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ORIGINAL RESEARCH

Sex Differences in the Age of Diagnosis for Cardiovascular Disease and Its Risk Factors Among US Adults: Trends From 2008 to 2017, the Medical Expenditure Panel Survey

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BACKGROUND: Sex differences in the trends for control of cardiovascular disease (CVD) risk factors have been described, but temporal trends in the age at which CVD and its risk factors are diagnosed and sex-specific differences in these trends are unknown.

METHODS AND RESULTS: We used the Medical Expenditure Panel Survey 2008 to 2017, a nationally representative sample of the US population. Individuals ≥18 years, with a diagnosis of hypercholesterolemia, hypertension, coronary heart disease, or stroke, and who reported the age when these conditions were diagnosed, were included. We included 100 709 participants (50.2% women), representing 91.9 million US adults with above conditions. For coronary heart disease and hypercholesterolemia, mean age at diagnosis was 1.06 and 0.92 years older for women, compared with men, respectively (both $P<0.001$). For stroke, mean age at diagnosis for women was 1.20 years younger than men ($P<0.001$). The mean age at diagnosis of CVD risk factors became younger over time, with steeper declines among women (annual decrease, hypercholesterolemia [women, 0.31 years; men 0.24 years] and hypertension [women, 0.23 years; men, 0.20 years]; $P<0.001$). Coronary heart disease was not statistically significant. For stroke, while age at diagnosis decreased by 0.19 years annually for women ($P=0.03$), it increased by 0.22 years for men ($P=0.02$).

CONCLUSIONS: The trend in decreasing age at diagnosis for CVD and its risk factors in the United States appears to be more pronounced among women. While earlier identification of CVD risk factors may provide opportunity to initiate preventive treatment, younger age at diagnosis of CVD highlights the need for the prevention of CVD earlier in life, and sex-specific interventions may be needed.

Key Words: age of diagnosis ■ cardiovascular disease ■ risk factors ■ sex differences

Cardiovascular disease (CVD) remains the leading cause of morbidity and mortality worldwide and is a major cause of lost productivity in the United States.[1,2] Mortality rates from CVD in the United States had been steadily declining from 1990 through 2010, but there has been stagnation in this progress over the past decade, particularly among young adults and especially women.[3–8] In fact, death rates from heart disease have been on the rise for middle-aged women 45 to 64 years of age.[5] Even though advancing age is the strongest risk factor for CVD, over 60% of individuals living with CVD are

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CLINICAL PERSPECTIVE

What Is New?

- This study suggests that there is a trend of decreasing age at diagnosis of cardiovascular disease (CVD) and CVD risk factors, which appears to be more pronounced among women.
- This could be a reflection of improved screening and detection of CVD and its risk factors at younger ages, or that the US population has been getting sicker at younger ages over time.
- Younger age at the time of diagnosis of clinical CVD has significant public health implications, as this could potentially translate to greater disability; loss of productivity; reduction in the quality of life; and excessive financial burden on patients, their families, and the US healthcare system.

What Are the Clinical Implications?

- The results from this study support more aggressive, high-impact, and proactive strategies for the primary prevention of CVD and its risk factors, particularly among the younger population in the outpatient setting.

Nonstandard Abbreviations and Acronyms

MEPS	Medical Expenditure Panel Surveys

<65 years old.[2] Sex differences in trends of control of CVD risk factors such as hypertension and dyslipidemia have been described, with better control of hypertension noted among women but not with dyslipidemia.[9] However, the temporal trends in the age at which CVD or its risk factors are diagnosed in the United States and whether there are sex-specific differences in these trends is unknown.

Younger age at the time of diagnosis of clinical CVD has significant public health implications, as this could potentially translate to greater loss of productivity; disability years lived; reduction in the quality of life; and excessive financial burden on patients, their families, and the US healthcare system.[7,8] On the other hand, younger age at diagnosis of risk factors for CVD could be an opportunity for earlier and better control of these risk factors to delay the onset of the disease, which will be beneficial in the long run.[8,10] It is also important to know whether there are sex-specific differences in the age of CVD onset, as this may support the implementation of sex-specific interventions for the improvement of cardiovascular outcomes.[11,12]

The current study was designed to describe the overall and sex-specific trends in age at diagnosis of CVD and its risk factors, using data from a nationally representative sample of the US adult civilian population from 2008 to 2017. We hypothesized that the mean age at diagnosis of CVD and its risk factors has decreased over time and that women have experienced steeper declines in the age at diagnosis of CVD, compared with men.

Transparency and Openness Policy

The Medical Expenditure Panel Surveys (MEPS) are publicly available data sets available from the Agency for Healthcare Research and Quality. While we are not directly providing data sets, our study findings should be easily reproducible from the methods described in paper.

METHODS

Data for this study were obtained from the MEPS from January 1, 2008 to December 31, 2017. The MEPS is a cross-sectional data set, cosponsored by the National Center for Health Statistics and the Agency for Healthcare Research and Quality.[13–17] It contains nationally representative samples of the US civilian noninstitutionalized population. The MEPS collects data of individuals and families using an overlapping panel design where new households are included yearly, and detailed information is collected for each person in the household in several rounds of interviews.[13–17] Information collected includes sociodemographic characteristics, health conditions, health resource use and expenditure, health insurance coverage, access to care, and patient satisfaction with health care. Informed consent was obtained by the Agency for Healthcare Research and Quality researchers. More detailed information on the background and data collection process of the MEPS is available in Data S1.

Information from the MEPS are saved in different files. For instance, demographic information is available in the MEPS full-year consolidated file, information on medical diagnoses are saved in the medical conditions file, medication data are available in the prescribed medicines file. We merged the full-year consolidated and the medical conditions file from 2008 to 2017, to obtain all necessary information on the participants included in this study. Of note, starting from 2016, the MEPS upgraded from the *International Classification of Diseases, Ninth Revision* (*ICD-9*), to the *Tenth Revision* (*ICD-10*) codes for medical conditions.

Participants, CVD, and Its Risk Factors and Definitions

For the purpose of these analyses, the term *CVD* is used to include coronary heart disease (CHD) and

stroke. CVD risk factors described here includes hypertension and hypercholesterolemia. The diagnosis of CVD and its risk factors was based on self-report or *ICD* diagnosis. The *ICD* codes used include CHD (*ICD-9*: 410, 413, and 414; *ICD-10*: I20, I21, and I25), stroke (*ICD-9*: 433–437; *ICD-10*: I163–I167), hypertension (*ICD-9*: 401; *ICD-10*: I10), and hypercholesterolemia (*ICD-9*: 278; *ICD-10*: E78). The MEPS questionnaire contains questions asking if participants had ever been diagnosed as having CHD, hypertension, stroke, or high cholesterol, and these questions remained the same over the study period. Individuals with any of the above medical conditions were asked at what age the diagnosis was made, and this information was included in the full-year consolidated file. The age of diagnosis for CHD, stroke, hypertension, and hypercholesterolemia was top-coded at 85 years.[18] Per guidelines from the Department of Health and Human Services, this study did not require approval from an institutional review board since the MEPS contains only a deidentified, publicly available data set.[19]

Other Study Variables

Some of the sociodemographic variables used in this study include current age groups (18–39, 40–64, and ≥65 years), race/ethnicity (non-Hispanic White, Black, Asian, and Hispanic), health insurance (uninsured, Medicaid, private, Medicare), level of education (less than high school, high school/Graduate Educational Development, and some college or higher), and geographic region (Northeast, Midwest, South, and West). Family income was categorized on the basis of the federal poverty level; <125% of the federal poverty level was classified as very low income/poor, 125% to <200% of the federal poverty level as low income, 200% to <400% of the federal poverty level as middle income, ≥400% of the federal poverty level as high income. An individual's comorbidity burden was estimated using the Charlson comorbidity index.[20,21]

Statistical Analysis

MEPS data from 2008 to 2017 were combined to calculate the mean age at diagnosis for CHD, stroke, hypertension, and hypercholesterolemia for men and women. The mean age at diagnosis was calculated for each of the above medical conditions for each year from 2008 to 2017, for the total population, and then for men and women separately. We also combined CHD and stroke to generate a single variable and averaged the age at diagnosis for these 2 conditions for each survey year. The trend in the mean age at diagnosis for CHD, stroke, hypertension, hypercholesterolemia, and a combination of CHD and stroke was calculated from the annual change overall and by sex, using a linear regression model. This same trend analysis was repeated for each medical condition, with further stratification by current age group, race/ethnicity, level of income, type of health insurance, and region. We also used linear regression to estimate the mean difference in the age at diagnosis of women compared with men for CHD, stroke, hypertension, and hypercholesterolemia, adjusted for the covariates mentioned above.

All statistical analyses were conducted using Stata version 14 (StataCorp LLC, College Station, TX) in

Table 1. Sociodemographic Characteristics of Individuals With Cardiovascular Disease or Its Risk Factors by Sex: MEPS 2008 to 2017

	Women	Men	Total
N	50 556	50 153	100 709
Weighted sample	46 161 722	45 793 899	91 955 621
Current age groups in y (weighted %)			
18–39	12.4	15.5	
40–64	49.3	53.3	
≥65	38.3	31.2	
Race/Ethnicity (weighted %)			
Non-Hispanic White	69.7	72.5	
Non-Hispanic Black	14.1	10.8	
Asian	4.2	4.6	
Hispanic	12.0	12.1	
Insurance status (weighted %)			
Uninsured	7.5	8.9	
Private	45.5	54.5	
Medicaid	11.0	8.0	
Medicare	36.0	28.7	
Education (weighted %)			
Less than high school	18.3	16.7	
High school/ General Education Development (GED)	53.5	53.3	
Some college or higher	28.2	30.0	
Level of income (weighted %)			
High income	36.6	46.8	
Middle income	29.2	28.4	
Low income	15.1	11.9	
Poor/very low income	19.1	12.9	
Region (weighted %)			
Northeast	17.9	18.1	
Midwest	21.7	21.5	
South	39.6	38.2	
West	20.8	22.2	

MEPS indicates Medical Expenditure Panel Survey.

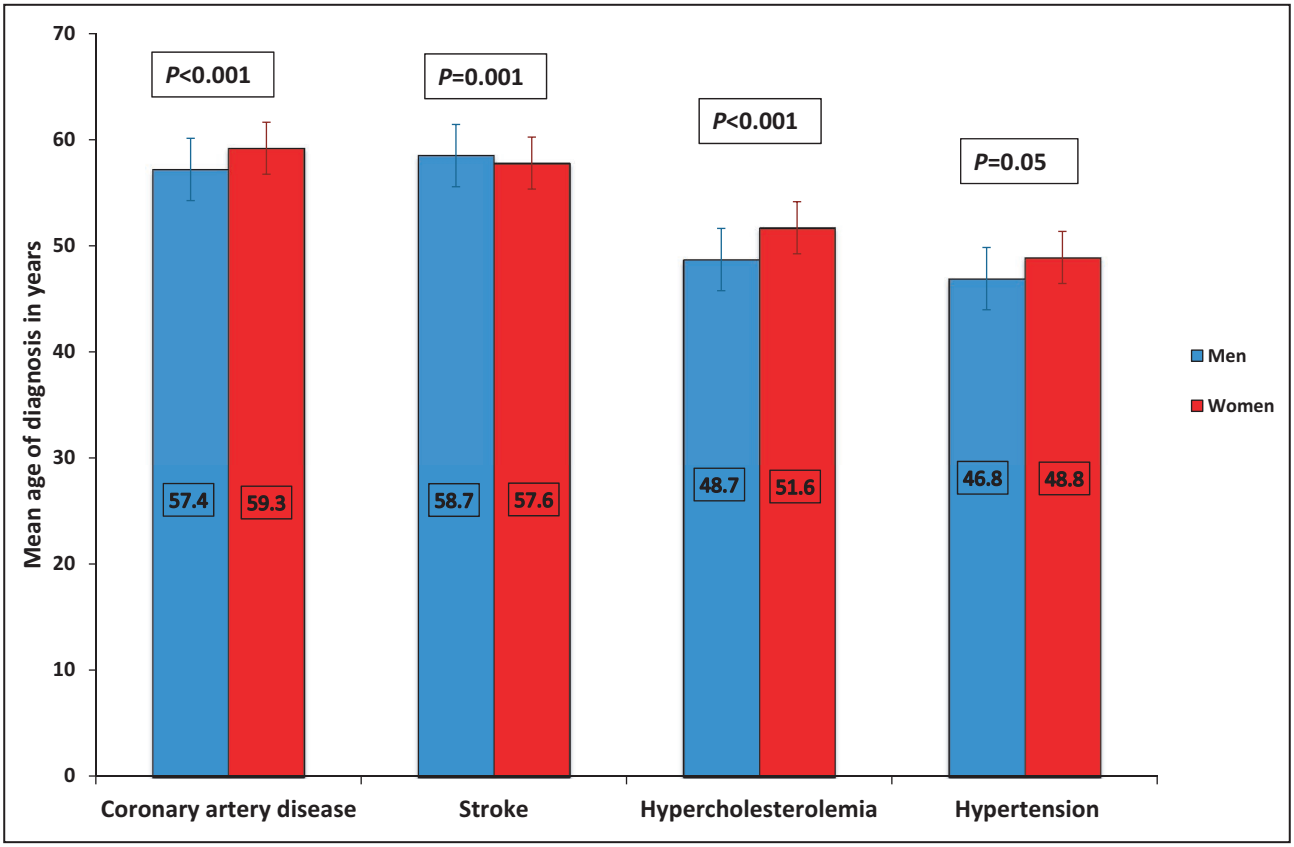

Figure 1. **Mean age at diagnosis of cardiovascular disease/risk factors among US adults, by sex: 2008 to 2017.**

April 2020. We used the *svy* command in Stata to declare the data set used as survey data. All weighted regression analyses were adjusted for current age, race/ethnicity, level of income, educational status, health insurance, and comorbid conditions. *P* values were 2-tailed, and the level of significance was set at <0.05.

RESULTS

From 2008 to 2017, a total of 100 709 participants (50.2% women), representing 91.9 million US civilian adults with CHD, hypertension, hypercholesterolemia, or stroke, who reported an age at diagnosis for these conditions were included. As shown in Table 1, over 40% of both men and women included were between 40 and 64 years of age at the time of MEPS survey. The majority of the patients studied were non-Hispanic White individuals, with 69.7% and 72.5% of the women and men being non-Hispanic White individuals, respectively. About 45% of the women and 54% of the men had private insurance. Additional sociodemographics by sex are as follows: completed at least high school education or its equivalent (53.5% women and 53.3% men), earned high income (36.6% women and 46.8% men), and resided in the southern region of the country (39.6% women and 38.2% men).

Figure 1 shows the mean age at diagnosis for CHD, stroke, hypertension, and hypercholesterolemia for men and women (CHD: men, 57.4 years versus women, 59.3 years; *P*<0.001; stroke: men, 58.7 years versus women 57.6 years; *P*<0.001; hypercholesterolemia: men, 48.7 years versus women, 51.6 years; *P*<0.001;

Table 2. **Adjusted Mean Difference in the Age of Diagnosis (in Years) of Cardiovascular Disease and Its Risk Factors Among US Adults, Stratified by Sex: MEPS 2008 to 2017**

Age of Diagnosis (in y) of CVD/CVD Risk Factors	Men	Women	*P* Value
β (95% CI) in y			
Coronary heart disease	Ref	1.06 (0.48 to 1.63)*	<0.001*
Hypercholesterolemia	Ref	0.92 (0.70 to 1.15)*	<0.001*
Hypertension	Ref	0.28 (–0.01 to 0.57)	0.05
Stroke	Ref	–1.20 (–1.89 to –0.49)*	0.001*

The beta-coefficients and their 95% CIs were obtained from linear regression models. All models compared women with men and were adjusted for current age, race/ethnicity, level of income, health insurance, educational status, and Charlson comorbidity index. MEPS indicates Medical Expenditure Panel Survey.

*Results are statistically significant with *P*<0.05.

hypertension: men, 46.8 years versus women, 48.8 years; *P*=0.05).

Table 2 shows the adjusted mean difference in the age at diagnosis of CVD and its risk factors in women compared with men. For CHD, the mean age at diagnosis was 1.06 years older for women compared with men (*P*<0.001). Regarding hypercholesterolemia, the mean age at diagnosis was 0.92 years older for women compared with men (*P*<0.001). Women were also diagnosed with hypertension at an older age compared with men, but this finding was not statistically significant. For stroke, the mean age at diagnosis for women was 1.20 years younger compared with men (*P*<0.001).

Figures 2 through 6 show the sex-specific trends in the adjusted mean age at diagnosis for CVD and its risk factors from 2008 to 2017. Over this 10-year period, there was an average annual decrease in the age at diagnosis of CHD for men and women, but this was not statistically significant (Figure 2). For stroke, the age at diagnosis decreased by 0.19 years annually for women (*P*=0.03), but increased by 0.22 annually for men (*P*=0.02) (Figure 3). Figure 4 shows a decreasing trend in the mean age at diagnosis for hypercholesterolemia from 2008 to 2017. Overall, there was a decrease of 0.28 years annually in the age at diagnosis for hypercholesterolemia (*P*<0.001), reflecting an average yearly decrease of 0.31 and 0.24 years for women and men, respectively (both *P*<0.001). Similar trends are seen in the age at diagnosis of hypertension from 2008 to 2017; there was an annual decrease of 0.21, 0.23, and 0.20 years in the age at diagnosis of hypertension for overall, and for women and men, respectively (all *P*<0.001) (Figure 5). There was an annual decrease in the age at diagnosis of CHD and stroke combined for men, women, and the total population, but this was not statistically significant (Figure 6).

A subanalysis showing the sex-specific trends in the mean age at diagnosis of CVD and its risk factors from 2008 to 2017, stratified by various sociodemographic factors, is shown in Tables S1 through S19: Tables S1 through S4 are stratified by race/ethnicity, Tables S5 through S7 are stratified by age groups, Tables S8 through S11 are stratified by income, Tables S12 through S15 are stratified by insurance, and Tables S16 through S19 are stratified by region.

Among non-Hispanic White individuals, the mean age at diagnosis of hypercholesterolemia decreased

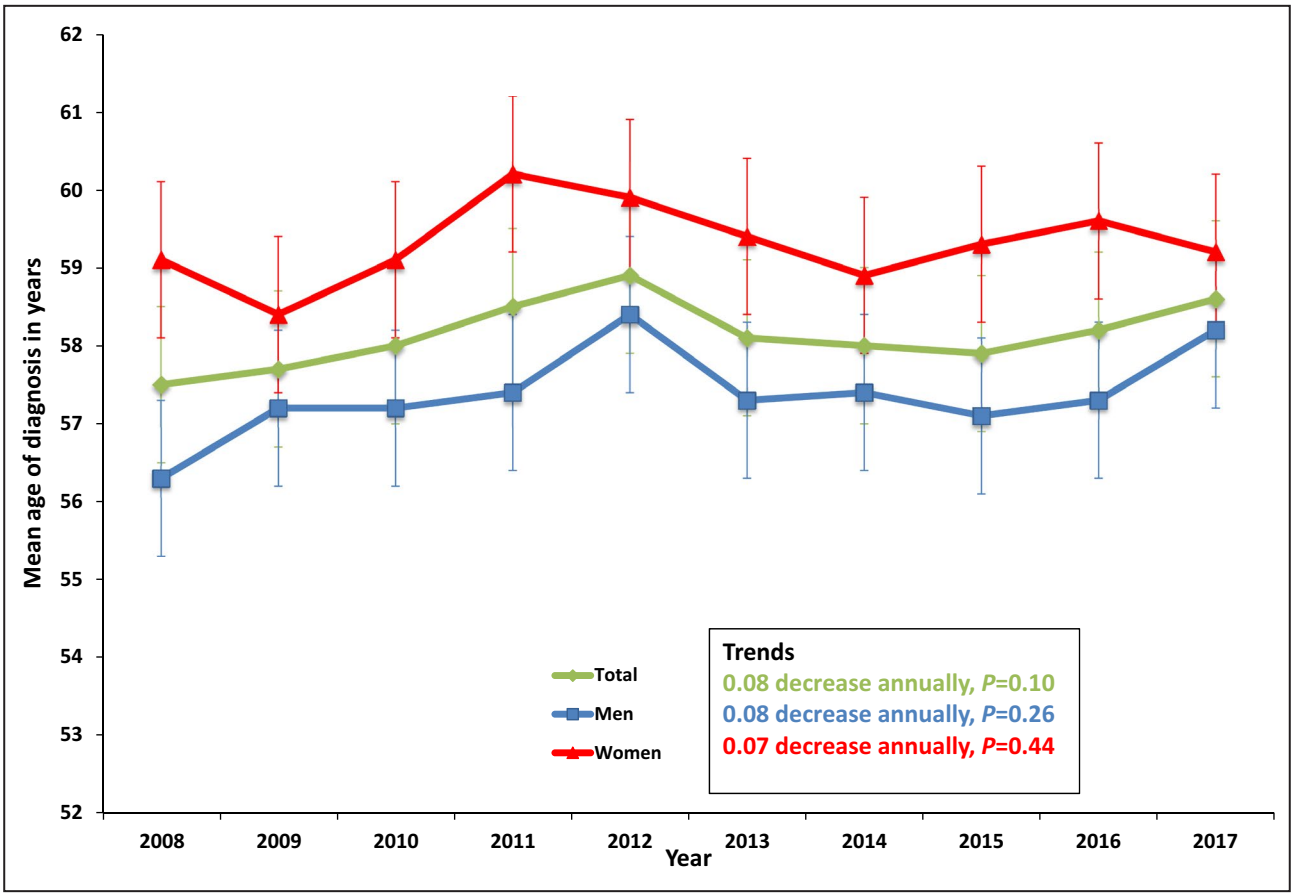

Figure 2. Adjusted* mean age (95% CI) of diagnosis of coronary heart disease among US adults for overall and by sex: trends from 2008 to 2017.

*Adjusted for current age group, race/ethnicity, level of income, type of health insurance, and Charlson comorbidity index.

from 51.7 years in 2008 to 50.5 years in 2017 (*P*=0.004) overall, and from 53.5 years in 2008 to 51.7 years in 2017 for women (*P*=0.001) (Table S1). There was no statistically significant change in the age at diagnosis for hypercholesterolemia among non-Hispanic White men (Table S1). Among Black, Asian, and Hispanic individuals, there was no statistically significant change in the age of diagnosis of CVD and its risk factors over the study period (Table S2 through S4). Among young women (age 18–39 years) with hypertension, the mean age at diagnosis decreased from 28.5 years in 2008 to 26.9 years in 2017 (*P*=0.007) (Table S5).

Among high-income-earning men, the age of diagnosis for CHD increased from 55.2 years in 2008 to 58.6 years in 2017 (*P*=0.03), but not so for women within the same income class (Table S8). Among individuals with middle income, for women, the age at diagnosis of CHD decreased from 61.8 years in 2008 to 58.0 years in 2017 (*P*=0.01) (Table S9). There was no statistically significant change in the age at diagnosis for CHD among men with middle income (Table S9). Among women with very low income, the age at diagnosis for stroke decreased from 56.9 years in 2008 to 54.7 years in 2017 (*P*=0.005) (Table S11). There was an increase in the age at diagnosis for stroke among men with very low income, but this was not statistically significant (Table S11).

Among individuals with private insurance, the age of diagnosis of hypercholesterolemia has become younger for both men and women, and age of diagnosis of hypertension younger for women (Table S12). Among uninsured individuals, the age of diagnosis of stroke has become older for women and the age of diagnosis of hypercholesterolemia younger for women (Table S13). For Medicaid insurance, the age of hypertension diagnosis in women has become older (Table S14). For Medicare insurance, the age of diagnosis for stroke was older in men, the age of diagnosis of hypertension younger in men, and the age of diagnosis of hypercholesterolemia was younger in both women and men (Table S15).

Among men living in the Northeast region of the country, there was an average yearly increase in the age of diagnosis for stroke by 0.86 years (*P*=0.005), a trend that was not noted among women (Table S16). Among women living in the South, there was an average yearly decrease in the age of diagnosis for stroke by 0.39 years (*P*=0.04), but not so for men (Table S18).

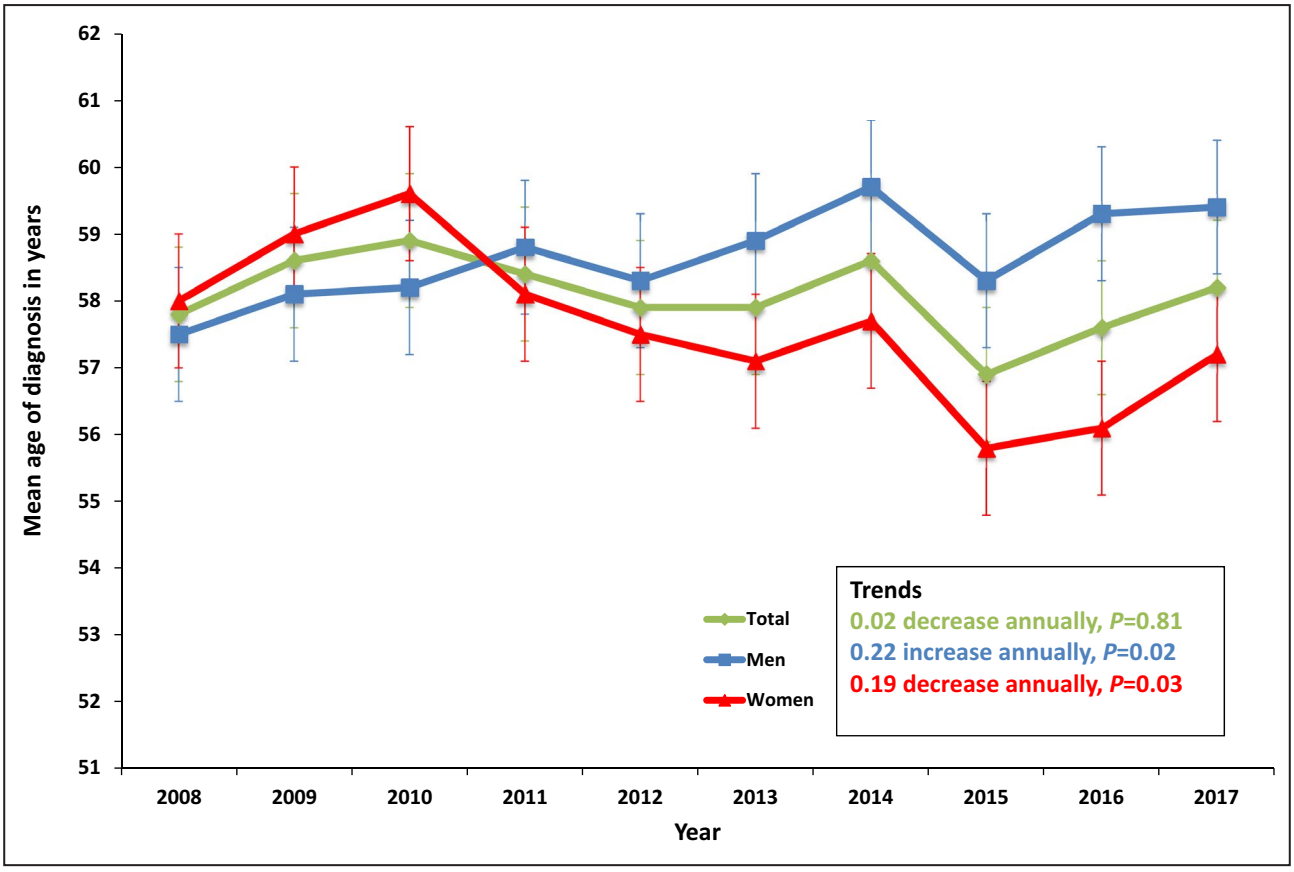

Figure 3. Adjusted* mean age (95% CI) of diagnosis of stroke among US adults for overall and by sex: trends from 2008 to 2017.

*Adjusted for current age group, race/ethnicity, level of income, type of health insurance, and Charlson comorbidity index.

DISCUSSION

In a nationally representative sample of the US adult population from 2008 to 2017, women are first diagnosed with CHD, hypertension, and hypercholesterolemia at a slightly older age compared with men. For stroke, women are diagnosed at a younger age when compared with men. When examining 10-year trends, there was a trend toward diagnosis at a younger age for these conditions, and this appeared to be more pronounced among women. The mean age at diagnosis for stroke decreased over the 10-year period for women but not so for men.

The burden of established CVD risk factors at 50 years of age is thought to be a predictor for lifetime risk of developing CVD.[22] Even the presence of a single major CVD risk factor before the age of 50 is associated with an increased lifetime risk of CVD and a decrease in median survival.[23] Other recent data from MEPS have shown that the prevalence of poor cardiovascular health status has been increasing in the US population over the past decade, and this adverse trend was noted across age groups.[17] A longer period of exposure to CVD risk factors may accelerate the development of CVD in younger individuals.[24] This is alarming when put in context with the findings from this study showing a trend toward younger age at diagnosis for hypertension and hypercholesterolemia, which were also found to be more pronounced among women. Recent studies also suggests that women exhibit steeper increases in blood pressure compared with men, as early as in their 30s, and this persists throughout their lifetime.[25]

On one hand, this trend toward a younger age at diagnosis of CVD and its risk factors might be favorable, suggesting improved preventive screening and detection efforts. Given that there has been an increase in awareness of CVD and its risk factors among women over the past decades,[26] one could argue that this has made women more proactive regarding their health care. Earlier detection of CVD risk factors provides an opportunity to initiate CVD prevention strategies as early as possible.[22] On the other hand, the progressive younger ages at time of diagnosis of CVD risk factors may indicate that the US population is getting unhealthier over time, which is supported by other national data.[2,17,27]

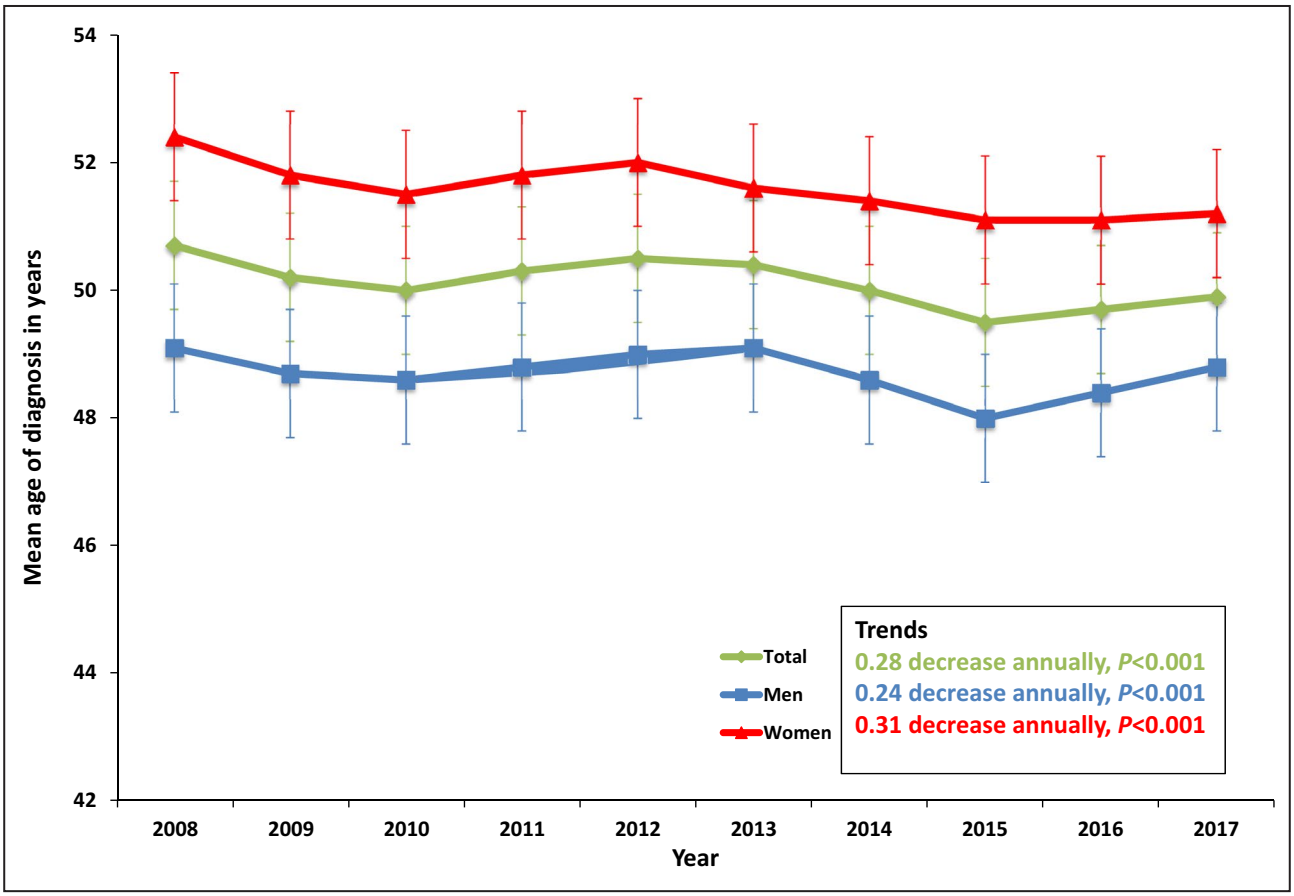

Figure 4. Adjusted* mean age (95% CI) of diagnosis of hypercholesterolemia among US adults for overall and by sex: trends from 2008 to 2017.

*Adjusted for current age group, race/ethnicity, level of income, type of health insurance, and Charlson comorbidity index.

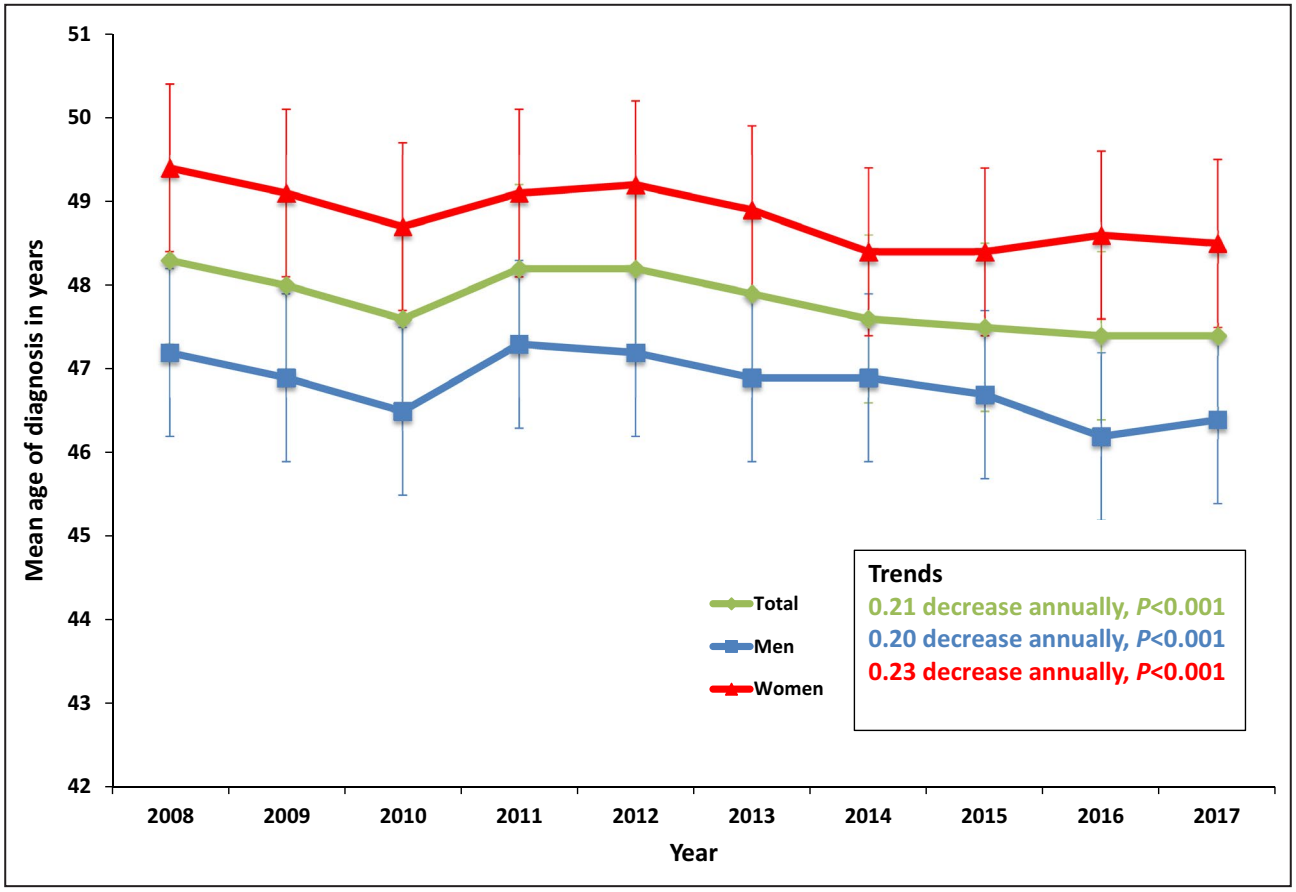

Figure 5. Adjusted* mean age (95% CI) of diagnosis of hypertension among US adults for overall and by sex: trends from 2008 to 2017.
*Adjusted for current age group, race/ethnicity, level of income, type of health insurance, and Charlson comorbidity index.

With the evidence-based recommendations for CVD prevention among women,[12] findings from the current study could help galvanize our approach to targeted age-group and sex-specific risk factor modification for the prevention of CVD.[11] However, it is important to note that irrespective of sex, a more aggressive approach needs to be adopted regarding promotion of cardiovascular health, CVD prevention, and risk factor modification for all adults, as described in the 2019 American College of Cardiology/American Heart Association Guideline for the Primary Prevention of CVD.[22]

In addition to younger age at diagnosis for CVD risk factors, our study also showed a trend toward younger age at diagnosis of clinical CVD, particularly for stroke. Mortality from CVD has been stagnant within the past decade and might have actually increased among middle-aged adults 55 to 64 years.[2,5,28] Some of the prior progress made in reducing mortality from heart disease was attributed to advances in care, early use of an invasive approach for CHD to improve survival, and better control of CVD risk factors.[28] However, over the past decade, optimal control of hypertension has plateaued (or worsened),[27] coincident with the prevalence of CHD and stroke, which interestingly appears to be on the rise among middle-aged adults.[28,29]

CVD commonly presents at an older age among women compared with men.[2] However, the prevalence of CVD is on the rise among middle-aged women.[4,5,30] Even though it is thought that the vasodilatory and antioxidant properties of endogenous estrogen provide some protection from CVD in younger premenopausal women, this may not be the case in the setting of other CVD risk factors.[11] The trends toward younger age at diagnosis of CVD in women as shown in this current study, with the increase in mortality within this population, requires further attention.[30] The results from this study also suggest that the mean age at diagnosis for stroke among women is younger and down-trending compared with men, a finding that is worrisome. It is unclear from our study whether a younger age of diagnosis of clinical CVD was from better detection of these disorders that might have been missed in the younger population in years past or attributed to other non-CVD causes, or whether there has been

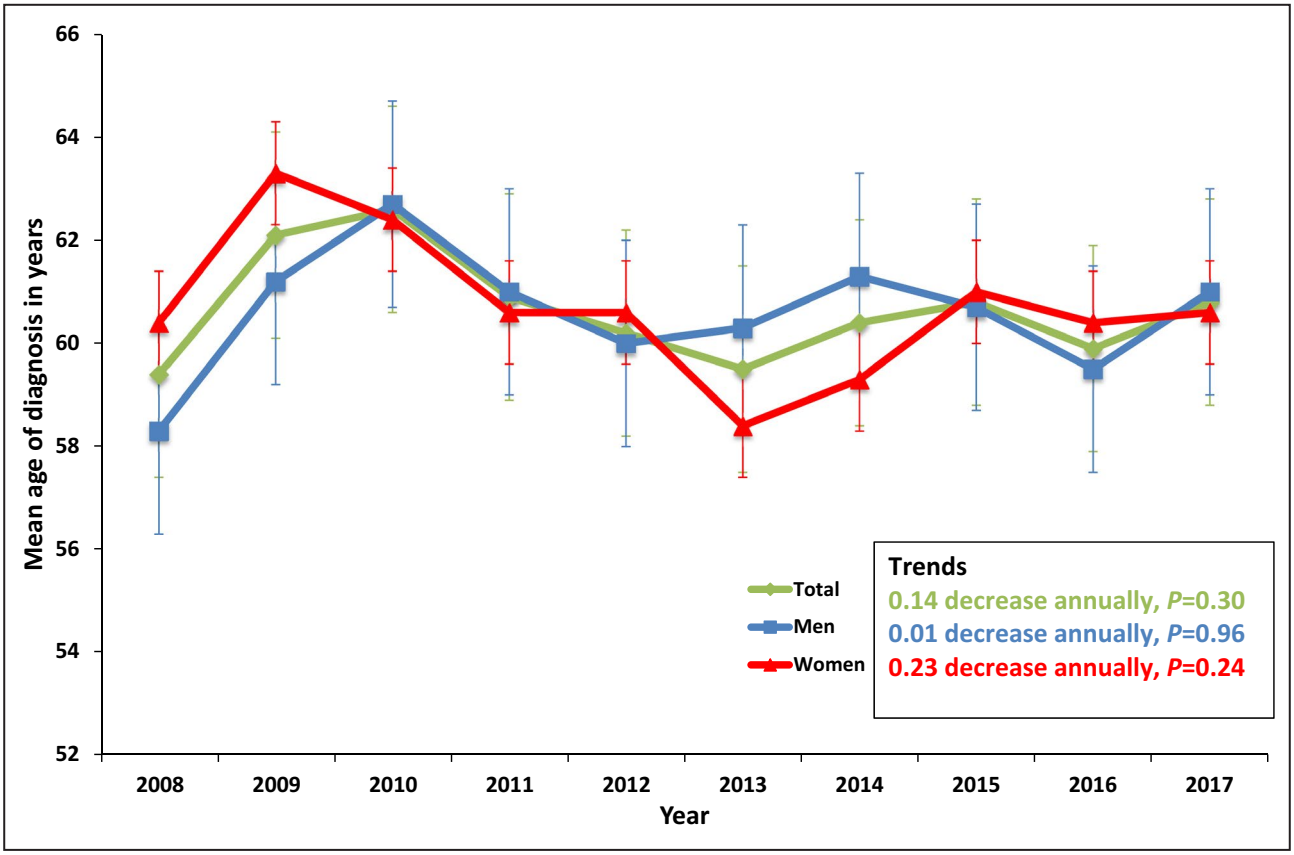

Figure 6. Adjusted* mean age (95% CI) of diagnosis of coronary artery disease+stroke combined among US adults for overall and by sex: trends from 2008 to 2017.
*Adjusted for current age group, race/ethnicity, level of income, type of health insurance, and Charlson comorbidity index.

a true increase in the prevalence of these medical conditions among younger population.

The national Million Hearts 2022 program was created to address these alarming trends toward a younger CVD population and reduce preventable cardiovascular events.[29] This is a framework that was revised in 2017 and co-led by the Centers for Disease Control and Prevention and the Centers for Medicare and Medicaid Services with the goal of preventing 1 million heart attacks and strokes in the United States over 5 years, by implementing proven, effective, and high-impact strategies to improve CVD risk factors, particularly among the younger population.[29] The Million Hearts strategy adopts a concerted effort led by clinicians that involves the identification of at-risk individuals and the implementation of cardiovascular preventive efforts by various federal and private partner organizations to ensure that these vulnerable individuals get the cardiovascular preventive services they need.

Strengths and Limitations of the Study

Our findings should be considered in the context of several limitations. First, conclusions from this study can be applicable only to the population from which the sample was drawn, and this does not include the military, incarcerated individuals, or any institutionalized individuals. Second, given that the age at diagnosis for CVD and its risk factors were self-reported (24% of the diagnosis of hypertension and 34% of the diagnosis of hypercholesterolemia did not have *ICD* confirmation), we cannot exclude the possibility of recall bias. Third, differences in healthcare-seeking behavior may contribute to some of the sex-specific differences observed in the age at diagnosis of CVD and its risk factors, which we could not account for in this study. Fourth, although we adjusted for the severity of an individual's other medical conditions, using a combination of their comorbidities as a metric, there remains a chance for residual confounding, given the lack of detailed clinical information on each participant in the MEPS data set. Fifth, since report on the age at diagnosis for the components of CHD; subtypes of stroke; and other CVD risk factors such as diabetes mellitus, obesity, and smoking is not available in the MEPS data set, that information is lacking in our study. Sixth, about 40% of the participants included in this study lived in the South region, which is known

to have a high incidence of CVD, especially stroke, and although our findings reflect the US population in aggregate, this may have an impact on the generalizability of results to specific US regions. However, our findings remain essentially the same on further stratification by region. Seventh, given that this was a large-sized population-based study, small differences may meet a level of statistical significance, but its clinical significance may be difficult to evaluate. In lieu of this, we therefore placed more emphasis on results with larger effect estimates. Finally, the trends in the age at diagnosis of CVD and its risk factors could have been affected by changes in temporal patterns over the years such as the mean age of men and women recruited for the survey yearly. Although the impact of these changes would be random on both men and women, some may be nonrandom.

Despite these limitations, our study has a number of strengths, including the overlapping survey design of MEPS to be able to track national trends over a time period and the application of survey weights to make the results representative of the status of the civilian adult US population.

CONCLUSIONS

In a nationally representative sample of the US adult population from 2008 to 2017, there is a decreasing trend in the age at diagnosis for CVD and its risk factors, which appears to be more pronounced among women. These findings may reflect improved screening and detection of CVD and its risk factors at younger ages; or more worrisome, it could mean the US population is getting unhealthier over time. While earlier identification of CVD risk factors may provide an opportunity to initiate preventive treatments, younger age at diagnosis of CVD highlights the need for the prevention of CVD at the earliest opportunity, and sex-specific interventions may be needed.

ARTICLE INFORMATION

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Supplementary Material

Data S1
Tables S1–S19

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SUPPLEMENTAL MATERIAL

Data S1.

DESCRIPTION OF THE MEPS AS REPRESENTED ON THE MEPS OFFICIAL WEBSITE: https://www.meps.ahrq.gov/mepsweb/about_meps/survey_back.jsp

"The Medical Expenditure Panel Survey, which began in 1996, is a set of large-scale surveys of families and individuals, their medical providers (doctors, hospitals, pharmacies, etc.), and employers across the United States. MEPS collects data on the specific health services that Americans use, how frequently they use them, the cost of these services, and how they are paid for, as well as data on the cost, scope, and breadth of health insurance held by and available to U.S. workers.

Major MEPS Components

MEPS currently has two major components: the Household Component and the Insurance Component. The Household Component provides data from individual households and their members, which is supplemented by data from their medical providers. The Insurance Component is a separate survey of employers that provides data on employer-based health insurance.

Household Component

The Household Component (HC) collects data from a sample of families and individuals in selected communities across the United States, drawn from a nationally representative subsample of households that participated in the prior year's National Health Interview Survey (conducted by the National Center for Health Statistics).

During the household interviews, MEPS collects detailed information for each person in the household on the following: demographic characteristics, health conditions, health status, use of medical services, charges and source of payments, access to care, satisfaction with care, health insurance coverage, income, and employment.

The panel design of the survey, which features several rounds of interviewing covering two full calendar years, makes it possible to determine how changes in respondents' health status, income, employment, eligibility for public and private insurance coverage, use of services, and payment for care are related.

The HC expenditures have been projected to future years by selected demographic characteristics by source of payment and type of service.

HC data are available on the MEPS Web site in data tables, downloadable data files (person, job, event, or condition level), annually projected expenditures through 2016, and interactive data tools, as well as in publications using HC data.

Insurance component

The Insurance Component (IC) collects data from a sample of private and public sector employers on the health insurance plans they offer their employees. The survey is also known as the Health Insurance Cost Study.

The collected data include the number and types of private insurance plans offered (if any), premiums, contributions by employers and employees, eligibility requirements, benefits associated with these plans, and employer characteristics.

IC estimates are available on the MEPS Web site in tabular form for national, regional, state, and metropolitan areas, as well as in publications using IC data and interactive data tools. IC data files are not available for public release.

Other MEPS components

MEPS also includes a Medical Provider Component (MPC), which covers hospitals, physicians, home health care providers, and pharmacies identified by MEPS-HC respondents. Its purpose is to supplement and/or replace information received from the MEPS-HC respondents.

Data files containing only this supplemental respondent information are not available, but the information is incorporated into the MEPS-HC data files.

In 1996 only, MEPS included a Nursing Home Component (NHC) that gathered information from a sample of nursing homes and residents nationwide on the characteristics of the facilities and services offered; expenditures and sources of payment on an individual resident level; and resident characteristics, including functional limitation, cognitive impairment, age, income, and insurance coverage. The NHC also collected data on the availability and use of community-based care prior to admission to nursing homes. For reasons of confidentiality, NHC data are available only at the Data Center located at AHRQ or at one of the Federal Statistical Research Data Centers.

The National Center for Health Statistics (NCHS) provides information on the NCHS National Nursing Home Survey (NNHS), a continuing series of national sample surveys of nursing homes, their residents, and their staff that have been conducted in 1973–74, 1977, 1985, 1995, 1997, and 1999."

Table S1. Sex differences in the age of diagnosis of cardiovascular disease & its risk factors, stratified by race/ethnicity: Trends from 2008-2017 among non Hispanic whites.

	Age of diagnosis		
Year	**Men**	**Women**	**Total**
NON HISPANIC WHITE			
CORONARY HEART DISEASE			
2008	56.6	60.3	58.1
2009	58.2	59.9	58.8
2010	57.9	60.5	58.9
2011	58.3	61.9	59.6
2012	59.2	61.4	60.0
2013	58.3	61.4	59.5
2014	58.6	60.8	59.4
2015	57.7	61.3	59.0
2016	57.7	61.8	59.1
2017	58.7	61.1	59.5
P for trend	0.37	0.27	0.23
Annual change in years, 95% CI	0.08 (-0.10 to 0.27)	0.14 (-0.11 to 0.38)	0.09 (-0.06 to 0.24)
STROKE			
2008	58.6	59.3	59.0
2009	59.4	60.8	60.2
2010	59.9	61.8	60.9
2011	59.6	60.6	60.1
2012	59.1	59.8	59.5
2013	59.9	59.1	59.5
2014	61.6	59.3	60.3
2015	59.6	56.3	57.8
2016	60.5	56.8	58.6
2017	60.2	59.2	59.7
P for trend	0.36	**0.04**	0.38
Annual change in years, 95% CI	0.16 (-0.19 to 0.52)	**-0.37 (-0.75 to -0.003)**	-0.12 (-0.38 to 0.14)
HYPERCHOLESTEROLEMIA			
2008	49.9	53.5	51.7
2009	49.5	52.7	51.1
2010	49.3	52.3	50.8
2011	49.8	52.6	51.1
2012	49.9	52.8	51.3
2013	49.9	52.5	51.2
2014	49.3	52.0	50.6
2015	48.8	51.5	50.1
2016	49.3	51.6	50.4

2017	49.3	51.7	50.5
P for trend	0.27	**0.001**	**0.004**
Annual change in years, 95% CI	-0.06 (-0.16 to 0.05)	**-0.18 (-0.29 to -0.08)**	**-0.12 (-0.21 to -0.04)**
HYPERTENSION			
2008	48.1	51.3	49.7
2009	47.6	50.8	49.2
2010	47.4	50.3	48.8
2011	48.0	50.8	49.3
2012	47.9	51.0	49.4
2013	47.8	50.6	49.1
2014	47.8	49.8	48.7
2015	47.6	50.1	48.8
2016	46.9	49.9	48.3
2017	46.9	49.8	48.2
P for trend	0.09	**0.01**	**0.004**
Annual change in years, 95% CI	-0.09 (-0.21 to 0.02)	**-0.14 (-0.26 to -0.03)**	**-0.13 (-0.21 to -0.04)**

Table S2. Sex differences in the age of diagnosis of cardiovascular disease & its risk factors, stratified by race/ethnicity: Trends from 2008-2017 among non-Hispanic Blacks.

Year	Age of diagnosis		
	Men	**Women**	**Total**
BLACKS			
CORONARY HEART DISEASE			
2008	55.5	56.1	55.8
2009	51.7	53.8	52.9
2010	51.8	55.4	53.7
2011	53.3	55.8	54.6
2012	55.4	57.5	56.5
2013	53.1	55.4	54.3
2014	52.8	54.2	53.6
2015	53.9	53.9	53.9
2016	54.3	54.4	54.3
2017	54.6	54.7	54.6
P for trend	0.61	0.46	0.81
Annual change in years, 95% CI	0.10 (-0.30 to 0.51)	-0.14 (-0.53 to 0.24)	-0.03 (-0.31 to 0.24)
STROKE			
2008	53.8	54.2	54.1
2009	54.0	52.8	53.3
2010	52.8	55.0	54.1
2011	57.6	54.4	55.7
2012	56.1	51.2	53.3
2013	55.1	50.2	52.1
2014	55.7	52.6	54.0
2015	55.7	54.7	55.1
2016	55.8	54.5	55.1
2017	57.2	54.9	55.9
P for trend	0.19	0.72	0.24
Annual change in years, 95% CI	0.29 (-0.15 to 0.74)	0.07 (-0.34 to 0.49)	0.18 (-0.12 to 0.48)
HYPERCHOLESTEROLEMIA			
2008	49.0	49.9	49.5
2009	48.7	49.4	49.1
2010	48.4	50.3	49.5
2011	48.4	51.1	49.9
2012	49.3	50.4	49.9
2013	49.5	49.8	49.7
2014	49.1	50.9	50.1
2015	48.7	51.0	49.9
2016	48.5	49.6	49.1

2017	49.7	49.6	49.7
P for trend	0.62	0.96	0.75
Annual change in years, 95% CI	0.05 (-0.15 to 0.25)	0.003 (-0.18 to 0.19)	0.02 (-0.12 to 0.16)
HYPERTENSION			
2008	44.5	43.7	44.0
2009	44.3	43.2	43.6
2010	43.2	43.3	43.3
2011	44.8	43.7	44.2
2012	45.3	43.7	44.4
2013	43.8	43.1	43.4
2014	43.7	43.2	43.4
2015	44.2	43.0	43.5
2016	43.7	43.6	43.6
2017	45.3	43.8	44.4
P for trend	0.83	0.98	0.85
Annual change in years, 95% CI	0.02 (-0.15 to 0.19)	0.001 (-0.13 to 0.14)	0.01 (-0.11 to 0.13)

Table S3. Sex differences in the age of diagnosis of cardiovascular disease & its risk factors, stratified by race/ethnicity: Trends from 2008-2017 among Asians.

Year	Age of diagnosis		
	Men	**Women**	**Total**
ASIAN			
CORONARY HEART DISEASE			
2008	52.2	59.7	55.6
2009	52.5	59.0	55.5
2010	58.9	56.8	57.7
2011	61.9	56.3	59.5
2012	58.9	58.9	58.9
2013	55.6	62.1	58.1
2014	53.9	60.6	55.2
2015	54.3	58.0	55.3
2016	56.3	62.6	58.3
2017	58.0	65.7	60.2
P for trend	0.83	0.22	0.58
Annual change in years, 95% CI	0.10 (-0.81 to 1.01)	0.67 (-0.43 to 1.78)	0.21 (-0.54 to 0.96)
STROKE			
2008	62.5	65.7	64.2
2009	67.6	63.4	65.6
2010	57.1	61.3	60.0
2011	58.2	62.3	60.1
2012	59.1	51.7	56.7
2013	56.5	60.9	58.4
2014	57.2	60.6	58.7
2015	59.0	61.2	60.2
2016	61.4	58.5	59.7
2017	61.3	62.8	62.0
P for trend	0.65	0.47	0.46
Annual change in years, 95% CI	-0.27 (-1.48 to 0.93)	-0.39 (-1.50 to 0.71)	-0.33 (-1.24 to 0.57)
HYPERCHOLESTEROLEMIA			
2008	47.1	51.3	49.1
2009	46.9	51.1	49.0
2010	46.8	51.7	49.1
2011	48.0	52.9	50.3
2012	47.1	53.1	50.0
2013	47.4	52.4	49.7
2014	47.8	53.1	50.1
2015	46.4	53.7	49.6
2016	46.5	53.8	49.8

2017	47.6	53.1	49.9
P for trend	0.95	0.13	0.56
Annual change in years, 95% CI	-0.01 (-0.32 to 0.29)	0.27 (-0.09 to 0.63)	0.08 (-0.19 to 0.35)
HYPERTENSION			
2008	46.9	51.5	49.2
2009	47.1	52.5	49.7
2010	45.8	52.7	49.2
2011	48.5	51.4	50.1
2012	48.8	51.2	50.0
2013	48.4	52.4	50.2
2014	49.9	51.9	50.9
2015	47.2	51.1	49.2
2016	46.7	53.5	50.2
2017	46.5	53.1	49.6
P for trend	0.99	0.59	0.71
Annual change in years, 95% CI	-0.001 (-0.34 to 0.34)	0.10 (-0.26 to 0.45)	0.05 (-0.21 to 0.31)

Table S4. Sex differences in the age of diagnosis of cardiovascular disease & its risk factors, stratified by race/ethnicity: Trends from 2008-2017 among Hispanics.

Year	Age of diagnosis		
	Men	**Women**	**Total**
HISPANIC			
CORONARY HEART DISEASE			
2008	56.9	54.9	55.9
2009	53.3	53.9	53.6
2010	53.9	54.1	54.0
2011	50.8	55.4	52.7
2012	53.5	52.7	53.2
2013	52.0	51.8	51.9
2014	52.0	53.3	52.6
2015	56.7	54.8	55.8
2016	57.5	53.9	55.8
2017	56.4	54.4	55.5
P for trend	0.22	0.89	0.53
Annual change in years, 95% CI	0.28 (-0.17 to 0.72)	-0.04 (-0.63 to 0.55)	0.12 (-0.27 to 0.51)
STROKE			
2008	54.6	54.7	54.6
2009	53.5	53.5	53.5
2010	53.4	53.6	53.5
2011	52.5	52.0	52.2
2012	53.8	52.5	53.1
2013	54.8	53.9	54.3
2014	53.7	53.3	53.5
2015	55.3	52.2	53.5
2016	55.6	53.1	53.9
2017	54.3	50.0	51.6
P for trend	0.64	0.45	0.63
Annual change in years, 95% CI	0.16 (-0.52 to 0.84)	-0.29 (-1.06 to 0.47)	-0.12 (-0.64 to 0.39)
HYPERCHOLESTEROLEMIA			
2008	45.5	48.3	46.9
2009	44.7	48.6	46.6
2010	45.1	48.1	46.6
2011	43.9	47.7	45.7
2012	44.3	48.6	46.4
2013	45.3	48.1	46.7
2014	45.5	47.9	46.7
2015	44.5	48.5	46.5
2016	45.1	48.8	46.9

2017	45.5	48.8	47.1
P for trend	0.67	0.59	0.54
Annual change in years, 95% CI	0.04 (-0.16 to 0.25)	0.05 (-0.14 to 0.25)	0.46 (-0.11 to 0.19)
HYPERTENSION			
2008	45.9	45.5	45.7
2009	46.2	45.8	46.0
2010	44.5	46.1	45.3
2011	44.8	47.1	45.9
2012	44.9	46.8	45.9
2013	44.5	47.1	45.8
2014	44.4	46.3	45.3
2015	44.6	46.3	45.4
2016	45.2	46.6	45.9
2017	44.7	47.1	45.9
P for trend	0.35	0.32	0.98
Annual change in years, 95% CI	-0.11 (-0.33 to 0.12)	0.11 (-0.11 to 0.32)	-0.02 (-0.16 to 0.16)

Table S5. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by age categories: Trends from 2008-2017 among young adults.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Young (age 18-39 years)			
CORONARY HEART DISEASE			
2008	30.9	27.2	29.0
2009	28.3	28.2	28.3
2010	29.6	30.2	29.9
2011	26.9	30.3	28.2
2012	26.8	31.9	29.8
2013	29.9	24.1	26.7
2014	30.2	25.8	29.2
2015	30.1	29.6	30.0
2016	29.2	27.2	28.3
2017	26.8	28.9	27.9
P for trend	0.92	0.81	0.83
Annual change in years, 95% CI	-0.02 (-0.43 to 0.39)	-0.09 (-0.79 to 0.63)	-0.04 (-0.43 to 0.35)
STROKE			
2008	25.9	28.8	27.6
2009	27.9	27.5	27.7
2010	28.1	26.6	27.7
2011	27.3	26.6	26.9
2012	28.2	26.4	27.2
2013	29.5	27.7	28.3
2014	30.8	28.7	29.1
2015	28.4	26.5	26.9
2016	26.9	27.8	27.5
2017	26.9	27.2	27.1
P for trend	0.88	0.78	0.91
Annual change in years, 95% CI	0.05 (-0.63 to 0.73)	-0.05 (-0.42 to 0.32)	-0.02 (-0.37 to 0.33)
HYPERCHOLESTEROLEMIA			
2008	29.3	29.0	29.2
2009	29.2	28.8	29.0
2010	29.6	29.2	29.4
2011	29.4	28.9	29.2
2012	29.7	28.8	29.4
2013	29.7	28.5	29.2
2014	29.3	28.6	29.0
2015	29.2	27.7	28.6

2016	29.8	27.7	28.9
2017	29.8	28.2	29.1
P for trend	0.44	**0.008**	0.27
Annual change in years, 95% CI	0.04 (-0.06 to 0.13)	**-0.15 (-0.25 to -0.04)**	-0.04 (-0.12 to 0.03)
HYPERTENSION			
2008	27.9	28.5	28.2
2009	27.9	28.1	28.0
2010	27.6	27.9	27.7
2011	28.1	27.6	27.9
2012	27.9	28.0	27.9
2013	27.6	27.6	27.7
2014	27.8	27.5	27.7
2015	27.5	27.3	27.4
2016	27.8	27.7	27.7
2017	27.4	26.9	27.2
P for trend	0.38	**0.007**	**0.01**
Annual change in years, 95% CI	-0.05 (-0.15 to 0.06)	**-0.12 (-0.21 to -0.03)**	**-0.08 (-0.14 to -0.013)**

Table S6. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by age categories: Trends from 2008-2017 among middle aged adults.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Middle aged (age 40-64 years)			
CORONARY HEART DISEASE			
2008	48.0	48.9	48.3
2009	47.9	48.1	47.4
2010	47.6	47.2	47.4
2011	48.0	48.6	48.2
2012	48.8	47.2	48.3
2013	48.1	47.4	47.8
2014	47.5	46.9	47.2
2015	48.1	48.4	48.2
2016	48.3	47.9	48.1
2017	49.3	47.6	48.7
P for trend	0.36	0.66	0.72
Annual change in years, 95% CI	0.07 (-0.09 to 0.23)	-0.06 (-0.32 to 0.20)	0.03 (-0.12 to 0.17)
STROKE			
2008	48.2	44.0	46.0
2009	47.7	46.6	47.1
2010	47.7	46.7	47.2
2011	46.4	45.6	46.0
2012	48.7	44.2	46.4
2013	48.8	43.6	46.0
2014	49.6	45.0	47.0
2015	48.5	45.4	46.8
2016	48.3	45.6	46.8
2017	48.4	45.3	46.8
P for trend	0.36	0.91	0.67
Annual change in years, 95% CI	0.12 (-0.14 to 0.37)	-0.015 (0.31 to 0.27)	0.05 (-0.16 to 0.25)
HYPERCHOLESTEROLEMIA			
2008	46.6	47.9	47.2
2009	46.1	47.3	46.7
2010	46.0	47.1	46.5
2011	46.0	47.1	46.5
2012	46.0	46.9	46.4
2013	45.8	46.4	46.1
2014	45.6	46.2	46.0
2015	44.9	46.2	45.5

2016	45.0	45.9	45.4
2017	44.8	45.7	45.2
P for trend	**<0.001**	**<0.001**	**<0.001**
Annual change in years, 95% CI	**-0.18 (-0.25 to -0.11)**	**-0.22 (-0.29 to -0.15)**	**-0.20 (-0.25 to -0.15)**
HYPERTENSION			
2008	44.7	45.1	44.9
2009	44.5	44.6	44.6
2010	44.5	44.5	44.5
2011	44.7	45.0	44.8
2012	44.9	44.7	44.8
2013	44.6	44.6	44.6
2014	44.3	44.0	44.2
2015	44.1	43.9	44.0
2016	43.9	44.2	44.1
2017	43.8	44.0	43.9
P for trend	**0.01**	**0.009**	**0.001**
Annual change in years, 95% CI	**-0.10 (-0.18 to -0.02)**	**-0.11 (-0.19 to -0.03)**	**-0.10 (-0.16 to -0.04)**

Table S7. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by age categories: Trends from 2008-2017 among older adults.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Older adults (age 65 years or older)			
CORONARY HEART DISEASE			
2008	62.3	65.5	63.7
2009	63.8	65.9	64.6
2010	63.8	65.8	64.7
2011	63.9	66.0	64.8
2012	64.2	65.9	64.9
2013	62.2	66.7	63.9
2014	62.4	65.4	63.6
2015	62.2	63.9	62.9
2016	61.9	64.6	62.9
2017	62.4	64.3	63.1
P for trend	0.05	0.07	**0.007**
Annual change in years, 95% CI	-0.17 (-0.34 to 0.003)	-0.19 (-0.39 to 0.19)	**-0.19 (-0.32 to -0.05)**
STROKE			
2008	65.8	68.5	67.3
2009	66.8	68.5	67.8
2010	68.2	67.2	67.6
2011	68.6	67.3	67.9
2012	66.4	67.8	67.2
2013	66.1	67.5	66.8
2014	66.4	69.1	67.9
2015	65.9	65.9	65.9
2016	66.6	65.8	66.2
2017	66.8	66.2	66.5
P for trend	0.62	0.09	0.09
Annual change in years, 95% CI	-0.06 (-0.31 to 0.19)	-0.25 (-0.54 to 0.04)	-0.17 (-0.36 to 0.03)
HYPERCHOLESTEROLEMIA			
2008	63.3	65.0	64.3
2009	62.5	64.1	63.4
2010	61.7	63.4	62.7
2011	61.5	63.0	62.3
2012	60.8	62.9	61.9
2013	60.1	62.2	61.3
2014	59.2	61.4	60.4
2015	58.5	60.9	59.9
2016	58.8	60.9	59.9

2017	58.2	60.1	59.2
P for trend	**<0.001**	**<0.001**	**<0.001**
Annual change in years, 95% CI	**-0.57 (-0.68 to -0.46)**	**-0.51 (-0.62 to -0.39)**	**-0.54 (-0.63 to -0.46)**
HYPERTENSION			
2008	59.2	60.1	59.7
2009	58.7	59.9	59.4
2010	58.1	59.1	58.7
2011	58.7	58.8	58.7
2012	57.9	58.9	58.5
2013	57.1	58.3	57.7
2014	56.7	57.4	57.1
2015	56.8	57.8	57.3
2016	55.9	56.9	56.5
2017	55.9	56.8	56.4
P for trend	**<0.001**	**<0.001**	**<0.001**
Annual change in years, 95% CI	**-0.38 (-0.52 to -0.24)**	**-0.37 (-0.49 to -0.25)**	**-0.38 (-0.47 to -0.29)**

Table S8. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by income levels: Trends from 2008-2017 among high income earners.

	Age of diagnosis		
Year	**Men**	**Women**	**Total**
High income			
CORONARY HEART DISEASE			
2008	55.2	57.5	55.9
2009	57.5	60.8	58.4
2010	57.1	58.5	57.5
2011	56.5	60.2	57.3
2012	58.0	62.3	59.1
2013	57.1	60.2	57.9
2014	57.6	61.1	58.6
2015	57.6	57.3	57.5
2016	58.1	58.2	58.1
2017	58.6	58.2	58.5
P for trend	**0.03**	0.74	0.13
Annual change in years, 95% CI	**0.24 (0.02 to 0.46)**	-0.07 (-0.48 to 0.35)	0.15 (-0.04 to 0.33)
STROKE			
2008	58.4	56.0	57.2
2009	60.9	58.1	59.3
2010	60.3	62.2	61.2
2011	58.4	56.5	57.5
2012	58.5	57.4	57.9
2013	60.5	55.7	58.2
2014	58.9	58.9	58.9
2015	58.8	57.0	57.9
2016	60.2	58.5	59.4
2017	60.9	56.4	58.9
P for trend	0.66	0.87	0.83
Annual change in years, 95% CI	0.11 (-0.39 to 0.61)	-0.05 (-0.65 to 0.56)	0.04 (-0.37 to 0.46)
HYPERCHOLESTEROLEMIA			
2008	48.5	50.9	49.6
2009	48.4	50.7	49.5
2010	48.3	50.7	49.3
2011	48.2	51.5	49.6
2012	48.1	51.6	49.6
2013	48.7	50.7	49.6
2014	48.2	50.5	49.2
2015	47.6	50.3	48.7
2016	47.5	49.4	48.3

2017	47.9	49.6	48.7
P for trend	0.14	**0.006**	**0.009**
Annual change in years, 95% CI	-0.09 (-0.21 to 0.03)	**-0.16 (-0.28 to -0.05)**	**-0.13 (-0.22 to -0.03)**
HYPERTENSION			
2008	46.6	50.1	48.2
2009	46.7	50.0	48.2
2010	47.0	49.6	48.2
2011	47.5	49.6	48.4
2012	47.4	50.3	48.6
2013	48.0	49.9	48.7
2014	47.2	49.2	48.0
2015	47.0	48.5	47.7
2016	46.4	48.8	47.4
2017	46.3	49.0	47.5
P for trend	0.55	**0.01**	0.05
Annual change in years, 95% CI	-0.04 (-0.16 to 0.09)	**-0.16 (-0.29 to -0.03)**	-0.10 (-0.19 to 0.0003)

Table S9. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by income levels: Trends from 2008-2017 among middle income earners.

	Age of diagnosis		
Year	**Men**	**Women**	**Total**
Middle income			
CORONARY HEART DISEASE			
2008	58.4	61.8	59.8
2009	58.5	59.9	59.0
2010	56.8	61.0	58.7
2011	58.8	63.2	60.5
2012	59.1	59.2	59.2
2013	58.0	61.0	59.2
2014	57.5	57.1	57.3
2015	57.6	59.2	58.2
2016	57.1	59.3	57.9
2017	58.0	58.0	58.0
P for trend	0.44	**0.01**	**0.03**
Annual change in years, 95% CI	-0.09 (-0.34 to 0.15)	**-0.39 (-0.71 to -0.07)**	**-0.21 (-0.41 to -0.02)**
STROKE			
2008	58.1	58.2	58.2
2009	57.2	59.0	58.1
2010	59.3	61.1	60.3
2011	61.0	59.9	60.5
2012	61.6	60.5	61.1
2013	60.3	61.1	60.7
2014	61.8	56.1	58.9
2015	59.9	55.9	57.7
2016	61.8	55.1	58.7
2017	60.6	58.2	59.4
P for trend	0.11	0.13	0.87
Annual change in years, 95% CI	0.36 (-0.08 to 0.80)	-0.41 (-0.95 to 0.12)	-0.03 (-0.37 to 0.32)
HYPERCHOLESTEROLEMIA			
2008	48.7	51.8	50.3
2009	48.5	52.1	50.3
2010	49.0	51.7	50.4
2011	49.0	51.9	50.5
2012	49.5	51.6	50.6
2013	49.1	51.7	50.4
2014	48.7	51.2	50.0
2015	48.2	50.7	49.5

2016	48.8	51.2	50.0
2017	49.5	51.3	50.4
P for trend	0.73	0.14	0.39
Annual change in years, 95% CI	0.02 (-0.10 to 0.15)	-0.11 (-0.26 to 0.04)	-0.04 (-0.14 to 0.06)
HYPERTENSION			
2008	47.0	48.8	47.9
2009	46.7	49.0	47.9
2010	46.3	48.3	47.3
2011	47.7	48.9	48.3
2012	46.8	48.9	47.9
2013	45.6	49.2	47.4
2014	46.4	48.4	47.4
2015	46.6	49.0	47.8
2016	45.9	48.1	47.0
2017	46.3	47.9	47.1
P for trend	0.24	0.31	0.14
Annual change in years, 95% CI	-0.09 (-0.24 to 0.06)	-0.08 (-0.23 to 0.08)	-0.09 (-0.21 to 0.03)

Table S10. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by income levels: Trends from 2008-2017 among low income earners.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Low income			
CORONARY HEART DISEASE			
2008	57.3	60.9	59.0
2009	57.9	60.0	58.8
2010	59.3	60.7	60.0
2011	60.1	59.9	60.0
2012	60.4	63.5	61.8
2013	58.9	62.9	60.8
2014	59.0	65.3	61.9
2015	57.6	64.0	60.4
2016	59.0	62.7	60.7
2017	59.5	62.2	60.8
P for trend	0.65	0.08	0.14
Annual change in years, 95% CI	0.09 (-0.29 to 0.47)	0.36 (-0.06 to 0.78)	0.22 (-0.08 to 0.52)
STROKE			
2008	59.7	61.8	60.8
2009	58.7	59.3	59.0
2010	59.9	59.9	59.9
2011	60.9	61.4	61.2
2012	58.8	60.4	59.7
2013	59.4	60.3	59.9
2014	61.1	66.1	63.9
2015	59.9	57.4	58.5
2016	61.4	60.5	60.9
2017	60.0	59.9	60.0
P for trend	0.67	0.82	0.89
Annual change in years, 95% CI	0.15 (-0.53 to 0.82)	-0.07 (-0.64 to 0.50)	0.03 (-0.39 to 0.45)
HYPERCHOLESTEROLEMIA			
2008	52.8	55.2	54.2
2009	50.4	53.9	52.4
2010	50.0	54.0	52.3
2011	51.1	53.4	52.4
2012	52.0	55.4	53.8
2013	50.7	54.5	52.9
2014	50.1	54.3	52.6
2015	48.9	54.3	51.9

2016	51.0	55.1	53.3
2017	50.6	53.7	52.4
P for trend	0.18	0.88	0.33
Annual change in years, 95% CI	-0.16 (-0.38 to 0.07)	-0.02 (-0.23 to 0.19)	-0.08 (-0.23 to 0.08)
HYPERTENSION			
2008	49.9	50.6	50.3
2009	48.4	50.7	49.7
2010	47.4	50.0	48.9
2011	47.6	50.6	49.3
2012	49.1	50.7	50.0
2013	47.9	49.9	49.0
2014	48.1	49.0	48.6
2015	47.0	49.0	48.2
2016	47.1	50.7	49.0
2017	46.2	49.7	48.1
P for trend	**0.01**	0.18	**0.009**
Annual change in years, 95% CI	**-0.27 (-0.49 to -0.06)**	-0.12 (-0.29 to 0.06)	**-0.19 (-0.33 to -0.05)**

Table S11. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by income levels: Trends from 2008-2017 among very low income earners

Year	Age of diagnosis		
	Men	**Women**	**Total**
Very low income			
CORONARY HEART DISEASE			
2008	53.5	56.5	55.2
2009	53.5	53.8	53.6
2010	56.0	55.9	56.0
2011	55.0	56.8	56.0
2012	55.9	55.8	55.8
2013	54.7	54.4	54.5
2014	55.5	55.8	55.7
2015	54.3	57.6	56.0
2016	54.1	58.9	56.3
2017	56.4	58.9	57.6
P for trend	0.45	0.05	0.07
Annual change in years, 95% CI	0.14 (-0.22 to 0.49)	0.34 (-0.01 to 0.68)	0.23 (-0.02 to 0.47)
STROKE			
2008	53.1	56.9	55.5
2009	55.6	59.6	58.0
2010	51.8	55.9	54.4
2011	53.9	55.3	54.7
2012	53.6	53.3	53.4
2013	55.0	52.7	53.6
2014	57.0	53.3	54.7
2015	53.9	53.2	53.5
2016	52.3	50.9	51.5
2017	55.7	54.7	55.2
P for trend	0.50	**0.005**	0.06
Annual change in years, 95% CI	0.15 (-0.28 to 0.57)	**-0.60 (-1.02 to -0.19)**	-0.29 (-0.61 to 0.02)
HYPERCHOLESTEROLEMIA			
2008	48.7	54.3	52.2
2009	48.6	51.8	50.5
2010	47.3	50.7	49.3
2011	48.5	51.0	50.0
2012	48.0	50.9	49.7
2013	49.1	50.9	50.2
2014	49.2	51.2	50.4
2015	48.4	50.6	49.7

2016	49.2	51.6	50.7
2017	49.1	52.4	51.1
P for trend	0.25	0.21	0.70
Annual change in years, 95% CI	0.11 (-0.08 to 0.30)	-0.12 (-0.30 to 0.07)	-0.03 (-0.18 to 0.12)
HYPERTENSION			
2008	46.9	47.8	47.5
2009	46.6	46.2	46.4
2010	44.6	46.8	46.0
2011	45.4	47.4	46.6
2012	45.6	46.8	46.3
2013	45.5	46.4	46.0
2014	46.0	46.8	46.5
2015	45.1	46.8	46.1
2016	45.5	47.3	46.5
2017	46.7	47.5	47.2
P for trend	0.74	0.81	0.95
Annual change in years, 95% CI	-0.03 (-0.23 to 0.16)	0.02 (-0.15 to 0.19)	-0.004 (-0.14 to 0.13)

Table S12. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by insurance status: Trends from 2008-2017 among participants with private insurance.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Private			
CORONARY HEART DISEASE			
2008	48.1	48.8	48.3
2009	48.4	46.5	47.9
2010	47.6	46.2	47.2
2011	47.6	49.0	48.0
2012	48.5	48.8	48.6
2013	47.2	48.4	47.6
2014	47.2	46.6	47.0
2015	47.8	48.5	48.1
2016	48.5	46.6	47.9
2017	48.9	46.9	48.2
P for trend	0.81	0.73	0.94
Annual change in years, 95% CI	0.03 (-0.19 to 0.25)	-0.07 (-0.51 to 0.36)	-0.01 (-0.22 to 0.21)
STROKE			
2008	49.3	43.1	45.8
2009	48.5	46.0	47.0
2010	46.4	46.3	46.4
2011	44.5	43.8	44.1
2012	46.8	42.3	44.2
2013	48.7	42.5	44.8
2014	49.8	43.9	46.4
2015	48.1	43.7	45.7
2016	47.6	43.4	45.3
2017	46.9	42.4	44.6
P for trend	0.93	0.42	0.57
Annual change in years, 95% CI	0.02 (-0.44 to 0.47)	-0.19 (-0.66 to 0.28)	-0.09 (-0.43 to 0.24)
HYPERCHOLESTEROLEMIA			
2008	43.4	45.1	44.2
2009	43.2	44.4	43.7
2010	43.3	44.4	43.8
2011	43.1	44.6	43.8
2012	43.0	44.9	43.8
2013	43.3	44.2	43.7
2014	43.1	44.0	43.5
2015	42.1	43.8	42.8

2016	42.4	43.4	42.8
2017	42.6	43.3	42.9
P for trend	**0.01**	**0.001**	**<0.001**
Annual change in years, 95% CI	**-0.11 (-0.19 to -0.02)**	**-0.17 (-0.27 to -0.07)**	**-0.14 (-0.21 to -0.07)**
HYPERTENSION			
2008	41.6	43.5	42.5
2009	41.6	42.5	42.0
2010	41.6	42.3	41.9
2011	41.9	43.2	42.5
2012	41.7	42.5	42.1
2013	41.7	42.5	42.0
2014	41.7	42.0	41.8
2015	41.1	41.9	41.5
2016	41.2	42.3	41.7
2017	40.8	42.1	41.4
P for trend	0.10	**0.01**	**0.009**
Annual change in years, 95% CI	-0.08 (-0.17 to 0.02)	**-0.12 (-0.22 to -0.02)**	**-0.10 (-0.17 to -0.02)**

Table S13. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by insurance status: Trends from 2008-2017 among uninsured participants.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Uninsured			
CORONARY HEART DISEASE			
2008	44.5	46.9	45.4
2009	45.7	47.8	46.7
2010	46.9	45.8	46.5
2011	45.3	47.6	46.2
2012	47.4	44.9	46.4
2013	48.7	47.3	48.0
2014	46.2	45.7	46.0
2015	47.5	43.5	46.6
2016	49.7	49.3	49.5
2017	45.8	50.3	48.3
P for trend	0.21	0.83	0.34
Annual change in years, 95% CI	0.34 (-0.19 to 0.88)	0.09 (-0.75 to 0.93)	0.24 (-0.26 to 0.73)
STROKE			
2008	41.1	39.7	40.5
2009	39.6	41.4	40.6
2010	41.2	40.7	41.0
2011	41.5	42.7	42.2
2012	45.8	37.9	42.2
2013	48.4	38.8	45.1
2014	46.8	41.5	44.0
2015	50.0	47.0	48.4
2016	42.4	48.5	45.4
2017	43.0	44.6	43.7
P for trend	0.08	**0.02**	**0.007**
Annual change in years, 95% CI	0.63 (-0.09 to 1.34)	**0.69 (0.08 to 1.30**	**0.65 (0.18 to 1.12)**
HYPERCHOLESTEROLEMIA			
2008	41.6	44.5	42.9
2009	41.6	44.7	43.1
2010	43.1	43.4	43.2
2011	41.8	43.7	42.6
2012	41.7	44.3	43.0
2013	40.7	43.8	42.2
2014	41.9	42.3	42.1
2015	40.5	41.2	40.8

2016	41.9	42.5	42.2
2017	41.9	44.2	42.9
P for trend	0.52	**0.04**	0.08
Annual change in years, 95% CI	-0.07 (-0.28 to 0.15)	**-0.24 (-0.49 to -0.001)**	-0.15 (-0.31 to 0.02)
HYPERTENSION			
2008	40.2	41.0	40.5
2009	40.0	41.0	40.5
2010	40.5	41.1	40.7
2011	39.9	40.2	40.1
2012	39.7	41.6	40.6
2013	40.1	41.5	40.7
2014	41.2	40.3	40.9
2015	40.2	40.9	40.6
2016	38.6	40.8	39.6
2017	41.1	41.2	41.1
P for trend	0.96	0.98	0.97
Annual change in years, 95% CI	0.005 (-0.21 to 0.22)	-0.002 (-0.19 to 0.19)	-0.002 (-0.16 to 0.15)

Table S14. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by insurance status: Trends from 2008-2017 among participants with Medicaid insurance.

	Age of diagnosis		
Year	**Men**	**Women**	**Total**
Medicaid			
CORONARY HEART DISEASE			
2008	46.4	48.1	47.4
2009	44.3	45.5	45.0
2010	45.0	44.9	44.9
2011	47.8	47.3	47.6
2012	49.0	44.5	47.1
2013	47.8	43.3	45.6
2014	46.8	48.2	47.5
2015	46.5	48.0	47.0
2016	45.5	47.3	46.3
2017	49.1	46.7	48.3
P for trend	0.62	0.50	0.33
Annual change in years, 95% CI	0.11 (-0.31 to 0.52)	0.11 (-0.22 to 0.44)	0.13 (-0.13 to 0.38)
STROKE			
2008	46.5	40.8	42.8
2009	48.6	44.5	46.2
2010	41.3	47.0	45.0
2011	46.3	45.7	46.0
2012	47.6	43.9	45.9
2013	46.2	40.3	43.3
2014	47.8	41.6	44.0
2015	47.0	42.0	44.1
2016	46.1	41.9	43.5
2017	46.8	42.7	44.5
P for trend	0.87	0.25	0.40
Annual change in years, 95% CI	0.04 (-0.46 to 0.55)	-0.26 (-0.72 to 0.19)	-0.14 (-0.48 to 0.19)
HYPERCHOLESTEROLEMIA			
2008	44.3	43.2	43.6
2009	41.5	42.1	41.9
2010	39.4	41.7	41.0
2011	44.1	43.8	44.0
2012	44.4	42.8	43.5
2013	44.0	43.5	43.7
2014	43.5	44.4	44.0
2015	43.8	43.4	43.6
2016	42.7	42.8	42.8

2017	43.4	43.0	43.2
P for trend	0.64	0.46	0.36
Annual change in years, 95% CI	0.04 (-0.14 to 0.23)	0.06 (-0.11 to 0.24)	0.06 (-0.07 to 0.18)
HYPERTENSION			
2008	42.4	37.7	39.3
2009	40.5	39.1	39.5
2010	38.2	38.2	38.2
2011	41.6	40.7	41.1
2012	41.9	39.6	40.7
2013	40.6	40.0	40.3
2014	40.5	40.6	40.5
2015	40.9	39.8	40.3
2016	40.5	40.3	40.4
2017	40.5	39.9	40.2
P for trend	0.38	**0.04**	0.24
Annual change in years, 95% CI	-0.10 (-0.31 to 0.12)	**0.18 (0.01 to 0.35)**	0.08 (-0.06 to 0.22)

Table S15. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by insurance status: Trends from 2008-2017 among participants with Medicare insurance.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Medicare			
CORONARY HEART DISEASE			
2008	60.3	63.2	61.8
2009	61.4	63.0	62.2
2010	61.8	62.8	62.3
2011	64.0	66.0	64.8
2012	64.2	66.0	64.9
2013	62.2	66.6	63.9
2014	62.5	65.4	63.6
2015	62.2	63.9	62.9
2016	61.9	64.5	62.9
2017	62.3	64.3	63.0
P for trend	0.94	0.41	0.79
Annual change in years, 95% CI	0.008 (-0.22 to 0.23)	0.10 (-0.14 to 0.34)	0.02 (-0.15 to 0.19)
STROKE			
2008	60.2	64.7	62.6
2009	61.2	66.0	63.8
2010	64.5	64.7	64.6
2011	68.6	67.5	68.0
2012	66.4	67.8	67.2
2013	66.1	67.5	66.9
2014	66.5	69.2	67.9
2015	66.0	66.3	66.2
2016	66.6	65.9	66.2
2017	66.8	66.2	66.5
P for trend	**0.01**	0.58	**0.03**
Annual change in years, 95% CI	**0.48 (0.12 to 0.84)**	0.09 (-0.24 to 0.43)	**0.27 (0.02 to 0.53)**
HYPERCHOLESTEROLEMIA			
2008	60.4	62.8	61.8
2009	59.9	61.9	61.1
2010	58.5	61.3	60.2
2011	61.5	63.1	62.4
2012	60.9	63.0	62.0
2013	60.2	62.2	61.3
2014	59.3	61.4	60.5
2015	58.5	61.0	59.9

2016	58.8	61.1	60.0
2017	58.2	60.1	59.2
P for trend	**<0.001**	**<0.001**	**<0.001**
Annual change in years, 95% CI	**-0.29 (-0.43 to -0.14)**	**-0.27 (-0.41 to -0.14)**	**-0.29 (-0.39 to -0.18)**
HYPERTENSION			
2008	57.5	58.3	58.0
2009	57.1	57.3	57.2
2010	55.8	56.3	56.1
2011	58.7	58.8	58.8
2012	58.0	58.9	58.5
2013	57.2	58.2	57.7
2014	56.8	57.4	57.1
2015	56.8	57.8	57.4
2016	55.9	56.9	56.5
2017	55.9	56.8	56.4
P for trend	**0.008**	0.06	**0.003**
Annual change in years, 95% CI	**-0.21 (-0.37 to -0.06)**	-0.13 (-0.26 to 0.08)	**-0.17 (-0.28 to -0.06)**

Table S16. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by region: Trends from 2008-2017 among participants living in the Northeast.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Northeast			
CORONARY HEART DISEASE			
2008	58.5	56.5	57.6
2009	60.4	56.2	58.8
2010	58.6	59.2	58.8
2011	58.7	60.6	59.4
2012	58.5	61.0	59.5
2013	57.1	59.1	57.9
2014	58.9	58.9	58.9
2015	59.4	59.5	59.5
2016	59.2	62.2	60.5
2017	57.5	60.1	58.5
P for trend	0.69	0.05	0.41
Annual change in years, 95% CI	-0.08 (-0.49 to 0.33)	0.44 (-0.01 to 0.88)	0.13 (-0.17 to 0.43)
STROKE			
2008	53.7	55.3	54.6
2009	54.0	58.1	56.3
2010	58.7	63.0	61.2
2011	61.8	58.9	60.4
2012	57.8	57.7	57.7
2013	56.8	55.1	56.0
2014	62.1	59.9	61.1
2015	61.8	58.9	60.1
2016	63.3	59.7	61.4
2017	61.2	61.3	61.3
P for trend	**0.005**	0.47	**0.01**
Annual change in years, 95% CI	**0.86 (0.27-1.46)**	0.24 (-0.43 to 0.92)	**0.54 (0.12 to 0.95)**
HYPERCHOLESTEROLEMIA			
2008	49.0	52.9	51.0
2009	48.8	52.6	50.6
2010	49.6	52.2	50.8
2011	47.8	52.8	50.2
2012	47.4	52.5	49.9
2013	48.1	51.7	50.0
2014	48.1	51.4	49.7
2015	48.6	52.0	50.2

2016	48.8	52.8	50.8
2017	48.9	50.5	49.7
P for trend	0.84	0.09	0.29
Annual change in years, 95% CI	-0.02 (-0.25 to 0.20)	-0.16 (-0.34 to 0.03)	-0.08 (-0.24 to 0.07)
HYPERTENSION			
2008	47.3	49.9	48.6
2009	47.2	49.8	48.5
2010	47.4	48.9	48.1
2011	47.7	50.4	49.0
2012	47.2	50.2	48.7
2013	47.8	49.8	48.8
2014	48.6	50.0	49.3
2015	47.2	49.3	48.3
2016	47.2	50.7	48.9
2017	46.2	50.0	48.0
P for trend	0.63	0.69	0.92
Annual change in years, 95% CI	-0.053 (-0.27 to 0.17)	0.05 (-0.17 to 0.26)	-0.008 (-0.18 to 0.16)

Table S17. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by region: Trends from 2008-2017 among individuals living in the Midwest.

Year	Age of diagnosis		
	Men	**Women**	**Total**
Midwest			
CORONARY HEART DISEASE			
2008	55.6	62.0	58.5
2009	56.1	61.2	58.0
2010	57.5	62.6	59.6
2011	57.2	62.4	59.1
2012	58.0	62.1	59.2
2013	56.8	63.4	59.0
2014	56.8	60.4	58.3
2015	58.6	58.3	58.5
2016	56.5	59.2	57.5
2017	57.4	58.6	57.8
P for trend	0.37	0.05	0.41
Annual change in years, 95% CI	0.12 (-0.15 to 0.39)	-0.41 (-0.82 to 0.01)	-0.11 (-0.36 to 0.15)
STROKE			
2008	60.3	58.1	59.2
2009	62.2	58.7	60.2
2010	58.9	57.0	57.7
2011	58.1	59.1	58.6
2012	60.3	57.0	58.7
2013	60.5	57.1	58.7
2014	60.6	60.6	60.6
2015	57.8	56.0	56.9
2016	58.3	57.2	57.7
2017	60.9	57.1	58.8
P for trend	0.57	0.71	0.57
Annual change in years, 95% CI	-0.14 (-0.62 to 0.34)	-0.11 (-0.72 to 0.49)	-0.12 (-0.53 to 0.29)
HYPERCHOLESTEROLEMIA			
2008	49.5	52.2	50.9
2009	49.5	51.8	50.7
2010	48.6	51.3	50.0
2011	49.0	51.7	50.3
2012	48.9	51.8	50.3
2013	49.0	51.3	50.1
2014	49.5	51.1	50.2
2015	48.9	50.7	49.8

2016	48.7	50.8	49.7
2017	48.7	51.1	49.9
P for trend	0.50	0.12	0.12
Annual change in years, 95% CI	- 0.06 (-0.24 to 0.12)	-0.14 (-0.31 to 0.04)	-0.10 (-0.24 to 0.03)
HYPERTENSION			
2008	47.6	49.0	48.3
2009	46.7	48.5	47.6
2010	45.5	48.4	47.0
2011	47.0	49.7	48.4
2012	47.2	50.1	48.7
2013	46.4	48.7	47.6
2014	46.5	48.2	47.3
2015	47.1	47.8	47.5
2016	46.0	48.2	47.1
2017	46.8	48.3	47.6
P for trend	0.72	0.22	0.27
Annual change in years, 95% CI	-0.03 (-0.22 to 0.15)	-0.11 (-0.29 to 0.07)	-0.08 (-0.22 to 0.06)

Table S18. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by region: Trends from 2008-2017 among individuals living in the South.

	Age of diagnosis		
Year	**Men**	**Women**	**Total**
South			
CORONARY HEART DISEASE			
2008	55.0	57.8	56.2
2009	55.8	57.9	56.7
2010	56.6	56.8	56.7
2011	57.8	57.1	57.6
2012	58.5	57.5	58.1
2013	57.7	57.5	57.6
2014	56.5	57.4	56.9
2015	56.1	58.4	57.1
2016	57.5	57.8	57.6
2017	58.4	59.1	58.7
P for trend	0.12	0.51	0.12
Annual change in years, 95% CI	0.21 (-0.05 to 0.47)	0.11 (-0.22 to 0.43)	0.16 (-0.04 to 0.37)
STROKE			
2008	56.8	57.6	57.3
2009	57.9	58.6	58.3
2010	57.6	59.5	58.6
2011	57.0	56.0	56.5
2012	56.5	56.1	56.3
2013	58.5	56.1	57.1
2014	58.9	54.9	56.6
2015	57.2	54.3	55.6
2016	57.9	54.2	55.9
2017	58.0	57.0	57.5
P for trend	0.68	**0.04**	0.28
Annual change in years, 95% CI	0.09 (-0.38 to 0.57)	**-0.39 (-0.79 to -0.01)**	-0.17 (-0.48 to 0.14)
HYPERCHOLESTEROLEMIA			
2008	49.1	52.5	50.9
2009	48.5	51.4	50.0
2010	48.5	51.2	49.9
2011	49.5	51.5	50.5
2012	49.6	51.7	50.7
2013	49.5	51.7	50.6
2014	49.1	51.4	50.2
2015	48.0	50.4	49.2
2016	48.6	50.5	49.5

2017	49.0	51.4	50.2
P for trend	0.68	0.08	0.13
Annual change in years, 95% CI	-0.03 (-0.18 to 0.12)	-0.13 (-0.28 to 0.02)	-0.09 (-0.21 to 0.03)
HYPERTENSION			
2008	46.6	48.5	47.6
2009	46.6	48.2	47.5
2010	46.4	48.4	47.4
2011	46.7	47.6	47.2
2012	46.4	47.6	47.0
2013	46.5	47.9	47.2
2014	46.5	47.2	46.9
2015	46.3	47.7	47.0
2016	45.4	47.4	46.4
2017	46.0	47.1	46.6
P for trend	0.21	**0.03**	**0.03**
Annual change in years, 95% CI	-0.08 (-0.23 to 0.05)	**-0.14 (-0.27 to -0.01)**	**-0.12 (-0.22 to -0.01)**

Table S19. Sex differences in the prevalence and age of diagnosis of cardiovascular disease & its risk factors, stratified by region: Trends from 2008-2017 among individuals living in the West.

	Age of diagnosis		
Year	**Men**	**Women**	**Total**
West			
CORONARY HEART DISEASE			
2008	57.3	60.8	58.5
2009	58.0	58.3	58.1
2010	56.6	59.1	57.6
2011	55.4	63.3	58.7
2012	58.5	62.2	60.0
2013	57.2	59.4	58.2
2014	58.0	61.7	59.3
2015	55.2	62.8	57.8
2016	56.2	60.8	58.0
2017	59.5	59.5	59.5
P for trend	0.92	0.69	0.44
Annual change in years, 95% CI	0.02 (-0.29 to 0.33)	0.11 (-0.42 to 0.63)	0.05 (-0.18 to 0.28)
STROKE			
2008	58.1	60.8	59.6
2009	57.5	60.7	59.3
2010	58.1	60.2	59.1
2011	60.2	60.1	60.1
2012	59.6	60.6	60.2
2013	60.0	61.3	60.7
2014	57.7	58.7	58.3
2015	58.4	56.5	57.4
2016	60.5	55.8	58.0
2017	59.1	54.4	56.8
P for trend	0.70	**0.04**	0.27
Annual change in years, 95% CI	0.14 (-0.59 to 0.89)	**-0.69 (-1.39 to -0.01)**	-0.30 (-0.85 to 0.24)
HYPERCHOLESTEROLEMIA			
2008	48.6	51.8	50.1
2009	48.1	51.8	49.8
2010	47.8	51.5	49.5
2011	48.3	51.6	49.9
2012	49.2	52.4	50.8
2013	49.2	51.7	50.4
2014	47.6	51.9	49.6
2015	46.6	51.8	49.1

2016	47.6	51.1	49.3
2017	48.3	51.4	49.8
P for trend	0.29	0.59	0.30
Annual change in years, 95% CI	-0.08 (-0.24 to 0.07)	-0.04 (-0.21 to 0.12)	-0.06 (-0.18 to 0.05)
HYPERTENSION			
2008	47.8	50.9	49.4
2009	47.4	50.7	48.9
2010	47.0	49.6	48.3
2011	48.4	50.5	49.4
2012	48.7	50.5	49.6
2013	47.8	50.4	49.0
2014	46.6	49.7	48.1
2015	46.3	49.9	48.1
2016	47.3	49.6	48.4
2017	46.7	50.3	48.4
P for trend	0.15	0.30	0.08
Annual change in years, 95% CI	-0.13 (-0.31 to 0.04)	-0.09 (-0.27 to 0.08)	-0.11 (-0.24 to 0.02)