.1
Educational level								
High school:								
Not completed	100.0	100.0	41.7	60.7	15.2	. . .	43.1	39.3
Completed.	100.0	100.0	50.0	70.1	18.8	. . .	31.1	29.9
College or university	100.0	100.0	57.0	75.2	18.3	. . .	24.6	24.8

[1]Total excludes unknowns.

Table 11. Pap smear: percent distribution of women by time since last Pap test, according to age and educational levels: United States and Canada, 1985

Age and educational level	Total[1]		Within 12 months		2-3 years ago		4 or more years ago		Never	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada	United States	Canada
					Percent distribution					
All ages	100.0	100.0	62.9	60.5	15.4	15.8	14.2	11.2	7.3	12.5
18-24 years	100.0	100.0	71.2	67.3	6.5	7.5	1.3	*	21.0	23.2
25-44 years	100.0	100.0	74.9	71.8	14.9	15.8	8.8	6.8	1.5	5.6
45-64 years	100.0	100.0	55.0	53.1	19.6	20.1	21.7	18.8	3.7	8.0
65 years and over	100.0	100.0	38.2	32.7	18.6	17.8	28.5	21.3	14.7	28.2
Educational level										
High school:										
Not completed	100.0	100.0	49.8	51.2	18.5	17.1	19.6	16.5	12.1	15.1
Completed	100.0	100.0	64.1	62.8	15.0	14.9	14.8	9.7	6.2	12.6
College or university	100.0	100.0	71.1	67.5	13.8	15.7	9.7	7.1	5.4	9.7

[1]Total excludes unknowns.

Table 12. Trends in smoking: percent distribution of adults ages 20-64 years by type of smoker, according to sex and age: United States and Canada, 1979 and 1985

Sex and age	Total[1]		Current smoker				Nonsmoker			
			United States		Canada		United States		Canada	
	United States	Canada	1979	1985	1979	1985	1979	1985	1979	1985
					Percent distribution					
All persons ages 20-64	100.0	100.0	35.4	33.3	46.1	37.0	64.6	66.7	53.9	63.0
Men										
All ages	100.0	100.0	39.0	35.5	49.9	38.8	61.0	64.5	50.1	61.2
20-24 years	100.0	100.0	30.9	31.0	54.4	40.0	69.1	69.0	45.6	60.0
25-44 years	100.0	100.0	43.3	38.0	50.0	40.1	56.7	62.0	50.0	59.9
45-64 years	100.0	100.0	36.2	33.4	47.2	35.9	63.8	66.6	52.8	64.1
Women										
All ages	100.0	100.0	32.9	31.3	42.4	35.2	67.1	68.7	57.6	64.8
20-24 years	100.0	100.0	31.3	32.5	51.0	41.5	68.7	67.5	49.0	58.5
25-44 years	100.0	100.0	34.6	31.8	43.0	36.5	65.4	68.2	57.0	63.5
45-64 years	100.0	100.0	31.4	29.9	37.2	30.1	68.6	70.1	62.8	69.8

[1]Total excludes unknowns.

Table 13. Trends in seatbelt use: percent distribution of adults ages 20-64 years by regularity of seatbelt use, according to sex and age: United States and Canada, 1979 and 1985

Sex and age	Total[1]		Usually				Sometimes				Never			
			United States		Canada		United States		Canada		United States		Canada	
	United States	Canada	1979	1985	1979	1985	1979	1985[2]	1979	1985	1979[3]	1985	1979	1985
							Percent distribution							
All persons ages 20-64 ..	100.0	100.0	19.6	35.8	61.0	78.9	14.6	32.1	4.1	8.4	65.7	32.2	34.9	12.7
Men														
All ages	100.0	100.0	19.8	34.7	59.3	73.4	13.6	32.8	4.5	9.9	66.6	32.4	36.2	16.7
20-24 years.	100.0	100.0	18.3	28.2	47.2	63.8	13.7	36.4	7.2	12.1	68.0	35.4	45.7	24.1
25-44 years.	100.0	100.0	18.9	36.2	60.0	75.6	15.4	32.5	4.5	9.2	65.7	31.3	35.8	15.1
45-64 years.	100.0	100.0	22.0	35.1	65.8	74.5	10.7	32.0	2.8	9.8	67.3	33.0	31.4	15.7
Women														
All ages	100.0	100.0	19.5	38.7	62.6	82.8	15.3	32.0	3.7	7.8	65.2	29.3	33.7	9.4
20-24 years.	100.0	100.0	17.6	34.6	50.1	78.9	13.9	36.0	5.4	9.7	68.5	29.4	44.5	11.3
25-44 years.	100.0	100.0	17.7	41.2	63.6	83.3	14.8	31.2	4.0	7.4	67.5	27.6	32.5	9.3
45-64 years.	100.0	100.0	22.8	36.7	68.0	83.6	16.5	31.4	2.3	7.6	60.7	31.9	29.7	8.8

[1]Total excludes unknowns.
[2]Combines "sometimes" and "occasionally."
[3]Includes "seldom."

Appendixes

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Appendix tables

Appendix I
Technical notes on methods

National Health Interview Survey

Background

This report is one of a series of statistical reports published by the staff of the National Center for Health Statistics (NCHS). It is based on information collected in a continuing nationwide sample of households included in the National Health Interview Survey (NHIS). Data are obtained on the personal, sociodemographic, and health characteristics of the family members and unrelated individuals living in these households.

Field operations for the survey are conducted by the U.S. Bureau of the Census under specifications established by NCHS. The U.S. Bureau of the Census participates in the survey planning, selects the sample, and conducts the interviews. The data are then transmitted to NCHS for preparation, processing, and analysis.

Summary reports and reports on special topics for each year's data are prepared by the staff of the Division of Health Interview Statistics for publication in Series 10 publications of NCHS. Data are also tabulated for other reports published by NCHS staff and for use by other organizations and by researchers within and outside the government. Since 1969, public use tapes have been prepared for each year of data collection.

It should be noted that the health characteristics described by NHIS estimates pertain only to the resident, civilian noninstitutionalized population of the United States living at the time of interview. The sample does not include persons residing in nursing homes, members of the armed forces, institutionalized persons, or U.S. nationals living abroad.

Statistical design of NHIS

General design

Data from NHIS have been collected continuously since 1957. The sample design of the survey has undergone changes following each decennial census. This periodic redesign of the NHIS sample allows the incorporation of the latest population information and statistical methodology into the survey design. The data presented in this report are from an NHIS sample design first used in 1985. It is anticipated that this design will be used until 1995.

The sample design plan of the NHIS follows a multistage probability design that permits a continuous sampling of the civilian noninstitutionalized population residing in the United States. The survey is designed in such a way that the sample scheduled for each week is representative of the target population and the weekly samples are additive over time. This design permits estimates for high-frequency measures or for large population groups to be produced from a short period of data collection. Estimates for low-frequency measures or for smaller population subgroups can be obtained from a longer period of data collection. The annual sample is designed so that tabulations can be provided for each of the four major geographic regions and for selected 1980 metropolitan statistical areas in the United States. Because interviewing is done throughout the year, there is no seasonal bias for annual estimates.

The continuous data collection also has administrative and operational advantages because fieldwork can be handled on a continuing basis with an experienced, stable staff.

Sample selection

The target population for NHIS is the civilian noninstitutionalized population residing in the United States. For the first stage of the sample design, the United States is considered to be a universe composed of approximately 1,900 geographically defined primary sampling units (PSU's). A PSU consists of a county, a small group of contiguous counties, or a metropolitan statistical area. The PSU's collectively cover the 50 States and the District of Columbia. The 52 largest PSU's are selected into the sample with certainty and are referred to as self-representing PSU's. The other PSU's in the universe are referred to as non-self-representing PSU's. These PSU's are clustered into 73 strata, and 2 sample PSU's are chosen from each stratum with probability proportional to size. This gives a total of 198 PSU's selected in the first stage.

Within a PSU, two types of second stage units, referred to as segments, are used. The first type, area segments, are defined geographically and contain an expected eight households. The second type, permit area segments, cover geographical areas containing housing units built after the 1980 census. The permit area segments are defined using updated lists of building permits issued in the PSU since 1980 and contain an expected four households.

Within each segment all occupied households are targeted for interview. On occasion, a sample segment may contain a large number of households. In this situation the households are subsampled to provide a manageable interviewer workload.

The sample was designed so that a typical NHIS sample for the data collection years 1985 to 1995 will consist of approximately 7,500 segments containing about 59,000 assigned households. Of these households, an expected 10,000 will be vacant, demolished, or occupied by persons not in the target population of the survey. The expected sample of 49,000 occupied households will yield a probability sample of about 127,000 persons.

New features of NHIS sample redesign

Starting in 1985, the NHIS design incorporated several new design features. The major changes include the following:

1. *The use of an all-area frame.* The NHIS sample is now designed so that it can serve as a sample frame for other NCHS population-based surveys. In previous NHIS designs about two-thirds of the sample was obtained from lists of addresses compiled at the time of the decennial census; that is, a list frame. Due to U.S. Bureau of the Census confidentiality restrictions, these sample addresses could be used for only those surveys being conducted by the U.S. Bureau of the Census. The methodology used to obtain addresses in the 1985 NHIS area frame does not use the census address lists. The sample addresses thus obtained can be used as a sampling frame for other NCHS surveys.
2. *The NHIS as four panels.* Four national subdesigns, or panels, constitute the full NHIS. Each panel contains a representative sample of the U.S. civilian noninstitutionalized population. Each of the four panels has the same sampling properties, and any combination of panels defines a national design. Panels were constructed to facilitate the linkage of NHIS to other surveys, and also to efficiently make large reductions in the size of the sample by eliminating panels from the survey.

   Budgetary considerations required the NHIS sample to be reduced by 25 percent for the 1985 data collection year. This was accomplished by dropping one panel from the NHIS design. For 1985 the sample consisted of 5,588 segments containing 44,000 assigned households. Of the 36,300 households eligible for interview, 34,844 households were actually interviewed, resulting in a sample of 91,531 interviewed persons.
3. *The oversampling of black persons.* One of the goals in designing the current NHIS was to improve the precision of estimates for black persons. This was accomplished by the use of differential sampling rates in PSU's with between about 5 and 50 percent black population. Sampling rates for selection of segments were increased in areas known to have the highest concentrations of black persons. Segment sampling

rates were decreased in other areas within the PSU to ensure that the total sample in each PSU was the same as it would have been without oversampling black persons.
4. *The reduction of the number of sampled PSU's.* Interviewer travel to sample PSU's constitutes a large component of the total field costs for the NHIS. The previous NHIS design included 376 PSU's. Research showed that reducing the number of sample PSU's while increasing the sample size within PSU's would reduce travel costs and also maintain the reliability of health estimates (Moore, 1985). The design now contains 198 PSU's.
5. *The selection of two PSU's per non-self-representing stratum.* In the previous design, one PSU was selected from each non-self-representing stratum. This feature necessitated the use of less efficient variance estimation procedures; the selection of two PSU's allows more efficient variance estimation methodology (Moore, 1985). In both designs, the self-representing strata are collapsed to form pseudo-PSU's for variance estimation.

Collection and processing of data

The NHIS questionnaire contains two major parts: The first consists of topics that remain relatively the same from year to year. Among these topics are the incidence of acute conditions, the prevalence of chronic conditions, persons limited in activity due to chronic conditions, restriction in activity due to impairment or health problems, and utilization of health care services involving physician care and short-stay hospitalization. The second part consists of special topics added as supplements to each year's questionnaire.

Careful procedures are followed to assure the quality of data collected in the interview. Most households in the sample are contacted by mail before the interviewer arrives. Potential respondents are informed of the importance of the survey and assured that all information obtained in the interview will be held in strict confidence. Interviewers make repeated trips to a household when a respondent is not immediately found. The success of these procedures is indicated by the response rate for the survey, which has been between 96 and 98 percent over the years for the basic health and demographic component.

When contact is made, the interviewer attempts to have all family members of the household 19 years of age and over present during the interview. When this is not possible, proxy responses for absent adult family members are accepted. In most situations, proxy respondents are used for persons under 19 years of age. Persons 17 and 18 years of age may respond for themselves, however.

Interviewers undergo extensive training and retraining. The quality of their work is checked by means of periodic

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NOTE: A list of references follows the text.

observation and by reinterview. Their work is also evaluated by statistical studies of the data they obtain in their interviews. A field edit is performed on all completed interviews so that if there are any problems with the information on the questionnaire, respondents may be recontacted to solve the problem.

Completed questionnaires are sent from the U.S. Bureau of the Census field offices to NCHS for coding and editing. To ensure the accuracy of coding, a 5-percent sample of all questionnaires is recoded and keyed by other coders. A 100-percent verification procedure is used if certain error tolerances are exceeded. Staff of the Division of Health Interview Statistics then edit the files to remove impossible and inconsistent codes.

The interview, field work, and data processing procedures summarized above are described in detail in Series 1, No. 18 (NCHS, 1985b).

Health promotion and disease prevention

One adult per family, 18 years of age or older, was randomly selected from the total NHIS sample to participate in the 1985 special section on Health Promotion and Disease Prevention (HPDP). Self-response was required for this portion of the survey and callbacks were made as necessary. A total of 33,630 interviews were completed for the HPDP, representing an estimated response rate of 90 percent. The HPDP questionnaire covered a wide range of health promotion topics including general health habits, injury control, high blood pressure, stress, exercise, smoking, alcohol use, dental care, and occupational safety and health.

In addition to data collected from HPDP sample persons, data related to smoking in pregnancy were collected for all women, aged 18–44 years, residing in NHIS sample households, who were currently pregnant or had had a child in the past 5 years. Data on breast feeding and child safety were collected for all children of appropriate ages residing in the household.

Estimation procedures

Because the design of NHIS is a complex multistage probability sample, it is necessary to reflect these complex procedures in the derivation of estimates. The estimates presented in this report are based upon 1985 sample person counts weighted to produce national estimates. The weight for each sample person is the product of five component weights:

1. *Probability of selection.* The basic weight for each person is obtained by multiplying the reciprocals of the probabilities of selection at each step in the design: PSU, segment, and household.

NOTE: A list of references follows the text.

Table I. The 40 poststratification age-sex-race cells in the National Health Interview Survey of Health Promotion and Disease Prevention

	Black		All other	
Age	Male	Female	Male	Female
18-19 years	X	X	X	X
20-24 years	X	X	X	X
25-29 years	X	X	X	X
30-34 years	X	X	X	X
35-44 years	X	X	X	X
45-49 years	X	X	X	X
50-54 years	X	X	X	X
55-64 years	X	X	X	X
65-74 years	X	X	X	X
75 years and over	X	X	X	X

2. *Household nonresponse adjustment within segment.* In NHIS, interviews are completed in about 96 percent of all eligible households. Because of household nonresponse, a weighting adjustment is required. The nonresponse adjustment weight is a ratio with the number of households in a sample segment as the numerator and the number of households actually interviewed in that segment as the denominator. This adjustment reduces bias in an estimate to the extent that persons in the noninterviewed households have the same characteristics as the persons in the interviewed households in the same segment.

3. *First-stage ratio adjustment.* The weight for persons in the non-self-representing PSU's is ratio adjusted to the 1980 population within four race-residence classes of the non-self-representing strata within each geographic region.

4. *Adjustment for probability of selection within household.* The weight for each NHIS HPDP sample person is multiplied by the inverse of the person's probability of selection within the family. For example, in a family of four adults, the sample person had a 1 in 4 probability of selection. That person's weight was then multiplied by 4.

5. *Poststratification by age-sex-race.* Within each of 40 age-sex-race cells (table I), a weight is constructed each quarter to ratio adjust the first-stage population estimate based on the NHIS to an independent estimate of the population of each cell. These independent estimates are prepared by the U.S. Bureau of the Census and are updated quarterly.

The main effect of the ratio-estimating process is to make the sample more closely representative of the target population by age, sex, race, and residence. The poststratification adjustment helps to reduce the component of bias resulting from sampling frame undercoverage; furthermore, this adjustment frequently reduces sampling variance.

Reliability of estimates

Because NHIS estimates are based on a sample, they may differ somewhat from the figures that would have been

obtained if a complete census had been taken using the same survey and processing procedures. There are two types of errors possible in an estimate based on a sample survey: Sampling and nonsampling errors. To the extent possible, these types of errors are kept to a minimum by methods built into the survey procedures (NCHS, 1973). Although it is very difficult to measure the extent of bias in NHIS, a number of studies have been conducted to examine this problem. The results have been published in several reports (NCHS, 1965a, 1965b, 1967, 1968).

Nonsampling errors

Interviewing process—Information, such as the number of days of restricted activity caused by the condition, can be obtained more accurately from household members than from any other source because only the persons concerned are in a position to report this information. However, there are limitations to the accuracy of diagnostic and other information collected in household interviews. For example, for diagnostic information, the household respondent can usually pass on to the interviewer only the information the physician has given to the family. For conditions not medically attended, diagnostic information is often no more than a description of symptoms. Further, a respondent may not answer a question in the intended manner because he or she has not properly understood the question, has forgotten the event, does not know, or does not wish to divulge the answer. Regardless of the type of measure, all NHIS data are estimates of known reported morbidity, disability, and so forth.

Population estimates—The appendix tables include population figures for specified categories. Except for overall totals for the 40 age, sex, and race groups, which are adjusted to independent estimates, these figures are based on the sample of households in NHIS. They are given to provide denominators for computation of percents and for this purpose they are more appropriate for use with the accompanying measures of health characteristics than other population data that may be available. With the exception of the overall totals by age, sex, and race mentioned above, the population figures differ from figures (which are derived from different sources) published in reports of the U.S. Bureau of the Census. Official population estimates are presented in U.S. Bureau of the Census reports in Series P-20, P-25, and P-60.

Rounding of numbers—In published tables, the figures are rounded to the nearest thousand, although they are not necessarily accurate to that detail. Derived statistics, such as rates and percent distributions, are computed after the estimates on which these are based have been rounded to the nearest thousand.

NOTE: A list of references follows the text.

Table II. Estimated standard error parameters for the 1985 National Health Interview Survey of Health Promotion and Disease Prevention

Parameter set	Characteristic	Estimated parameters	
		a	b
I	Population estimates for demographic, socioeconomic, and health characteristics ..	0.000004	6752.95
II	Age-sex-race population based upon combining the postratification cells of table I	0.0	0.0

Table III. Estimated adult population by sex, age, and educational levels: United States and Canada, 1985

Sex, age, and educational level	United States	Canada
	Number in thousands	
Total	170,971	18,254
Men		
18-24 years	13,360	1,592
25-44 years	35,100	3,972
45-64 years	21,215	2,344
65 years and over ...	11,105	1,043
Women		
18-24 years	14,052	1,571
25-44 years	36,904	3,960
45-64 years	23,297	2,426
65 years and over ...	15,939	1,349
Educational level		
High school:		
Not completed	41,430	6,284
Completed........	66,476	5,232
College or university. .	62,536	6,738

Sampling errors

The standard error is primarily a measure of sampling error, that is, the variations that might occur by chance because only a sample of the population is surveyed. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference would be less than twice the standard error and about 99 out of 100 that it would be less than 2½ times as large.

Individual standard errors were not computed for each estimate in this report. Instead, standard errors were computed for a broad spectrum of estimates. Regression techniques were then applied to produce equations from which a standard error for any estimate can be approximated. The regression equations, represented by parameters *a* and *b*, are presented in table II. Rules explaining their use are presented in the section "General rules for determining standard errors." Population table III provides the denominators.

The reader is cautioned that this procedure will give an approximate standard error of an estimate rather than the precise standard error. The reader is further cautioned that particular care should be exercised when the denominator is small.

General rules for determining standard errors

To produce approximate standard errors of NHIS HPDP estimates, the reader must first determine the type of characteristic to be estimated, that is, the parameter set in table II to be used. The reader must then determine the type of estimate for which the standard error is needed. The type of estimate corresponds to one of four general rules for determining standard errors. Examples of their use are available (NCHS, 1986d).

Rule 1. *Percents when the denominator is not generated by the poststratification age-sex-race classes (table I)*—If p represents an estimated percent, b is the parameter from table II associated with the numerator characteristic, and y is the number of persons in the denominator upon which p is based, then the standard error of p may be approximated by

$$\text{SE}(p) = \sqrt{\frac{bp\,(100-P)}{y}} \qquad (1)$$

Rule 2. *Percents when the denominator is generated by the poststratification age-sex-race classes (table I)*—In this case, the denominator has no sampling error. If percent p is the ratio of two estimated numbers, $p = x/Y$ (where p may be inflated by 100 for percents), with Y having no sampling error, then the approximate standard error of p is given by the formula

$$\text{SE}(p) = p\sqrt{a + \frac{b}{x}} \qquad (2)$$

In this report, the value of the denominator Y is always provided, but the numerator value x is not published. For these cases the value of x may be computed by the formula

$$x = \frac{pY}{100}$$

Rule 3. *Estimated number of people or events*—For the estimated number of people that can be derived from the percents shown in this report, there are two cases to consider. For the first case, if the estimated number is any combination of the poststratification age-sex-race cells in table I, then its value has been adjusted to official U.S. Bureau of the Census figures and its standard error is assumed to be 0.0. This corresponds to parameter set II in table II. As an example, this would be the case for the number of persons in the U.S. target population or the number of black persons in the 18-44 year age group. Although the race class "white" is not specifically adjusted to U.S. Bureau of the Census figures, it dominates the poststratification "all other" race class, and, consequently, age-sex-"all other" race combinations of table I can be treated as age-sex-white combinations for the purpose of approximating standard errors.

For the second case, the standard errors for all other estimates of numbers of people such as the number of people who eat breakfast daily are approximated by using the parameter provided in table II and formula 3 below.

If the aggregate x for a characteristic has associated parameters a and b, then the approximate standard error for x, SE(x) can be computed by the formula

$$\text{SE}(x) = \sqrt{ax^2 + bx} \qquad (3)$$

Rule 4. *Difference between two statistics (total and percent)*—If x_1 and x_2 are two estimates, then the standard error of the difference $(x_1 - x_2)$ can be computed as follows:

$$\text{SE}(x_1 - x_2) = \sqrt{\text{SE}(x_1)^2 + \text{SE}(x_2)^2 - 2r\,\text{SE}(x_1)\text{SE}(x_2)} \qquad (4)$$

where SE(x_1) and SE(x_2) are computed using rules 1-3 as appropriate and r is the correlation coefficient between x_1 and x_2.

Assuming $r = 0.0$ will result in an accurate standard error if the two estimates are actually uncorrelated and will result in an overestimate of the standard error if the correlation is positive or an underestimate if the correlation is negative.

Relative standard errors

Prior to 1985, relative standard error (RSE) curves were presented in Series 10 reports for approximating relative standard errors. For readers who wish to continue using them, the following provides guidance. The relative standard error (RSE) of an estimate is obtained by dividing the standard error (SE) of the estimate by the estimate x itself. This quantity is expressed as a percent of the estimate:

$$\text{RSE} = 100\frac{\text{SE}(x)}{x}$$

Canada's Health Promotion Survey[1]

Background

Canada's Health Promotion Survey (CHPS) was one of several surveys on health-related topics conducted for Health and Welfare Canada by Statistics Canada over the past two decades (Health and Welfare Canada, in press). With the exception of a regular series on smoking practices, these surveys tend to be carried out at irregular intervals. Consistency in question wording and sample design is relied upon to provide data comparability.

NOTE: A list of references follows the text.

With the exception of the Canada Health Survey (Health and Welfare Canada and Statistics Canada, 1981), which was a joint venture of the two Federal departments, most of these surveys are conducted by Statistics Canada under contract, according to specifications established by Health and Welfare Canada. CHPS followed this pattern: As the survey sponsor, Health and Welfare Canada established objectives, took major responsibility for questionnaire design, carried out data analysis, published the survey findings (Health and Welfare Canada, in press), and prepared a data tape for public use (Health and Welfare Canada, 1985). Statistics Canada participated actively in the survey design, selected the sample, collected the data, and carried out initial data processing.

As is true of the NHIS, the data from the CHPS pertain to the resident, civilian noninstitutionalized population of Canada alive at the time of the interview (June 1985). The sample does not include residents of nursing homes, hospitals, other institutions, the Armed Forces, or Canadians living abroad. The data in the present report also exclude residents of the Northwest Territories, who were surveyed at a later date by means of a personal interview. These various exclusions account for about 3 percent of the total Canadian population.

Statistical design of CHPS

The target population for the Health Promotion Survey was all persons 15 years of age and over living in Canada with the exceptions noted above. Because the sampling methodology used for the Health Promotion Survey was random digit dialing, households (and thus persons living in households) that do not have telephones were obviously excluded from the surveyed population. This accounts for less than 3 percent of the total population. However, the survey estimates have been adjusted (weighted) to include persons without telephones.

The Health Promotion Survey employed two random-digit-dialing sampling techniques. For the 10 provinces, the Waksberg method was used (Waksberg, 1978). For the Yukon, the method used was elimination of non-working banks.

The Waksberg method is a random-digit-dialing sampling technique that significantly reduces the cost of a survey compared with dialing telephone numbers completely at random. The method employs a two-stage sample design that increases the likelihood of contacting households. The following describes the procedure for the 10 provinces.

First, a list of all telephone area code and existing prefix number combinations was obtained for the survey area. An up-to-date listing of all possible area code prefix combinations was obtained; to these, all possible combinations of the next two digits were added (that is, all possible banks of 100 consecutive numbers within existing area code

prefix combinations). This resulted in a list of all the possible first 8 digits of 10-digit telephone numbers in the survey area. These eight-digit numbers formed the primary sampling units.

A random selection was made of one of these eight-digit numbers and then the final two digits were generated at random. This number (called a primary number) was called to determine whether it reached a household. If it did not reach a household (that is, the number was not assigned for use or was a business or institution), the number was dropped from further consideration. If it did reach a household, additional numbers (referred to as a secondary number) were generated within the same bank. These numbers were also called to determine whether they reached a household. Secondary numbers were generated on a continuing basis until (a) five additional households were reached in each retained bank, (b) the bank was exhausted, or (c) the survey period ended.

Primary numbers were generated continuously throughout the survey period to yield the required sample size within each province. An attempt was made to conduct an interview with all primary and secondary households reached.

This method is more efficient than "pure" random digit dialing because there is a higher probability of reaching a household if the telephone number for that household is within a bank of numbers that contains at least one other household. For the Health Promotion Survey, about 50 percent of secondary numbers called reached a household, compared with only 16 percent of primary numbers called.

For the Yukon Territory, a list of all banks that contained at least one household (that is, all working banks) was drawn up by the telephone company. The final two digits of telephone numbers were generated at random within these working banks. An attempt was made to conduct an interview for each telephone number that reached a household. Approximately 17 percent of the telephone numbers called reached a household.

Two considerations governed the sample design. On the one hand, good national estimates of the distribution of various characteristics are needed for use by the Federal government and national associations. On the other hand, because much of the policy and program activity in health is at the provincial and territorial level, better quality data are required at this level than are typically available from a national household survey. The sample was, therefore, allocated equally to the 10 provinces and the Yukon (1,000 each). One exception was Alberta, which had a target sample of 3,300. The additional sample of 2,300 was located in Edmonton, and the cost of this supplement was borne by that city's board of health.

Collection and processing of data

After a household was successfully contacted, all members were listed and one who was at least 15 years of age was selected at random. The interview was then conducted with this selected person by telephone. If this person was

Table IV. Households contacted and individual response rate, by area

Area	Total number called	Proportion identified as eligible households		Individual response rate	
		Percent	Number	Percent	Number
All areas	40,357	33.8	13,649	81.9	11,181
Newfoundland.	4,926	21.2	1,043	81.4	849
Prince Edward Island . . .	3,121	35.4	1,105	84.0	928
Nova Scotia	3,036	35.2	1,069	86.1	920
New Brunswick	2,720	40.9	1,113	86.0	956
Quebec.	1,874	53.9	1,010	83.8	846
Ontario	2,223	47.1	1,046	72.3	756
Manitoba	3,674	27.4	1,008	82.3	830
Saskatchewan.	4,510	21.0	948	81.6	774
Alberta	7,128	47.1	3,359	81.4	2,733
British Columbia.	2,188	49.9	1,091	82.4	899
Yukon.	4,957	17.3	857	80.5	690

not available to be interviewed immediately, an appointment was made for a later time. No proxy reporting was accepted. The interview protocol will be found in appendix III.

Interviews were conducted from Statistics Canada's eight regional offices plus an additional office set up specifically for the Yukon component in Whitehorse, from June 3-21, 1985. In some offices, the deadline was extended so that more of the outstanding calls could be completed. All interviews were conducted between 8:30 a.m. and 9:30 p.m. local time during weekdays and during the day on Saturdays. Interviewers were experienced Statistics Canada regular staff, and generally were female. In addition to their experience and training in the general conduct of interviews, they were specifically trained in telephone techniques and in the subject matter of the CHPS. Supervisors monitored the interviewers on a daily basis to ensure that procedures followed the specifications.

Table IV shows the results of the various stages of contact with survey respondents. The overall response rate was 82 percent; that is, out of the 13,649 households contacted, 11,181 adult Canadians participated in the survey. As is generally true in household surveys, nonrespondents were disproportionately male and young (age 15-24 years).

Nonresponse because of language difficulties, illness, or absence of the selected person are some of the problems inherent in a survey that does not allow proxy reporting. Once a respondent was selected, if he or she could not complete the interview, no replacement was made. In some cases, the selected person could not communicate in either English or French, even though another household member was able to respond.

The "No contact" type of nonresponse is a particular problem for telephone surveys. There is no way of knowing whether these telephone numbers have reached a residence, which is eligible for the survey or a business or institution, which is not. Every effort was made to call these numbers many times. Statistics Canada also checked with telephone companies concerning their status; however, a residual 2 to 3 percent could not be determined.

Data capture was conducted in each of the regional offices and transmitted to Ottawa. The data capture operators entered the data directly from the questionnaires into a minicomputer. The data capture program allowed for a valid range of codes to be entered for each question and followed the flow pattern of the questionnaire based on each entry. No editing was done to check for consistency between questions at the data entry stage. It was possible for operators to enter invalid data or to enter data that violated the skip patterns of the questionnaire, but only through the use of a specific override function after they had been alerted that the entry was incorrect.

Following data capture, all survey records were subjected to an exhaustive computer edit. Partial nonresponse, flow-pattern errors, and abnormally high or low responses were identified. Records with missing or incorrect data were assigned nonresponse codes or, in some cases, were imputed from other parts of the same questionnaire. The one exception to this was the selected person's age and sex. In some cases, these variables were imputed from another record on the Health Promotion Survey file.

Estimation procedures

A self-weighting sample design is one for which the weights for each unit in the sample are the same. For a two-stage sample design, this happens if the first stage units (that is, the Primary Sampling Units, PSU) are selected using probability proportional to size sampling and a fixed number of units are selected within each selected PSU with equal probability.

For the CHPS, the households within each province were selected using this sampling scheme and, thus, the sampled households within each province have identical weights. The first stage sampling units were banks of telephone numbers, and the second stage units were actual telephone numbers corresponding to households within those banks. Household weights differ from province to province because a different sampling rate was used for each province. This is because of the wide range in provincial population sizes combined with the desire of the survey sponsor for equal sample sizes in all 10 provinces.

The following paragraphs outline the steps used in weighting the Health Promotion Survey records.

1. In the first stage of weighting, all households selected into the sample within a given province were assigned an identical weight.
2. The weights for households with more than one private telephone number were adjusted downward to account for the fact that such households have a higher probability of being selected.
3. The weights for responding households (that is, the records on the file) were adjusted upward to account for nonresponding households. This adjustment was done independently within Census Metropolitan area/non-Census Metropolitan area geographical classifications within each province. Weights were also adjusted when fewer than the required number of

telephone numbers were generated within an area because of reaching the end of the survey period. This adjustment is based on the assumption that the households that were interviewed represent the characteristics of those that should have been interviewed. To the extent that this is not true, the estimates produced will be somewhat biased.

4. A person weight was calculated for each person who responded to the survey by multiplying the household weight for that person by the number of persons in the household who were eligible to be selected for the survey.

5. In the last stage of weighting, the person weights were ratio adjusted to agree with age-sex distributions projected from the Census of Canada. Census-projected population counts were obtained for males and females within each province and the Yukon for the following age groups: 15-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 years and over. Inmates of institutions were excluded from the census projections because this group was not surveyed. For each of the resulting 154 classifications ($11 \times 2 \times 7$), the person weights for records within the classification were adjusted by multiplying by the ratio of the *projected census population count* to the sum of the person weights of records in the province-age-sex-group.

Reliability of estimates

The estimates derived from this survey are based on a sample of households. Somewhat different figures might have been obtained if a complete census had been taken using the same questionnaire, interviewers, supervisors, processing methods, and so forth, as those actually used. The difference between the estimates obtained from the sample and the results from a complete count taken under similar conditions is called the sampling error of the estimate.

Although the exact sampling error of the estimate, as defined above, cannot be measured from sample results alone (otherwise a survey would be unnecessary), it is possible to estimate a statistical measure of sampling error, the standard error, from the sample data. Using the standard error, confidence intervals for estimates (ignoring the effects of nonsampling error) may be obtained under the assumption that the estimates are normally distributed about the true population value. The chances are about 68 out of 100 that the difference between a sample estimate and the true population value would be less than one standard error, about 95 out of 100 that the difference would be less than two standard errors, and virtually certain that the difference would be less than three standard errors.

Because of the large variety of estimates that can be produced from a survey, the standard deviation is usually expressed relative to the estimate to which it pertains. The resulting measure, known as the RSE of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percent of the estimate.

Derivation of sampling variabilities for each of the estimates that could be generated from the Health Promotion Survey would be an extremely costly procedure and, for most users, an unnecessary one. Consequently, crude measures of sampling variability have been developed for use (table V). This table has been produced using the RSE formula based on a simple random sample. Because the Health Promotion Survey estimates were made from a two-stage cluster design, a factor called the design effect was introduced into the formula. This factor accounts for the increase in variance that results from using a two-stage cluster design over a simple random sample.

The following rules should enable the reader to determine approximate RSE's for aggregates (totals), percents, ratios, differences between totals or percents, and differences between ratios.

Rule 1. *Estimates of aggregates (totals)*—The RSE for a total depends only on the size of the estimated total itself. On table V, locate the estimated total (in thousands) in the left column of the table (headed "Numerator of percentage") and follow the X's across to the first figure encountered. This is the RSE.

Rule 2. *Estimates of percents*—The RSE of an estimated percent depends on the size of the percent and the size of the group upon which the percent is based. Estimated percents are relatively more reliable than the corresponding estimates of the numerators of the percents, particularly if the percents are 50 percent or greater. To estimate the RSE of a percent, reference should be made to the percent (across the top of table V) and to the numerator of the percent, in thousands (down the left side of the table). The intersection of the appropriate row and column gives the proper RSE.

Rule 3. *Ratios*—In the case where the numerator is a subset of the denominator, the ratio should be converted to a percent and rule 2 applied. In the case where the numerator is not a subset of the denominator, the RSE of the ratio of the two estimates is approximately equal to the square root of the sum of squares of each RSE considered separately; that is, the RSE of a ratio:

$$r = \frac{x}{y} \quad \text{is}$$

$$\text{RSE}(r) = \sqrt{\text{RSE}(x)^2 + \text{RSE}(y)^2}$$

This formula will tend to overstate the error if x and y are positively correlated and understate the error if x and y are negatively correlated.

Rule 4. *Differences between totals or percents*—The standard deviation of a difference between two estimates is approximately equal to the square root of the sum of the squares of each standard deviation considered separately. That is, the standard deviation of a difference:

$$d = x - y \text{ is equal to}$$

$$\text{SD}(d) = \sqrt{[x\text{RSE}(x)]^2 + [y\text{RSE}(y)]^2}$$

Table V. Crude sampling variabilities for the Canadian Health Promotion Survey

[10 provinces; Yukon Territory excluded]

Numerator of percentage in thousands	Estimated percent													
	0.1	1.0	2.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	50.0	70.0	90.0
1	155.7	155.0	154.2	151.8	147.8	143.6	139.3	134.9	130.3	125.6	120.7	110.2	85.3	49.3
2	110.1	109.6	109.0	107.4	104.5	101.6	98.5	95.4	92.2	88.8	85.3	77.9	60.3	34.8
3	89.9	89.5	89.0	87.7	85.3	82.9	80.4	77.9	75.2	72.5	69.7	63.6	49.3	23.4
4	77.9	77.5	77.1	75.9	73.9	71.8	69.7	67.5	65.2	62.8	60.3	55.1	42.7	24.6
5	69.6	69.3	69.0	67.9	66.1	64.2	62.3	60.3	58.3	56.2	54.0	49.3	33.2	22.0
6	63.6	63.3	63.0	62.0	60.3	58.6	56.9	55.1	53.2	51.3	49.3	45.0	34.8	20.1
7	58.8	58.6	58.3	57.4	55.9	54.3	52.7	51.0	49.3	47.5	45.6	41.6	32.2	18.6
8	55.0	54.8	54.5	53.7	52.2	50.8	49.3	47.7	46.1	44.4	42.7	38.9	30.2	17.4
9	51.9	51.7	51.4	50.6	49.3	47.9	46.4	45.0	43.4	41.9	40.2	36.7	28.4	16.4
10	49.2	49.0	48.8	48.0	46.7	45.4	44.1	42.7	41.2	39.7	38.2	34.8	27.0	15.6
11	46.9	46.7	46.5	45.8	44.6	43.3	42.0	40.7	39.3	37.9	36.4	33.2	25.7	14.9
12	44.9	44.7	44.5	43.8	42.7	41.5	40.2	38.9	37.6	36.3	34.8	31.8	24.6	14.2
13	43.2	43.0	42.8	42.1	41.0	39.8	38.6	37.4	36.1	34.8	33.5	30.6	23.7	13.7
14	41.6	41.4	41.2	40.6	39.5	38.4	37.2	36.1	34.8	33.6	32.2	29.4	22.8	13.2
15	40.2	40.0	39.8	39.2	38.2	37.1	36.0	34.8	33.7	32.4	31.2	28.4	22.0	12.7
16	38.9	38.7	38.6	38.0	36.9	35.9	34.8	33.7	32.6	31.4	30.2	27.5	21.3	12.3
17	37.8	37.6	37.4	36.8	35.8	34.8	33.8	32.7	31.6	30.5	29.3	26.7	20.7	11.9
18	36.7	36.5	36.3	35.8	34.8	33.9	32.8	31.8	30.7	29.6	28.4	26.0	20.1	11.6
19	35.7	35.6	35.4	34.8	33.9	32.9	32.0	31.0	29.9	28.8	27.7	25.3	19.6	11.3
20	X	34.7	34.5	34.0	33.0	32.1	31.2	30.2	29.1	28.1	27.0	24.6	19.1	11.0
21	X	33.8	33.7	33.1	32.2	31.3	30.4	29.4	28.4	27.4	26.3	24.0	18.6	10.7
22	X	33.0	32.9	32.4	31.5	30.6	29.7	28.8	27.8	26.8	25.7	23.5	18.2	10.5
23	X	32.3	32.2	31.7	30.8	29.9	29.1	28.1	27.2	26.2	25.2	23.0	17.8	10.3
24	X	31.6	31.5	31.0	30.2	29.3	28.4	27.5	26.6	25.6	24.6	22.5	17.4	10.1
25	X	31.0	30.8	30.4	29.6	28.7	27.9	27.0	26.1	25.1	24.1	22.0	17.1	9.9
30	X	28.3	28.2	27.7	27.0	26.2	25.4	24.6	23.8	22.9	22.0	20.1	15.6	9.0
35	X	26.2	26.1	25.7	25.0	24.3	23.6	22.8	22.0	21.2	20.4	18.6	14.4	8.3
40	X	24.5	24.4	24.0	23.4	22.7	22.0	21.3	20.6	19.9	19.1	17.4	13.5	7.8
45	X	23.1	23.0	22.6	22.0	21.4	20.8	20.1	19.4	18.7	18.0	16.4	12.7	7.3
50	X	21.9	21.8	21.5	20.9	20.3	19.7	19.1	18.4	17.8	17.1	15.6	12.1	7.0
55	X	20.9	20.8	20.5	19.9	19.4	18.8	18.2	17.6	16.9	16.3	14.9	11.5	6.6
60	X	20.0	19.9	19.6	19.1	18.5	18.0	17.4	16.8	16.2	15.6	14.2	11.0	6.4
65	X	19.2	19.1	18.8	18.3	17.8	17.3	16.7	16.2	15.6	15.0	13.7	10.6	6.1
70	X	18.5	18.4	18.1	17.7	17.2	16.7	16.1	15.6	15.0	14.4	13.2	10.2	5.9
75	X	17.9	17.8	17.5	17.1	16.6	16.1	15.6	15.0	14.5	13.9	12.7	9.9	5.7
80	X	17.3	17.2	17.0	16.5	16.1	15.6	15.1	14.6	14.0	13.5	12.3	9.5	5.5
85	X	16.8	16.7	16.5	16.0	15.6	15.1	14.6	14.1	13.6	13.1	11.9	9.3	5.3
90	X	16.3	16.3	16.0	15.6	15.1	14.7	14.2	13.7	13.2	12.7	11.6	9.0	5.2
95	X	15.9	15.8	15.6	15.2	14.7	14.3	13.8	13.4	12.9	12.4	11.3	8.8	5.1
100	X	15.5	15.4	15.2	14.8	14.4	13.9	13.5	13.0	12.6	12.1	11.0	8.5	4.9
125	X	13.9	13.8	13.6	13.2	12.8	12.5	12.1	11.7	11.2	10.8	9.9	7.6	4.4
150	X	12.7	12.6	12.4	12.1	11.7	11.4	11.0	10.6	10.3	9.9	9.0	7.0	4.0
200	X	X	10.9	10.7	10.4	10.2	9.9	9.5	9.2	8.9	8.5	7.8	6.0	3.5
250	X	X	9.8	9.6	9.3	9.1	8.8	8.5	8.2	7.9	7.6	7.0	5.4	3.1
300	X	X	8.9	8.8	8.5	8.3	8.0	7.8	7.5	7.3	7.0	6.4	4.9	2.8
350	X	X	8.2	8.1	7.9	7.7	7.4	7.2	7.0	6.7	6.4	5.9	4.6	2.6
400	X	X	X	7.6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.5	4.3	2.5
450	X	X	X	7.2	7.0	6.8	6.6	6.4	6.1	5.9	5.7	5.2	4.0	2.3
500	X	X	X	6.8	6.6	6.4	6.2	6.0	5.8	5.6	5.4	4.9	3.8	2.2
750	X	X	X	5.5	5.4	5.2	5.1	4.9	4.8	4.6	4.4	4.0	3.1	1.8
1,000	X	X	X	X	4.7	4.5	4.4	4.3	4.1	4.0	3.8	3.5	2.7	1.6
1,500	X	X	X	X	3.8	3.7	3.6	3.5	3.4	3.2	3.1	2.8	2.2	1.3
2,000	X	X	X	X	X	3.2	3.1	3.0	2.9	2.8	2.7	2.5	1.9	1.1
3,000	X	X	X	X	X	X	2.5	2.5	2.4	2.3	2.2	2.0	1.6	0.9
4,000	X	X	X	X	X	X	X	2.1	2.1	2.0	1.9	1.7	1.3	0.8
5,000	X	X	X	X	X	X	X	X	1.8	1.8	1.7	1.6	1.2	0.7
6,000	X	X	X	X	X	X	X	X	X	1.6	1.6	1.4	1.1	0.6
7,000	X	X	X	X	X	X	X	X	X	X	1.4	1.3	1.0	0.6
8,000	X	X	X	X	X	X	X	X	X	X	X	1.2	1.0	0.6
9,000	X	X	X	X	X	X	X	X	X	X	X	1.2	0.9	0.5
10,000	X	X	X	X	X	X	X	X	X	X	X	X	0.9	0.5
12,500	X	X	X	X	X	X	X	X	X	X	X	X	0.8	0.4
15,000	X	X	X	X	X	X	X	X	X	X	X	X	X	0.4

NOTES: Sampling variabilities (relative standard errors) are in percents. To determine sampling variabilities for estimates of totals, locate the row closest to the estimated total. The left column gives the sampling variability. To determine sampling variabilities for estimates of percents, use the row closest to the numerator of the percent and the column closest to the percent. Sampling variabilities in this table are crude indicators and in general are higher than those that would be obtained using more exact techniques. Under no circumstances are they official.

Relative standard errors (RSE's) above the first cut-off line are unacceptably high; RSE's below the first cut-off line and above the second cut-off line may be used with caution; RSE's below the second cut-off line are acceptable.

The RSE's shown in this table can be obtained with the following formula:

$$RSE = \sqrt{(2423.3702) \times (1 - \text{proportion})/\text{numerator}}$$

The formula may be particularly helpful in cases where use of the table requires interpolation.

The RSE of d is approximately

$$RSE(d) = \frac{SD(d)}{d}$$

This formula is accurate for the difference between separate and uncorrelated characteristics but is only approximate otherwise.

Rule 5. *Differences between ratios*—In this case, rules 3 and 4 are combined. The RSE's for the two ratios are first determined using rule 3, and then the RSE of their difference is found using rule 4.

The 1979 surveys

Detailed discussions of the sample design and estimation procedures for the 1979 National Survey of Personal Health Practices and Consequences and the 1979 Canada Health Survey have been previously published (Health and Welfare Canada and Statistics Canada, 1981; NCHS, 1981). Readers desiring to carry out further analyses of the trend data shown in this report are referred to these earlier publications.

NOTE: A list of references follows the text.

Appendix II
Definition of terms

Terms related to health practices

Amount of absolute alcohol—This is calculated from the number of drinks reportedly consumed during a given time period, assuming each to contain 0.5 ounce of absolute alcohol (ethanol). Heavier drinkers consumed an average of 1.0 ounces of ethanol (2 drinks or more) daily. Moderate drinkers consumed an average of 0.22-0.99 ounces of ethanol daily (4-13 drinks per week). Lighter drinkers consumed an average of 0.01-0.21 ounces of ethanol daily (3 or fewer drinks per week). This classification scheme was developed by Johnson et al. (1977) and has been used in numerous other analyses (Clark and Midanik, 1982; Malin, Wilson and Williams, 1985; Schoenborn, 1986; Schoenborn, 1987).

Breakfast—U.S. survey respondents were simply asked, "How often do you eat breakfast?" The Canadian survey asked for the weekly frequency of several categories of breakfast food; "just coffee or tea" was included in the same category as "nothing."

Breast examination—The U.S. survey refers to examination by a doctor or other health professional; the Canadian one specifies a doctor or nurse.

Current drinker—A person who has had at least one drink of an alcoholic beverage in the past 12 months.

Drinking and driving—In the United States, the question asked was, "During the past year, how many times did you drive when you had perhaps had too much to drink?" The Canadian survey included the question, "During the past month how many times have you driven within 2 hours of drinking any amount of alcohol?"

Former drinker—In the United States, a person who has had at least 12 drinks in any one year, but none in the past year. In Canada, this refers to a person who has had at least one drink in his or her lifetime, but none in the past year.

Life-long abstainer—In the United States, a person who has not had at least 12 drinks in any one year. In Canada, this refers to a person who has never had any alcoholic beverages.

NOTE: A list of references follows the text.

Regularly active person—In the U.S. survey, a person answering positively to the question, "Do you exercise or play sports regularly?" In Canada, persons were defined as regularly active if they reported vigorous exercise (for example, calisthenics, jogging, racquet sports, brisk walking) of at least 15 minutes' duration at least 3-4 times weekly.

Seatbelt use—"Usually" includes "all or most of the time" (United States) and "always" or "most of the time" (Canada). "Sometimes" refers to "some of the time" and "once in a while" (United States) and "sometimes" (Canada). "Never" is "never" in the U.S. survey and "rarely or never" in Canada.

Smoking—This refers only to cigarettes. Current smokers include regular and occasional smokers; nonsmokers may be either life-long abstainers or former smokers.

Demographic terms

Age—The age at last birthday.

Education—The number of years of schooling was determined in the United States; a separate question specified if the highest year was completed. In the Canadian survey, respondents were asked to check the category describing the highest level completed. The table category which may not be strictly comparable for the two countries is "completed high school." This is because the number of years to complete high school varies in Canada from 11 years (about 25 percent of the population) to 13 years (about 35 percent), the balance requiring 12 years as in the United States.

Parent's education—For the United States, this term refers to the highest level of education achieved by the person designated "responsible adult in the household." This person is usually the father or mother but may be unrelated to the child. For Canada, parent's education refers to that of the survey respondent. See questionnaire (appendix III) for question on children's use of seatbelts.

FORM HIS-1(SB) (1985)
(10-15-84)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

NATIONAL HEALTH INTERVIEW SURVEY

HEALTH PROMOTION AND DISEASE PREVENTION SUPPLEMENT BOOKLET

NOTICE — Information contained on this form which would permit identification of any individual or establishment has been collected with a guarantee that it will be held in strict confidence, will be used only for purposes stated for this study, and will not be disclosed or released to others without the consent of the individual or the establishment in accordance with section 308(d) of the Public Health Service Act (42 USC 242m).

RT70		
1. 3-7 / 8	**2.** R.O. Number 9-10	**3.** Sample 11-13

Book ____ of ____ books

4. Control number 14-16	17-20	21-22
PSU	Segment	Serial

| **5.** Person number 23-24 | **6.** Sex 25
 1 ☐ Male
 2 ☐ Female | **7.** Sample Person 26-45
 Last name | 46-60
 First name |

8. FINAL STATUS OF SUPPLEMENTS
61

0 ☐ No person 18 + in this family *(Household page)*

a. Section M (Household Respondent Section)

Interview

   1 ☐ Complete interview (all appropriate items completed)

   2 ☐ Partial interview (some but not all appropriate items completed) *(Explain in notes)*

Noninterview

   3 ☐ Refusal ⎫ *(Explain in notes)*
   4 ☐ Other ⎭

b. Sections N through V (Sample Person Section)

Interview
62

   1 ☐ Complete interview (all appropriate sections completed)

   2 ☐ Partial interview (some but not all appropriate sections completed) *(Explain in notes)*

Noninterview

   3 ☐ Refusal *(Explain in notes)*

   4 ☐ SP temporarily absent

   5 ☐ SP mentally or physically incapable

   6 ☐ Other *(Explain in notes)*

▶ TRANSCRIPTION FROM COMPLETED HIS-1
80

12. Telephone in household *(Household page, question 11)*

   1 ☐ Yes

   2 ☐ No

13. Education of SP *(page 42, question 2a)*
81-82

00 ☐ Never attended or kindergarten

   Elem: 1   2   3   4   5   6   7   8

   High: 9   10   11   12

   College: 1   2   3   4   5   6 +

Finish grade/year *(Question 2b)*
83

   1 ☐ Yes

   2 ☐ No

14. Main Race of SP *(page 42, question 3a/b)*
84

   1   2   3   4   5 — *Specify* ↙

15. Family Income *(page 46, question 8b)*
85-86

00 ☐ A	10 ☐ K	20 ☐ U
01 ☐ B	11 ☐ L	21 ☐ V
02 ☐ C	12 ☐ M	22 ☐ W
03 ☐ D	13 ☐ N	23 ☐ X
04 ☐ E	14 ☐ O	24 ☐ Y
05 ☐ F	15 ☐ P	25 ☐ Z
06 ☐ G	16 ☐ Q	26 ☐ ZZ
07 ☐ H	17 ☐ R	
08 ☐ I	18 ☐ S	
09 ☐ J	19 ☐ T	

▶ Refer to HIS-1(SB) page 4, questions 4a and b. Transcribe from HIS-1 for the sample person, if required *(page 20, questions 5a and b)*.

9.
Beginning time		Ending time	
63-66	67	68-71	72
	1 a.m.		1 a.m.
	2 p.m.		2 p.m.

10. Interviewer identification
73-74

Name   Code

11. FAMILY ROSTER

List all nondeleted family members 18 + by age (oldest to youngest). Refer to sample selection label and circle as appropriate. THEN circle Person No. in item 11 and mark "SP" box on HIS-1 for the selected sample person.

Line No.	Person No.	Name	Age
75	76-77		78-79
1			
2			
3			
4			
5			
6			
7			
8			
9			

FOOTNOTES

| **Section M. PREGNANCY AND SMOKING** | | **Person Number** _____ | 5—6 |

| **M1** | Refer to age and sex on Household Composition Page.
☐ Females 18—44 in family *(Enter person number* ☐No females 18—44 in
and name of all females 18—44; THEN 1) family *(Section N)* | First name

_____ |

Read to respondent:
These next few questions refer to smoking and pregnancy and are asked of women aged 18—44. In this family the questions refer to *(read names).*

1a. Are any of these women now pregnant? ☐ Yes ☐ No *(2)* ☐ DK *(2)*

b. Who is this? *Mark box in person's column.*
| | 1b. | ₁☐ Yes, pregnant now ₉ ☐DK | 7 |

c. Anyone else? ☐ Yes *(Reask 1b and c)* ☐ No

2a. Have any of these women given birth to a live born infant in the past 5 years?
☐ Yes ☐ No *(M2)* ☐ DK *(M2)*

b. Who is this? *Mark box in person's column.*
| | 2b. | ₁☐ Yes, child past 5 years ₉ ☐DK | 8 |

c. Anyone else? ☐ Yes *(Reask 2b and c)* ☐ No

| **M2** | Mark first appropriate box. ☐ 1b and 2b blank for all persons *(Section N)* | M2 | ₁☐ Available, "Yes" in 2b *(3)*
₂☐ Available, "Yes" in 1b *(4)*
₃☐ Callback required *(NP)*
₄☐ Noninterview *(Cover page, THEN NP)*
₈☐ Other *(NP)* | 9 |

| **3.** In what month and year was your last child born? | 3. | _____ / 19 _____
Month   Year | 10—13 |

| **4.** Have you smoked at least 100 cigarettes in your entire life? | 4. | ₁☐ Yes *(Mark "Smoking asked" box, THEN 5)*
₂☐ No *(Mark "Smoking asked" box, THEN NP)* | 14 |

| **5a.** Do you smoke cigarettes now? | 5a. | ₁☐ Yes *(6)*
₂☐ No | 15 |

| **b.** About how long has it been since you last smoked cigarettes fairly regularly? | b. | _____ Number { ₁☐ Days ₂☐ Weeks ₃☐ Months ₄☐ Years } *(M3)*
₉₉₈☐ Never smoked regularly *(M3)* | 16—18 |

| **6.** On the average, about how many cigarettes a day do you now smoke? | 6. | _____ Number
₀₀☐ Less than 1 per day | 19—20 |

| **M3** | Mark appropriate box. | M3 | ₁☐ "Yes" in 1b and "Yes" in 5a *(8)*
₂☐ "Yes" in 1b and "No" in 5a *(7)*
₈☐ Other *(M4)* | 21 |

| **7.** Have you smoked cigarettes at any time during this pregnancy? | 7. | ₁☐ Yes
₂☐ No *(M4)* | 22 |

| **8.** On the average, about how many cigarettes a day did you smoke BEFORE you found out you were pregnant this time? | 8. | _____ Number
₉₈☐ Did not smoke regularly | 23—24 |

| **9.** On the average, about how many cigarettes a day did you smoke AFTER you found out you were pregnant this time? | 9. | _____ Number
₉₉☐ Did not smoke regularly | 25—26 |

| **M4** | Mark appropriate box. | M4 | ₁☐ "Yes" in 2b *(10)*
₈☐ Other *(14)* | 27 |

| **10.** Did you smoke cigarettes at all during the 12 months before your last child was born in *(month and year in 3)?* | 10. | ₁☐ Yes
₂☐ No *(14)* | 28 |

| **11.** On the average, about how many cigarettes a day did you smoke BEFORE you found out you were pregnant? | 11. | _____ Number
₉₈☐ Did not smoke regularly | 29—30 |

| **12.** On the average, about how many cigarettes a day did you smoke AFTER you found out you were pregnant? | 12. | _____ Number
₉₈☐ Did not smoke regularly
₀₀☐ None *(14)* | 31—32 |

| **13.** In general, would you say that you smoked cigarettes during MOST of that pregnancy? | 13. | ₁☐ Yes
₂☐ No
₈☐ Other *(Specify)* _____ | 33 |

| **14.** Did a doctor EVER advise you to quit or cut down on smoking? | 14. | ₁☐ Yes
₂☐ No
₉☐ DK | 34 |

Section N. GENERAL HEALTH HABITS

		Sample Person Number _____ 3—4

N1

1 ☐ Callback required *(Hhld. page)*
2 ☐ Noninterview *(Cover page)*
3 ☐ Available *(1)*

Read to respondent:

These questions are about general health practices.

1. **How often do you eat breakfast — almost every day, sometimes, rarely or never?**

1 ☐ Almost every day
2 ☐ Sometimes
3 ☐ Rarely or never

2. **Including evening snacks, how often do you eat between meals — almost every day, sometimes, rarely or never?**

1 ☐ Almost every day
2 ☐ Sometimes
3 ☐ Rarely or never

3. **When you visit a doctor or other health professional for routine care, is eating proper foods discussed often, sometimes, rarely or never?**

1 ☐ Often
2 ☐ Sometimes
3 ☐ Rarely or never
4 ☐ Don't visit for routine care

N2 | *Refer to page 46 or 47, item R, of HIS-1.*

1 ☐ SP is Hhld. resp. *(5)*
8 ☐ Other *(4)*

4a. **About how tall are you without shoes?**

_____ Feet _____ Inches

b. **About how much do you weigh without shoes?**

_____ Pounds

Hand Card N1 or read responses for telephone interview.

5. **In your opinion which of these are the TWO best ways to lose weight?**

1 ☐ Don't eat at bedtime
2 ☐ Eat fewer calories
3 ☐ Take diet pills
4 ☐ Increase physical activity
5 ☐ Eat NO fat
6 ☐ Eat grapefruit with each meal

6. **Are you now trying to lose weight?**

1 ☐ Yes
2 ☐ No *(9)*

7. **Are you eating fewer calories to lose weight?**

1 ☐ Yes
2 ☐ No

8. **Have you increased your physical activity to lose weight?**

1 ☐ Yes
2 ☐ No

9a. **Do you consider yourself overweight, underweight, or just about right?**

1 ☐ Overweight
2 ☐ Underweight } *(10)*
3 ☐ About right

b. **Would you say you are very overweight, somewhat overweight, or only a little overweight?**

1 ☐ Very overweight
2 ☐ Somewhat overweight
3 ☐ Only a little overweight

10. **On the average, how many hours of sleep do you get in a 24-hour period?**

_____ Hours

FOOTNOTES

11. Is there a particular clinic, health center, doctor's office, or other place that you usually go to if you are sick or need advice about your health?	**25** ₁ ☐ Yes ₂ ☐ No *(14)*
12. What kind of place is it — a clinic, a health center, a hospital, a doctor's office, or some other place? IF HOSPITAL: **Is this an outpatient clinic or the emergency room?** IF CLINIC: **Is this a hospital outpatient clinic, a company clinic, or some other kind of clinic?**	**26** ₁ ☐ Doctor's office (group practice or doctor's clinic) ₂ ☐ Hospital outpatient clinic ₃ ☐ Sample person's home ₄ ☐ Hospital emergency room ₅ ☐ Company or industry clinic ₆ ☐ Health center ₉ ☐ Other *(Specify)* _____
13. Is there ONE particular doctor you usually see at *(place in 12)*?	**27** ₁ ☐ Yes } ₂ ☐ No } *(N3)*
Hand Card N2 or read reasons for telephone interview. **14.** Which of these is the MAIN reason you don't have a particular place you usually go?	**28** ₁ ☐ Have two or more usual doctors or places depending on what is wrong ₂ ☐ Haven't needed a doctor ₃ ☐ Previous doctor no longer available ₄ ☐ Haven't been able to find the right doctor ₅ ☐ Recently moved to area ₆ ☐ Can't afford medical care ₈ ☐ Other reason *(Specify)* _____
N3 *Refer to sex.*	**29** ₁ ☐ Male *(Section O)* ₂ ☐ Female *(15)*
15. About how long has it been since you had a Pap smear test?	**30—31** _____ Years 98 ☐ Never 00 ☐ Less than 1 year
16a. About how long has it been since you had a breast examination by a doctor or other health professional?	**32—33** _____ Years 98 ☐ Never 00 ☐ Less than 1 year
b. Do you know how to examine your own breasts for lumps?	**34** ₁ ☐ Yes ₂ ☐ No *(Section O)*
c. About how many times a year do you examine your own breasts for lumps?	**35—36** _____ Times per year 88 ☐ Other *(Specify)* _____ 98 ☐ Never

FOOTNOTES

Section O. INJURY CONTROL AND CHILD SAFETY AND HEALTH

			37
O1	*Refer to household composition.*	1 ☐ Children under 10 in family *(1)* 2 ☐ No children under 10 in family *(O3)*	

	38
Read to respondent: **These questions are about preventing injuries to children.** **1a. Have you ever heard about POISON CONTROL CENTERS?**	1 ☐ Yes 2 ☐ No *(2)*

		39
b. Do you have the telephone number for a Poison Control Center in your area?	1 ☐ Yes 2 ☐ No 9 ☐ DK	

		40
2. There is a medication called IPECAC (ip' i kak) **SYRUP which is sometimes taken to cause vomiting after something poisonous is swallowed. Do you now have any Ipecac Syrup in this household?**	1 ☐ Yes 2 ☐ No 9 ☐ DK	

			41
O2	*Refer to household composition.*	1 ☐ Children under 5 in family *(3)* 2 ☐ No children under 5 in family *(O3)*	

		42
3. Have you heard about child safety seats, sometimes called car safety carriers, which are designed to carry children while they are riding in a car?	1 ☐ Yes 2 ☐ No *(O3)*	

		43
4. Did a doctor or other health professional EVER tell you about the importance of using car safety seats for (your) children?	1 ☐ Yes 2 ☐ No	

			44
O3	*Refer to household composition.*	1 ☐ Children under 18 in family *(O4)* 2 ☐ No children under 18 in family *(10)*	

			RT73	3—4

			Person Number ____	**5—6**
O4	*Enter person number and name of all children under 18; THEN mark box.*	**O4**	First name _____	
			1 ☐ Under 5 *(5)* 2 ☐ 5—17 *(7)*	**7**

5. When —— was brought home from the hospital following birth, was —— buckled in a car safety seat?	**5.**	1 ☐ Yes 2 ☐ No 3 ☐ Not born in hospital 4 ☐ Didn't ride home in "car" 9 ☐ DK	**8**

6a. Does —— now have a car safety seat?	**6a.**	1 ☐ Yes 2 ☐ No } *(7)* 9 ☐ DK	**9**
b. When riding in a car, is —— buckled in a car safety seat all or most of the time, some of the time, once in awhile, or never?	**b.**	1 ☐ All or most of the time 2 ☐ Some of the time } *(NP)* 3 ☐ Once in awhile 4 ☐ Never } 9 ☐ DK } *(7)*	**10**

7. When riding in a car, does —— wear a seat belt all or most of the time, some of the time, once in awhile, or never?	**7.**	1 ☐ All or most of the time 2 ☐ Some of the time 3 ☐ Once in awhile 4 ☐ Never 5 ☐ Uses child safety seat 9 ☐ DK	**11**

O5 *Refer to age.*	**O5**	1 ☐ Under 5 *(8)* 8 ☐ Other *(O6)*	**12**

Read to respondent: (**These next questions are about breastfeeding.**) **8. Was ——ever breastfed?**	**8.**	1 ☐ Yes 2 ☐ No } 9 ☐ DK } *(O6)*	**13**

9. How old was —— when —— COMPLETELY stopped breastfeeding?	**9.**	000 ☐ Still breastfed 1 ☐ Days 2 ☐ Weeks 3 ☐ Months ____ 4 ☐ Years Age	**14—16**

O6 *Respondent*	**O6**	1 ☐ Child's parent 8 ☐ Other	**17**

Section O. INJURY CONTROL AND CHILD SAFETY AND HEALTH — Continued

10. When driving or riding in a car, do you wear a seat belt all or most of the time, some of the time, once in awhile, or never?

1 ☐ All or most of the time
2 ☐ Some of the time
3 ☐ Once in awhile
4 ☐ Never
5 ☐ Don't ride in car

Read to respondent:

The next questions are about this home.

11a. How many smoke detectors are installed in this home?

01 ☐ Only 1 *(11c)*

_____ Number *(11b)*

00 ☐ None ⎫
99 ☐ DK   ⎬ *(12)*

b. How many of them are now working?

_____ Number *(11d)*

00 ☐ None *(11f)*

c. Is it now working?

1 ☐ Yes
2 ☐ No ⎫
9 ☐ DK ⎬ *(11f)*

d. How do you know [it is/they are] working?

1 ☐ Tested it/them

1 ☐ It/they went off because of smoke

1 ☐ It/they went off while cooking

1 ☐ Changed the batteries

1 ☐ The light is on

1 ☐ Beeps when battery is low

1 ☐ Other *(Specify)* _____

e. Any other way?

☐ Yes *(Reask 11d and e)*
☐ No

f. [Is it/Are any of the smoke detectors] next to a sleeping area?

1 ☐ Yes
2 ☐ No
9 ☐ DK

12a. Do you know about what the hot water temperature is in this home?

1 ☐ Yes
2 ☐ No *(13)*

b. About what temperature is the hot water?

_____ Temperature

OR
1 ☐ High
2 ☐ Low
3 ☐ Medium

c. How did you estimate the hot water temperature?

1 ☐ The setting on hot water heater
2 ☐ Tested with thermometer
3 ☐ Guessed
6 ☐ Other *(Specify)* _____

13. In the past 12 months, have you (or has anyone in your household) used a thermometer to test the temperature of the hot water here?

1 ☐ Yes
2 ☐ No
9 ☐ DK

14. ABOVE what temperature will hot water cause scald injuries?

_____ Temperature

999 ☐ DK

FOOTNOTES

FORM HIS-1(SB) (1905) (10-15-84

53

Section P. HIGH BLOOD PRESSURE

1. I am going to read a list of things which may or may not affect a person's chances of getting HEART DISEASE.

Hand Card P

After I read each one, tell me if you think it definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting heart disease. First —

	DEFINITELY INCREASES	PROBABLY INCREASES	PROBABLY DOES NOT INCREASE	DEFINITELY DOES NOT INCREASE	DK/NO OPINION	
a. Cigarette smoking? (Give me a number from the card.)	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	5
b. Worry or anxiety?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	6
c. High blood pressure?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	7
d. Diabetes?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	8
e. Being VERY overweight?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	9
f. Overwork?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	10
g. Drinking coffee with caffeine?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	11
h. Eating a diet high in animal fat?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	12
i. Family history of heart disease?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	13
j. High cholesterol?	₁ ☐	₂ ☐	₃ ☐	₄ ☐	₉ ☐	14

2. The following conditions are related to having a STROKE. In your opinion, which of these conditions MOST increases a person's chances of having a stroke — diabetes, high blood pressure, or high cholesterol?

15

₁ ☐ Diabetes
₂ ☐ High blood pressure
₃ ☐ High cholesterol
₉ ☐ DK

3. Which one of the following substances in food is MOST often associated with HIGH BLOOD PRESSURE — sodium, cholesterol or sugar?

16

₁ ☐ Sodium
₂ ☐ Cholesterol
₃ ☐ Sugar
₈ ☐ Other *(Specify)* _____
₉ ☐ DK

4. Have you EVER been told by a doctor or other health professional that you had hypertension, sometimes called high blood pressure?

17

₁ ☐ Yes
₂ ☐ No *(12)*
₃ ☐ Only during pregnancy *(12)*

5. Were you told two or more DIFFERENT times that you had hypertension or high blood pressure?

18

₁ ☐ Yes
₂ ☐ No
₉ ☐ DK

6. Are you NOW taking any medicine prescribed by a doctor for your hypertension or high blood pressure?

19

₁ ☐ Yes *(8)*
₂ ☐ No

7a. Was any medicine EVER prescribed by a doctor for your hypertension or high blood pressure?

20

₁ ☐ Yes
₂ ☐ No *(8)*

b. Did a doctor advise you to stop taking the medicine?

21

₁ ☐ Yes
₂ ☐ No

FOOTNOTES

Section P. HIGH BLOOD PRESSURE — Continued

	a. Diet to lose weight?	b. Cut down on salt or sodium in your diet?	c. Exercise?
8. Because of your hypertension or high blood pressure, has a doctor or other health professional EVER advised you to —	1 ☐ Yes (9) ▢22 2 ☐ No (8b)	1 ☐ Yes (9) ▢23 2 ☐ No (8c)	1 ☐ Yes (9) ▢24 2 ☐ No (11)
9. Have you EVER followed this advice?	1 ☐ Yes (10) ▢25 2 ☐ No (8b)	1 ☐ Yes (10) ▢26 2 ☐ No (8c)	1 ☐ Yes (10) ▢27 2 ☐ No (11)
10. Are you NOW following this advice?	1 ☐ Yes } (8b) ▢28 2 ☐ No }	1 ☐ Yes } (8c) ▢29 2 ☐ No }	1 ☐ Yes } (11) ▢30 2 ☐ No }

11a. Do you still have hypertension or high blood pressure?	1 ☐ Yes (12) 2 ☐ No 9 ☐ DK ▢31
b. Is this condition completely cured or is it under control?	1 ☐ Cured 2 ☐ Under control 9 ☐ DK ▢32

12a. ABOUT how long has it been since you LAST had your blood pressure taken by a doctor or other health professional?	‾‾‾‾‾‾ { 2 ☐ Days ▢33–35
	Number { 3 ☐ Weeks
	         { 4 ☐ Months
	         { 5 ☐ Years
	999 ☐ DK }
	000 ☐ Never } (13)

b. Blood pressure is usually given as one number over another. Were you told what your blood pressure was, in NUMBERS?	1 ☐ Yes 2 ☐ No } 9 ☐ DK } (12d) ▢36
c. What was your blood pressure, in NUMBERS?	‾‾‾‾‾ / ‾‾‾‾‾ ▢37–39 999 999 ☐ DK
d. At that time, was your blood pressure high, low, or normal?	▢40–42 ▢43 1 ☐ High 2 ☐ Low 3 ☐ Normal 8 ☐ Other (Specify) _____ 9 ☐ DK
13. Do you NOW have diabetes or sugar diabetes?	1 ☐ Yes 2 ☐ No 8 ☐ Other (Specify) _____ ▢44
14. Have you ever been told by a doctor or other health professional that you had high cholesterol?	1 ☐ Yes 2 ☐ No ▢45
15. Do you have any kind of heart condition or heart trouble?	1 ☐ Yes 2 ☐ No ▢46
16. Have you ever had a stroke?	1 ☐ Yes 2 ☐ No ▢47

FOOTNOTES

Section Q. STRESS

Read to respondent:

These next questions are about stress.

1. **During the past 2 weeks, would you say that you experienced a lot of stress, a moderate amount of stress, relatively little stress, or almost no stress at all?**

   - 1 ☐ A lot
   - 2 ☐ Moderate
   - 3 ☐ Relatively little
   - 4 ☐ Almost none
   - 5 ☐ DK what stress is *(3)*

2. **In the past year, how much effect has stress had on your health — a lot, some, hardly any or none?**

   - 1 ☐ A lot
   - 2 ☐ Some
   - 3 ☐ Hardly any or none

3a. **In the past year, did you think about seeking help for any personal or emotional problems from family or friends?**

   - 1 ☐ Yes
   - 2 ☐ No

   b. **from a helping professional or a self-help group?**

   - 1 ☐ Yes
   - 2 ☐ No

Q1 *Refer to 3a and b*

   - 1 ☐ "No" in 3a and 3b *(Section R)*
   - 8 ☐ Other *(4)*

4a. **Did you actually seek any help?**

   - 1 ☐ Yes
   - 2 ☐ No *(Section R)*

   b. **From whom did you seek help?**

   Number up to four items in the order mentioned.

   Do not read list.

___ Family member or relative	54		___ Gamblers Anonymous	63	
___ Friend	55		___ Weight Watchers	64	
___ Psychologist	56		___ Counselor at work	65	
___ Psychiatrist	57		___ Counselor at school	66	
___ Psychiatric social worker	58		___ Probation officer	67	
___ Other mental health professional	59		Other *(Specify)*		
___ Medical doctor	60		___ _____	68	
___ Religious counselor	61		___ _____	69	
___ Alcoholics Anonymous	62		___ _____	70	

   c. **Anyone else?**

   - ☐ Yes *(Reask 4b and c)*
   - ☐ No

Section R. EXERCISE

R1

   - 1 ☐ SP is physically handicapped *(Describe in footnotes, THEN 1)*
   - 8 ☐ Other *(2)*

Read to respondent:

These next questions are about physical exercise. *Hand calendar.*

1a. **In the past 2 weeks (outlined on that calendar), beginning Monday *(date)* and ending this past Sunday *(date)*, have you done any exercises, sports, or physically active hobbies?**

   - 1 ☐ Yes
   - 2 ☐ No *(3, page 13)*

   b. **What were they?**
   Record on next page, THEN 1c.

   c. **Anything else?**

   - ☐ Yes *(Reask 1b and c)*
   - ☐ No *(2b)*

FOOTNOTES

Section R. EXERCISE — Continued

Read to respondent: **These next questions are about physical exercise.** *Hand calendar.* **2a.** In the past 2 weeks (outlined on that calendar), beginning Monday, *(date)*, and ending this past Sunday, *(date)*, have you done any (of the following exercises, sports, or physically active hobbies) — `7`	**b.** How many times in the past 2 weeks did you [play/go/do] *(activity in 2a)?*	**c.** On the average, about how many minutes did you actually spend *(activity in 2a)* on each occasion?	**d.** [What usually happened to your heart rate or breathing when you *(activity in 2a)?*] Did you have a small, moderate, or large increase, or no increase at all in your heart rate or breathing?
YES NO (1) Walking for exercise? ₁☐ ₂☐	(1) _____ Times `8–9`	_____ Minutes `10–12`	₁☐ Small ₃☐ Large `13` ₂☐ Moderate ₄☐ None
R2 Refer to age. ₁☐ SP is 75 + *(23)* `14` ₈☐ Other *(2)*			
(2) Jogging or running? ₁☐ ₂☐ `15`	(2) _____ Times `16–17`	_____ Minutes `18–20`	₁☐ Small ₃☐ Large `21` ₂☐ Moderate ₄☐ None
(3) Hiking? ₁☐ ₂☐ `22`	(3) _____ Times `23–24`	_____ Minutes `25–27`	₁☐ Small ₃☐ Large `28` ₂☐ Moderate ₄☐ None
(4) Gardening or yard work? ₁☐ ₂☐ `29`	(4) _____ Times `30–31`	_____ Minutes `32–34`	₁☐ Small ₃☐ Large `35` ₂☐ Moderate ₄☐ None
(5) Aerobics or aerobic dancing? ₁☐ ₂☐ `36`	(5) _____ Times `37–38`	_____ Minutes `39–41`	₁☐ Small ₃☐ Large `42` ₂☐ Moderate ₄☐ None
(6) Other dancing? ₁☐ ₂☐ `43`	(6) _____ Times `44–45`	_____ Minutes `46–48`	₁☐ Small ₃☐ Large `49` ₂☐ Moderate ₄☐ None
(7) Calisthenics or general exercise? ₁☐ ₂☐ `50`	(7) _____ Times `51–52`	_____ Minutes `53–55`	₁☐ Small ₃☐ Large `56` ₂☐ Moderate ₄☐ None
(8) Golf? ₁☐ ₂☐ `57`	(8) _____ Times `58–59`	_____ Minutes `60–62`	₁☐ Small ₃☐ Large `63` ₂☐ Moderate ₄☐ None
(9) Tennis? ₁☐ ₂☐ `64`	(9) _____ Times `65–66`	_____ Minutes `67–69`	₁☐ Small ₃☐ Large `70` ₂☐ Moderate ₄☐ None
(10) Bowling? ₁☐ ₂☐ `71`	(10) _____ Times `72–73`	_____ Minutes `74–76`	₁☐ Small ₃☐ Large `77` ₂☐ Moderate ₄☐ None
(11) Biking? ₁☐ ₂☐ `78`	(11) _____ Times `79–80`	_____ Minutes `81–83`	₁☐ Small ₃☐ Large `84` ₂☐ Moderate ₄☐ None
(12) Swimming or water exercises? ₁☐ ₂☐ `85`	(12) _____ Times `86–87`	_____ Minutes `88–90`	₁☐ Small ₃☐ Large `91` ₂☐ Moderate ₄☐ None
(13) Yoga? ₁☐ ₂☐ `92`	(13) _____ Times `93–94`	_____ Minutes `95–97`	₁☐ Small ₃☐ Large `98` ₂☐ Moderate ₄☐ None
R3 Refer to age. ₁☐ SP is 65 – 74 *(23)* `RT77` ₈☐ Other *(14)* `3–4` `5`			
(14) Weight lifting or training? ₁☐ ₂☐ `6`	(14) _____ Times `7–8`	_____ Minutes `9–11`	₁☐ Small ₃☐ Large `12` ₂☐ Moderate ₄☐ None
(15) Basketball? ₁☐ ₂☐ `13`	(15) _____ Times `14–15`	_____ Minutes `16–18`	₁☐ Small ₃☐ Large `19` ₂☐ Moderate ₄☐ None
(16) Baseball or softball? ₁☐ ₂☐ `20`	(16) _____ Times `21–22`	_____ Minutes `23–25`	₁☐ Small ₃☐ Large `26` ₂☐ Moderate ₄☐ None
(17) Football? ₁☐ ₂☐ `27`	(17) _____ Times `28–29`	_____ Minutes `30–32`	₁☐ Small ₃☐ Large `33` ₂☐ Moderate ₄☐ None
(18) Soccer? ₁☐ ₂☐ `34`	(18) _____ Times `35–36`	_____ Minutes `37–39`	₁☐ Small ₃☐ Large `40` ₂☐ Moderate ₄☐ None
(19) Volleyball? ₁☐ ₂☐ `41`	(19) _____ Times `42–43`	_____ Minutes `44–46`	₁☐ Small ₃☐ Large `47` ₂☐ Moderate ₄☐ None
(20) Handball, racquetball, or squash? ₁☐ ₂☐ `48`	(20) _____ Times `49–50`	_____ Minutes `51–53`	₁☐ Small ₃☐ Large `54` ₂☐ Moderate ₄☐ None
(21) Skating? ₁☐ ₂☐ `55`	(21) _____ Times `56–57`	_____ Minutes `58–60`	₁☐ Small ₃☐ Large `61` ₂☐ Moderate ₄☐ None
(22) Skiing? ₁☐ ₂☐ `62`	(22) _____ Times `63–64`	_____ Minutes `65–67`	₁☐ Small ₃☐ Large `68` ₂☐ Moderate ₄☐ None
(23) Have you done any (other) exercises, sports, or physically active hobbies in the past 2 weeks (that I haven't mentioned)? Anything else? ☐ Yes — What were they? ☐ No `69–70` _____	(23) _____ Times `71–72`	_____ Minutes `73–75`	₁☐ Small ₃☐ Large `76` ₂☐ Moderate ₄☐ None
_____ `77–78`	(23) _____ Times `79–80`	_____ Minutes `81–83`	₁☐ Small ₃☐ Large `84` ₂☐ Moderate ₄☐ None

FORM HIS-1(SB) (1985) (4-25-85).

3. Do you exercise or play sports regularly?		1 ☐ Yes 2 ☐ No *(5)*	**85**

4. For how long have you exercised or played sports regularly? _____ Number	1 ☐ Days 2 ☐ Weeks 3 ☐ Months 4 ☐ Years	**86–88**

5a. Would you say that you are physically more active, less active, or about as active as other persons your age?	1 ☐ More active 2 ☐ Less active 3 ☐ About as active *(R4)* 8 ☐ Other *(Specify)* _____ *(R4)*	**89**
b. Is that [a lot more or a little more/a lot less or a little less] active?	1 ☐ A lot more 2 ☐ A little more 3 ☐ A lot less 4 ☐ A little less	**90**

R4	Refer to "Wa/Wb" boxes in C1 on HIS-1.	1 ☐ Wa or Wb box marked *(6a)* 8 ☐ Other *(6c)*	**91**

6a. How much hard physical work is required on your job? Would you say a great deal, a moderate amount, a little, or none?	1 ☐ Great deal 2 ☐ Moderate amount 3 ☐ A little ⎫ *(7)* 4 ☐ None ⎭	**92**
b. About how many hours per day do you perform hard physical work on your job?	_____ Hours *(7)*	**93–94**
c. How much hard physical work is required in your main daily activity? Would you say a great deal, a moderate amount, a little, or none?	1 ☐ Great deal 2 ☐ Moderate amount 3 ☐ A little ⎫ *(7)* 4 ☐ None ⎭	**95**
d. About how many hours per day do you perform hard physical work in your main daily activity?	_____ Hours	**96–97**

Read to respondent: These next questions are about strengthening the heart and lungs through exercise. 7a. How many days a week do you think a person should exercise to strengthen the heart and lungs?	_____ Days 8 ☐ Other *(Specify)* _____ 9 ☐ DK	**98**
b. For how many minutes do you think a person should exercise on EACH occasion so that the heart and lungs are strengthened?	_____ Minutes 999 ☐ DK	**99–101**

Hand card R1
c. (During those *(number in 7b)* minutes), How fast do you think a person's heart rate and breathing should be to strengthen the heart and lungs?
Do you think that the heart and breathing rate should be —
  no faster than usual,
  a little faster than usual,
  a lot faster but talking is possible,
  so fast that talking is not possible?
	1 ☐ No faster than usual
	2 ☐ A little faster than usual
	3 ☐ A lot faster but talking is possible
	4 ☐ So fast that talking is not possible
	9 ☐ DK
		102

FOOTNOTES

Section S. SMOKING

S1	Refer to "Smoking asked" box on HIS-1.	1 ☐ "Smoking asked" box marked (4) 8 ☐ Other (1)	5

Read to respondent:

These next questions are about smoking cigarettes.

1. Have you smoked at least 100 cigarettes in your entire life?   1 ☐ Yes   2 ☐ No (4)   `6`

2a. Do you smoke cigarettes now?   1 ☐ Yes (3)   2 ☐ No   `7`

b. About how long has it been since you last smoked cigarettes fairly regularly?

⎧ 1 ☐ Days ⎫
⎪ 2 ☐ Weeks ⎪ (4)
⎨ 3 ☐ Months ⎬
⎩ 4 ☐ Years ⎭

_____ Number

998 ☐ Never smoked regularly (4)   `8-10`

3. On the average, about how many cigarettes a day do you now smoke?

00 ☐ Less than 1 per day

___ ___ Number   `11-12`

4. [These next questions are about smoking cigarettes.] (Hand Card S) Tell me if you think CIGARETTE SMOKING definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting the following problems. First —

	DEFINITELY INCREASES	PROBABLY INCREASES	PROBABLY DOES NOT INCREASE	DEFINITELY DOES NOT INCREASE	DK/NO OPINION	
a. Emphysema? (Give me a number from the card.)	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	13
b. Bladder cancer?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	14
c. Cancer of the larynx (lar'inks) or voice box?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	15
d. Cataracts?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	16
e. Cancer of the esophagus?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	17
f. Chronic bronchitis?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	18
g. Gallstones?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	19
h. Lung cancer?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	20

S2	Refer to age.	1 ☐ SP is under 45 (4i) 2 ☐ SP is 45 + (S3)	21

Read to respondent:
Does cigarette smoking during pregnancy definitely increase, probably increase, probably not or definitely not increase the chances of —

	DEFINITELY INCREASES	PROBABLY INCREASES	PROBABLY DOES NOT INCREASE	DEFINITELY DOES NOT INCREASE	DK/NO OPINION	
i. Miscarriage?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	22
j. Stillbirth?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	23
k. Premature birth?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	24
l. Low birth weight of the newborn?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	25

5a. If a woman takes birth control pills, is she more likely to have a stroke if she smokes than if she does not smoke?

1 ☐ Yes
2 ☐ No ⎫ (S3)
9 ☐ DK ⎭   `26`

b. Is she much more likely or somewhat more likely to have a stroke?

1 ☐ Much more
2 ☐ Somewhat more   `27`

S3	Refer to 1.	1 ☐ "Yes" in 1 (6) 8 ☐ Other (Section T)	28

6. Did a doctor EVER advise you to quit or cut down on smoking?

1 ☐ Yes
2 ☐ No
9 ☐ DK   `29`

Section T. ALCOHOL USE

Read to respondent:

These next questions are about drinking alcoholic beverages. Included are liquor such as whiskey, rum, gin, or vodka, and beer, and wine, and any other type of alcoholic beverage.

1a. In YOUR ENTIRE LIFE have you had at least 12 drinks of ANY kind of alcoholic beverage?

1 ☐ Yes
2 ☐ No *(1d)*

b. In ANY ONE YEAR have you had at least 12 drinks of ANY kind of alcoholic beverage?

1 ☐ Yes
2 ☐ No *(1d)*

`31`

c. Have you had at least one drink of beer, wine, or liquor during the PAST YEAR?

1 ☐ Yes *(2)*
2 ☐ No

`32`

d. What is your MAIN reason for not drinking (in the past year)?

00 ☐ No need/not necessary
01 ☐ Don't care for/dislike it
02 ☐ Medical/health reasons
03 ☐ Religious/moral reasons
04 ☐ Brought up not to drink
05 ☐ Costs too much
06 ☐ Family member an alcoholic or problem drinker
07 ☐ Infrequent drinker
08 ☐ Other *(Specify)* _____

(9)

`33—34`

---

2. In the past 2 WEEKS (outlined on that calendar), beginning Monday *(date)* and ending this past Sunday *(date)*, on how many days did you drink any alcoholic beverages, such as beer, wine, or liquor?

Use list to probe, if necessary.

`35—36`

01 ☐ 14 (Every day)	12 ☐ 8—9	23 ☐ 3	
02 ☐ 13—14	13 ☐ 8	24 ☐ 2—3	
03 ☐ 13	14 ☐ 7—8	25 ☐ 2	
04 ☐ 12—13	15 ☐ 7	26 ☐ 1—2	
05 ☐ 12	16 ☐ 6—7	27 ☐ 1	
06 ☐ 11—12	17 ☐ 6	00 ☐ None/Never *(4)*	
07 ☐ 11	18 ☐ 5—6	99 ☐ DK	
08 ☐ 10—11	19 ☐ 5		
09 ☐ 10	20 ☐ 4—5		
10 ☐ 9—10	21 ☐ 4		
11 ☐ 9	22 ☐ 3—4		

---

3. On the *(number in 2)* days that you drank alcoholic beverages, how many drinks did you have per day, on the average?

Use list to probe, if necessary.

`37—38`

01 ☐ Twelve or more	08 ☐ Three or four
02 ☐ Seven to eleven	09 ☐ Three
03 ☐ Six	10 ☐ Two or three
04 ☐ Five or six	11 ☐ Two
05 ☐ Five	12 ☐ One or two
06 ☐ Four or five	13 ☐ One
07 ☐ Four	99 ☐ DK

4a. Was the amount of your drinking during that 2-WEEK period typical of your drinking during the past 12 months?

1 ☐ Yes *(5)*
2 ☐ No

`39`

b. Was the amount of your drinking during that 2-WEEK period more or less than your drinking during the past 12 months?

1 ☐ More
2 ☐ Less

`40`

---

5. During the past 12 months, in how many MONTHS did you have at least one drink of ANY alcoholic beverage?

_____ Months

`41—42`

---

6. During [that month/those months], on how many DAYS did you have 9 or more drinks of ANY alcoholic beverage?

_____ Days
000 ☐ None or never

`43—45`

---

7. During [that month/those months], on how many DAYS did you have 5 or more drinks of ANY alcoholic beverage? (Include the *(number in 6)* days you had 9 or more drinks.)

_____ Days
000 ☐ None or never

`46—48`

---

8. During the past year, how many times did you drive when you had perhaps too much to drink?

_____ Times
000 ☐ None
998 ☐ Don't drive

`49—51`

FOOTNOTES

Section T. ALCOHOL USE — Continued

9. *(Hand Card T)* Tell me if you think HEAVY ALCOHOL DRINK-ING definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting the following problems. First —

	DEFINITELY INCREASES	PROBABLY INCREASES	PROBABLY DOES NOT INCREASE	DEFINITELY DOES NOT INCREASE	DK/NO OPINION	
a. Throat cancer? (Give me a number from the card.)	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	52
b. Cirrhosis of the liver?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	53
c. Bladder cancer?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	54
d. Cancer of the mouth?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	55
e. Arthritis?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	56
f. Blood clots?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	57

		58
T1	Refer to age.	1 ☐ SP is under 45 *(9g)* 2 ☐ SP is 45+ *(Section U)*

Read to respondent :

Does heavy drinking during pregnancy definitely increase, probably increase, probably not or definitely not increase the chances of —

	DEFINITELY INCREASES	PROBABLY INCREASES	PROBABLY DOES NOT INCREASE	DEFINITELY DOES NOT INCREASE	DK/NO OPINION	
g. Miscarriage?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	59
h. Mental retardation of the newborn?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	60
i. Low birth weight of the newborn?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	61
j. Birth defects?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	62

		63
10a. Have you ever heard of FETAL ALCOHOL SYNDROME?	1 ☐ Yes 2 ☐ No *(Section U)*	

		64
b. In your opinion, which ONE of the following best describes Fetal Alcohol Syndrome — a baby is born drunk, or born addicted to alcohol, or born with certain birth defects?	1 ☐ Drunk 2 ☐ Addicted to alcohol 3 ☐ With certain birth defects	

FOOTNOTES

FORM HIS-1(SB) (1985) (10-15-84)

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Section U. DENTAL CARE

1. This next question is about preventing **TOOTH DECAY.** *Hand Card U.* After I read each of the following, tell me if you think it is definitely important, probably important, probably not, or definitely not important in preventing **TOOTH DECAY.** First —	DEFINITELY IMPORTANT	PROBABLY IMPORTANT	PROBABLY NOT IMPORTANT	DEFINITELY NOT IMPORTANT	DK/NO OPINION	
a. Seeing a dentist regularly? (Give me a number from the card.)	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	65
b. Drinking water with fluoride from early childhood?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	66
c. Regular brushing and flossing of the teeth?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	67
d. Using fluoride toothpaste or fluoride mouth rinse?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	68
e. Avoiding between-meal sweets?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	69
2. Now I'm going to ask about preventing **GUM DISEASE.** In your opinion, how important or not important is each of the following in preventing **GUM DISEASE?** First —						
a. Seeing a dentist regularly?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	70
b. Drinking water with fluoride from early childhood?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	71
c. Regular brushing and flossing of the teeth?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	72
d. Using fluoride toothpaste or fluoride mouth rinse?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	73
e. Avoiding between-meal sweets?	1 ☐	2 ☐	3 ☐	4 ☐	9 ☐	74

3. In your opinion, which of the following is the MAIN cause of tooth loss in CHILDREN — tooth decay, gum disease, or injury to the teeth?	1 ☐ Tooth decay 2 ☐ Gum disease 3 ☐ Injury to the teeth	75
4. In your opinion, which of the following is the MAIN cause of tooth loss in ADULTS — tooth decay, gum disease, or injury to the teeth?	1 ☐ Tooth decay 2 ☐ Gum disease 3 ☐ Injury to the teeth	76
5a. Have you ever heard of DENTAL SEALANTS?	1 ☐ Yes 2 ☐ No *(Section V)*	77
b. Which of the following BEST describes the purpose of dental sealants — to prevent gum disease, to prevent tooth decay, or to hold dentures in place?	1 ☐ Prevent gum disease 2 ☐ Prevent tooth decay 3 ☐ Hold dentures in place	78

FOOTNOTES

Section V. OCCUPATIONAL SAFETY AND HEALTH

V1	Refer to "Wa/Wb" boxes in C1 on HIS-1.	1 ☐ Wa or Wb box marked (1) 8 ☐ Other (Cover page)

6

Read to respondent:

These questions are about your present job.

1a. In your present job, are you exposed to any SUBSTANCES that could endanger your health, such as chemicals, dusts, fumes, or gases?

1 ☐ Yes
2 ☐ No } (2)
9 ☐ DK

b. What substances are you exposed to that could endanger your health?	**SUBSTANCE 1**	**SUBSTANCE 2**
Enter each substance in a separate column. **Any others?**	7-8	17-18
Ask 1c for each response in 1b.	9-16	19-26
c. How can *(response in 1b)* **endanger your health?** *Record verbatim response(s).* **Any other way?**		
	99 ☐ DK	99 ☐ DK

RT80

2a. In your present job, are you exposed to any WORK CONDITIONS that could endanger your health, such as loud noise, extreme heat or cold, physical or mental stress, or radiation?

3-4

5

1 ☐ Yes
2 ☐ No } (3)
9 ☐ DK

b. What work conditions are you exposed to that could endanger your health?	**WORK CONDITION 1**	**WORK CONDITION 2**
Enter each work condition in a separate column. **Any others?**	6-7	16-17
Ask 2c for each response in 2b.	8-15	18-25
c. How can *(response in 2b)* **endanger your health?** *Record verbatim response(s).* **Any other way?**		
	99 ☐ DK	99 ☐ DK

3a. In your present job are you exposed to any risks of accidents or injuries?

66

1 ☐ Yes
2 ☐ No } (Cover Page)
9 ☐ DK

b. What (other) risks of accidents or injuries are you exposed to?
Record verbatim response(s).

67-86

c. Any others?

☐ Yes (Reask 3b and c)
☐ No } (Cover Page)
☐ DK

HEALTH PROMOTION SURVEY ☐☐☐ - ☐☐☐ - ☐☐☐☐   ☐☐

Telephone Number   Hrd Page –
Line No.

First I would like to ask you a few questions about your health.

1. In general, compared to other persons your age would you say your health is ...

- ^{1}◯ Excellent
- ^{2}◯ Very good
- ^{3}◯ Good
- ^{4}◯ Fair
- ^{5}◯ Poor

2. Do you agree or disagree with the following statement? Compared to most people my age I make more of an effort to improve my health.

- ^{6}◯ Agree
- ^{7}◯ Disagree
- ^{8}◯ No opinion

3. Do you think there is anything you personally should do to improve your physical health?

^{1}◯ Yes ^{2}◯ No ——➤ Go to 6

4. What is the most important thing you personally should do?

- ^{3}◯ Exercise more
- ^{4}◯ Improve eating habits
- ^{5}◯ Lose weight
- ^{6}◯ Stop smoking
- ^{7}◯ Reduce drug use/medications
- ^{8}◯ Cut down on drinking
- ^{9}◯ Other (specify) _____

5. Is there anything stopping you from making this improvement? (Mark all that apply)

- ^{01}◯ No
- ^{02}◯ Problem not serious, no urgency
- ^{03}◯ Lack of time
- ^{04}◯ Lack of self discipline, energy
- ^{05}◯ Too depressed
- ^{06}◯ Don't know how to get started, lack knowledge
- ^{07}◯ Peer pressure
- ^{08}◯ Lack of support from family or friends
- ^{09}◯ Don't want to change current habits
- ^{10}◯ Too difficult
- ^{11}◯ Too costly
- ^{12}◯ Other (specify) _____

6. Do you think there is anything you personally should do to improve the way you cope with stress?

^{1}◯ Yes ^{2}◯ No ——➤ Go to 9

7. What is the most important thing you think you should do? (Mark only most important)

- ^{1}◯ Exercise more
- ^{2}◯ Learn to relax, worry less
- ^{3}◯ Get out more often, make new friends, socialize
- ^{4}◯ Change jobs, move, leave home, change situation
- ^{5}◯ Reduce drug use/medications
- ^{6}◯ Reduce alcohol use
- ^{7}◯ Spend more time with family and close friends
- ^{8}◯ Other (specify) _____

8. Is there anything stopping you from making this improvement?

- ^{01}◯ No
- ^{02}◯ Problem not serious, no urgency
- ^{03}◯ Lack of time
- ^{04}◯ Lack of self discipline, energy
- ^{05}◯ Too depressed
- ^{06}◯ Don't know how to get started, lack knowledge
- ^{07}◯ Peer pressure
- ^{08}◯ Lack of support from family or friends
- ^{09}◯ Don't want to change current habits
- ^{10}◯ Too difficult
- ^{11}◯ Too costly
- ^{12}◯ Other (specify) _____

9. In general would you say you're ...

- ^{1}◯ Very happy
- ^{2}◯ Pretty happy
- ^{3}◯ Not too happy

10. Would you describe your life as ...

- ^{4}◯ Very stressful
- ^{5}◯ Fairly stressful
- ^{6}◯ Not very stressful
- ^{7}◯ Not at all stressful

11. Are there health topics about which you feel you need more information?

⁸◯ Yes   ⁹◯ No ——➤ Go to 13

12. On which of the following health topics do you feel you need more information?

	Yes	No
Nutrition	01◯	02◯
High blood pressure	03◯	04◯
Mental health	05◯	06◯
Smoking	07◯	08◯
Alcohol	09◯	10◯
Marijuana	11◯	12◯
Safety and accident prevention	13◯	14◯

The next few questions are about your current physical condition.

13. How tall are you without shoes?

[1][ ][ ]   or   [2][ ][ ][ ]
feet / inches   centimetres

14. How much do you weigh?

[3][ ][ ][ ]   or   [4][ ][ ][ ]
pounds   kilograms

15. How much would you like to weigh?

[5][ ][ ][ ]   or   [6][ ][ ][ ]
pounds   kilograms

⁷◯ Don't know

16. Are you limited in the kind or amount of activity you can do because of a long term physical condition or health problem? By long term I mean a condition that has lasted or is expected to last more than 6 months.

¹◯ Yes   ²◯ No ——➤ Go to 18

17. Are your activities limited ...

	Yes	No
At home	3◯	4◯
At work or school	5◯	6◯
In other activities such as leisure time pursuits or transportation to or from work	7◯	8◯

18. When did you last have your blood pressure checked?

¹◯ Last 6 months
²◯ 6-12 months
³◯ One to two years
⁴◯ More than 2 years
⁵◯ Never ⎫
⁶◯ Don't know ⎬ Go to 22

19. As far as you know is your blood pressure high?

⁷◯ Yes
⁸◯ No ⎫
⁹◯ Don't know ⎬ Go to 22

20. Are you currently doing anything to control your blood pressure?

¹◯ Yes   ²◯ No ——➤ Go to 22

21. What are you doing? (Mark all that apply)

01◯ Medication
02◯ Quit smoking
03◯ Exercise
04◯ Weight loss
05◯ Sodium restriction
06◯ Other diet change
07◯ Relaxation
08◯ Reduce alcohol use
09◯ Other (specify) ——————
10◯ Don't know

22. Do you agree or disagree with the following statement? You only need to have your blood pressure checked if you think you have a problem.

¹◯ Agree
²◯ Disagree
³◯ No opinion

The next few questions are about exercise.

23. Exercise includes vigorous activities such as calisthenics, jogging, racquet sports, team sports, dance classes, or brisk walking. Do you feel you get as much exercise as you need or less than you need?

⁴◯ As much as needed
⁵◯ Less than needed
⁶◯ Don't know

24. How many times per week do you exercise for at least 15 minutes?

¹◯ Daily
²◯ 5-6 times a week
³◯ 3-4 times a week
⁴◯ 1-2 times a week
⁵◯ Less than once a week
⁶◯ Never
⁷◯ Don't know

25. Would you say you are physically more active, about the same or less active than other persons your age?

¹◯ More active
²◯ About the same
³◯ Less active
⁴◯ Don't know

8-5400-140.1

26. Do you think that getting more exercise would improve your health...

   ^{5}O A great deal

   ^{6}O A moderate amount

   ^{7}O A little

   ^{8}O Not at all

   ^{9}O Don't know

The next few questions are about smoking.

27. At the present time do you smoke cigarettes?

   ^{1}O Yes ^{2}O No ——→ Go to 31

28. Do you smoke cigarettes regularly, that is usually everyday or occasionally, not every day?

   ^{3}O Regularly ^{4}O Occasionally

29. In the past year has anyone asked you to not smoke around them?

   ^{5}O Yes ^{6}O No ——→ Go to 31

30. Where has this happened?   Anywhere else? (Mark all that apply)

   ^{1}O At school

   ^{2}O At work

   ^{3}O In a car

   ^{4}O Restaurant

   ^{5}O In your own home

   ^{6}O In a house other than your own

   ^{7}O Other (specify) _____

31. Now I'd like your opinion on some statements about smoking. Tell me whether you agree or disagree with each of the following?

	Agree	Dis-agree	No opinion
Children are more likely to start smoking if their parents smoke	^{01}O	^{02}O	^{03}O
People are too concerned about the effect on their health of other people smoking	^{04}O	^{05}O	^{06}O
Most non-smokers don't mind when people smoke in their presence	^{07}O	^{08}O	^{09}O
Women should not smoke during pregnancy	^{10}O	^{11}O	^{12}O
Non-smokers should be provided with a smoke-free area where they work	^{13}O	^{14}O	^{15}O
Smokers should ask permission before smoking in the presence of others	^{16}O	^{17}O	^{18}O
Smoking helps you stay slim	^{19}O	^{20}O	^{21}O

32. Do you think that a person who quits after ten years of heavy smoking reduces the risk of getting a disease related to smoking...

   ^{1}O A great deal

   ^{2}O A moderate amount

   ^{3}O A little bit

   ^{4}O Not at all

   ^{5}O Don't know

33. Do you ever feel unpleasant effects from the cigarette smoke of others?

   ^{6}O Yes ^{7}O No

34. Have you ever asked someone not to smoke?

   ^{8}O Yes ^{9}O No ——→ Go to 36

35. Where was that? Anywhere else? (Mark all that apply)

   ^{1}O In restaurant

   ^{2}O At work

   ^{3}O At school

   ^{4}O In a car

   ^{5}O Public transportation (bus, airplane)

   ^{6}O In your own home

   ^{7}O In a house other than your own

   ^{8}O Other (specify) _____

Now I would like to ask some questions about alcohol consumption.

36. In the next questions when we use the word drink it means:

   One bottle of beer or glass of draft
   One small glass of wine
   One shot or mixed drink with hard liquor

   Have you ever taken a drink of beer, wine, liquor or other alcoholic beverage?

   ^{1}O Yes ^{2}O No ——→ Go to 44

37. In the past 12 months, have you taken a drink of beer, wine, liquor or other alcoholic beverage?

   ^{3}O Yes ^{4}O No ——→ Go to 44

38. During the past 12 months, how often, on average, did you drink alcoholic beverages? Was it...

   ^{1}O Every day

   ^{2}O 4-6 times a week

   ^{3}O 2-3 times a week

   ^{4}O Once a week

   ^{5}O Once or twice a month

   ^{6}O Less often than once a month

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66

39. (a) **Thinking back over the past 7 days, on how many of these days did you have any alcoholic drinks?**

   ☐   8◯ None ———➤Go to 40

   (b) **On how many of these days did you have 2 or more drinks?**

   ☐   8◯ None ———➤Go to 40

   (c) **On how many of these days did you have 4 or more drinks?**

   ☐   8◯ None ———➤Go to 40

   (d) **On how many of these days did you have 8 or more drinks?**

   ☐   8◯ None ———➤Go to 40

   (e) **On how many of these days did you have 12 or more drinks?**

   ☐   8◯ None

40. **Would you say that this is more, less or about the same amount that you usually consume during a week?**

   1◯ More

   2◯ Less

   3◯ Same

41. **During the past month how many times have you driven within two hours after drinking any amount of alcohol?**

   ☐

   88◯ Don't drive ———➤Go to 44

   99◯ Don't know

42. **About how many drinks can <u>you</u> have, over a 3 hour period, before <u>you</u> would worry about your ability to drive?**

   ☐

   99◯ Don't know

43. **There is a legal limit to the amount of alcohol <u>you</u> can have in your blood when driving. How many drinks do you think <u>you</u> can have over a period of three hours before you are over the legal limit?**

   ☐

   99◯ Don't know

44. **In the past 12 months, have you been with a friend or relative whom you thought had too much to drink to drive safely?**

   5◯ Yes

   6◯ No   ⎫
   7◯ Don't know ⎬ Go to 47
            ⎭

45. **On the most recent occasion did you attempt to prevent this person from driving?**

   8◯ Yes   9◯. No ———➤ Go to 47

46. **What did you do?** (Mark all that apply)

   1◯ Drove them home yourself

   2◯ Asked someone to drive them home

   3◯ Asked them to take a taxi

   4◯ Hid their car keys

   5◯ Served coffee

   6◯ Kept the person at your home

   7◯ Other (specify) _____

47. **How many drinks do you think a person can have per week, without endangering his/her health over the long term?**

   ☐

   99◯ Don't know

48. **Now I'd like your opinion on some statements about drinking. Please tell me, whether you agree or disagree?**

	Agree	Dis-agree	No opinion
Moderate drinking can be good for your health	01◯	02◯	03◯
On social occasions I often feel obligated to have a drink, even when I would rather not	04◯	05◯	06◯
Most drinkers do not suffer health problems as a result of their drinking	07◯	08◯	09◯
Most people don't mind if you get intoxicated once in a while	10◯	11◯	12◯
I'd rather pay for a taxi than see a friend drive after drinking	13◯	14◯	15◯

Now I would like to ask about your use of drugs.

49. **In the past 12 months have you used:**

Sleeping pills?	01◯	Yes
	02◯	No
Pep pills, stimulants?	03◯	Yes
	04◯	No
Tranquilizers such as valium?	05◯	Yes
	06◯	No
Cocaine?	07◯	Yes
	08◯	No
Marijuana or hashish?	09◯	Yes
	10◯	No

50. **Do you think that occasional use of marijuana will affect a persons' physical or mental health?**

   4◯ Yes

   5◯ No   ⎫
   6◯ Don't know ⎬ Go to 52
            ⎭

51. What effects do you think it would have? (Mark all that apply)

- 01◯ Relaxation or other positive effects
- 02◯ Addiction/leads to harder drugs
- 03◯ Memory loss, brain damage
- 04◯ Other mental or behavioral effects
- 05◯ Lung damage
- 06◯ Genetic problems/sterility
- 07◯ Other physical health problems
- 08◯ Increase/risk of accidents or injury
- 09◯ Other (specify) _____
- 10◯ Don't know

The next few questions are about safety.

52. On average, about how many miles or kilometres per week do you travel in a private vehicle...

As a driver?

| 1 | | | | | or | 2 | | | | |

    miles   kilometres

- 3◯ Don't know

53. On average, about how many miles or kilometres per week do you travel in a private vehicle...

As a passenger?

| 4 | | | | | or | 5 | | | | . |

    miles   kilometres

- 6◯ Don't know

54. How often do you use seatbelts when you ride in a car? (Read responses)

- 1◯ Always
- 2◯ Most of the time
- 3◯ Sometimes
- 4◯ Rarely or never

55. When you are driving a car do you insist that the children with you have their seatbelt fastened or are in carseats? (Read responses)

- 1◯ Always
- 2◯ Most of the time
- 3◯ Sometimes
- 4◯ Rarely or never
- 5◯ Don't drive
- 6◯ Don't drive with children in car

56. In the past 3 years have you taken any training to administer first aid?

- 7◯ Yes   8◯ No

57. Can you administer cardio-pulmonary resuscitation, sometimes called CPR?

- 1◯ Yes   2◯ No

58. Would you agree or disagree with the following statement? It is worth learning CPR even though few people ever have to use it.

- 3◯ Agree
- 4◯ Disagree
- 5◯ No opinion

59. Do you have the following in your home?

	Yes	No
A first aid kit	1◯	2◯
A smoke detector	3◯	4◯
A fire extinguisher	5◯	6◯

---

60. Interviewer check item:

Respondent is: Female   7◯ ——→Go to 61

                  Male   8◯ ——→Go to 66

The next questions are about health practices.

61. In the past 12 months have you had your breasts examined by a doctor or nurse?

- 1◯ Yes   2◯ No

62. Have you ever been shown how to examine your breasts?

- 3◯ Yes   4◯ No

63. How often do you examine your own breasts? Would you say...

- 5◯ At least once a month
- 6◯ Once every 2-3 months
- 7◯ Less often
- 8◯ Never

64. How often do you think a woman should examine her own breasts?

- 1◯ At least once a month
- 2◯ Once every 2-3 months
- 3◯ Less often
- 4◯ Never
- 5◯ Don't know

65. When was the last time you had a PAP smear test for cancer?

- 1◯ Within the past year
- 2◯ Last 2-3 years
- 3◯ More than 3 years
- 4◯ Never
- 5◯ Don't know

The next few questions are about social relationships.

66. About how many people, including relatives, do you consider to be your friends, that is, people you see socially on a regular basis?

[box]

67. Of the people you see socially how many smoke cigarettes? (Read responses)

^{1}O None

^{2}O A few

^{3}O About half

^{4}O Most or all

^{5}O Don't know

68. How many would you say drink too much? (Read responses)

^{1}O None

^{2}O A few

^{3}O About half

^{4}O Most or all

^{5}O Don't know

69. How many of your friends use marijuana regularly? (Read responses)

^{1}O None

^{2}O A few

^{3}O About half

^{4}O Most or all

^{5}O Don't know

70. How many of your friends exercise regularly? (Read responses)

^{1}O None

^{2}O A few

^{3}O About half

^{4}O Most or all

^{5}O Don't know

71. How many do you consider to be your close friends, that is, people you could talk to if you needed help or had a problem? (Read responses)

^{1}O None

^{2}O A few

^{3}O About half

^{4}O Most or all

^{5}O Don't know

72. What is your current marital status?

^{1}O Married (including common-law)

^{2}O Single/never married

^{3}O Separated

^{4}O Divorced   } Go to 74

^{5}O Widowed

73. Does your spouse do any of the following?

	Yes	No
Exercise regularly	^{01}O	^{02}O
Smoke cigarettes	^{03}O	^{04}O
Drink too much	^{05}O	^{06}O
Overeat	^{07}O	^{08}O
Use tranquilizers such as valium	^{09}O	^{10}O
Smoke marijuana	^{11}O	^{12}O

The next questions are about nutrition.

74. In the last week on how many days did you have the following for breakfast?

Nothing or just coffee or tea [box]

Eggs, bacon, ham or other meat [box]

Breads, pastries, pancakes or cereals [box]

Fruit or juice [box]

Cheese, milk or other dairy products [box]

75. Are there any foods which you think you should limit or avoid, for the sake of your health?

^{1}O Yes ^{2}O No ——→ Go to 77

76. Of the following types of food, which one do you feel is the most important to limit or avoid for the sake of your health? Food that is . . .

^{3}O High in cholesterol

^{4}O High in fat

^{5}O High in sugar

^{6}O High in salt

^{7}O Don't know

77. Are there any foods which you think you should eat more often for the sake of your health?

^{8}O Yes ^{9}O No ——→ Go to 79

78. Of the following types of food, which one do you feel is the most important to eat more often for the sake of your health? Foods such as . . .

^{1}O Fruits and vegetables

^{2}O Whole grain cereals

^{3}O Milk and milk products

^{4}O Meat/fish/poultry

^{5}O Don't know

79. I will now read a list of health topics. For each one I'd like your opinion about how important you feel it is for the government to deal with each topic. Tell me on a scale from 1 to 10; with 1 being not at all important and 10 being extremely important.

	Not at all important								Extremely important		Don't know
	1	2	3	4	5	6	7	8	9	10	
Drug use	01○	02○	03○	04○	05○	06○	07○	08○	09○	10○	11○
Smoking	12○	13○	14○	15○	16○	17○	18○	19○	20○	21○	22○
Alcohol problems	23○	24○	25○	26○	27○	28○	29○	30○	31○	32○	33○
High blood pressure	34○	35○	36○	37○	38○	39○	40○	41○	42○	43○	44○
Child health	45○	46○	47○	48○	49○	50○	51○	52○	53○	54○	55○
Eating habits	56○	57○	58○	59○	60○	61○	62○	63○	64○	65○	66○
Mental health	67○	68○	69○	70○	71○	72○	73○	74○	75○	76○	77○
Accident prevention in the home	78○	79○	80○	81○	82○	83○	84○	85○	86○	87○	88○
Accident prevention at work	89○	90○	91○	92○	93○	94○	95○	96○	97○	98○	99○
Accident prevention on the road	100○	101○	102○	103○	104○	105○	106○	107○	108○	109○	110○

80. Do you agree or disagree with the following statements?

	Agree	Dis-agree	No opinion
Following a healthy diet is expensive and time consuming	1○	2○	3○
I'd rather be overweight than have to give up many of the foods I like	4○	5○	6○
Skipping breakfast is an effective way to control or reduce your weight	7○	8○	9○

81. Do you think that you could improve your health by changing your eating habits?

1○ Yes

2○ No

3○ Don't know

Finally a few questions about yourself.

82. What is the highest grade or level of education you have ever completed?

1○ No schooling

2○ Elementary

3○ Some ⎫
4○ Completed ⎭ Secondary

5○ Some ⎫ Community college,
6○ Completed ⎭ technical college, CEGEP, nurse's training

7○ Some ⎫ University
8○ Completed ⎭ or teacher's college

9○ Other education or training

83. What language do you speak at home most often?

1○ English

2○ French

3○ Other

84. What is the postal code for this dwelling?

|_|_|_| |_|_|_| 4○ Don't know

85. How many telephones, counting extensions, are there in your dwelling?

1○ One ———▶ Go to 90

2○ Two or more

86. Do all the telephones have the same number?

3○ No

4○ Yes ———▶ Go to 90

87. How many different numbers are there?

☐☐

88. Are any of these numbers for business use only?

5○ No ———▶ Go to 90

6○ Yes

89. How many are for business use only?

☐☐

90. Which of the following best describes your main activity during the last 12 months? Were you mainly...

1○ Working at a job or ──→ Go to 92
   business

2○ Looking for work ──→ Go to 91

3○ A student
4○ Retired
5○ Keeping house
6○ Other (specify) _____ } Go to 96

91. Did you have a job at any time during the last 12 months?

1○ Yes   2○ No ──→ Go to 96

92. For whom do/did you work?

|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|
|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

93. What kind of business, industry or service is/was that?

|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|
|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

94. What kind of work do/did you do?

|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|
|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

95. How many persons does this company employ? Include persons in all branch locations of the company. Are there...

3○ Over 100

4○ Between 50 and 100

5○ Between 10 and 49

6○ Under 10

7○ Don't know

96. In the last five years have you been unemployed for a year or longer?

1○ Yes   2○ No

97. Interviewer check item:

If code 1 in question 90   3○ ──→ Go to 98
Otherwise   4○ ──→ Go to 104

98. Are you aware of any safety or accident prevention programs at your place of work?

5○ Yes   6○ No   7○ Don't know

99. Are you aware of any other programs to improve health, physical fitness or good nutrition?

1○ Yes   2○ No   3○ Don't know

100. In the past year, have you seen or received any information about health topics at your place of work? (e.g. posters, bulletin boards, pamphlets, etc.)

4○ Yes   5○ No ──→ Go to 102

101. Have you found the information helpful?

6○ Yes   7○ No

102. Is smoking restricted in your place of work...

1○ Completely

2○ In certain places

3○ Not at all

4○ Don't know

103. Do you think your place of work is an appropriate place to promote good health habits?

5○ Yes

6○ No

7○ Don't know

104. Do you think schools are an appropriate place to promote good health habits?

1○ Yes

2○ No

3○ Don't know

105. What was your household's total income from all sources before taxes and deductions for 1984?

|_|_|_|_|_|_| .00   4○ Don't know

106. What is the single most important thing you have done in the past year to improve your health?

01○ Nothing ──→ Go to 109

02○ Increased exercise

03○ Lost weight

04○ Improved eating habits

05○ Quit smoking/reduced amount smoked

06○ Reduced drug/medication use

07○ Drank less alcohol

08○ Had blood pressure checked

09○ Attempted to control blood pressure

10○ Learned to manage stress

11○ Reduced stress level

12○ Received medical treatment

13○ Other (specify) _____

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107. Aside from improving your health, was there any other reason that you decided to do this?

^{1}O Yes

^{2}O No $\longrightarrow$ Go to 109

108. What was the other reason?

|⌞_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|⌟|

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109. Considering the health topics we've discussed in this questionnaire, is there anything you _intend_ to do, to improve your health in the next year? (Mark all that apply)

01 O Nothing

02 O Increase exercise

03 O Lose weight

04 O Improve eating habits

05 O Quit smoking/reduce amount smoked

06 O Reduce drug/medication use

07 O Drink less alcohol

08 O Have blood pressure checked

09 O Attempt to control blood pressure

10 O Learn to manage stress

11 O Reduce stress level

12 O Receive medical treatment

13 O Other (specify) _____

COMMENTS:

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