

Comparing Health Care Financial Burden With an Alternative Measure of Unaffordability

INQUIRY: The Journal of Health Care Organization, Provision, and Financing
Volume 54: 1–7
© The Author(s) 2017
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0046958017732960
journals.sagepub.com/home/inq



Edward S. Kielb, BS¹, Corwin N. Rhyan, MPP¹, and James A. Lee, MS¹

Abstract

Health insurance plans with high deductibles increase exposure to health care costs, raising concerns about how the growth in these plans may be impacting both the financial burden of health care expenditures on families and their access to health care. We find that foregoing medical care is common among low-income, privately insured families, occurring at a greater rate than those with higher incomes or Medicare coverage. To better understand the relationship between out-of-pocket (OOP) spending and access, we used the 2011-2014 Medical Expenditure Panel Survey (MEPS) data and a logistic model to analyze the likelihood of avoiding or delaying needed medical care based on health insurance design and other individual and family characteristics. We find that avoiding or delaying medical care is strongly correlated with coverage under a high-deductible health plan, and with depression, poor perceived health, or poverty. However, it is relatively independent of the percent of income spent on OOP costs, making the percent of income spent on OOP costs by itself a poor measure of health care unaffordability. Individuals who spend a small percentage of their income on health care costs may still be extremely burdened by their health plan when financial concerns prevent access to health care. This work emphasizes the importance of insurance design as a predictor of access and the need to expand the definition of financial barriers to care beyond expenditures, particularly for the low-income, privately insured population.

Keywords

high-deductible health plans, financial burden, health expenditures, deductibles and coinsurance, logistic model, out-of-pocket costs, health insurance, access to health care, unaffordability, underinsured

Introduction

The Affordable Care Act (ACA) instituted a wide array of changes to the health insurance marketplace resulting in increased access for many previously uninsured individuals and increased standards for those with private employer or marketplace, nongroup coverage. While most notable for the resulting drop in uninsured rates across the country, primarily driven by the state Medicaid expansions and employer and individual mandates, the law also established regulations requiring stricter standards for a minimum acceptable level of coverage.^{1,2} These standards include guaranteed issue (preventing insurers from excluding those with preexisting conditions), the elimination of lifetime spending caps, limits on annual deductibles, limits on annual out-of-pocket (OOP) spending, and requirements that plans cover services considered essential to an individual's health. These standards are aimed at reducing *underinsurance*, a situation where an individual's coverage either leaves them liable for an unsustainable amount of medical OOP expenses or results in the inability to receive necessary care.³

Despite the ACA regulations and guaranteed level of coverage, for many low-income individuals in the non-group, individual market and employees covered with

employer-sponsored insurance, their plan leaves them underinsured. This is especially true for those offered high-deductible health plans (HDHPs), which under the law in 2015 were allowed to have deductibles up to \$6600 for an individual and \$13 200 for a family. While often paired with health savings accounts (HSAs), a high-deductible plan for a low-income individual places a potentially significant burden for medical expenses before the deductible is reached as many of these individuals are unable to fund their HSA.⁴ Furthermore, while these plans are subject to the OOP maximums established by the law, services not classified as essential health benefits and services provided out-of-network may not count toward the annual cap, further exposing an individual to higher expenses.

¹Altarum Institute, Ann Arbor, MI, USA

Received 6 May, 2017; revised 28 July, 2017; accepted 2 August, 2017

Corresponding Author:

Edward S. Kielb, Strategic Research and Initiatives Group, Altarum Institute, 3520 Green Court #300, Ann Arbor, MI 48105, USA.
Email: EdwardSKielb@Gmail.com



The use of HDHPs has increased substantially over the past 10 years, carrying with it several major concerns for low-income enrollees.⁵ First, that these individuals will be forced to spend a large percentage of their income on health care expenses. Thresholds of 10% or 20% of total income have been identified as levels of concern for combined spending on premiums and OOP medical expenses. Previous work has shown that families making less than 200% of the Federal Poverty Level (FPL) are far more likely to have a health care financial burden—the percent of income spent on premiums and OOP costs—above these thresholds.^{6,7,8,9} In addition, it has been shown that these risks are even more pronounced in the pool of low-income individuals with HDHPs, who have almost twice the risk of health care expenditures exceeding 20% of income than those with a plan without such high deductibles.^{10,11} Furthermore, recent research has analyzed the impact of HDHPs on medical expenditures. HDHPs appear to cause reduced spending on outpatient care and pharmaceuticals, though no judgment has been yet been made on how such plan changes impact low-wage, privately insured persons.^{12,13,14}

A potential complementary concern for the underinsured is that they avoid receiving necessary medical care altogether, such as dental care, filling prescriptions, or critical medical procedures.¹⁵ Previous work that has looked solely at health care financial burden as a percent of income effectively censors those with the inability to spend on health care, and thus does not capture this concern. A low-income individual who spends 0% of their income on health care may nevertheless be extremely burdened by their underinsurance if they completely avoided care due to the potential OOP costs. Moreover, financial burden as a measure of underinsurance is problematic because the OOP caps under ACA make it mathematically impossible for some middle-income families to reach the 10% or 20% of income threshold, despite the possibility they may be significantly impacted by their medical expenses.¹⁶ Previous work modeling avoided or delayed care only in families with children demonstrated that in such families, a measure of these concerns is a better predictor of unmet needs than raw OOP costs.¹⁷

It is important to note that the concept of *underinsurance* includes components beyond the economic concerns of avoiding care due to cost and percentage of income spent on health care expenses mentioned above. Previous work has also identified underinsurance can occur as a result of plans not covering particular services or providers (structural underinsurance) or from an individual's perception of the quality of a health plan and its coverage (attitudinal underinsurance).¹⁸ Qualitative underinsurance measures to assess these concerns using access to care questions have been previously demonstrated in an analysis of the impacts of the ACA on people's access to health care.¹⁹ Furthermore, using the 2007 Health Tracking Household Survey, it was demonstrated that almost 20 percent of US adults faced some manner of *unaffordability* barrier to medical care.²⁰ It has also been found that lower income persons are

more likely to experience nonfinancial barriers and less likely to use health care than their higher income counterparts.²¹

In this article, we focus primarily on economic and attitudinal factors of underinsurance. To measure the attitudinal factor of underinsurance, we defined an unaffordability metric to identify individuals who avoid or delay medical care as a result of cost. We then compare this metric with a health care financial burden indicator—percent of family income spent on health care—measuring economic factors of underinsurance. Finally, focusing on the privately insured population, we develop a logistic model to predict the impact of financial barriers, plan type, and health characteristics on unaffordability concerns for this population.

Study Data and Methods

We analyzed the Medical Expenditure Panel Survey (MEPS) using SAS version 9.4. The MEPS population is a subset of the National Health Interview Survey (NHIS) respondents and is designed to provide nationally representative spending estimates of per-capita medical procedures. The most recent available data is from 2014. It was collected from March to May 2015 and includes responses from 34,875 individuals. Each individual is reported as part of a larger family with a corresponding characteristic weight determined by demographic and financial factors, thus allowing us to collapse the data to the household level. We used the Current Population Survey (CPS) family weights; the differences with MEPS-defined weights are small, but the CPS definition is broader.²² For example, using the CPS definition, college students away from home count as members of their family's household.

Outcome Variables

Our central data definition concerns *unaffordability*. We defined it as a dichotomous variable on a household level using a series of access to care questions. A family is defined as having an unaffordability concern if any member of that family reported either delay or loss of medical care, prescription medication, or dental care for financial reasons. We assume that family members typically pool resources used for medical care and that therefore unaffordability concern for any member of the family extends to others within that family. This accords with recent publications using *unaffordability* as a measure of financial barriers.^{16,17,18} Exact MEPS questions used to compute the unaffordability metric are found in Online Appendix A.

A second key variable is *health care financial burden*, which estimates financial barriers facing families. We defined *health care financial burden* as the proportion of total OOP medical expenditures divided by total income for each family. Previous work that quantifies *health care financial burden* using MEPS data sometimes includes individual contributions to premiums in addition to OOP expenditures for the privately insured population.⁷ Our measure of *health care financial*

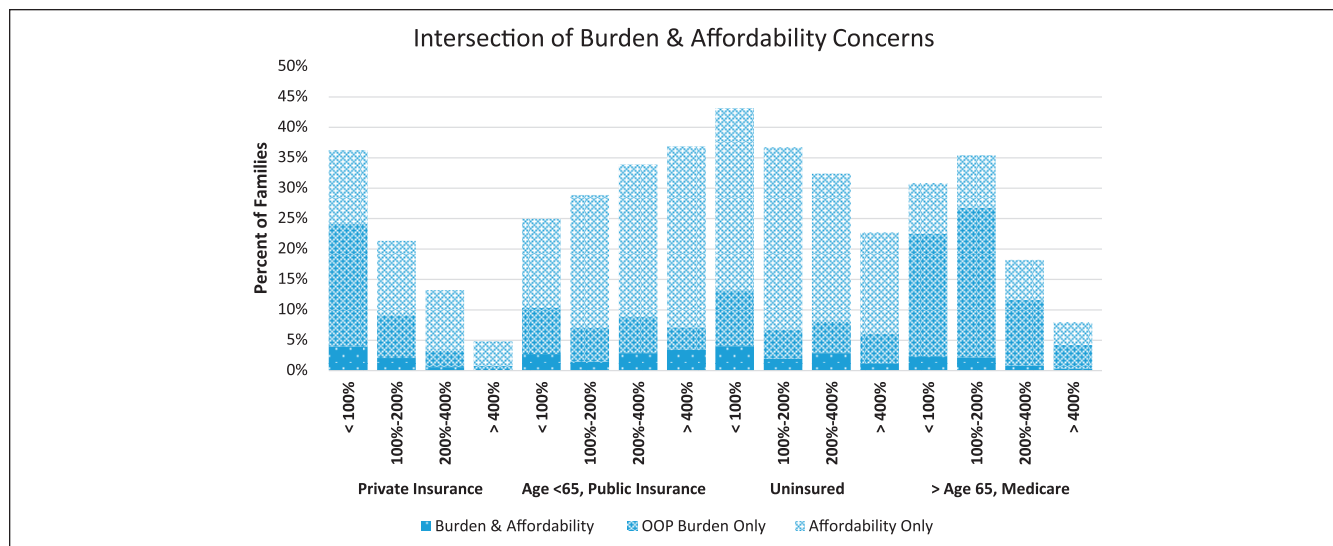


Figure 1. Relationship between affordability and high OOP financial burden by insurance type and income level, 2014.

Note. 'Burden & Affordability' refers to the percentage of families facing 10% or more in OOP financial burden who reported affordability concerns.

'OOP Burden Only' and 'Affordability Only' refer to the percentage of families who either faced a 10% or higher OOP financial burden or who reported affordability concerns, but not both. OOP = out-of-pocket.

burden in this article only includes OOP expenditures for 2 reasons. First, because we model *unaffordability*, which focuses on care decisions made at the margin, OOP expenditures may best represent the spending that is made for a marginal unit of medical care. Second, the MEPS data contain premium expenditures only for the privately insured population; therefore, only including OOP *health care financial burden* best allows for comparison across insurance types.

A final important outcome variable is the presence of an *HDHP*. MEPS separates out insurance plans according to their deductible within the privately insured population, allowing us to define a dichotomous variable as 1 for persons with a plan that has a deductible of at least \$1300/\$2600 for a single/family plan, respectively, and 0 otherwise. This distinction has been used in recent literature indicating a link between *HDHPs* and high *health care financial burden*.¹⁰

Analytical Methods

Our first aim was to characterize unaffordability concerns across the US population. To accomplish this, we broke down the US population into subgroups differentiated by insurance type and income bracket. We then analyzed the relationship between *unaffordability* concerns and high *health care financial burden* within each group, to determine the overlap between the two.

Using these subgroups, we calculated a range of summary statistics, including using MEPS family weights to calculate the number of families within that group across the US population, unaffordability concerns, and health care financial burden. Next, we calculated how *unaffordability* problems within these subgroups have varied over time.

Finally, we set out to determine factors that had an impact on *unaffordability among the privately insured*, and included them into a model of families who would be most likely to have financial concerns regarding OOP medical expenditures. We thus developed a series of predictive logistic models of *unaffordability* on a household level to achieve this goal. A logistic model measures the percentage change in the odds of a dependent variable based on a 1-unit increase from a given baseline in each individual independent variable. We categorized indicator variables into 4 groups: income indicators, demographic indicators, psychological and health indicators, and insurance plan indicators. We then modeled unaffordability using income and each other indicator category, with one overall model including all significant indicators from our first three. The rationale behind the chosen indicators within each group was based on the authors' intuition, MEPS data availability, and ensuring that the chosen indicators provided a comprehensive basis for each group. We used *P* values of .05, .01, and .001 for determining levels of statistical significance of the relationship between independent indicators and *unaffordability* in each model, using .01 as a cutoff for indicator inclusion in our overall model.

Results and Analysis

Our first aim was to compare *unaffordability* with *health care financial burden* as a measure of financial barriers for the US population. Figure 1 shows that not only are financial concerns relatively nonoverlapping with high *health care financial burden* but also that reliance on *health care financial burden* misses a large portion of the population that is foregoing care and therefore potentially not spending much

Table 1. Unaffordability and health care financial burden by insurance type and income level, 2014.

Insurance type	Income group, % of FPL	Number of families	Health care financial burden	Unaffordability	Observations
Private insurance (any), <65 y of age	All	76 187 469	3.7% (14.2%)	8.2%	7075
	0-100	4 671 602	31.6% (170.9%)	16.0%	585
	100-200	9 366 705	3.0% (11.8%)	14.2%	1183
	200-400	25 100 165	2.1% (6.8%)	10.5%	2555
	>400	37 048 988	1.4% (4.2%)	4.1%	2752
	All	17 541 674	3.8%	21.1%	2728
Public insurance only, <65 y of age	0-100	9 322 380	5.0%	17.3%	1601
	100-200	5 207 237	2.5%	23.2%	776
	200-400	2 222 701	2.7%	27.9%	285
	>400	789 356	1.8%	33.1%	66
	All	15 583 979	3.2%	29.8%	2439
Uninsured, <65 y of age	0-100	5 122 037	5.4%	33.9%	924
	100-200	4 699 835	2.4%	31.9%	807
	200-400	4 154 327	1.8%	27.2%	561
Medicare, 65+ y of age	>400	1 608 780	1.8%	17.7%	147
	All	29 951 117	8.3%	7.3%	2729
	All	3 462 049	4.7%	13.2%	533
Medicare plus other insurance, 65+ y of age	All	15 950 421	10.4%	5.2%	1227
Medicare plus private insurance, 65+ y of age	All	10 538 647	6.3%	8.7%	969
Medicare only, 65+ y of age	All				

Note. For a full definition of the questions governing this definition of unaffordability, see Online Appendix A. Health care financial burden incorporating premium costs is included in parentheses. The equations governing the difference between this health care financial burden definition and a mean of the ratios can be found in Online Appendix B. FPL = Federal Poverty Level.

money on health care. The correlation coefficient r is -0.06753 between high health care financial burden and *unaffordability* and is not statistically significantly different from 0 (indicating independence).

Summary statistics of *unaffordability* across all insurance types and income groups are shown in Table 1.

Table 1 demonstrates that low-wage (income <200% of the FPL), privately insured families, a group that encompasses more than 14 million households, face high unaffordability barriers to receiving medical care, with between 14% and 16% of such families reporting foregoing medical care as a result of cost. This stands in stark contrast to higher wage, privately insured families, which tend to face among the lowest unaffordability barriers to receiving care of any group. The low-wage, privately insured groups also have very high levels of average financial burden, even sometimes exceeding annual income, particularly when premium costs are included. In the low-wage, privately insured population, financial burdens above 100% of annual income are most likely a result of families relying on savings to pay for their premiums and OOP expenses.

Trends of financial barriers over the past 4 years are shown in Figure 2. Unaffordability barriers facing privately insured families with the lowest incomes (0-100 FPL) reached a 4-year high in 2014, while consistently surpassing Medicare and approaching the concerns reported by public-only insured families. It is noteworthy that both the number of uninsured families as well as the rate at which uninsured

families report financial concerns have decreased substantially over the past 4 years.

To better understand the results shown in Table 1 and Figure 2, we tested a series of models looking for a set of indicators that had statistically significant relationships with *unaffordability* within the privately insured population (Table 2). Indicator definitions not found in the text can be found in Online Appendix C.

Table 2 displays the parameters of a series of predictive logistic models. For example, a 1-unit change in *family income* in our model refers to 10 000 dollars; in our Income + Demographic indicators model, for example, for every additional 10 000 dollars of *family income*, there is a 6.8% decrease in the odds of that family reporting a financial concern.

Every model indicates that *family income* is significantly correlated with *unaffordability* using a P value of .001. In addition, this correlation is relatively stable regardless of which other independent indicators are held constant. This finding is consistent with the hypothesis that low-wage families are more likely to forego medical care due to its cost.

Perceived health has a strong positive correlation with *unaffordability*—the poorer someone's perceived health, the more likely they are to report unaffordability concerns. This indicator was significant using a P value of .001.

Depression in a family's reference person demonstrated a strong correlation with likelihood to report unaffordability

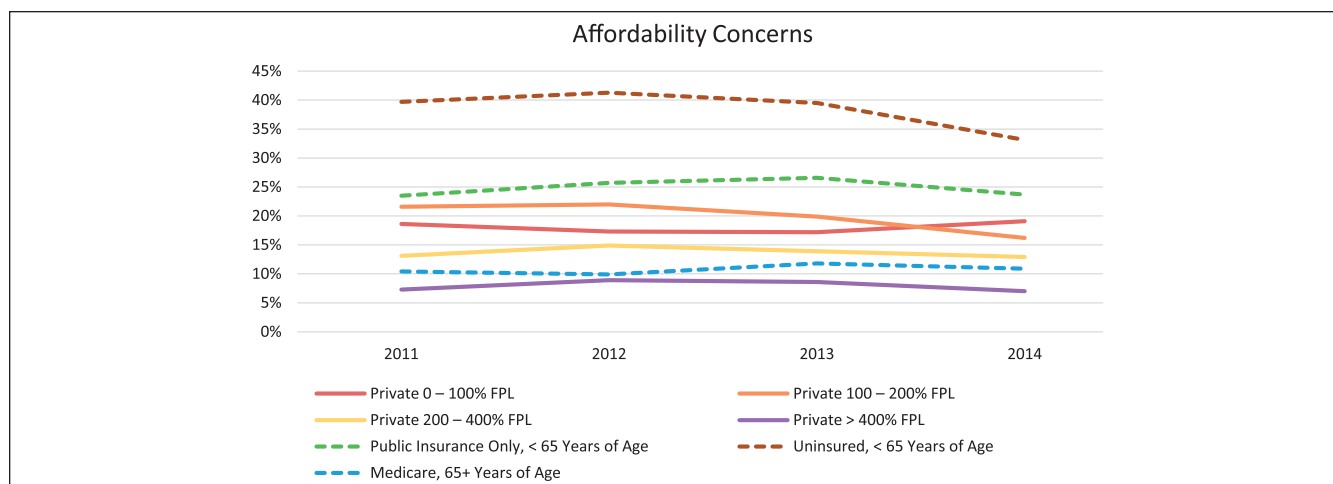


Figure 2. Affordability concerns over time by insurance type and income level, 2011-2014.

Note. Affordability concerns defined using the same set of questions across all years. Recent data selected to determine impact of ACA implementation on affordability. FPL = Federal Poverty Level; ACA = Affordable Care Act.

Table 2. Logistic model of unaffordability indicator strength within the privately insured population, 2014.

	Model 1 Income + Demo.	Model 2 Income + Psy.	Model 3 Income + Ins.	Model 4 Overall
Income factors				
Family income (\$10 000)	-6.8%***	-5.2%***	-6.1%***	-5.8%***
Demographic factors				
Sex				
Male	Reference			Reference
Female	25.6%**			23.8%*
Age	1.9%***			1.2%**
Family size				
Single (1)	Reference			
Small (2-4)	11.6%			
Large (5+)	22.1%			
Geographic region				
Northeast	Reference			
Midwest	-6.9%			
South	24.6%			
West	12.1%			
Psychological and health factors				
Perceived poor health		44.5%***		39.2%***
Depression		19.7%***		22.9%***
Chronic conditions		9.3%		
Insurance plan factors				
Health plan deductible				
Low/unknown deductible			Reference	Reference
High deductible			53.3%***	49.7%***

Note. Predicted values adjusting for all covariates. For a full accounting of the model, including indicators that are not statistically significant, see Online Appendix D. For technical details, see Online Appendix E. For Charlson comorbidity groups and weightings, see Online Appendix F.
 *Statistically significant using $P = .05$. **Statistically significant using $P = .01$. ***Statistically significant using $P = .001$.

concerns. The rate at which increased *depression* correlated to increased unaffordability concerns was statistically significant using a P value of .001.

HDHPs play a large role in the perceived *unaffordability* of health care. Our models indicate that families with HDHPs were expected to be at least 49.7% more likely to report

unaffordability concerns, even when correcting for *family income, perceived health, depression, age, and sex* of the reference person. Using *HDHPs* as an indicator was statistically significant using a *P* value of .001.

Discussion

By implementing a metric for health care *unaffordability*, we are able to demonstrate the importance of considering both *unaffordability* and *health care financial burden* concerns in at-risk populations. The relative lack of intersection between families with financial concerns and those with high *health care financial burden* (Figure 1) indicates that these 2 concerns represent distinct and complementary problems of potential underinsurance. The substantial proportion of families that avoid or delay care, despite not reaching a 10% or 20% financial burden threshold, emphasizes the importance of a qualitative unaffordability metric. Avoided or delayed care, which our results show is surprisingly common among low-income and uninsured families, represents a significant public health concern. Delaying and avoiding care likely results in poorer management of chronic health conditions, increases the chance health problems go undiagnosed, and likely increases future health care costs by failing to prevent more severe health conditions. Avoidance of care due to financial concerns is necessary to consider alongside health care expenditures, and with increased patient cost-sharing and the rising prevalence of *HDHPs*, low-income families are at an even greater risk for both high *health care financial burden* and *unaffordability* concerns.

In our model of *unaffordability* risk, we identify factors that compound to put a privately insured family at risk for avoiding or delaying medical care even beyond income (Table 2). In particular, we find large and significant reported risks of avoiding care when a family is covered under an *HDHP*, when their reference person has worse perceived health, and when their reference person reports depression. These results both support recent findings that *HDHPs* result in significant increased financial barriers to obtaining care and invite several possible psychological explanations.¹⁰ The first is that those who are depressed or perceive themselves to be unhealthy are more likely to report negative experiences, such as foregoing medical care due to its cost.²³ The second is that persons who cannot afford medical care become depressed or unhealthy as a result of the financial barriers they are facing.²⁴ While the latter represents a possible reverse causality wherein *unaffordability* results in depression, the true directionality is unknown. Previous work into this relationship has demonstrated that depression may directly influence access to care through multiple mechanisms.²⁵ The percentage of family income spent on *OOP* expenditures is not predictive of reporting unaffordability concerns, likely due to the independence between *unaffordability* and *health care financial burden*.

When using our *unaffordability* definition to identify individuals who are significantly underinsured, it is important to note the risk of false-positives. Our *unaffordability* metric is based on qualitative survey responses within the *MEPS* questionnaire, which is more ambiguous than calculated measures of expenditure burden. We can observe this possible false identification of at-risk families by looking at the results in the >400% *FPL* privately insured population. While we typically would not define these families as financially at risk, our *unaffordability* metric shows a larger-than-expected percentage who report avoiding or delaying medical care due to cost. This may be a result of those who, even at high income levels, are particularly price sensitive.²⁶ It could also be a result of those who have a distaste of high medical costs or by the politicization of recent health care debates.

Our multiyear analyses indicate a slight downward trend in unaffordability concerns in some of the most at-risk groups, including both the privately insured population between 100% and 200% of *FPL* and the uninsured population from 2011 to 2014 (Figure 2); both trends could be a result of Medicaid expansion under the *ACA*.²⁷ We find that the low-wage, privately insured population remains more vulnerable to reporting foregoing medical care due to financial barriers than the Medicare population and is almost as vulnerable as the Medicaid population. These results add an important rationale to refocus research and policy on this group.

Conclusion

Low-wage, privately insured individuals present a unique research and policy opportunity for improving medical care accessibility and unaffordability in the United States. To examine financial barriers within this population, we applied a measure of *unaffordability* and demonstrated its distinct and complementary relationship with the established *health care financial burden* measure of barriers to accessing care. From our unaffordability measure, we created a model of barriers facing the privately insured population. This model pointed to both vulnerability of low-wage populations to unaffordability concerns and *HDHPs* having a strong negative impact on families reporting being able to afford medical care. These results highlight the value of increased research on low-wage, privately insured persons, as well as further investigation into the impacts of high-deductible health plans on financial barriers to obtaining medical care.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article. This article received internal funding from the Altarum Institute.

Supplementary Material

Supplementary material is available online.

References

1. Ward BW, Clarke TC, Nugent CN, Schiller JS. Early release of selected estimates based on data from the 2015 National Health Interview Survey (National Center for Health Statistics). <https://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201605.pdf>. Published 2016. Accessed April 14, 2017.
2. French MT, Homer J, Gumus G, Hickling L. Key provisions of the patient protection and Affordable Care Act (ACA): a systematic review and presentation of early research findings. *Health Serv Res*. 2016;51(5):1731-1771.
3. Abraham JM, DeLeire T, Royalty AB. Moral hazard matters: measuring relative rates of underinsurance using threshold measures. *Health Serv Res*. 2010;45(3):806-824.
4. Helmchen LA, Brown DW, Lurie IZ, Lo Sasso AT. Health savings accounts: growth concentrated among high-income households and large employers. *Health Aff (Millwood)*. 2015;34(9):1594-1598.
5. The Henry J. Kaiser Family Foundation and Health Research & Educational Trust. 2016 Employer health benefits survey. <http://kff.org/health-costs/report/2016-employer-health-benefits-survey/>. Published 2016. Accessed April 14, 2017.
6. Banthin JS, Bernard DM. Changes in financial burdens for health care: national estimates for the population younger than 65 years, 1996 to 2003. *JAMA*. 2006;296(22):2712-2719.
7. Cunningham PJ. The growing financial burden of health care: national and state trends, 2001-2006. *Health Aff (Millwood)*. 2010;29(5):1037-1044.
8. Galbraith AA, Wong ST, Kim SE, Newacheck PW. Out-of-pocket financial burden for low-income families with children: socioeconomic disparities and effects of insurance. *Health Serv Res*. 2005;40(6):1722-1736.
9. Bennett KJ, Powell MP, Probst JC. Relative financial burden of health care expenditures. *Soc Work in Public Hlth*. 2009;25(1):6-16.
10. Abdus S, Selden TM, Keenan P. The financial burdens of high-deductible health plans. *Health Aff (Millwood)*. 2016;35(12):2297-2301.
11. Polsky D, Grande D. The burden of health care costs for working families—implications for reform. *N Engl J Med*. 2009;361:437-439.
12. Haviland AM, Eisenberg MD, Mehrotra A, Huckfeldt PJ, Sood N. Do “consumer-directed” health plans bend the cost curve over time? *J Health Econ*. 2016;46:33-51.
13. Kullgren JT, Galbraith A, Rosenthal MB, Landon BE, Lieu TA. Health care use and decision making among lower-income families in high-deductible health plans. *Arch Intern Med*. 2010;170(21):1918-1925.
14. Waters TM, Chang CF, Cecil WT, Kasteridis P, Mirvis D. Impact of high-deductible health plans on health care utilization and costs. *Health Serv Res*. 2011;46(1):155-172.
15. Diamant AL, Hays RD, Morales LS, et al. Delays and unmet need for health care among adult primary care patients in a restructured urban public health system. *Am J Public Health*. 2004;94(5):783-789.
16. Riggs KR, Buttorff C, Alexander GC. Impact of out-of-pocket spending caps on financial burden of those with group health insurance. *J Gen Intern Med*. 2015;30(5):683-688.
17. Wisk LE, Gangnon R, Vanness DJ, Galbraith A, Mullahy J, Witt WP. Development of a novel, objective measure of health care-related financial burden for U.S. families with children. *Health Serv Res*. 2014;49(6):1852-1874.
18. Blewett L, Ward A, Beebe TJ. How much health insurance is enough? Revisiting the concept of underinsurance. *Med Care Res Rev*. 2006;63(6):663-700.
19. McMorrow S, Kenney GM, Long SK, Gates JA. Marketplaces helped drive coverage gains in 2015; affordability problems remained. *Health Aff (Millwood)*. 2016;35(10):1810-1815.
20. Kullgren JT, McLaughlin CG, Mitra N, Armstrong K. Nonfinancial barriers and access to care for U.S. adults. *Health Serv Res*. 2012;47(1 Pt 2):462-485.
21. Sherman BW, Gibson TB, Lynch WD, Addy C. Health care use and spending patterns vary by wage level in employer-sponsored plans. *Health Aff (Millwood)*. 2017;36(2):250-257.
22. Banthin JS, Selden TM. Income measurement in the Medical Expenditure Panel Survey. https://meps.ahrq.gov/data_files/publications/workingpapers/wp_06005.pdf. Published 2006. Accessed April 14, 2017.
23. Cast AD, Welch BK. Emotions and the self: depression and identity change. *Sociol Quart*. 2015;56(2):237-266.
24. Muramatsu N. County-level income inequality and depression among older Americans. *Health Serv Res*. 2003;38(6):1863-1884.
25. Thorpe JM, Thorpe CT, Kennelty KA, Chewning BA. Depressive symptoms and reduced preventive care use in older adults: the mediating role of perceived access. *Med Care*. 2012;50(4):302-310.
26. Morrissey MA. Price sensitivity in health care: implications for health care policy. <http://www.nfib.com/Portals/0/PriceSensitivity.pdf>. Published 2005. Accessed April 14, 2017.
27. Atherly A, Call K, Coulam R, Dowd B. Medicaid expansions and crowd-out: evidence from HIFA premium assistance programs. *Health Serv Res*. 2016;51(1):117-128.