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HEALTHCARE ACCESS, CHRONIC DISEASE BURDEN, AND DELAYED MEDICAL CARE AMONG U.S. ADULTS: A POPULATION-BASED ANALYSIS OF THE 2024 NATIONAL HEALTH INTERVIEW SURVEY

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ABSTRACT-

Cost-related delayed care is an important concern for access to healthcare in the United States, especially when financial hardship and poor insurance coverage are present, and when chronic disease is present. The study analyzed the relationship between delayed medical care and chronic disease burden, financial barriers, and health care access among all adults in the United States in 2024 based on the National Health Interview Survey Sample Adult data. A cross-sectional secondary analysis with complex survey weighting and design variables was performed. The influence of insurance coverage, usual source of care, problems paying medical bills, worry about medical bills, burden of chronic diseases, and sociodemographic factors on delayed medical care was assessed. The proportion of poor medical care was 8.58% (weighted). Delays in care were significantly higher among uninsured adults and those without a usual source of care. The strongest associations were with medical-bill problems and great concern about paying healthcare expenses. Lack of insurance, absence of a usual source of care, financial hardship, and increased chronic disease burden were associated with increased odds of delayed care in adjusted analyses. The lowest prevalence was among the oldest adults, those over the age of 65. These results suggest that financial and health-care-availability factors play a role in delaying medical care and support the need for measures that increase affordability and continuity of care as well as support adults with chronic conditions.

Keywords: Healthcare access; Delayed medical care; Chronic disease burden; Health insurance; Medical financial hardship

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1. Introduction

Ensuring timely access to affordable health care is a major and essential prerequisite for good prevention of diseases, early diagnosis, continuity of the treatment process and long-term management of chronic disease. Yet, affordability of care continues to be a problem in the United States, with out-of-pocket expenses, gaps in care, deductibles and other financial pressures impacting patients' decisions about whether they seek care when they need it. Access issues related to affordability remain a critical challenge in the delivery of equitable health care, with recent national policy discussion highlighting that these issues are continuing to impact access for a variety of populations (Kazi et al., 2026).

Having insurance is not the only measure of access to health care. Socio-economic status, work, income, geographic location, and access to the health care system may also influence access to care among adults. A large body of long-term evidence on the U.S. adult population has revealed that socioeconomic inequities in access to health and health services are linked to significant inequities in health outcomes, underscoring the health impacts of unequal access to health services (Gulati et al., 2025).

Access to healthcare is also complicated by the burden of chronic disease, as people with multiple chronic diseases may need more frequent clinical contacts, use more medications, more monitoring and follow-up care. Financial barriers to health-care utilization may thus be particularly challenging for adults suffering from multiple chronic conditions. The fact that some U.S. evidence in recent years has highlighted the relevance of cost-related delays in healthcare suggests a relationship between multimorbidity and affordability that can impact timely healthcare can be found (Azubuike & Alawode, 2024).

One of the most significant structural problems in the U.S. health care system continues to be affordability. The direct expenses of health insurance coverage, including deductibles, copayments, coinsurance, and services not covered by the insurance coverage, can be high even if people have coverage. These financial hurdles can cause patients to delay seeking medical care, diagnostic services, treatment or medication. The issues have remained for some time and have spurred renewed interest in affordability of healthcare as a national policy priority (McWilliams & Dusetzina, 2024).

One important way to enhance access to public insurance has been the expansion of public insurance. Increased coverage through Medicaid expansion under the Affordable Care Act has been linked to changes in health care access and financial behaviour among U.S. adults, highlighting that greater coverage can have a positive impact on access and financial strain (Baten et al., 2024). However, access is still inequitable, as coverage is not necessarily linked to timely and affordable services.

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Access barriers that may be especially complex for working-age adults involve the need to have insurance or for it to be tied to employment status, occupational benefits, and household financial resources. While insurance coverage is a factor that has been found to be associated with important differences in access to care among adults with long COVID, the relationship between health needs and insurance coverage status can vary in populations with chronic health needs (Ford et al., 2024).

Even those who have private health insurance can have a significant financial burden. While insurance status is a useful indicator of financial protection, recent evidence suggests that financial stress within the health care system can continue to affect adults with commercial insurance, highlighting the need for measures to go beyond just insurance status to capture financial strain for these individuals (Shashikumar et al., 2024). It's important to consider this when examining delayed care, since some patients may be covered by insurance, but opt not to seek treatment due to financial costs.

Other financial burdens, like medical debt and out-of-pocket expenses, also can create financial hardship that impacts access. The study found that adults with an increased OOHB or medical debt were more likely to have financial barriers to accessing needed healthcare services, suggesting a clear link between financial stress in the household and healthcare access (Bernard et al., 2023). These barriers can be particularly significant when they delay or pass up the opportunity to receive prevention services or when they result in an exacerbation of chronic conditions.

Similarly, adults with prolonged post-COVID symptoms have been shown to have difficulties accessing healthcare. The financial and structural barriers that impact access to and affordability of health care services for COVID-19 patients have been reported to have deepened the need for health care services by adult patients (aged 18-64) with post-COVID-19 (PC19) illness (Karpman et al., 2023). These results further emphasise that access barriers should be studied in nationally representative adult populations.

Chronic illness can also have financial ramifications that cause financial delays to care. Repeated healthcare utilisation, medication requirements and treatment costs can also add up, even for adults with chronic disease who have commercial insurance, which means there can be significantly worse financial outcomes (Becker et al., 2022). These provide a plausible pathway in which a combination of chronic disease burden and healthcare affordability can impact access to timely healthcare.

Therefore, it is necessary to explore healthcare access, financial barriers and the burden of chronic diseases in a single framework. This study thus examined the prevalence of cost-related delay in medical care among U.S. adults and the association with health insurance coverage, usual source of care, difficulty with medical bills, financial worry, burden of chronic disease, and other key sociodemographic characteristics in the 2024 National Health Interview Survey (NHIS).

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2. Materials and Methods

2.1 Study Design and Data Source

The NHIS-Sample Adult public-use dataset from the 2024 survey was used for a cross-sectional secondary analysis. NHIS is a national cross-sectional household health survey carried out by the National Centre for Health Statistics. The 2024 survey asked the following questions of the civilian noninstitutionalized population in the 50 states and the District of Columbia. The data were gathered from January 01, 2024, to December 31, 2024, with the main method being computer-assisted personal interviews, supplemented by telephone interviews where appropriate. 2024-NHIS-PRICSSA-508

The NHIS uses a geographically clustered, stratified sampling design. Each eligible household is sampled, and 1 adult is selected at random to fill out the Sample Adult interview. The present analysis used the public-use Sample Adult file from the National Health Interview Survey (NHIS) from 2024, which comprised 32,629 respondents and represented the source population. 2024-NHIS-PRICSSA-508

2.2 Study Population and Eligibility

The analytical population comprised NHIS 2024 Sample Adult population aged 18 years and older. Valid information for the variables necessary for the analysis for which the participant was included. If the response was refused, not ascertained, do not know or any other category not included in valid answers, they were coded as missing and not included in analyses involving those variables.

As NHIS is a complex design, the analyses were performed on the full public use adult sample of NHIS, and not by manually removing the NHIS design structure. This method allows valid variance estimation for population and subgroup analyses as per recommendations by NCHS. 2024-NHIS-PRICSSA-508

2.3 Outcome Variable

The main outcome measured was delay in health care access due to cost in the past 12 months (NHIS variable MEDDL12M_A). Responses where medical care was delayed due to cost were recorded as 1 (yes) and responses where medical care was not delayed due to cost, as 0 (no). Invalid/non-substantive responses were considered missing.

Prevalence of delayed medical care was calculated for total, and for each of the following categories: demographic, healthcare-access, financial, and chronic-disease.

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2.4 Healthcare Access and Financial Variables

Measures of health care access were chosen to capture structural and financial health care access barriers. The state of health insurance coverage was evaluated based on the NOTCOV_A measure and classified as covered or not covered. The previous question, USUALPL_A was used to create a dichotomous variable named AVAILUROU.AVAILUROU was created from the previous question USUALPL_A, which was dichotomized as one usual place vs. no usual place or more than one usual place.

Financial barriers were measured by both PAYBLL12M_A (problems paying or inability to pay medical bills), and PAYWORRY_A (degree of worry about ability to pay medical bills). The latter was rated as very worried, somewhat worried or not worried at all. Each of these variables was analyzed separately in descriptive analyses and then was included in the multivariable regression model.

2.5 Chronic Disease Burden

Chronic disease burden was constructed from five physician-diagnosed chronic conditions available in the Sample Adult dataset:

- hypertension (HYPEV_A);
- diabetes (DIBEV_A);
- coronary heart disease (CHDEV_A);
- chronic obstructive pulmonary disease (COPDEV_A); and
- arthritis (ARTHEV_A).

Each condition was coded as present or absent using valid yes/no responses. A chronic disease count was then calculated by summing the number of conditions present for each participant. The count was categorised into 0 conditions, 1 condition, and ≥2 conditions to represent increasing chronic disease burden.

In addition to the composite burden measure, the five chronic conditions were evaluated individually to examine condition-specific differences in delayed medical care.

2.6 Sociodemographic and Health Covariates

The variables available in the 2024 NHIS Sample Adult were used to select for covariates, including age, sex, race/ethnicity, smoking status, U.S. Census region, and urban-rural residence.

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Age was categorised as 18–24, 25–34, 35–44, 45–54, 55–64, and ≥65 years. Sex was evaluated based on the sex categories available. Race/ethnicity was categorized as Hispanic, non-Hispanic White, non-Hispanic Black, and other non-Hispanic. Lifetime and current smoking responses were used to determine smoking status as never, former, or current smoking. Geographic region was classified as Northeast, Midwest, South, or West, and urban-rural residence was classified based on available NHIS metropolitan/nonmetropolitan classification.

2.7 Survey Design and Weighting

The NHIS complex survey design was included in all analyses. The population-representative estimates were generated with the Sample Adult final annual weight (WTFA_A) as the sampling weight variable, and PSTRAT as the stratum and PPSU as the primary sampling unit. These variables are specified by NCHS for valid Sample Adult analysis. 2024-NHIS-PRICSSA-508

The variance estimation was done in the framework of the linearization of Taylor series. The final annual weight is used to correct for nonresponse and unequal probabilities of selection. Weighting, clustering, and stratification were needed because NHIS is not a simple random sample, as this would lead to underestimation of the standard errors and increase the risk of Type I error. 2024-NHIS-PRICSSA-508

2.8 Statistical Analysis

The Python programming language was utilised for analyses. Pandas and NumPy were used to manage and recode the data, and statsmodels and matplotlib were used for statistical modelling and graphical analyses.

Sociodemographic, health access measures, chronic conditions and delayed medical care were summarised by frequency, percentage, and prevalence estimates, all of which were weighted. Weighted prevalence estimates were used to estimate corresponding 95% confidence intervals. The differences in delayed medical care between categorical groups were assessed by comparing the data using design-adjusted comparisons for complex survey data.

A survey-weighted logistic regression was used to analyse factors associated with delayed medical care. Crude odds ratios were first calculated for each predictor. The multivariable model was then developed to include the variables related to health care access, financial barriers, chronic disease burden, age, sex, race/ethnicity, smoking status, geographic region and urban-rural residence. Adjusted odds ratios (aORs) with 95% confidence intervals (CIs) were reported for associations. A two-sided p-value < 0.05 was statistically significant.

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Four main graphical outputs were created: weighted prevalence by category of healthcare access; weighted prevalence by degree of chronic disease burden; forest plot of adjusted associations; and weighted prevalence by age group. All figures have been created to publication quality.

2.9 Ethical Considerations

This study was conducted with publicly available, de-identified NHIS data, and participants were not contacted directly. The public-use files are deliberately formatted to preserve respondent confidentiality, and greater detail is only provided in restricted-use information via the NCHS Research Data Centre. 2024-NHIS-PRICSSA-508. No further recruitment of participants, intervention or gathering of identifiable personal information was therefore carried out for this secondary analysis.

3. Results

3.1 Sociodemographic Characteristics of the Study Population

The analysis included 32,629 adults from the 2024 National Health Interview Survey. Adults aged ≥65 years constituted the largest weighted age group (22.98%), followed by those aged 25–34 years (17.10%) and 35–44 years (17.02%). Females represented 51.32% of the weighted population, whereas males accounted for 48.68%. Most respondents were non-Hispanic White (61.13%), followed by Hispanic (17.94%), non-Hispanic Black (11.84%), and other non-Hispanic racial/ethnic groups (9.10%).

Regarding smoking status, 67.64% were never smokers, 22.42% were former smokers, and 9.94% were current smokers. Regionally, the South accounted for the largest proportion of the weighted population (38.56%), followed by the West (23.58%), Midwest (20.50%), and Northeast (17.36%). Large central metropolitan areas accounted for 31.73% of participants, whereas 14.10% lived in nonmetropolitan areas. The weighted sociodemographic and health characteristics of the study population are presented in Table 1.

Table 1. Weighted Sociodemographic and Health Characteristics of U.S. Adults in the 2024 National Health Interview Survey

Characteristic	Category	Unweighted n	Weighted %	95% CI
Age group	18–24 years	2,008	11.59	10.99–12.19

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	25–34 years	4,676	17.10	16.55–17.65
	35–44 years	5,057	17.02	16.48–17.57
	45–54 years	4,446	15.43	14.92–15.94
	55–64 years	5,467	15.87	15.41–16.33
	≥65 years	10,923	22.98	22.39–23.58
Sex	Male	14,985	48.68	48.00–49.35
	Female	17,639	51.32	50.65–52.00
Race/ethnicity	Hispanic	4,762	17.94	16.72–19.15
	Non-Hispanic White	21,770	61.13	59.67–62.60
	Non-Hispanic Black	3,296	11.84	11.02–12.65
	Non-Hispanic other	2,801	9.10	8.43–9.77
Smoking status	Never smoker	20,351	67.64	66.87–68.41
	Former smoker	8,162	22.42	21.80–23.05
	Current smoker	3,363	9.94	9.47–10.40

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Region	Northeast	5,178	17.36	16.43–18.28
	Midwest	7,492	20.50	19.49–21.50
	South	11,815	38.56	37.15–39.97
	West	8,144	23.58	22.34–24.82
Urban–rural residence	Large central metro	9,376	31.73	29.66–33.81
	Large fringe metro	6,836	24.81	22.60–27.02
	Medium/small metro	9,113	29.36	26.66–32.05
	Nonmetropolitan	7,304	14.10	12.90–15.30

3.2 Overall Prevalence of Delayed Medical Care

The overall weighted prevalence of delayed medical care because of cost was 8.58% among U.S. adults. Considerable variation was observed according to healthcare-access and financial characteristics. Adults experiencing limitations in healthcare access or financial difficulty consistently showed higher prevalence estimates than their respective comparison groups.

Healthcare-access characteristics and the corresponding prevalence of delayed medical care are summarised in Table 2. The variation in delayed medical care according to healthcare-access and financial-barrier characteristics is also illustrated in Figure 1.

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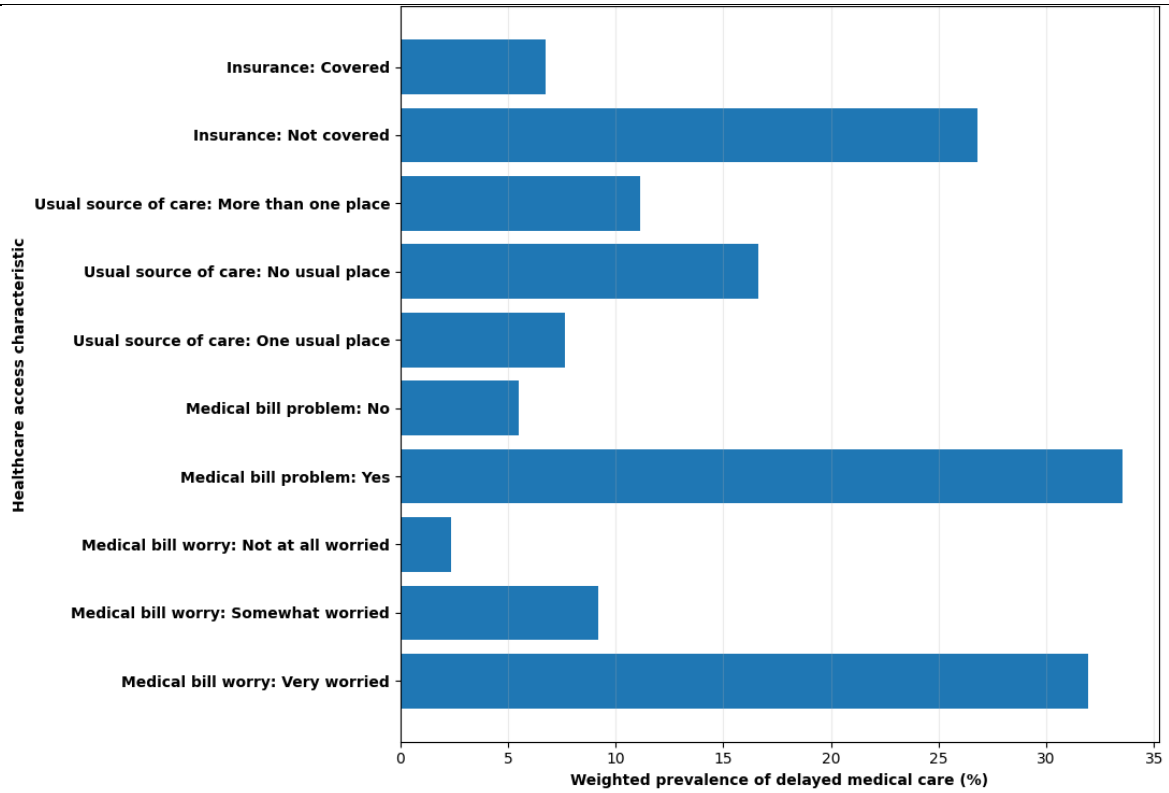


Figure 1. Weighted Prevalence of Delayed Medical Care According to Healthcare Access Characteristics Among U.S. Adults

3.3 Health Insurance Coverage and Usual Source of Care

Health insurance coverage showed a marked association with delayed medical care. Adults without health insurance had a weighted delayed-care prevalence of 26.79%, compared with 6.75% among insured adults (p<0.001). Thus, delayed care was approximately four times as prevalent among uninsured adults at the descriptive level.

Differences were also apparent according to the availability of a usual source of healthcare. Adults reporting no usual place of care had a weighted delayed-care prevalence of 16.63%, compared with 7.62% among those with one usual source of care. Adults reporting more than one usual place of care had an intermediate prevalence of 11.12%.

These findings are presented in Table 2 and visually supported by Figure 1, which demonstrates the substantially higher prevalence of delayed care among uninsured adults and those without a usual source of healthcare.

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Table 2. Healthcare Access Characteristics and Prevalence of Delayed Medical Care Among U.S. Adults

Healthcare access characteristic	Category	n	Delayed care, weighted %	95% CI	p-value
Health insurance coverage	Covered	30,218	6.75	6.35–7.15	<0.001
	Not covered	2,318	26.79	24.63–28.95	
Usual place of care	One usual place	28,930	7.62	7.18–8.06	<0.001
	No usual place	2,739	16.63	14.97–18.30	
	More than one place	721	11.12	8.35–13.88	
Problems paying medical bills	No	29,186	5.47	5.10–5.84	<0.001
	Yes	3,243	33.56	31.50–35.61	
Worry about paying medical bills	Not at all worried	18,720	2.33	2.04–2.63	<0.001
	Somewhat worried	9,576	9.18	8.44–9.93	
	Very worried	4,135	31.97	30.10–33.83	

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3.4 Financial Barriers to Medical Care

Financial difficulty was among the most prominent characteristics associated with delayed medical care. Adults who reported problems paying medical bills had a weighted delayed-care prevalence of 33.56%, compared with only 5.47% among those who did not report such problems (p<0.001).

A pronounced gradient was also observed according to concern about paying medical bills. Delayed medical care occurred in 31.97% of adults who were very worried about paying medical expenses, compared with 9.18% among those who were somewhat worried and 2.33% among those who were not worried at all.

As illustrated in Figure 1, medical-bill problems and high levels of concern regarding healthcare expenses were associated with the highest observed prevalence estimates of delayed medical care.

3.5 Chronic Disease Burden and Delayed Medical Care

Chronic disease burden was evaluated using selected chronic conditions, including hypertension, diabetes, coronary heart disease, chronic obstructive pulmonary disease (COPD), and arthritis. At the descriptive level, the weighted prevalence of delayed care differed only slightly according to the number of chronic conditions.

Adults with no selected chronic conditions had a delayed-care prevalence of 8.42%, compared with 8.79% among adults with one chronic condition and 8.70% among those with two or more conditions. The overall unadjusted difference between the three burden categories was not statistically significant (p=0.707).

The distribution of delayed medical care according to chronic disease burden is presented in Table 3. The weighted prevalence estimates across the three burden categories are displayed in Figure 2, demonstrating the limited crude variation between groups.

Table 3. Chronic Disease Burden and Delayed Medical Care Among U.S. Adults

Chronic condition/burden	Category	n	Delayed care, weighted %	95% CI	p-value
Hypertension	No	20,314	8.80	8.27–9.33	0.071
	Yes	12,263	8.06	7.42–8.71	

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Diabetes	No	28,891	8.52	8.06–8.98	0.414
	Yes	3,709	9.06	7.82–10.31	
Coronary heart disease	No	30,406	8.73	8.28–9.17	<0.001
	Yes	2,110	5.73	4.36–7.09	
COPD	No	30,733	8.49	8.05–8.93	0.044
	Yes	1,856	10.32	8.44–12.21	
Arthritis	No	23,861	8.28	7.79–8.76	0.005
	Yes	8,724	9.67	8.79–10.55	
Chronic disease burden	0 conditions	15,825	8.42	7.84–9.00	0.707
	1 condition	8,519	8.79	7.99–9.59	
	≥2 conditions	8,095	8.70	7.87–9.54	

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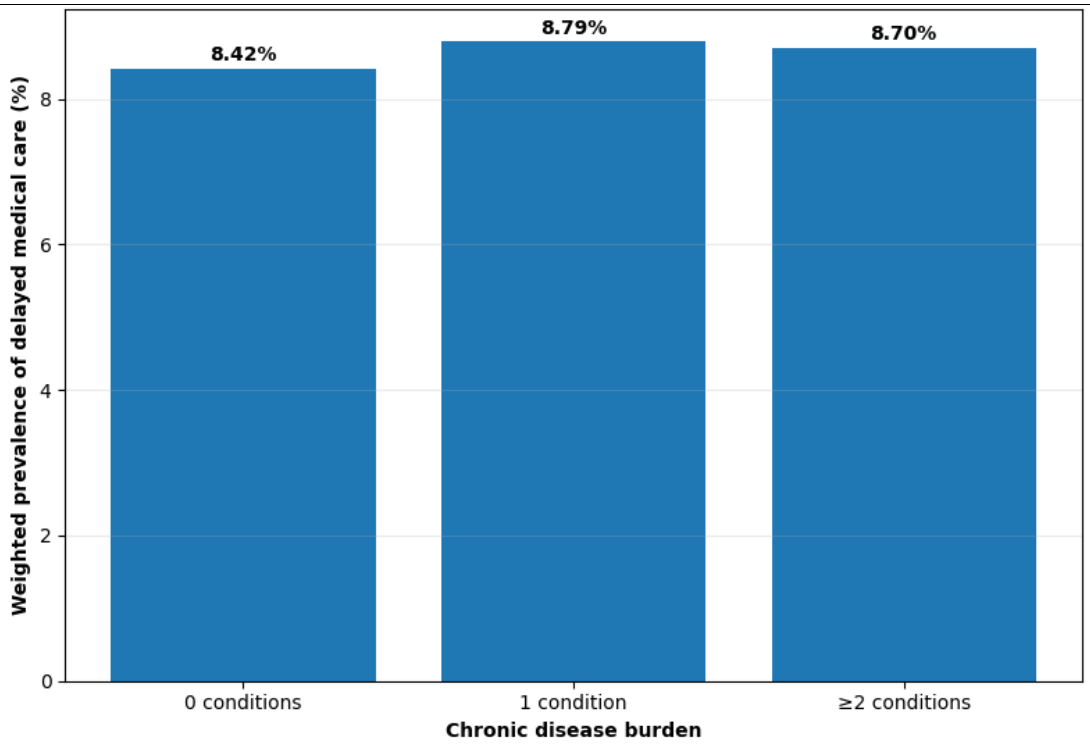


Figure 2. Weighted Prevalence of Delayed Medical Care According to Chronic Disease Burden Among U.S. Adults

3.6 Individual Chronic Conditions and Delayed Medical Care

Analysis of individual chronic diseases showed that delayed-care patterns varied by condition. Adults with COPD had a weighted delayed-care prevalence of 10.32%, compared with 8.49% among those without COPD (p=0.044). Adults with arthritis similarly exhibited a higher prevalence of delayed care than adults without arthritis (9.67% vs. 8.28%, p=0.005).

Differences according to hypertension and diabetes status were comparatively small in the unadjusted analysis. Hypertension was associated with delayed-care prevalence estimates of 8.06% among affected adults and 8.80% among those without hypertension, whereas the corresponding estimates for diabetes were 9.06% and 8.52%, respectively.

These condition-specific results are summarized in Table 3 and indicate that the crude association between chronic illness and delayed care differed across specific disease groups.

3.7 Multivariable Factors Associated With Delayed Medical Care

The survey-weighted multivariable logistic regression identified several healthcare-access and financial characteristics associated with delayed medical care. As shown in Table 4, uninsured

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adults had significantly higher adjusted odds of delayed care than insured adults (aOR=2.52, 95% CI: 2.12–2.99; $p<0.001$). Adults without a usual source of healthcare also had higher adjusted odds of delayed care (aOR=1.45, 95% CI: 1.21–1.73; $p<0.001$).

Financial barriers showed the largest adjusted associations. Adults who experienced problems paying medical bills had 3.73 times the odds of delayed care compared with those without such problems (95% CI: 3.24–4.29; $p<0.001$). Compared with adults who were not worried about paying medical bills, those who were somewhat worried had increased odds of delayed care (aOR=3.06, 95% CI: 2.62–3.57; $p<0.001$), while those who were very worried had substantially greater odds (aOR=9.72, 95% CI: 8.09–11.69; $p<0.001$).

After adjustment for healthcare-access and demographic factors, chronic disease burden was also associated with delayed care. Adults with one chronic condition had higher odds than those with none (aOR=1.31, 95% CI: 1.13–1.52; $p<0.001$), while those with ≥2 chronic conditions had greater odds (aOR=1.80, 95% CI: 1.50–2.16; $p<0.001$).

The complete survey-weighted regression results are presented in Table 4, while the magnitude and precision of the major adjusted associations are illustrated in Figure 3.

Table 4. Survey-Weighted Logistic Regression of Factors Associated with Delayed Medical Care Among U.S. Adults

Predictor	Comparison	Crude OR (95% CI)	Adjusted OR (95% CI)	p-value for adjusted model
Insurance coverage	Not covered vs covered	5.06 (4.45–5.74)	2.52 (2.12–2.99)	<0.001
Usual place of care	No usual place vs one usual place	2.42 (2.11–2.77)	1.45 (1.21–1.73)	<0.001
	More than one vs one usual place	1.52 (1.14–2.03)	1.17 (0.80–1.71)	0.408

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Medical bill problems	Yes vs no	8.73 (7.78–9.79)	3.73 (3.24–4.29)	<0.001
Medical bill worry	Somewhat vs not at all worried	4.23 (3.66–4.89)	3.06 (2.62–3.57)	<0.001
	Very worried vs not at all worried	19.66 (16.88–22.90)	9.72 (8.09–11.69)	<0.001
Chronic disease burden	1 vs 0 conditions	1.05 (0.93–1.18)	1.31 (1.13–1.52)	<0.001
	≥2 vs 0 conditions	1.04 (0.91–1.18)	1.80 (1.50–2.16)	<0.001
Age	25–34 vs 18–24 years	1.60 (1.31–1.96)	1.29 (1.00–1.67)	0.046
	35–44 vs 18–24 years	1.30 (1.05–1.61)	1.00 (0.78–1.27)	0.994
	45–54 vs 18–24 years	1.36 (1.10–1.69)	0.90 (0.69–1.16)	0.407
	55–64 vs 18–24 years	1.15 (0.94–1.42)	0.77 (0.59–1.00)	0.052
	≥65 vs 18–24 years	0.30 (0.24–0.38)	0.27 (0.20–0.37)	<0.001
Sex	Male vs female	0.76 (0.69–0.85)	0.81 (0.72–0.91)	<0.001

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Race/ethnicity	Hispanic vs NH White	1.19 (1.04–1.35)	0.50 (0.43–0.60)	<0.001
	NH Black vs NH White	1.02 (0.87–1.20)	0.66 (0.53–0.81)	<0.001
	NH other vs NH White	0.70 (0.57–0.85)	0.58 (0.47–0.72)	<0.001
Smoking status	Former vs never smoker	1.17 (1.03–1.33)	1.22 (1.05–1.41)	0.009
	Current vs never smoker	1.89 (1.64–2.16)	1.17 (0.97–1.40)	0.096
Region	Midwest vs Northeast	1.37 (1.15–1.64)	1.15 (0.93–1.41)	0.202
	South vs Northeast	1.67 (1.42–1.96)	1.22 (1.02–1.46)	0.027
	West vs Northeast	1.27 (1.07–1.51)	1.22 (1.01–1.48)	0.038
Urban–rural residence	Large fringe vs large central metro	0.98 (0.85–1.14)	1.04 (0.88–1.23)	0.669
	Medium/small vs large central metro	1.25 (1.09–1.44)	1.17 (1.00–1.38)	0.051
	Nonmetropolitan vs large central metro	1.00 (0.86–1.17)	0.84 (0.70–1.01)	0.069

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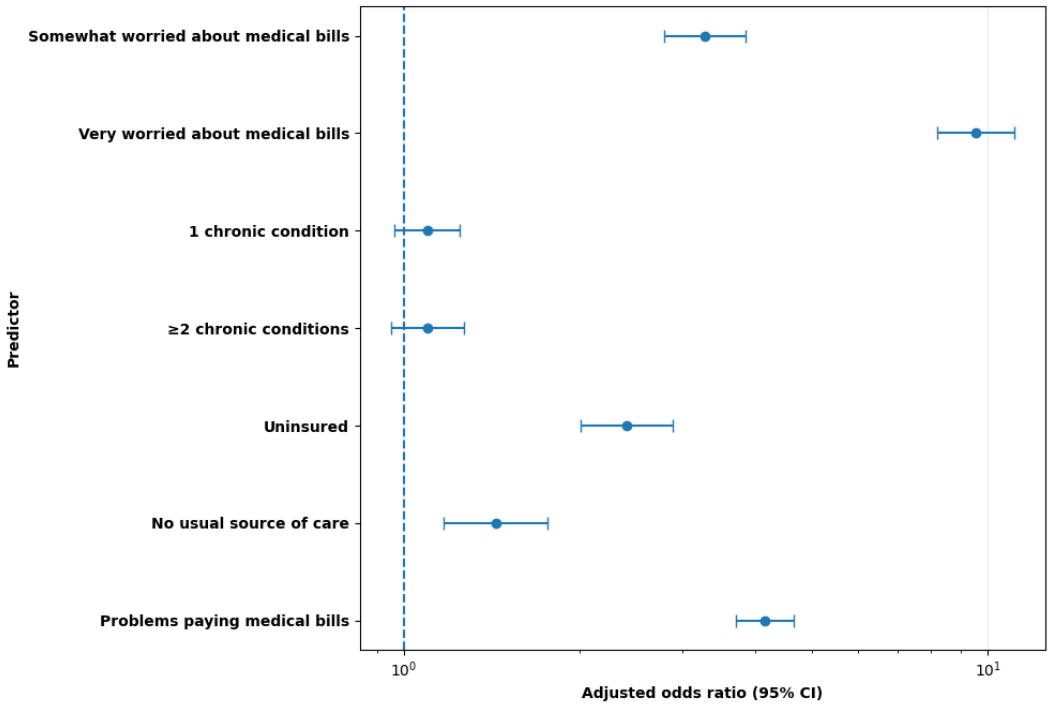


Figure 3. Adjusted Odds Ratios and 95% Confidence Intervals for Factors Associated with Delayed Medical Care Among U.S. Adults

3.8 Age-Related Variation in Delayed Medical Care

Substantial differences in delayed medical care were observed across age groups. Adults aged 25–34 years had the highest weighted prevalence at 12.45%. This was followed by adults aged 45–54 years (10.81%), 35–44 years (10.36%), and 55–64 years (9.28%). Adults aged 18–24 years had a weighted prevalence of 8.16%.

In contrast, adults aged ≥65 years had the lowest prevalence of delayed medical care, at 2.62%. The age-specific pattern is illustrated in Figure 4, showing a marked reduction in delayed-care prevalence among the oldest age group compared with younger and middle-aged adults.

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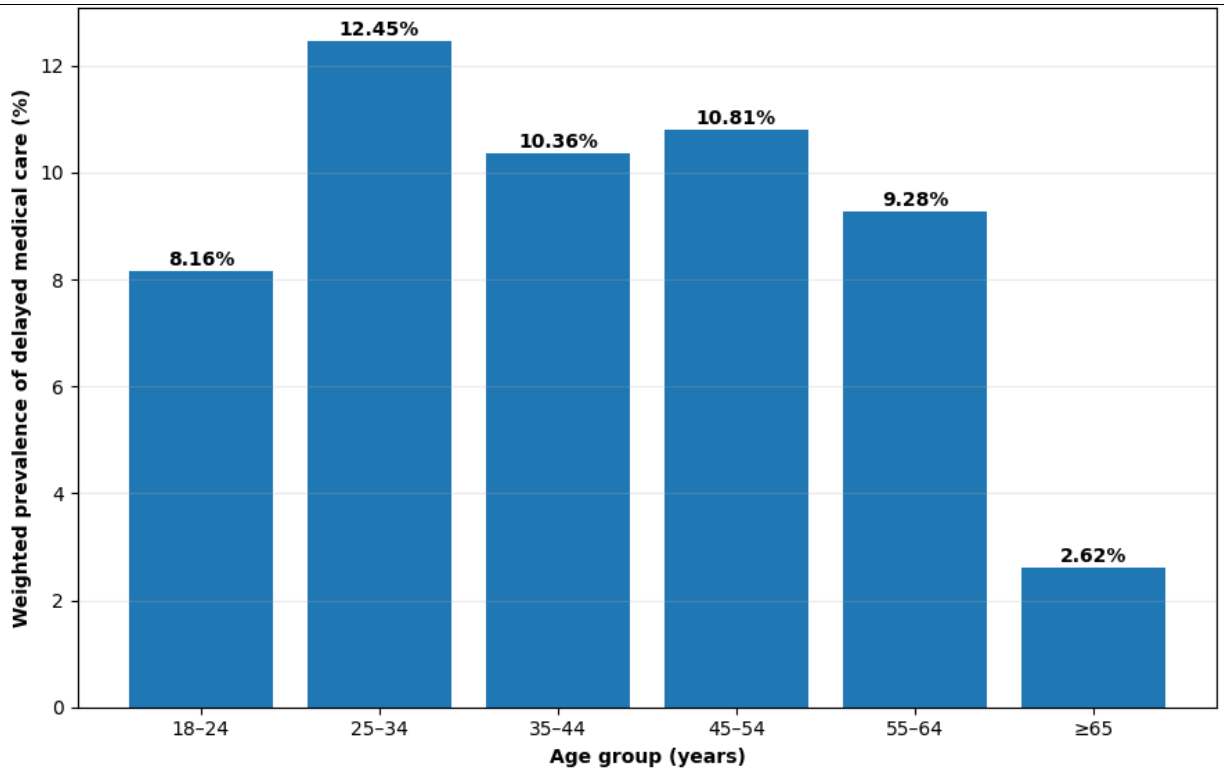


Figure 4. Weighted Prevalence of Delayed Medical Care Across Age Groups Among U.S. Adults

3.9 Overall Pattern of Findings

Taken together, the findings demonstrated that delayed medical care was most strongly concentrated among adults experiencing financial and healthcare-access barriers. The highest descriptive prevalence estimates occurred among adults with problems paying medical bills, those very worried about medical expenses, and those without health insurance. Chronic disease burden showed minimal differences in the unadjusted prevalence analysis but was associated with higher odds of delayed care after multivariable adjustment. Age-related differences were also evident, with adults aged 25–34 years showing the highest prevalence and adults aged ≥65 years the lowest.

4. Discussion

The present analysis shows significant variation in the cost-related delayed health care utilization of U.S. adults by healthcare-access, financial, demographic and chronic-disease characteristics. The most notable patterns were seen in those adults who were without insurance, had no usual source of care, who had difficulty paying medical bills, and who were concerned about the cost of medical bills. These results are consistent with the broader evidence that financial exposure

continues to be one of the most important factors impacting timely receipt of needed care among adults (Moon et al., 2026).

The relationship between not being insured and delayed care is also comparable to the national evidence available for disease-specific care. Lack of insurance has been found to be related to cost-related delays in or missed care for adults with diabetes, particularly (Casagrande & Lawrence, 2025). However, insurance status does not necessarily reflect the true level of accessibility as administrative barriers can also hinder access to care. Even when people have insurance, they can face extra hurdles due to insurance denials and administrative hassles (Yaver, 2024).

Another factor identified in the present study that was associated with usual source of care is access. Adults lacking a regular health care facility had a higher prevalence as well as adjusted odds of delayed care. Access to health services is important and could help minimize delays by ensuring a consistent health services entry point for evaluation, follow-up and referrals. Similarly, previous studies have found multiple individual and healthcare access factors to be linked to late care for adults (Ratnapradipa et al., 2023).

One of the most salient aspects of the financial burden was revealed as a financial strain. The highest adjusted association was found with the adults who reported problems with their medical bills and with those who expressed a high concern for paying medical bills. Cost-sharing and high deductibles in insurance plans significantly add to the direct economic cost of care for adults with chronic disease, which continues to be a concern (Park et al., 2023). Beyond attendance, financial stress has also been shown to affect cost-related nonadherence in individuals with CLD (Kim et al., 2024), highlighting the impact that affordability issues can have on health-care utilization.

The financial-access pattern observed was also consistent with those observed in a cardiovascular population. Adults with atherosclerotic cardiovascular disease (ASCVD) have been linked to delays in receiving medical care, both due to cost and non-cost barriers (Mszar et al., 2024). Current national data also show that financial difficulties continue to be an issue for adults with cardiovascular disease, further emphasizing the importance of financial constraints that may prevent adults with cardiovascular disease from accessing health care in a timely fashion (Shah et al., 2026).

The burden of chronic diseases revealed an interesting difference between the crude and adjusted analysis. There was a small difference in weighted prevalence by disease burden (zero, one or two or more chronic disease conditions) for delayed care, while the adjusted analysis showed increased odds with increased disease burden. This indicates that the association between multimorbidity and delay in care might be partly explained by other demographic factors such as age, insurance, financial burden, and other factors. Cost-related medicine nonadherence is another example of

how a chronic disease can couple with cost constraints; for adults with COPD, there was significant cost-related medication nonadherence (Wen et al., 2024).

There was some variation across chronic diseases in the individual disease analyses. The differences were larger for wasted care in COPD and arthritis, but smaller for hypertension and diabetes. This may be because of symptom burden, treatment intensity, or frequency of contact with the healthcare system, as well as the need for and costs of medications. Cardiovascular risk factors (CVRFs) among the working-age population have also been linked to access to care, which implies that barriers to access can affect the management of CVRFs in various ways across the conditions (Marinacci et al., 2023).

There was another interesting finding, the age gradient. Adults aged 25 - 34 years reported the highest weighted prevalence of delayed medical care, while adults aged 65 years or older reported the lowest prevalence of delayed medical care. Younger and middle-aged adults might have more fluctuations in insurance coverage, employment-based benefits, and costs of health care than older adults, who are more likely to have established health care relationships. There are also studies that show there is variation in delayed and foregone care amongst nonelderly U.S. adults by age (Giannouchos et al., 2022).

It is important to consider regional differences as well. The majority of the subjects in the study were from the southern part of the country, and there was a difference in the regression analysis by region. Medical financial hardship has been shown to persist in the Southern United States and has been linked to other socioeconomic and health care system differences (Datta et al., 2024). Racial/ethnic disparities have also been documented among Medicare beneficiaries with respect to satisfaction with access and affordability of healthcare services, suggesting that access barriers may differ among racial/ethnic groups (Roberts et al., 2024).

Other factors that might relate to disability and functional status, not measured in the main study variables, may also affect access to healthcare. Among U.S. adults, there are differences in access to healthcare by disability and by race, further highlighting the need to consider intersecting vulnerabilities as they relate to healthcare access (Choi et al., 2025). The disparities in delayed healthcare access have also been found between gender groups, which suggests that barriers can go beyond traditional socioeconomic and clinical groups (Finneran et al., 2024).

In conclusion, the results suggest that not only does the chronic disease burden affect medical care delays, but also the overall impact of insurance coverage, medical care affordability, continuity of care, and the sociodemographic context. In the healthcare and nursing practice context, these results indicate that these factors should be routinely identified as potential indicators of patients' medical-bill problems, absence of a usual source of care, and multiple chronic conditions. Additional data also suggest that medical debt is strongly linked to delayed care for physical,

mental and dental health issues, further highlighting the need for screening financial barriers to care in clinical and community environments (Moon et al., 2026).

Public health and health services approaches to reducing delayed health care will likely need to encompass not only coverage, but actual affordability of services as well. Strategies that focus on coverage alone are likely to be less effective in addressing ongoing costs to patients, administrative hassles, or gaps in access to care. This finding aligns with evidence that the linkage between affordability and access is highly associated with healthcare utilisation and financial hardship for several U.S. populations (Shah et al., 2026).

5. Conclusion

This study confirms that there is a strong relationship between cost-related delayed health care and health care access problems, and financial difficulty in the United States for adults. The weighted overall prevalence of delayed care was 8.58%, but was significantly greater for uninsured adults, adults with no usual source of care, adults who had difficulty paying medical bills and adults who experienced significant worry regarding health care costs. These results suggest that financial access to needed medical care on time is still very much related to financial constraints. The prevalence of delayed care for chronic diseases was largely similar across unadjusted analyses, and adults with 1 or more chronic conditions had increased odds of delayed care when compared to adults with selected chronic conditions in the adjusted analysis. This implies that the impact of chronic illness could be more pronounced if healthcare access, financial factors and demographic aspects were considered together. There were also significant differences in age related to the prevalence, with younger and middle-aged adults having higher prevalence than adults over 65 years of age. The overall conclusions suggest that such a step to decrease delayed healthcare access will not only involve extending insurance coverage but also a greater effort to improve the quality of care and its accessibility. Support for navigating and continuity of care for adults living with chronic conditions, the financial burden of out-of-pocket costs, and policies and healthcare strategies should also be considered. These measures could contribute to facilitating timely access, preventing unnecessary deterioration in health, as well as enhancing patient-centred care.

References

1. Azubuike, C. D., & Alawode, O. A. (2024). Delayed healthcare due to cost among adults with multimorbidity in the United States. *Healthcare, 12*(22), 2271. https://doi.org/10.3390/healthcare12222271

2. Baten, R. B. A., Noman, A., & Rahman, M. N. (2024). Affordable Care Act Medicaid expansion, access to health care, and financial behavior of the United States adults. *Journal of Public Health Policy, 45*(4), 740–756. https://doi.org/10.1057/s41271-024-00522-0

3. Becker, N. V., Scott, J. W., Moniz, M. H., Carlton, E. F., & Ayanian, J. Z. (2022). Association of chronic disease with patient financial outcomes among commercially insured adults. *JAMA Internal Medicine, 182*(10), 1044–1051. https://doi.org/10.1001/jamainternmed.2022.3687

4. Bernard, D. M., Selden, T. M., & Fang, Z. (2023). The joint distribution of high out-of-pocket burdens, medical debt, and financial barriers to needed care. *Health Affairs, 42*(11), 1517–1526. https://doi.org/10.1377/hlthaff.2023.00604

5. Casagrande, S. S., & Lawrence, J. M. (2025). Trends in delaying and forgoing medical care due to cost and the association with insurance status among US adults with diabetes, 2009–2023. *BMJ Open Diabetes Research & Care, 13*(6), e005446. https://doi.org/10.1136/bmjdrc-2025-005446

6. Choi, J., Castro, F., Swenor, B., & Varadaraj, V. (2025). Healthcare access by disability and race among United States adults: Behavioral Risk Factor Surveillance System 2019 to 2021. *Disability and Health Journal, 18*(4), 101908. https://doi.org/10.1016/j.dhjo.2025.101908

7. Datta, B. K., Coughlin, S. S., Moore, J. X., & Chen, J. (2024). Medical financial hardship in the Southern United States: The struggle continues across generations pre- and post-the Affordable Care Act. *Research in Health Services & Regions, 3*, 13. https://doi.org/10.1007/s43999-024-00049-7

8. Finneran, P., Toribio, M. P., Natarajan, P., & Honigberg, M. C. (2024). Delays in accessing healthcare across the gender spectrum in the All of Us Research Program. *Journal of General Internal Medicine, 39*(7), 1156–1163. https://doi.org/10.1007/s11606-023-08548-y

9. Ford, N. D., Slaughter, D., Dalton, A. F., Edwards, D., Ma, K., King, H., & Saydah, S. (2024). Health insurance and access to care in U.S. working-age adults experiencing Long COVID. *American Journal of Preventive Medicine, 67*(4), 530–539. https://doi.org/10.1016/j.amepre.2024.05.007

10. Giannouchos, T. V., Brooks, J. M., Andreyeva, E., & Ukert, B. (2022). Frequency and factors associated with foregone and delayed medical care due to COVID-19 among nonelderly US adults from August to December 2020. *Journal of Evaluation in Clinical Practice, 28*(1), 33–42. https://doi.org/10.1111/jep.13645

11. Gulati, I., Kilian, C., Buckley, C., Mulia, N., & Probst, C. (2025). Socioeconomic disparities in healthcare access and implications for all-cause mortality among US adults: A 2000–2019 record linkage study. *American Journal of Epidemiology, 194*(2), 432–440. https://doi.org/10.1093/aje/kwae202

12. Karpman, M., Zuckerman, S., & Morriss, S. (2023). Health care access and affordability among US adults aged 18 to 64 years with self-reported post-COVID-19 condition. *JAMA Network Open, 6*(4), e237455. https://doi.org/10.1001/jamanetworkopen.2023.7455

13. Kazi, D. S., Beckman, J. A., Benjamin, R. M., Firestone, G., Johnson, J. C., McClellan, M. B., Meltzer, N., Oxrider, A., Rosen, S. E., Scott, B. L., Volpp, K. G., & Warner, J. J. (2026). Health care affordability in the United States, from crisis to action: A Presidential Advisory from the American Heart Association. *Circulation, 153*(22), e1369–e1389. https://doi.org/10.1161/CIR.0000000000001442

14. Kim, D., Manikat, R., Wijarnpreecha, K., & Ahmed, A. (2024). Financial hardship and cost-related nonadherence to medication in patients with liver disease in the United States. *Alimentary Pharmacology & Therapeutics, 60*(4), 492–502. https://doi.org/10.1111/apt.18122

15. Marinacci, L. X., Bartlett, V., Zheng, Z., Mein, S., & Wadhera, R. K. (2023). Health care access and cardiovascular risk factor management among working-age US adults during the pandemic. *Circulation: Cardiovascular Quality and Outcomes, 16*(12), e010516. https://doi.org/10.1161/CIRCOUTCOMES.123.010516

16. McWilliams, J. M., & Dusetzina, S. B. (2024). Affordability of health care in the United States—Old problems awaiting a new administration. *New England Journal of Medicine, 391*(15), 1372–1374. https://doi.org/10.1056/NEJMp2410638

17. Moon, K. J., Becker, N. V., Miller, K. E. M., & Ettman, C. K. (2026). Medical debt and deferred care for physical health, mental health, and dental needs among U.S. adults. *Journal of General Internal Medicine, 41*(11), 3133–3141. https://doi.org/10.1007/s11606-026-10215-x

18. Mszar, R., Hagan, K., Lahan, S., & Parekh, T. (2024). Cost and non-cost factors associated with delays in receiving medical care in adults with atherosclerotic cardiovascular disease. *Journal of the Royal College of Physicians of Edinburgh, 54*(2), 127–132. https://doi.org/10.1177/14782715241256693

19. Park, K. E., Saluja, S., & Kaplan, C. M. (2023). Alleviating financial hardships associated with high-deductible health plans for adults with chronic conditions through health savings accounts. *Journal of General Internal Medicine, 38*(7), 1593–1598. https://doi.org/10.1007/s11606-022-07985-5

20. Ratnapradipa, K. L., Jadhav, S., Kabayundo, J., Wang, H., & Smith, L. C. (2023). Factors associated with delaying medical care: Cross-sectional study of Nebraska adults. *BMC Health Services Research, 23*, 118. https://doi.org/10.1186/s12913-023-09140-0

21. Roberts, E. T., Ruggiero, D. A., Stefanescu, A., Patel, S., Hames, A. G., & Tipirneni, R. (2024). Racial and ethnic disparities in satisfaction with healthcare access and affordability in Medicare Advantage vs. Traditional Medicare. *Journal of General Internal Medicine, 39*(12), 2368–2371. https://doi.org/10.1007/s11606-024-08892-7

22. Shah, R. M., Arun, A. S., Lu, Y., Dhruva, S. S., Wadhera, R. K., & Krumholz, H. M. (2026). Health care affordability by atherosclerotic cardiovascular disease status: A JACC data report on trends in the United States, 2019–2024. *Journal of the American College of Cardiology, 87*(9), 1145–1148. https://doi.org/10.1016/j.jacc.2025.12.042

23. Shashikumar, S. A., Zheng, Z., Joynt Maddox, K. E., & Wadhera, R. K. (2024). Financial burden of health care in the privately insured US population. *JAMA Internal Medicine, 184*(7), 843–845. https://doi.org/10.1001/jamainternmed.2024.1464

24. Wen, X., Qiu, H., Yu, B., Bi, J., Gu, X., Zhang, Y., & Wang, S. (2024). Cost-related medication nonadherence in adults with COPD in the United States 2013–2020. *BMC Public Health, 24*, 864. https://doi.org/10.1186/s12889-024-18333-z

25. Yaver, M. (2024). Rationing by inconvenience: How insurance denials induce administrative burdens. *Journal of Health Politics, Policy and Law, 49*(4), 539–565. https://doi.org/10.1215/03616878-11186111