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For Third Enrollment Period, Marketplaces Expand Decision Support Tools To Assist Consumers

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ABSTRACT **The design of the Affordable Care Act's online health insurance Marketplaces can improve how consumers make complex health plan choices. We examined the choice environment on the state-based Marketplaces and HealthCare.gov in the third open enrollment period. Compared to previous enrollment periods, we found greater adoption of some decision support tools, such as total cost estimators and integrated provider lookups. Total cost estimators differed in how they generated estimates: In some Marketplaces, consumers categorized their own utilization, while in others, consumers answered detailed questions and were assigned a utilization profile. The tools available before creating an account (in the window-shopping period) and afterward (in the real-shopping period) differed in several Marketplaces. For example, five Marketplaces provided total cost estimators to window shoppers, but only two provided them to real shoppers. Further research is needed on the impact of different choice environments and on which tools are most effective in helping consumers pick optimal plans.**

The third enrollment period for the health insurance Marketplaces established by the Affordable Care Act (ACA) opened online November 1, 2015. More than two million consumers selected plans in the first four weeks of the period—and 35 percent of them were not previously enrolled in a Marketplace.[1]

In this enrollment period thirty-eight states used the federal website, HealthCare.gov, while twelve states and the District of Columbia used their own state-based Marketplaces.[2] More than 11 million people selected a plan on the Marketplaces in the second enrollment period, and 12.7 million did so in the third.[3,4]

Substantial technical issues plagued the websites during the first open enrollment period, but they had largely been addressed by the second period.[5] Even in a relatively smoothly functioning Marketplace, selecting a health insurance plan is a complex task, which is made more difficult by unfamiliar terminology, complicated trade-offs between coverage and premiums, and multiple plan options.[6–9] On HealthCare.gov, for example, the average number of health plans per county was forty-eight in 2016.[10]

Suboptimal plan selection, which is prevalent and costly, can lead to consumers' being unsatisfied if they are unaware of their cost-sharing responsibility or the exclusion of their preferred providers from insurance networks.[11] In extreme cases, poor choices can have severe financial consequences, including bankruptcy. In the end, choice errors are costly not only to consumers but also to Marketplace operators and taxpayers.

The design of the online Marketplaces can influence and improve how consumers make these complex decisions.[5] The choice environment, sometimes referred to as the "choice architecture," includes how plan options are displayed and what tools are available to help consumers

make a selection.[12–15] For example, previous studies have shown that providing calculation aids can help consumers make fewer mistakes, while listing plans by premium cost draws attention away from other relevant features, such as deductible and copayment amounts.[5,13]

We examined the choice environments on the state-based Marketplaces and HealthCare.gov in the third open enrollment period. All information reported in the article was current as of November 30, 2015. We collected data on plan presentation and consumer decision aids (Exhibit 1), similar to what we did in the first two open enrollment periods.[15] In this article we recommend steps to improve decision making by consumers in future enrollment periods and research to evaluate these steps.

Study Data And Methods

DATA COLLECTION Our research assistants and we went shopping on the thirteen state-based Marketplaces (for a list of Marketplaces, see Appendix Exhibit A1)[16] and HealthCare.gov in November 2015, at the beginning of the third open enrollment period. At least two researchers independently surveyed each web portal and recorded detailed screenshots of the web pages. All discrepancies in coding data on plan presentation and consumer decision aids were resolved by team consensus.

Our process simulated a typical Marketplace shopping experience, in terms of both real shopping and window shopping. *Real shopping* refers to what is presented on a website after the consumer creates an account with personal identification. *Window shopping* refers to browsing plan options anonymously, before creating an account. We collected data in both contexts because we found substantial differences in the choice environments in previous enrollment periods.[15] We compared the real-shopping and window-shopping experiences in the third open enrollment period, and below we comment on major differences between the third and first two enrollment periods.

OUTCOMES Within each Marketplace, we collected data on the default order of health plans (that is, the order in which plans appear on a Marketplace website before the consumer applies any sorts or filters) and on filtering and sorting functionality (that is, using check boxes to show plans with specific features or ordering plans by certain variables), since the order of choice options is a strong nudge in decision making.[17] We also collected data on any indications of network size, given the rise in plans with narrow networks.[18]

We documented the availability of several consumer decision aids (described in Exhibit 1), as these are tools that are present on the Marketplaces or recommended by expert groups.[19] Of note, we did not verify the accuracy of the total cost estimates or the provider and formulary directories. We did examine the questions used to generate the total cost estimates and how the estimating strategies differed. We considered pop-up explanations more useful than glossary definitions that appear on a separate webpage.[8] Because of the prevalence of narrow networks, we determined whether sites explained that maximum out-of-pocket spending applied to in-network services only.

We present data for HealthCare.gov separately from the state-based Marketplaces, since thirty-eight states and the majority of Marketplace enrollees relied on HealthCare.gov.[2,4] This study was deemed exempt from review by the University of Pennsylvania Institutional Review Board.

LIMITATIONS Our study had several limitations. First, we may have missed certain choice architecture features that were present on the

EXHIBIT 1

Consumer decision aids on health insurance Marketplaces

Type of decision aid	Description
Total cost estimator	Allows consumers to enter information to produce a personalized estimate of out-of-pocket expenses that adds the monthly premium to other expenses such as deductibles, coinsurance, and copayments (for information consumers are asked to enter and types of estimates provided by these tools, see the text)
Integrated provider lookup[a]	Allows consumers to determine whether their provider is included in each plan's network
Integrated drug lookup[a]	Allows consumers to determine whether their medications are included in each plan's formulary
Quality ratings	ACA-mandated system of quality and price ratings that must be displayed on the websites by 2016, generally as a star system
Pop-up definitions	Explanations that appear when a consumer hovers the cursor over or clicks on a term, such as *deductible* or *coinsurance*

SOURCE Authors' analysis of health insurance Marketplaces in the third open enrollment period, November 1–30, 2015. **NOTE** ACA is Affordable Care Act. [a]Websites that directed the consumer to another website or an external file were not classified as having an integrated decision aid.

sites even after using multiple coders and screenshots. However, if we did, those features were not located by multiple observers with experience in navigating the web portals and thus are unlikely to be readily apparent to the average consumer.

Second, we might not have captured changes made to the sites after our data collection period. For example, HealthCare.gov fully implemented a drug formulary lookup tool in December 2015.[20] We were unable to assess the choice environment for consumers who were reenrolling on the Marketplaces, nor could we systematically analyze the transition between window shopping and real shopping.

Finally, although we describe several elements that likely influence decision making, our findings do not necessarily indicate that the websites were effective at enrolling consumers who made efficient choices.

Study Results

PRESENTATION OF PLANS In the real-shopping experience, the majority of state-based Marketplaces (nine of thirteen) and HealthCare.gov presented plans in order of their premiums, from cheapest to most expensive (Exhibit 2). Two state-based Marketplaces (California and Kentucky) listed plans by estimated total out-of-pocket spending. Massachusetts listed plans in the silver tier first, with a message that read, "The plans shown here are some of our most popular plans and offer a good balance between monthly premiums and out-of-pocket costs." Minnesota listed plans in order of best fit, based on consumer preferences on the following variables: availability of a health savings account, wellness programs (for asthma care, diabetes care, fitness discount, healthy pregnancy, high blood pressure care, and weight loss), metal tier, and deductible amount.

Across all Marketplaces, consumers could use common features such as premium, deductible,

EXHIBIT 2

Choice environments in the health insurance Marketplaces, real-shopping context

		Available on state-based Marketplaces		Functionalities on HealthCare.gov and state-based Marketplaces		
	Available on HealthCare.gov	No.	States	Sort only	Filter only	Sort and filter
DEFAULT ORDER OF PLANS BY:						
Premium	Yes	9	CO, CT, DC, ID, MD, NY, RI, VT, WA	—[a]	—[a]	—[a]
Estimated total out-of-pocket spending	No	2	CA, KY	—[a]	—[a]	—[a]
Best fit for consumer	No	1	MN	—[a]	—[a]	—[a]
Silver tier listed first	No	1	MA	—[a]	—[a]	—[a]
CONSUMER DECISION AIDS						
Total cost estimator	No	2	CA, KY	2	0	0
Integrated provider lookup	Yes	8	CO, DC, KY, MD, MA, NY, RI, WA	1	2	0
Integrated drug lookup	No	0	None	0	0	0
Quality ratings	No	5	CA, CT, MD, NY, VT	1	0	3
Pop-up definitions	No	11	CA, CO, CT, ID, MD, MA, MN, NY, RI, VT, WA	—[a]	—[a]	—[a]
PLAN FEATURES PRESENTED						
Premiums	Yes	13	CA, CO, CT, DC, ID, KY, MD, MA, MN, NY, RI, VT, WA	3	1	10
Maximum out-of-pocket spending	Yes	12	CA, CO, CT, ID, KY, MD, MA, MN, NY, RI, VT, WA	1	3	4
Deductible	Yes	13	CA, CO, CT, DC, ID, KY, MD, MA, MN, NY, RI, VT, WA	1	1	9
Metal tier	Yes	13	CA, CO, CT, DC, ID, KY, MD, MA, MN, NY, RI, VT, WA	1	10	3
Insurance carrier	Yes	13	CA, CO, CT, DC, ID, KY, MD, MA, MN, NY, RI, VT, WA	0	6	5
Plan type, such as HMO	Yes	9	CA, CO, DC, ID, KY, MD, MA, MN, VT	0	8	0
Indication of network size	No	2	MA, RI	0	0	0

SOURCE Authors' analysis of health insurance Marketplaces in the third open enrollment period, November 1–30, 2015. **NOTES** "Real-shopping context" refers to what consumers see after they create an account with their personal information. "States" are the fifty states and the District of Columbia. There are thirteen state-based Marketplaces and one federal Marketplace. Quality ratings and pop-up definitions are explained in the Notes to Exhibit 1. HMO is health maintenance organization. [a]Not applicable.

metal tier, insurance carrier, maximum out-of-pocket spending, and plan type to sort information, filter it, or both (Exhibit 2).

For window-shopping consumers who did not qualify for premium tax subsidies, ten state-based Marketplaces and HealthCare.gov sorted plans by premium, while two states used estimated total out-of-pocket spending (Exhibit 3) (for more detailed window-shopping results, see Appendix Exhibit A2).[16] For window shoppers who qualified for premium tax subsidies (data not shown), plans were ordered by premium (in six Marketplaces) or estimated total out-of-pocket spending (two), or by placing silver plans first or displaying only silver plans (four).

If consumers qualified for plans with cost-sharing reductions, HealthCare.gov and nine state-based Marketplaces directed consumers toward silver plans. Four used a stronger nudge that listed silver plans first or showed consumers only silver plans, while six explained in text only that cost-sharing reductions were limited to silver plans (data not shown).

CONSUMER DECISION AIDS

▶ **TOTAL COST ESTIMATORS:** In the real-shopping experience, California and Kentucky had total cost estimators, whose estimates of total out-of-pocket spending included the monthly premium in addition to any cost sharing (that is, deductibles, copays, and coinsurance) (Exhibit 2). In the window-shopping experience, California did not provide a total cost estimator, but four additional Marketplaces—HealthCare.gov, Connecticut, the District of Columbia, and Minnesota—did (for more detailed window-shopping results, see Appendix Exhibit A2).[16]

The Marketplaces differed in the information they requested from consumers to produce the estimates of total out-of-pocket spending. A list of questions and answers that Marketplaces used to estimate this spending is provided in Appendix Exhibit A4.[16] For example, some Marketplaces asked about the consumer's estimated medical and prescription utilization (low, moderate, high, or very high), health (poor, average, or excellent), medical conditions (for example, high blood pressure, diabetes, thyroid disease, or lung cancer), expected medical treatments, and ongoing prescriptions.

HealthCare.gov asked, "Do you think your use of medical services in 2016 will be low (minimal other medical expenses), medium (2 doctor visits, 1 lab or diagnostic test, 2 prescription drugs, minimal other medical expenses), or high (10 doctor visits, 4 lab or diagnostic tests, 17 prescription drugs, 1 day in hospital, $7,600 in other medical expenses)?" (Appendix Exhibit A4).[16] Kentucky allowed consumers to adjust their expected number of visits and medical care use after answering a series of detailed questions (for lists of questions and utilization variables, see Appendix Exhibits A4 and A5).[16]

In the window-shopping experience, the estimated total out-of-pocket spending in the District of Columbia was presented as an average point estimate and as "cost in a bad year." The chance of having a bad year was also presented as a percentage, based on information the consumer provided about his or her health (for a figure illustrating the cost estimates, see Appendix Exhibit A6).[16] While Idaho did not provide specific estimates of total out-of-pocket spending, it did display flags for low, moderate, and high estimated expense levels, to indicate which plans might be more costly for consumers.

▶ **PROVIDER AND DRUG LOOKUP TOOLS:** Integrated tools to look up providers were found on HealthCare.gov and eight state-based Marketplaces in the real-shopping experience (Exhibit 2). The integrated search functionality was available for individual providers and for hospitals on four Marketplaces (data not shown). Consumers could sort plans by inclusion of providers in one Marketplace and could filter plans by inclusion of providers in two Marketplaces (Exhibit 2). Two Marketplaces provided an indication of provider network size: Massachusetts had a "network note" tag that indicated a narrow network, and Rhode Island listed the number of covered doctors and hospitals in the state (Exhibit 2).

EXHIBIT 3

Choice environments in the health insurance Marketplaces, by window-shopping and real-shopping context

	Number of Marketplaces (N = 14)	
	Window shopping	Real shopping
DEFAULT ORDER OF PLANS BY:		
Premium	11	10
Estimated total out-of-pocket spending	2	2
Best fit for consumer	0	1
Silver tier listed first	0	1
Metal tier	1	0
CONSUMER DECISION AIDS		
Total cost estimator	5	2
Integrated provider lookup	8	9
Integrated drug lookup	1	0
Quality ratings	4	5
Pop-up definitions	10	11

SOURCE Authors' analysis of health insurance Marketplaces in the third open enrollment period, November 1–30, 2015. **NOTES** "Window-shopping context" refers to what consumers see when browsing plan options before creating an account. "Real-shopping context" refers to what consumers see after they create an account with their personal identification. The information presented in this exhibit applies to window-shopping consumers who did not qualify for premium tax subsidies. Quality ratings and pop-up definitions are explained in the Notes to Exhibit 1.

In the window-shopping experience, eight Marketplaces provided integrated provider lookup tools (Exhibit 3) (for more detailed window-shopping results, see Appendix Exhibit A2).[16] Six state-based Marketplaces allowed consumers to search for participating providers without having to provide a name in one or both types of experience—for example, by providing a radius around a ZIP code, a specialty, or a language spoken (data not shown). An integrated drug lookup tool was available only on Colorado's Marketplace and just for the window-shopping experience. The tool allowed consumers to enter the name of a medication and filter plans by coverage of that medication.

▶ **QUALITY RATINGS:** In the real-shopping experience, quality ratings were available on five sites; four of these allowed users to filter and sort by these ratings (Exhibit 2). The criteria used to create quality ratings varied. California based its ratings on members' experiences getting appointments and care, the care itself, the providers, and customer service (data not shown). Connecticut converted National Committee for Quality Assurance scores into star ratings, and Vermont used information from carriers and members about care and service.

▶ **POP-UP DEFINITIONS:** Pop-up definitions were available in the real-shopping experience on eleven of the thirteen state-based Marketplaces, but not on HealthCare.gov (Exhibit 2). They were available in the window-shopping experience on nine state-based Marketplaces and HealthCare.gov (Exhibit 3).

Eight Marketplaces indicated that the estimated maximum out-of-pocket expense applied only to in-network services (data not shown). All but two Marketplaces included a glossary of common health insurance terms.

▶ **MISCELLANEOUS TOOLS:** One state, Washington, asked consumers three questions to help narrow plan options in both the real- and window-shopping experiences. The questions were whether a consumer wanted to pay less for each visit and more for the monthly premium, if he or she preferred more choices of doctors, and if he or she wanted to pay more for each visit and less for the monthly premium. Responses activated filters on the deductible amount, plan type (health maintenance organization versus preferred provider organization), and plans with a health savings account, respectively.

Discussion

The ACA Marketplaces varied in how they displayed plan options and the tools they provided to help consumers select a plan. We found greater adoption of some decision support tools, such as total cost estimators and integrated provider lookups, in the third open enrollment period compared to the previous two periods.[15] However, a closer look at the total cost estimators revealed that an array of strategies was used to generate and present these estimates.

The different choice environments presented on the Marketplaces resulted in varying experiences for consumers.

The functionality of integrated provider lookup tools also varied, as only some allowed consumers to sort or filter plans by their preferred providers. Finally, the tools available in the real- and window-shopping experiences differed, with some key tools available only to window shoppers. For example, total cost estimators were on five Marketplaces in the window-shopping experience but only on two in the real-shopping experience.

THIRD OPEN ENROLLMENT PERIOD VERSUS THE FIRST TWO The most notable additions in the third enrollment period compared to the first two periods were total cost estimators and integrated provider lookups.[15] In the window-shopping experience, for example, the number of Marketplaces that offered total cost estimators increased from zero in the first enrollment period to five in the third, including HealthCare.gov for the first time. More Marketplaces had integrated provider lookups (there were three in the first enrollment period and eight in the third) and pop-up definitions (five and nine, respectively).

Most sites have continued to list plans by the premium amount. However, compared to previous enrollment periods, in the third period more sites were experimenting with alternative orders, including by estimated total out-of-pocket spending or with best-fitting or silver-tier plans first—especially for consumers who qualified for tax credits and cost-sharing reductions.

CHOICE ENVIRONMENT AFFECTS CONSUMER EXPERIENCE The different choice environments presented on the Marketplaces resulted in varying experiences for consumers. On HealthCare.gov, for example, plans were presented in order

Selecting a health insurance plan on a state or federal Marketplace can be a daunting task for consumers.

of lowest to highest premium by default; a provider lookup tool was included; and the window- and real-shopping experiences had a similar visual style, although the real-shopping context lacked a cost calculator. To make the transition from window to real shopping, consumers were encouraged to write down their preferred plan name or print out the plan description.

In contrast, consumers in California were presented with plans listed in order of estimated total out-of-pocket expenses based on estimated medical and prescription usage in the real-shopping experience, but there was no integrated provider lookup tool. The real-shopping experience made multiple sorts and filters available to consumers. The window-shopping experience was quite different. After entering general location and income range information into a subsidy calculator in the window-shopping experience, consumers were presented with a fairly static page of plans divided into metal tiers and listed in order of their premiums, as opposed to the estimated total out-of-pocket expense in the real-shopping experience.

VARIATION IN TOTAL COST ESTIMATORS The total cost estimators found on HealthCare.gov and in California, Connecticut, D.C., Kentucky, and Minnesota gave consumers information about what they would pay in a year by adding their expected or estimated total out-of-pocket spending to the monthly premium. These estimates help consumers understand and compare the trade-offs between premiums and out-of-pocket expenses when care is needed and are intended to minimize consumers' surprise if they incur high out-of-pocket spending for care.[19]

Further research on the information used to produce these total cost estimates is needed, as is greater transparency about the information. Some sites, such as HealthCare.gov, asked consumers one or two simple questions to match themselves to a user profile (for example, someone with low, medium, or high use). Other sites provided extensive, sometimes overwhelming, lists of selectable conditions and treatments and then used probability to assign a consumer to a user profile. Some of the conditions and treatments listed (such as "diabetes" and "having a baby") are common, though the rationale behind including other choices (such as "manic depression" and "treatment of upset stomach") is more difficult to understand.

How the estimate algorithms differ and which method produces the most accurate estimate are still unknown. Because no gold standard or central authority exists for decision tools, consumers must rely on the Marketplaces to choose the best vendor to supply these tools. To calculate medical costs and therefore out-of-pocket spending, vendors are using a variety of databases such as those of the National Medical Expenditure Survey, Medicare, and private payer claims.[11]

There are no published studies to provide a basis for concluding which data source or algorithm is optimal. Validating these different decision support strategies will require providing researchers with data that most Marketplaces do not collect, such as web analytic records that are linked to plan choices or claims data. Even basic data such as deidentified individual-level enrollment data are not available to most researchers.

INSURANCE NETWORK TRANSPARENCY More Marketplaces, including HealthCare.gov, have integrated tools that allow consumers to see if their providers or hospitals are in a network, compared to the previous enrollment periods. These tools are important since insurers use narrow networks to control costs and since returning customers may consider changing plans.[18]

We found an indication of network size on just two Marketplaces. In one case, the choice of a narrow network flag may be too simplistic; in the other case, listing the number of providers may be too complicated for consumers to interpret.

Instead, Marketplaces could consider developing a simple network sizing algorithm (for example, one that would categorize networks as extra small, small, medium, large, or extra large) or a composite measure of "convenient access to care" that would account for the number of doctors, total network size, type of insurance product, and consumer satisfaction.[19,21] These types of indicators would allow consumers—particularly those who do not have preferred physicians or hospitals—to choose a plan based on network size versus affordability and would minimize surprises when seeking care.

Additionally, consumers need more explicit explanations that maximum out-of-pocket spending applies only to in-network services.

Similarly, prescription drug coverage is an important feature for many consumers, but only Colorado included an integrated drug lookup tool in its window-shopping experience. The well-established formulary tool for Medicare plans could serve as model for exchange plans.[22]

DIFFERENCES BETWEEN WINDOW AND REAL SHOPPING Certain key tools were available only in the window-shopping context for some Marketplaces. For example, HealthCare.gov's total cost estimator was available for window shoppers but not for real shoppers. It may be easier to implement decision support tools in the window-shopping experience than in the real-shopping one since linkage to secure databases for identity verification is not required for window shoppers.

Window shopping is a common entryway into the Marketplaces for many consumers, so highlighting plan affordability—particularly for consumers who qualify for tax credits and cost-sharing reductions—is important as a way to demonstrate the value of Marketplace plans. However, for consumers who start as real shoppers and for Marketplaces where the transition between window and real shopping is cumbersome, providing tools in both contexts would be helpful. In addition, at least some Marketplaces use different vendors for coding real-shopping and window-shopping experiences. In informal discussions with Marketplace officials and vendors, we found no indication that the decision to offer different choice environments for the two groups of shoppers was based on evidence—or even belief—that such an approach was optimal.

Further refinements are needed to improve the default order of plans. As in previous enrollment periods, in the third period most sites organized plans according to a single attribute: the monthly premium. Although sorts and filters are available for consumers, the default order has a strong influence on consumers.[17] To nudge consumers toward plans that may be better choices, Marketplaces could consider presenting plans in more sophisticated default orders, such as in order of total estimated out-of-pocket spending or best fit, or using a "smart default" (that is, a preselected cost-effective option based on the consumer's estimated usage, preferences, or both).[11,13,15,23]

Conclusion

Selecting a health insurance plan on a state or federal Marketplace can be a daunting task for consumers. Tools such as total cost estimators and provider lookups give consumers additional information up front as they shop and should help prevent consumers from being unpleasantly surprised when they use their insurance, which has sometimes led to attrition.

States that have more sophisticated choice architecture could serve as models for other states and HealthCare.gov.

Some states, including those with Marketplaces that experienced fewer technical challenges in the first two enrollment periods (such as Connecticut, Kentucky, and Washington), have been able to develop their choice architecture more than other states. Larger states with their own Marketplace that assess a per plan surcharge, such as the one in California, may also have more resources available to improve their decision support, compared to smaller states. Some states may be selecting vendors that place more emphasis on choice tools than other vendors do.

While states that seem to have more sophisticated choice architecture could serve as models for other states and HealthCare.gov, further research is needed to discern the value and impact of different choice environments and demonstrate which tools are most effective in helping consumers pick the optimal plan, or at least avoid a poor choice. Researchers will need access to more data from the Marketplaces—ideally including consumers' enrollment choices linked to other data such as claims and web analytics—as they conduct experiments, potentially both on the Marketplace websites and in the laboratory. Ultimately, understanding what helps improve consumers' insurance choices on the Marketplaces will benefit not only the consumers themselves but also the federal and state governments that subsidize the insurance purchases. ■

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April 2016 | Issue Brief

Analysis of UnitedHealth Group's Premiums and Participation in ACA Marketplaces

Cynthia Cox and Ashley Semanskee

In late 2015, amid a series of closures of relatively small co-op health plans, the nation's largest private insurer, UnitedHealth Group, announced that it too expected losses in its Affordable Care Act (ACA) marketplace business and would reconsider its participation in the Marketplaces in the first half of 2016. Most recently, there have been media reports that UnitedHealthcare (a subsidiary of UnitedHealth Group) would no longer participate in the Arkansas, Georgia, and Michigan exchange markets starting in 2017. Though United is a large, established insurer in the employer-based insurance market, it has been cautious about entering the ACA marketplaces, only participating in a handful of states in 2014 before expanding its reach in 2015 and 2016.

This analysis provides a state by state look at where United is participating in the Marketplaces this year and the extent to which it is offering one of the lower premium plans. It provides context for what the effect would be if United withdraws from some or all remaining markets where the company participates in 2016 (both in states using Healthcare.gov and those running their own exchanges). We examine the effect a further withdrawal would have on insurer participation on the exchanges, with a particular focus on areas with limited competition (counties with just 1 or 2 insurers). We also analyze premium data to identify where United currently offers one of the two lowest-cost silver plans. As the low-cost silver plans are generally the most popular plans on the market, and these plans are the basis for subsidy calculation, a United exit would likely have a more significant effect on people living in these counties.

If United were to exit from all areas where it currently participates and not be replaced by a new entrant, the effect on insurer competition could be significant in some markets – particularly in rural areas and southern states. United current participates in 1855 counties, representing 59% of all counties nationwide (and an estimated 71% of marketplace enrollees). We find that in 29% of counties (536 out of 1855 counties) where United participates, its exit would result in a drop from two insurers to one. In another 29% of counties (532) where United currently participates, there would be two exchange insurers as a result of a withdrawal. If United were to leave the exchange market overall, 1.8 million Marketplace enrollees would be left with two insurers, and another 1.1 million would be left with one insurer as a result of the withdrawal.

United does not generally offer low premium plans in the Marketplaces. It has the lowest or second-lowest silver plan in 35% of counties (647) where it participates in 2016, representing an estimated 16% of marketplace enrollees overall. Even when it did price relatively low, it was often not significantly lower than its nearest competitors. As a result, the effect of a United withdrawal nationally would be modest. The national weighted average benchmark silver plan would have been roughly 1% higher in 2016 had United not participated (less than $4 per month for an unsubsidized 40-year-old).

United's Participation in ACA Marketplaces

When the new health insurance exchanges launched in 2014, United was noticeably absent from most state marketplaces. Taking a relatively cautious approach early on, the company offered plans in just 4 states in 2014, but quickly expanded to 23 states in 2015 and again expanded to a total of 34 states in 2016.

The parent company UnitedHealth Group owns a number of subsidiaries, including UnitedHealthcare and Harken Health. In cases where two or more issuers in a given area are owned or operated by a single parent company, we group issuers by parent company (using HHS Medical Loss Ratio public use files, and refer to these groupings of affiliated issuers as single "insurers" throughout the analysis. At the time of this report, one United subsidiary, UnitedHealthcare, will leave the market in Arkansas, Georgia, and Michigan in 2017, while Harken Health, another United subsidiary, will continue to participate in Georgia. (We therefore consider United as remaining in the market in Georgia counties where the Harken Health subsidiary currently operates.)

An outstanding question is whether the withdrawals from these three states will be followed by similar exits elsewhere. It is possible that United may continue to participate in some states but exit from certain counties within the state. In Virginia, for example, the insurer's preliminary rate filing indicates that it may not participate in some counties in 2017 where it had in 2016. The rest of this analysis examines the effects of a full exit by UnitedHealth Group from the remaining states, taking into account the insurer's planned withdrawal from Arkansas and Michigan and partial withdrawal from Georgia.

Effects of a United Withdrawal on Insurer Participation

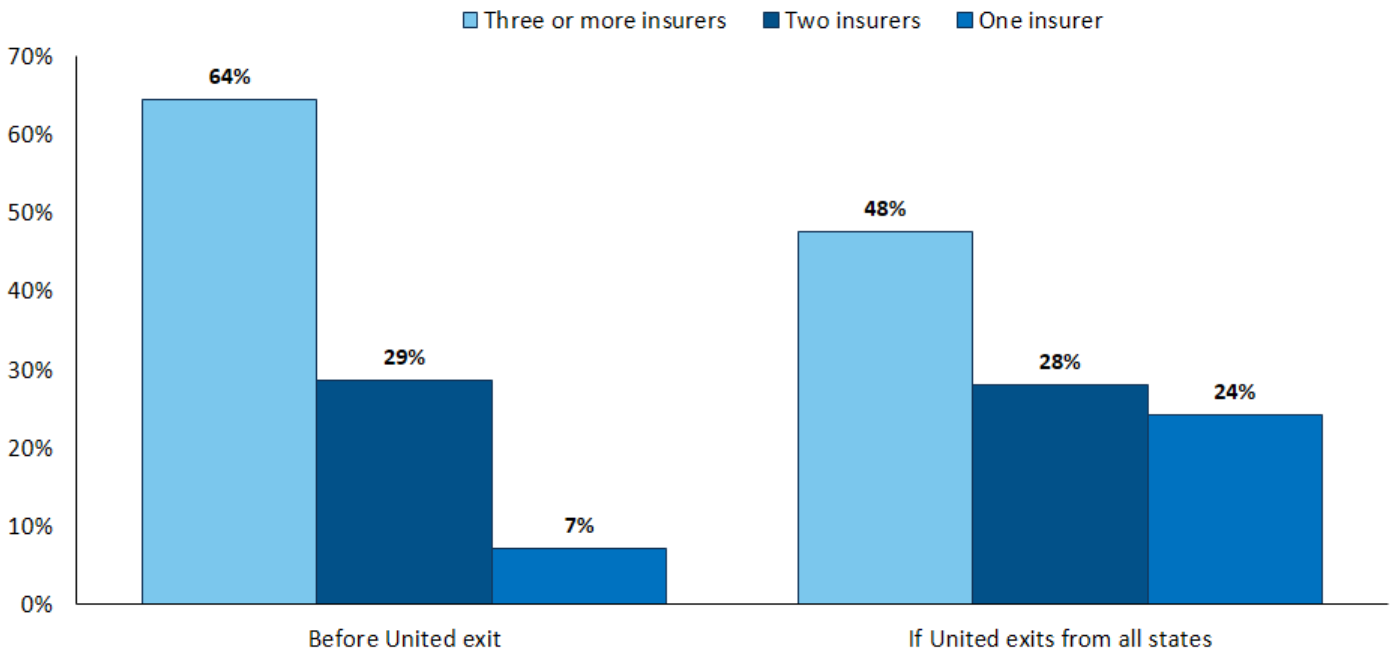
If United were to withdraw from additional state Marketplaces, the effects on competition would vary from state-to-state and even county-to-county depending on how significant of a player United had been. Our ability to analyze market share and market concentration at the state or county level, however, is limited by the lack of publicly-available insurer enrollment data in the majority of states (the following section discusses this in more detail).

Another way to quantify the effect of United's potential departure is to focus on those areas that would be left with just one or two insurers. Our previous analysis of insurer participation on the Marketplaces in states that use Healthcare.gov found that 40% of counties in those states had one or two insurers in 2016, up from 35% the previous year. This analysis includes all 50 states and DC, and finds that 36% of counties nationally had one or two exchange insurers in 2016.

If United were to withdraw from all states, 532 counties would go from having three insurers to two, while another 536 counties would go from having two insurers to just one. The net effect of a United exit would be that 532 more counties in the U.S. would have just one or two insurers on the exchange. Combining these counties with the 1,121 counties that already had one or two insurers would mean that just over half (53%) of U.S. counties would have one or two exchanges insurers.

Figure 1

Percent of U.S. counties with just one or two insurers in 2016, before and after United exit

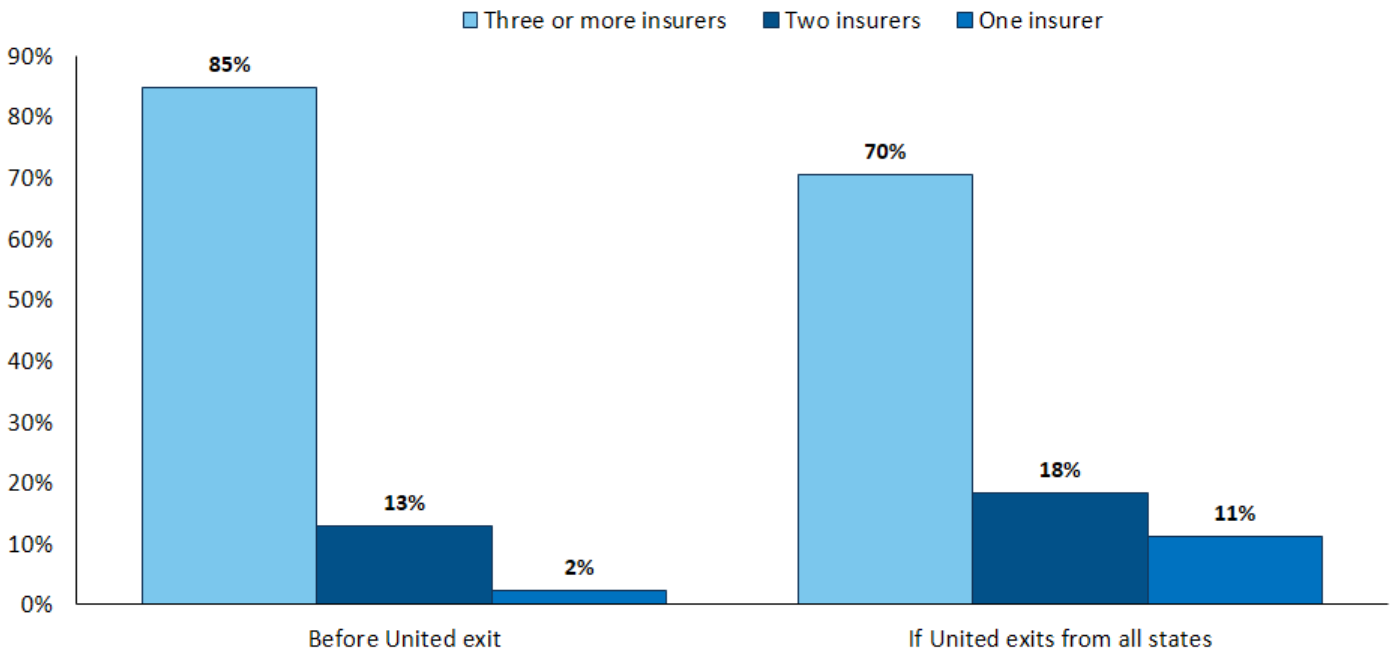


SOURCE: Kaiser Family Foundation analysis of premium data from Healthcare.gov, Health and Human Services Medical Loss Ratio Public Use Files, and State Based Marketplace websites. Note: Insurers are grouped by parent company. Therefore, United is treated as participating in Georgia counties where Harken Health, a United subsidiary, is expected to continue operating.

As discussed in more detail below, counties with limited competition tend to be more rural and sparsely populated, and therefore do not represent the bulk of enrollment. If United exits everywhere (again, with the exception of Harken Health in Georgia), the number of Marketplace enrollees with access to only one or two exchange insurers would increase (from 1.9 million to 3.8 million or from 15% to 30% of all enrollees), and the number of enrollees with only one insurer would also increase (from 303 thousand to 1.4 million or from 2% to 11% of all enrollees). Still, the vast majority of Marketplace enrollees (8.9 million or 70% of enrollees nationally) would continue to have a choice of three or more insurers, even in the absence of United.

Figure 2

Percent of individuals enrolled in counties with just one or two insurers in 2016, before and after United exit



SOURCE: Kaiser Family Foundation analysis of premium data from Healthcare.gov, Health and Human Services Medical Loss Ratio Public Use Files, and State Based Marketplace websites. Note: Insurers are grouped by parent company. Therefore, United is treated as participating in Georgia counties where Harken Health, a United subsidiary, is expected to continue operating.

State-by-State Effects of a United Withdrawal on Insurer Participation

The table below shows the distributional effects of a potential exit by United in the states and counties where it currently participates. Consumer choice and plan participation in certain states, such as Alabama, Kansas, Mississippi, North Carolina, Oklahoma, and Tennessee, would be particularly affected by a United departure. All Kansas and Oklahoma exchange enrollees currently have two insurers from which to choose, but would be left with one insurer if United were to exit from the state and not be replaced by a new entrant. In Alabama, 67% of enrollees (living in 60 counties) would go from having a choice of two insurers to a single exchange insurer, and the remaining 33% of enrollees (living in 7 counties) would go from having a choice of three insurers to two.

Table 1: Potential Effects of a United Withdrawl on Insurer Participation
In the States and Counties where United Participates in 2016

State	Total # Counties in State	Total # Enrollees in State	Where United Participates		If exit, drop from 2 to 1 Insurer (% of state total)		If exit, drop from 3 to 2 Insurers (% of state total)	
			Counties	Enrollees*	Counties	Enrollees*	Counties	Enrollees*
Alabama	67	195,047	67	195,047	60 (90%)	130,359 (67%)	7 (10%)	64,688 (33%)
Arizona	15	203,064	15	203,064	8 (53%)	30,761 (15%)	5 (33%)	14,825 (7%)
Arkansas	75	73,643	75	73,643	-	-	-	-
California**	58	1,575,340	34	203,472	-	-	28 (48%)	158,769 (10%)
Colorado	64	150,769	42	125,276	-	-	26 (41%)	7,318 (5%)
Connecticut***	8	116,019	8	116,019	-	-	-	-
Florida	67	1,742,806	67	1,742,806	44 (66%)	268,068 (15%)	13 (19%)	367,156 (21%)
Georgia****	159	587,833	157	569,200	30 (19%)	20,184 (3%)	47 (30%)	47,604 (8%)
Illinois	102	388,176	27	304,434	-	-	-	-
Indiana	92	196,241	92	196,241	-	-	9 (10%)	6,567 (3%)
Iowa	99	55,088	76	48,311	-	-	73 (74%)	47,161 (86%)
Kansas	105	101,553	105	101,553	105 (100%)	101,553 (100%)	-	-
Kentucky***	120	93,666	120	93,666	38 (32%)	18,540 (20%)	39 (33%)	20,488 (22%)
Louisiana	64	214,143	64	214,143	-	-	59 (92%)	130,990 (61%)
Maryland**	24	162,103	24	162,103	-	-	-	-
Massachusetts***	14	213,883	14	213,883	-	-	-	-
Michigan	83	345,804	7	153,559	-	-	1 (1%)	1,905 (1%)
Mississippi	82	108,668	82	108,668	50 (61%)	47,001 (43%)	32 (39%)	61,667 (57%)
Missouri	115	290,197	115	290,197	2 (2%)	3,723 (1%)	96 (83%)	97,380 (34%)
Nebraska	93	87,824	93	87,824	-	-	2 (2%)	840 (1%)
Nevada	17	88,142	3	79,278	-	-	3 (18%)	79,278 (90%)
New Jersey	21	288,571	21	288,571	-	-	-	-
New York**	62	271,964	15	204,536	-	-	-	-
North Carolina	100	613,477	77	563,819	38 (38%)	155,008 (25%)	39 (39%)	408,811 (67%)
Ohio	88	243,714	88	243,714	-	-	-	-
Oklahoma	77	145,328	77	145,328	77 (100%)	145,328 (100%)	-	-
Pennsylvania	67	439,235	23	289,131	-	-	5 (7%)	172,724 (39%)
Rhode Island	5	34,670	5	34,670	-	-	5 (100%)	34,670 (100%)
South Carolina	46	231,845	5	45,649	3 (7%)	20,674 (9%)	2 (4%)	24,975 (11%)
Tennessee	95	268,860	95	268,860	57 (60%)	78,803 (29%)	24 (25%)	69,333 (26%)
Texas	254	1,306,179	30	1,044,424	7 (3%)	26,323 (2%)	3 (1%)	9,780 (1%)
Virginia	134	421,892	37	245,465	-	-	7 (5%)	8,579 (2%)
Washington**	39	200,691	39	200,691	16 (41%)	81,912 (41%)	-	-
Wisconsin	72	239,031	56	193,895	1 (1%)	37 (0%)	7 (10%)	5,856 (2%)
TOTAL (US)	3,142	12,681,637	1,855	9,051,140	536 (17%)	1,128,274 (9%)	532 (17%)	1,841,363 (15%)

Source: Kaiser Family Foundation, *Analysis of UnitedHealth Group's Premiums and Participation in ACA Marketplaces.* 2016.
Notes:
***"Enrollees" refers to the sum of all those signed up for a marketplace plan in the affected counties at the end of open enrollment in 2016. It does not refer to the number of enrollees in United plans – this information is not available at the county-level.**
**Marketplace enrollment-per-county data obtained from State for 2015 increased proportionate to 2016 sign-ups.
***Marketplace enrollment-per-county estimated as proportion of State enrollment. See methods for more details.
****Georgia results include Harken Health as a participating insurer.

Similarly, in Mississippi, 43% of enrollees (living in 50 counties) would go from having a choice of two insurers to having a single exchange insurer, and the remaining 57% of enrollees (living in 32 counties) would go from having a choice of three insurers to two.

The loss of United from Arkansas' exchange will result in a drop from 4 insurers to 3 insurers (grouped by parent company) in every county in the state if the insurer is not replaced by a new entrant. Though more insurers participating in an area is generally seen as a sign of stronger competition, some market analysts have suggested that a minimum of 3 insurers is generally sufficient for effective competition to take place.

In Georgia, the withdrawal of the subsidiary UnitedHealthcare will leave many counties with limited exchange market competition: 47 counties would go from having three insurers to two, and another 30 counties will be left with 1 exchange insurer. Though nearly half (48%) of Georgia counties will have just one or two insurers in the absence of UnitedHealthcare (up from 19% of counties in 2016), these counties are largely rural and do not represent the bulk of enrollment. In total, 67,788 Georgia Marketplace enrollees (representing 12% of enrollees overall in the state) will have a choice of one or two insurers in 2017 (up from 28,184 in 2016), unless another company enters the market.

Insurer Participation in Urban vs. Rural Areas

The areas where United currently participates are somewhat less rural than the areas where it does not participate. In the 1,855 counties where United offers exchange coverage in 2016, 18% of the population lives in rural areas, while across the 1,287 areas where United did not participate, 25% of the population lives in rural areas. Even so, because rural areas typically have fewer insurers, United's withdrawal would have a more pronounced effect on insurer participation in rural regions.

In the 532 counties where a United exit would result in a drop from three to two insurers, a disproportionately large share (26%) of the population lives in rural areas. And in the 536 counties where the company's withdrawal would leave just one insurer, an even larger share (35%) of the population lives in rural areas. For perspective, 20% of the total 2016 enrolled population lives in rural areas. In the 787 counties where a United exit would leave behind at least 3 insurers, just 13% of the population lives in rural areas.

Areas Where United Offers a Low-Cost Silver Plan

In addition to potentially leaving several areas with one or two participating insurers, a United withdrawal would be most disruptive where a large share of enrollees had been enrolled in one of the company's plans. However, it is unclear how often that is the case due to a lack of publicly-available enrollment data for exchange plans. While insurer-level enrollment data are unavailable in most states, we do know from Health and Human Services (HHS) reports that a large share of enrollees tend to enroll in one of the two lowest cost silver plans.

Table 2 below illustrates the distributional effect United's participation had on silver premiums in 2016 Marketplaces. Overall, United offered one of the two lowest cost silver plans in 647 counties in 2016; this represents 35% of the counties in which the company participated and 21% of counties across the U.S. This represents 22% of enrollees living in areas where United participates and 16% of enrollees nationally. If the

general trend reported by HHS holds true in these counties, and enrollees were more likely to sign up for the low-cost silver plans, it is likely that United held a sizable share of the market in these areas.

Table 2: Distribution of Counties where United participates in 2016,
by the dollar-per-month increase in the benchmark premium for a 40-year-old if United had not participated

State	Total # Counties in State	Counties Where United Participates	Counties where United offers one of the two lowest cost silver plans (% of state total)	Counties where the benchmark would be higher if United had not participated (40 year old premium)		
				$1 - $25	$25 -$100	> $100
Alabama	67	67	66 (99%)	8 (12%)	58 (87%)	
Arizona	15	15	10 (67%)	2 (13%)	5 (33%)	3 (20%)
Arkansas	75	75	(0%)			
California*	58	34	3 (5%)	3 (5%)		
Colorado*	64	42	1 (2%)	1 (2%)		
Connecticut*	8	8	(0%)			
Florida	67	67	19 (28%)	6 (9%)	12 (18%)	1 (1%)
Georgia**	159	157	34 (21%)	31 (19%)	3 (2%)	
Illinois	102	27	18 (18%)	10 (10%)	8 (8%)	
Indiana	92	92	(0%)			
Iowa	99	76	71 (72%)	5 (5%)	66 (67%)	
Kansas	105	105	2 (2%)	2 (2%)		
Kentucky*	120	120	(0%)			
Louisiana	64	64	50 (78%)	37 (58%)	13 (20%)	
Maryland*	24	24	10 (42%)	10 (42%)		
Massachusetts*	14	14	(0%)			
Michigan	83	7	(0%)			
Mississippi	82	82	16 (20%)	11 (13%)	5 (6%)	
Missouri	115	115	70 (61%)	55 (48%)	14 (12%)	
Nebraska	93	93	65 (70%)	14 (15%)	50 (54%)	
Nevada	17	3	2 (12%)	2 (12%)		
New Jersey	21	21	(0%)			
New York*	62	15	(0%)			
North Carolina	100	77	74 (74%)	29 (29%)	36 (36%)	9 (9%)
Ohio	88	88	13 (15%)	12 (14%)	1 (1%)	
Oklahoma	77	77	(0%)			
Pennsylvania	67	23	14 (21%)	12 (18%)	2 (3%)	
Rhode Island*	5	5	0%			
South Carolina	46	5	(0%)			
Tennessee	95	95	73 (77%)	43 (45%)	30 (32%)	
Texas	254	30	8 (3%)	7 (3%)	1 (0%)	
Virginia	134	37	11 (8%)	11 (8%)		
Washington*	39	39	16 (41%)	16 (41%)		
Wisconsin	72	56	1 (1%)			
TOTAL (US)	3,142	1,855	647 (21%)	327(18%)	304 (10%)	13 (0%)

Source: Kaiser Family Foundation, *Analysis of UnitedHealth Group's Premiums and Participation in ACA Marketplaces* . 2016.
*Premiums in state-based exchanges gathered by rating area from state plan finder tools. See methods for more details.
**Georgia results include Harken Health as a participating insurer.

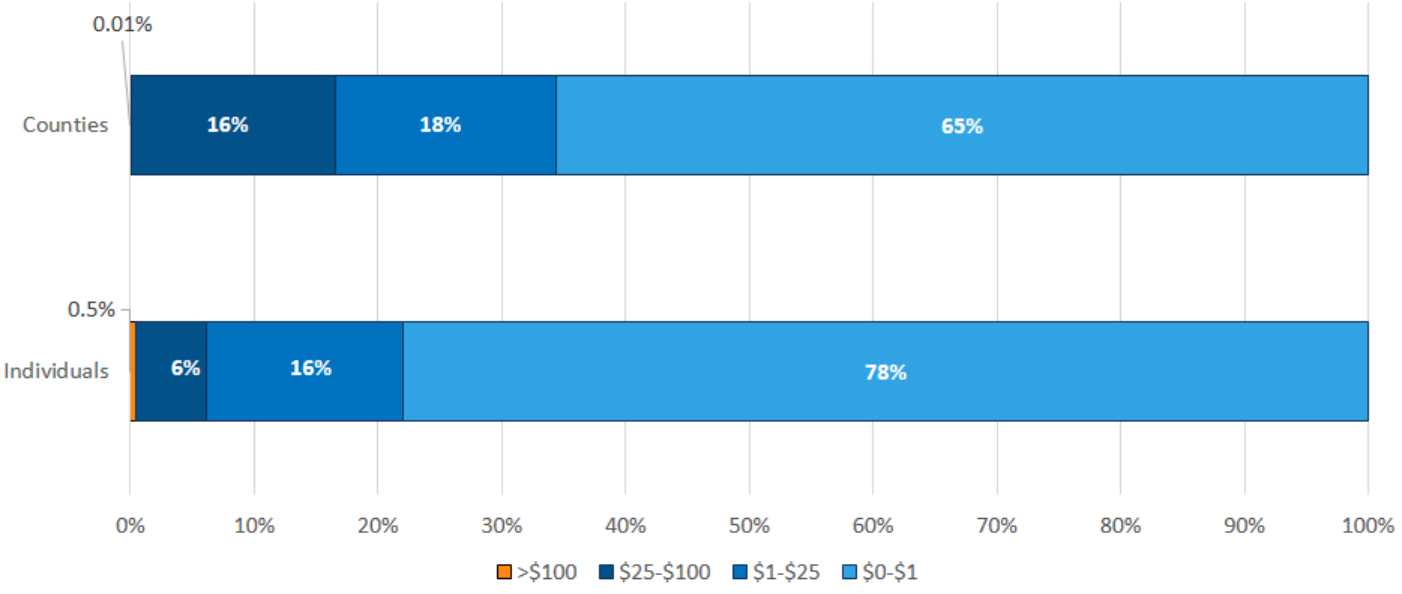
In addition to being one of the more popular plan options, the second-lowest cost silver (benchmark) plan is the basis for calculating subsidies on the exchange. Enrollees must pay the difference between the plan they choose and the benchmark plan, making them sensitive to large differences in premiums. In roughly half (330) of the counties where United offered one of the lowest-cost silver plans, the company's presence in the Marketplace had a relatively minor effect on benchmark premiums. If the company had not participated in these counties, the benchmark plan would have been higher by $25 per month or less for a 40-year-old. In the remaining counties, where the benchmark premium would have been much higher ($25 to $100), it's likely that United represents a larger portion of the market.

In states like Iowa, Alabama, Arizona, Nebraska, North Carolina, and Tennessee, where United priced significantly lower than some of its competitors, it is likely that more enrollees would have enrolled in a United plan and would therefore be most affected by the company's withdrawal.

Overall, the national average benchmark premium would be 1% higher had United not participated in 2016, which is less than $4 per month for an unsubsidized 40-year-old on average. (Note that this does not take into account different pricing behavior by insurers due to fewer competitors.)

Figure 3

Percent of counties and individuals where United currently participates in the marketplace, where benchmark premiums will rise if United exits in 2016



Note: Premiums are measured in dollars per month for an unsubsidized 40 year old.

SOURCE: Kaiser Family Foundation analysis of premium data from Healthcare.gov, Health and Human Services Medical Loss Ratio Public Use Files, and State Based Marketplace websites. Note: Insurers are grouped by parent company. Therefore, United is treated as participating in Georgia counties where Harken Health, a United subsidiary, is expected to continue operating.

Conclusion

On average nationally, based on our analysis of 2016 insurer premiums, United's participation on the exchanges had a relatively small effect on premiums. The company was less likely to offer one of the lowest-cost silver plans, where the bulk of enrollees tend to sign up. When it did offer a low-cost option, its pricing was often not far from its competitors. As a result, the weighted average benchmark premium would have been roughly 1% higher had United not participated in 2016 (not accounting for the possible effect changes in insurer participation may have had on pricing behavior or the potential for new entrants to the market).

However, the significance of United leaving the exchange market would vary substantially by state and could have a significant effect in some markets. In more than half of the counties where it participates – and 34% of counties overall – a United withdrawal would have an appreciable effect on the number of insurers competing on the exchange. More than one in four counties where United participates would see a drop from two insurers to one if the company were to exit and not be replaced by a new entrant, and a similar number would go from having three insurers to two. In total, 1.8 million enrollees would go from having a choice of three insurers to two, and another 1.1 million would go from having a choice of two insurers to one.

Two of the states where United has announced its withdrawal, Georgia and Arkansas, offer an illustration of this variation. On the one hand, even after United's withdrawal, every enrollee in Arkansas will continue to have 3 insurers from which to choose, a number that is sometimes seen as an important threshold for effective market competition to take place. United had not offered one of the two lowest silver plans in any county in Arkansas, which may also be an indication that the company did not have sizable market share in the state.

In Georgia, on the other hand, nearly fifty thousand Marketplace enrollees (8%) will go from having a choice of three insurers to two as a result of one United subsidiary withdrawing. Another twenty thousand enrollees (3%) will be left with just one insurer if no new entrants replace United. Additionally, United offered one of the lowest cost silver plans in about 1 in 5 Georgia counties, suggesting that it may have held a relatively sizable share of the market in these areas.

In a similar situation as Georgia, certain other states – such as Alabama, North Carolina, and Tennessee – would be particularly affected by a potential United withdrawal as these states would see appreciable drops in insurer participation and sizable changes in benchmark premiums in a number of counties if United were not participating.

The longer-term effects of a United withdrawal are more difficult to quantify. Other participating plans may independently plan to raise or lower premiums and enter or exit markets. In areas with limited insurer participation, the remaining plans after a United exit may have more market power relative to providers, but in the absence of insurer competition, those savings may not be passed along to consumers. The ACA's rate review and medical loss ratio provisions may counter some of this effect by requiring insurers to undergo state or federal review of large rate increases and requiring that plans issue rebates if they set premiums too high relative to the cost of providing care.

The ACA marketplaces are still relatively new and insurers have only recently had sufficient information on who is enrolling and how much health care they are using in order to set accurate premiums. Premium changes and the exit of insurers that are not able to offer competitive and profitable plans is to be expected.

Methods

This analysis utilizes publicly available plan participation and premium data for states using the Healthcare.gov interface (including state-based exchanges that utilize Healthcare.gov: NV, NM, HI, and OR). We obtained plan participation and premium data for state-based exchanges that do not utilize Healthcare.gov by searching the most populous counties and/or zip codes by rating area on each state's plan finder tools.

One limitation of this approach for state-based exchanges is that, while plans must set uniform premiums across a rating area, they may opt to selectively participate in certain counties within a rating area. Therefore, it is possible that some insurers do not participate in some counties within a given rating area in state-based exchanges that do not use Healthcare.gov, so the total insurer count may vary within those counties.

Enrollment data at the county level in states that use Healthcare.gov are published by the U.S. Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation (ASPE). These data represent plan sign-ups, not effectuated enrollment. Some state-based exchanges make similar data available. Where this data were available for state-based exchanges but only from 2015, county-level enrollment was increased based on the change in state enrollment from 2015 to 2016. Where county-level enrollment data were not available in state-based exchanges, we proportionately assigned state-level sign-ups by county population. The percent of county population residing in rural areas was obtained from the Missouri Census Data Center.

We grouped insurers by parent company or group affiliation, which we obtained from HHS Medical Loss Ratio public use files. In some cases, parent company information was not available from the HHS file, and corrections were made. Harken Health is a subsidiary of UnitedHealth Group; in Georgia this plan is treated as remaining in the market, while in Chicago, Illinois it is treated as potentially exiting the market.

Changes in the benchmark premium are weighted by county enrollment using the method described above. As we are unable to confirm the percentage of the premium that is due to essential health benefits in state-based exchanges, we did not apply this percentage in states that use the Healthcare.gov interface when calculating changes in the benchmark premium.

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April 2016 | Issue Brief

Is ACA Coverage Affordable for Low-Income People? Perspectives from Individuals in Six Cities

Jennifer Tolbert, Robin Rudowitz, and Melissa Majerol

Executive Summary

Millions of people have gained access to health insurance coverage under the Affordable Care Act (ACA) through Medicaid and the Marketplaces. While research shows that coverage improves access to care and promotes financial stability, issues around access and affordability remain, and are more acute for the low-income population. To learn more about how low-income individuals have fared with their new coverage, we conducted nine focus groups (three groups with Medicaid enrollees and six groups with low-income Marketplace enrollees) in six states (California, Florida, Maryland, Missouri, Ohio, and Virginia). Many participants were struggling financially and reported substantial debt (including medical debt). Many had ongoing physical and mental health needs and were accessing health services to treat those conditions. Following are key themes from the groups:

1. New coverage did not change underlying financial struggles and hardship due to medical debt incurred prior to gaining coverage. Many participants were stretched financially, had limited capacity to absorb unexpected costs, and struggled with finding secure employment in their area.
2. Medicaid stands up well for the lowest income participants in terms of ease of enrollment, out-of-pocket costs and affordability, and ability to find providers and access care. A small number of participants reported trouble affording care that wasn't covered (particularly for vision or dental) and difficulty finding some providers, including mental health providers.
3. Largely due to premium tax credits in the Marketplace, premiums were generally affordable, but out-of-pocket costs weighed heavily on Marketplace participants, especially those with high deductible plans. Many reported being overwhelmed by plan choices. Some were able to make trade-offs to purchase higher cost plans with lower deductibles to meet anticipated care needs, but not everyone was able to afford higher premiums.
4. The fear of unknown costs was a constant worry for many Marketplace participants. Many got bills for services they thought were covered, such as screenings, colonoscopies and mammograms when issues were discovered and treated. These bills caused many to avoid getting needed care. Marketplace participants also reported trouble affording care that wasn't covered by their plan, notably vision and some dental services.
5. Most participants had accessed care and were positive overall about new ACA coverage through Medicaid and the Marketplace. They were grateful that coverage was available to them, particularly those who had been previously ineligible for Medicaid or barred from private coverage due to pre-existing conditions. However, many Marketplace participants wanted coverage to be more affordable.

Introduction

Since the implementation of the Affordable Care Act in 2010, millions of people have gained health coverage through health insurance Marketplaces and expanded Medicaid in states that have opted to adopt the Medicaid expansion. This new coverage has improved access to care and provided financial protection against medical expenses for many.[1] However, affording this coverage is a problem for some. Particularly for low-income individuals with private insurance through the Marketplaces, premiums and out-of-pocket costs can be difficult to afford, creating barriers to accessing needed care. Although Medicaid offers protection from premiums and deductibles, some beneficiaries may still face challenges getting the care they need. Additionally, problems paying medical bills continue to plague many, even those with insurance.[2] These problems can be especially acute for low and moderate-income individuals and families, many of whom are burdened by debt and struggle to pay monthly bills.

The ACA expanded Medicaid to nearly all nonelderly adults with incomes at or below 138% of the federal poverty level (FPL). With the June 2012 Supreme Court ruling, the Medicaid expansion effectively became optional for states, and as of January 2016, 31 states and DC had expanded Medicaid eligibility under the ACA. In states that did not adopt the expansion, individuals with incomes between 100-138% FPL are eligible for tax credits in the Marketplace, but Marketplace coverage has more out-of-pocket costs than Medicaid.

This report is based on focus group discussions with low and moderate income adults who gained Medicaid or Marketplace coverage following the implementation of the ACA. It explores several areas about their coverage, including their experiences signing up for coverage; their knowledge of what their plan covers and what factors they weighed in choosing their plan; what they pay for their coverage and their perceptions of whether these costs are affordable; their experiences accessing care; and the impact of out-of-pocket costs on their ability to get needed care. Building on other research in this area, this report provides valuable insights into the ongoing financial struggles facing low-income individuals and the problems they confront affording health coverage.

Methods

The findings are based on nine focus group discussions conducted by the Kaiser Family Foundation and Belden Russonello Strategists in six cities during January and February 2016. Sites included Baltimore, MD; Richmond, VA; Columbus, OH; St. Louis, MO; Oakland, CA; and Tampa, FL. Three of these cities are in states that have expanded Medicaid—California, Maryland, and Ohio—and in these sites, we conducted separate focus groups with individuals (income 50-138% FPL) who were enrolled in Medicaid and with those enrolled in coverage through the Marketplace (income 139-250% FPL). In the three non-expansion states—Florida, Missouri, and Virginia—we conducted focus groups only with individuals (income 100-250% FPL) who were enrolled in coverage through the Marketplace. Annual income at 138% FPL is equal to $16,242 for an individual and $27,724 for a family of three in 2015. Annual income at 250% FPL is equal to $29,700 for an individual and $50,400 for a family of three.

Each focus group consisted of 9-11 participants, with a total of 91 participants including 30 covered by Medicaid and 61 covered through the Marketplace. Participants were selected to provide a mix of demographic characteristics, including age, race/ethnicity, marriage status, and work status. All individuals had used services since obtaining their current coverage and most reported having at least one chronic condition.

Additionally, all reported that they had trouble affording some aspect of their current coverage, including premiums, deductibles, and/or copayments. (For more details on participants see Appendix A).

Prior to enrolling in their current coverage, three-quarters of those with Medicaid were previously uninsured while about half of those with Marketplace coverage were uninsured. Across both groups, the length of time that participants were uninsured ranged from a few months to many years, with several participants reporting they had been uninsured their entire adult lives. Most participants were aware of the coverage options available through the ACA and signed up when the coverage became available in 2014 or when they lost their previous coverage. Most participants said they learned about new coverage options through the news and media, were eager to have coverage, and signed up when the coverage became available. Some, however, were motivated to sign up to avoid paying the penalty. Often the reason for signing up influenced how they chose their plans.

Key Findings

1. Underlying financial struggles and hardship due to medical debt incurred prior to gaining Medicaid or Marketplace coverage remain

Participants reported struggling financially, with many saying they had difficulty paying for basic expenses each month. Most participants in the Medicaid and Marketplace groups were working. Despite improvements in the economy since the recession, most said it was still difficult to find work or full-time jobs, and as a result, many were working part-time. In part, because of the inability in the current job market to find stable, full-time jobs, over half of participants described their financial situation as poor or just getting by. Many participants across both groups said they were having trouble affording basic needs like housing (rent or mortgage), food, utilities and transportation, and were often unable to pay monthly bills. To get by, participants said they relied on family members and churches, in some cases. Participants in the Medicaid groups were more likely to report relying on other social services, but Marketplace participants also said they went to food pantries for support.

Nearly all participants sought ways to cut expenses, including dropping internet or cable television, consolidating cell phone plans, as well as limiting the number of times they eat out. Some juggled bills by skipping some bills one month and others the next month or paying just enough to avoid having services shut off. Most tried to live within their means, but often faced unexpected bills such as car repairs, a leaky roof, or medical expenses that added to their financial struggles.

> *I think there's jobs, I just think it's hard to get a full time job… most people I know work a couple jobs to equal one full-time job. (Nancy, Richmond Marketplace)*

> *Things are coming up all the time. Whether it's a medical expense, whether it's something that involves your vehicle. All kinds of things can come up at any point in time. If you're just making it, that's going to throw a cramp in your spending, or in your finances. (Donnie, Baltimore Marketplace)*

Contributing to financial problems, participants reported a range of chronic and acute health issues, some of which affected their ability to work. Overall the groups reported that they were in "good" health. However, across both the Medicaid and Marketplace groups, participants reported many health conditions. The most common chronic health issues across the groups were high cholesterol and blood

pressure; depression, anxiety, or other mental or emotional conditions; arthritis; asthma/emphysema; and diabetes. Some participants described more serious health problems like cancer, stroke, and autoimmune diseases. A number suffered injuries on the job and others said they suffered from chronic pain. For some, these injuries and illnesses limited their job options and their ability to work, particularly when health conditions, including pain, were not well managed.

> *I work part-time because of my anxiety. It's a lot easier than working full-time. (Sophie, Baltimore Marketplace)*
>
> *I was injured on the job, that's why I ended up losing the job. It was a rotator cuff…. I've never seen a company abandon me as fast as, "We love you Paul, but when you get hurt, you're gone." (Paul, St. Louis Marketplace)*

The large majority of participants had some or a lot of debt, including debt from medical bills, that contributed to their financial challenges. Nearly three-quarters of participants (64 out of 91) reported having at least some debt, and many reported having a lot of debt. Student loans and medical expenses were the biggest sources of debt, but car loans and credit cards were also contributors. Among participants who reported medical debt, most of the medical expenses were incurred while they were uninsured, though some reported incurring medical debt while previously insured. Participants in both the Medicaid and Marketplace groups reported experiencing significant health problems while they were uninsured, including cancer, stroke, and kidney stones, as well as chronic conditions, such as diabetes and asthma. Getting treatment for these more severe conditions often resulted in large medical bills, but even minor issues, such as a trip to the emergency room for a broken foot, could result in unaffordable medical bills. Many were not able to make payments on this debt and were often sent to collections, ultimately damaging their finances and credit.

> *I have [student loans], I have been paying it for 16 years. I came out of school owing $70,000. That's just for the Master's degree. (Womson, Baltimore Marketplace)*
>
> *There was two years we weren't insured before the whole Obamacare. My wife had cysts she had to have removed and whatnot. We didn't have insurance. She wasn't working. I was the only worker. Couldn't really afford that and pay all your bills at the same time, so that's still piled up…it's affecting the credit. I try to pay when I can, but there's months you can't pay. (Dave, St. Louis Marketplace)*
>
> *I had a separate physician's bill for one time at the ER…I thought everything was covered but no. It's in my closet. I'll pay it eventually. (Shaeeda, Baltimore Medicaid)*

2. Medicaid coverage stands up well for the lowest income participants in terms of enrollment, access and out of pocket costs

Most participants with Medicaid said the enrollment process was simple and appreciated the ability to enroll online. Medicaid participants reported applying for their coverage through multiple avenues. Many applied through new websites, either through their state's integrated Marketplace and Medicaid website or directly through the Medicaid agency website. Some received help enrolling at a provider's office when they sought care or with the help of an enrollment assister. While most reported that the process was easy, a small number experienced delays in obtaining coverage and others had problems with the website. Some participants had to pick a Medicaid managed care plan once they enrolled. If they did not pick a plan

they may have been assigned to a plan. Participants said they chose the plan based on brand or reputation and if they could keep their doctor.

> *With the new Medicaid expansion they have a hotline you can call now where if you sent in your paperwork or if you do it online, they answer the phone right away and answer questions and its great customer service. I couldn't believe how good it was compared to dealing with the local Job and Family Services office. (Rachel, Columbus Medicaid)*
>
> *I applied online. It took me like 10 or 15 minutes. You put in social security numbers. How much you make. I didn't hear from them for a while. I think it took like two months or maybe three months before I got a letter. Eventually I got a letter saying I was approved. They send you packets with different providers. You pick a provider. They send you an insurance card. Then we had insurance. (Johntai, Baltimore Medicaid)*

Several participants reported confusion and difficulty signing up for Marketplace coverage in the first year; for those signing up for the first time or renewing their coverage in 2015 the process was smoother. A number of participants said they first signed up in the fall of 2013 so they would have coverage beginning in January 2014. Those applying early indicated they faced problems with the website and other difficulties enrolling in coverage. Some faced delays in the process and reported receiving conflicting or incorrect information from enrollment assisters or the call center when they sought assistance with their application. In contrast, participants signing up for the first time in 2015 indicated the website was more functional and the process was easier. Similarly, those who renewed their Marketplace coverage in 2015 reported the process to be free of the problems from the first year and relatively easy to navigate. Despite improvements, many individuals had trouble figuring out their income, and therefore, eligibility for subsidies. Many low-income individuals may have multiple jobs, or jobs without steady income streams, so projecting their income for the year for purposes of determining eligibility for subsidies is difficult.

> *I felt that the website was also built for people in really traditional jobs. I'm an independent contractor, so I don't get pay stubs every two weeks. Verifying my income and all that stuff was not easy for someone in my position. (Shannon, Baltimore Marketplace)*
>
> *At first they had problems with the website but once that got going, I went to the family services and on the computer it took me like maybe five minutes. It was really easy. (Billy, Columbus Marketplace)*

Participants with Medicaid described their coverage as comprehensive and affordable. Despite being screened for having affordability issues as a condition for participation in the focus group, Medicaid participants expressed satisfaction with their coverage, describing it as very affordable and providing coverage, in most cases, for the services they need. Several participants noted their affordability challenges stemmed from medical debt they were trying to pay off, unrelated to their current Medicaid coverage. They thought that coverage through Medicaid could help address prior medical bills and were disappointed when they learned that would not be the case. Once they gained coverage, participants with Medicaid obtained care to address ongoing health needs. Especially for those who were uninsured prior to enrolling in Medicaid, having coverage meant they were able to get treatment and medications for chronic conditions, including diabetes, asthma, and mental health issues. Participants appreciated not having to pay premiums and while they noted modest copayment requirements for certain services, they said these were affordable. Participants who previously had private insurance contrasted the low out-of-pocket costs in Medicaid to the larger copayments for doctor's visits they paid previously.

It was a relief to not have to always worry about what the co-pay was going to be this time. When I had private insurance I was always worried about whether or not I was going to be able to afford the visit. (Johntai, Baltimore Medicaid)

I've gone once [to the doctor] and it was completely covered. They didn't want a copay or anything. (Cynthia, Columbus Medicaid)

I think the good thing with this is I know the visit's going to be covered. I don't have to worry about how much am I going to have to shell out at the end of the visit and the guess work around how much it will be. (Shaeeda, Baltimore Medicaid)

A small number of Medicaid participants said they had problems affording services not covered by insurance, particularly dental and vision, and finding some doctors. Medicaid does not always cover vision or dental for adults or alternative treatments such as acupuncture or chiropractic care. Some participants faced out-of-pocket costs for these services; others avoided accessing these services knowing they could not afford the costs. In addition, some Medicaid enrollees reported difficulty finding certain types of providers, such as mental health providers.

I don't want to have dental work because I don't have dental coverage and dentists are so expensive. (Daniel, Oakland Medicaid)

I think with specialists like chiropractors, mental health, optometry things like that, [Medicaid] could be a little better. (Jason, Columbus Medicaid)

Most Medicaid enrollees thought that paying a monthly premium would be difficult. Medicaid participants in the three locations do not face a monthly fee or premium. A limited number of states have approval or are seeking approval to impose these fees on their Medicaid expansion population, particularly for enrollees at or above 100% of poverty. Most Medicaid enrollees in these groups valued their coverage and said they would be able to pay a small amount for coverage. However, most participants felt that a fee of up to 2% of income ($20-$25 for an individual or $50-$55 for a family of four with incomes up to 138% of poverty) was high and would be a burden to pay.

It would be a struggle. (Deborah, Baltimore Medicaid)

It feels reasonable right now because I have an income and I don't have a lot of debt…But there have been times in my life where I was so poor and so much in debt, there is no way I could have afforded even twenty dollars a month. (Rachel, Columbus Medicaid)

I wouldn't have it probably. I'd probably just go without. (Jana, California Medicaid)

3. While premiums were generally affordable, out-of-pocket costs weighed heavily on Marketplace participants

Understanding of health insurance concepts, particularly deductibles and out-of-pocket maximums, varied widely among participants. Many Marketplace participants reported being overwhelmed by the plan choices and had difficulty weighing different plan options. They admitted being confused by terms like deductibles and out-of-pocket maximums when first signing up. As a result, they reported focusing more on the monthly cost of the coverage in the first year. That price sensitivity, in

combination with their lack of understanding how insurance works, led some to select a plan with a lower premium but higher deductible. Knowledge improved as participants gained experience using their coverage. Most participants switched plans after their first year of coverage; some sought to avoid large premium increases while others sought a better balance between premiums and deductibles. After using their coverage for a year, some participants reported placing greater emphasis on choosing plans with lower out-of-pocket costs or those in which their providers participated when they renewed their coverage.

> *No one ever explained to you what deductibles were or what the difference between a premium and a deductible was, or why they were different. (Joanne, Richmond Marketplace)*
>
> *It's just more simplification of the whole thing would be nice. There's too many options, and in essence you don't know the results of what you choose, until you actually have an operation, and then you get that $6,600 [bill from the deductible]. (Paul, St. Louis Marketplace)*
>
> *I think everybody was more prepared because they were going in this year with better information than the first year. At first it was money and now they're through it for a year so now, they know that they need a lower deductible and they're willing to pay a higher premium. (Billy, Columbus Marketplace)*
>
> *I did want to stay with my doctor, but the reason I chose the specific plan from the specific organization was balancing out what I pay per month, how it's subsidized and the deductible… (Roger, Oakland Marketplace)*

Availability of premium tax credits helped to make premiums affordable for many Marketplace enrollees. The premium tax credits available to low and moderate income individuals and families were important to making coverage affordable for participants. Many acknowledged that without the subsidies they received, their premiums would have been too high for them to afford each month. Some participants who had previous coverage through an employer or coverage they purchased on their own, found premiums to be lower in the Marketplace than what they had paid before. While most participants said their monthly premium was affordable, several reported having missed a premium payment because of unexpected expenses in a particular month. These individuals and families were constantly having to balance competing expenses, sometimes having to choose between paying their premium or buying food or keeping their electricity on. In addition, some mentioned it was difficult to determine eligibility for the subsidies due to fluctuations in income.

> *I had private insurance and I was paying through the nose, $700 and $600…when I signed up for Covered California that first year my rates dropped to like $250 for roughly the same type of coverage. (Po, Oakland Marketplace)*
>
> *What I have now, the premium is really low, and my doctors are in it. (Michelle, St. Louis Marketplace)*
>
> *We just haven't paid [the premium] this month…I'll pay the bills first. Whatever is left, I'll deal with the incidentals. (Shannon, Baltimore Marketplace)*
>
> *I'm getting a premium, but I know I have to pay it back as soon as I file my taxes. I work as a waiter, and the year that they took my taxes, not much was reported. This year, I know every tax credit I got, I have to pay back as soon as I file. Not looking forward to that. (Zak, Baltimore Marketplace)*

Participants expressed concern about their ability to afford the out-of-pocket costs related to their plan deductibles, especially those participants with higher deductible plans. Nearly all participants reported their plan included an annual deductible that required them to pay out of pocket for

services before their insurance would take effect. These deductibles ranged from less than $500 to over $6,000 for those with individual coverage and double these amounts for those with family coverage. When asked whether they could afford their full deductible, if needed, responses varied. While some said no, others had included the deductible in the calculation of their costs for the coverage and felt they could afford it. For participants enrolled in high deductible bronze plans, the costs associated with the deductibles prevented them from getting care they felt they needed. These participants described feeling as if they were uninsured for anything other than a catastrophic event. Some described their coverage as a backstop against financial ruin should a severe health care issue arise, rather insurance that covered needed medical services. As a consequence, some participants said they did not go the doctor or get treatment for chronic conditions because they knew they could not afford the costs.

> *My insurance last year, like I said, the deductible was really high. They didn't really cover much. I was left with a lot of bills. I would just suffer through anything to not have to pay it. (Kimberly, Richmond Marketplace)*
>
> *There's just too much out-of-pocket. Way too much. (Paul, St. Louis Marketplace)*
>
> *I'd really like to see some specialists but I know I wouldn't be able to afford the copay. I have $2,000-$3,000 out of pocket every year that I, I can't afford that. That's why I have health insurance. If I could afford $3,000, why would I need health insurance? (Matthew, Richmond Marketplace)*
>
> *It's a Bronze plan and the deductible is like $6,000, so basically it's a catastrophic plan and I've never used it. (Po, Oakland Marketplace)*
>
> *Sometimes, it's hard making those choices. I don't want to decide whether to get medical treatment that I crucially need, as opposed to buying dinner. (Womson, Baltimore Marketplace)*

Some participants reported making financial trade-offs to purchase plans with lower deductibles so they could get care they anticipated needing during the year. Choosing plans with lower deductibles or those that offered broad provider networks was particularly important for participants with ongoing health needs. Participants with greater understanding of how health insurance works and what to look for in a plan were able to weigh competing priorities of price versus out-of-pocket costs to select plans that would enable them to access the care they expected to need during the year. These participants reported spending a great deal of time examining different options and investigating provider networks so that they could make an informed choice. However, only those with greater financial resources were able to make these choices. Some participants who needed ongoing care said they could not afford the higher premiums associated with the lower deductible plans.

> *You see, with me being diabetic, high blood pressure…I needed a good medication … you know, a good drug program …so I had to go with the higher premiums. (Alan, Tampa Marketplace)*
>
> *At the marketplace, I got the most expensive plan that I could get because I knew I had to have surgery and I got the deductible…I think $1,150… and I knew that my surgery would be covered …but I still got to pay premiums and whatnot and I had to pay the deductible. The same with this year, I had surgery again so I just kept the same insurance. If I didn't have the issue that I have I probably would have just gotten the basic with the $6,000 cap or whatever. (Brandy, Columbus Marketplace)*

4. The fear of unknown costs was a constant worry for many participants, which caused many to avoid needed care

Despite some challenges, many Marketplace participants, particularly those with lower deductible plans, reported accessing needed care. Participants offered many examples of being able to go to the doctor or get needed care once they enrolled in their Marketplace coverage. They reported getting treatment for chronic conditions, such as diabetes or high blood pressure, and for mental health conditions, including anxiety and depression. Several participants said they were able to get long-standing issues addressed, and in some cases, finally had surgeries they had been putting off for years. Many also said they were able to get check-ups and routine screenings. Coverage of prescriptions drugs was particularly important for many. However, some participants expressed frustration that their drugs weren't covered or were included in a higher tier, which meant they were forced to pay large monthly copayments.

> *Before I had health coverage, this was probably 3 years ago, it turns out, I had pneumonia for a month and the cough went on for another year. I just never went to the doctor. I didn't have insurance. Finally, when I did end up getting coverage, I was told, "You have damage in your lungs from this cough that's been going on for a year." I was able to get medication for that. (Chris, Richmond Marketplace)*
>
> *The few visits I've gone in for would have buried me in debt if I didn't have insurance. I'll pay the $65 dollars… if it saves me from getting a $10,000 bill for what I thought was a routine test. (Shannon, Baltimore Marketplace)*
>
> *[Since gaining insurance] I filled some cavities and just took care of some stuff before I'd actually lose my front tooth and not be able to fix it. That's a real scare because that affects your everyday life…people look at you different. (Billy, Columbus Marketplace)*

However, when they used their coverage, nearly all Marketplace participants reported receiving an unexpected bill for services they thought were covered. Several participants, even those with lower deductible plans, said they were afraid to use their coverage because they worried about hidden costs, including lab tests or procedures that were not covered. In some cases, the bills participants received were the result of not yet having met the deductible for the year. However, in other cases, participants reported receiving bills because they failed to get prior authorization for the service, or because the claim was denied, or because the service was provided by a participating provider but at a non-participating facility. Several participants reported bills related to receiving a colonoscopy. In this case, participants scheduled the colonoscopy believing it would be covered as a preventive screening. However, when a polyp was discovered and removed, they received a bill for the procedure. Participants said it was impossible to anticipate these types of bills in advance, leading some to forego care to avoid unexpected costs. Some participants contacted the insurance companies and were able to resolve the problems. For others, these bills presented a financial burden, and many reported they were still paying them off.

> *Even though I have coverage, just for me. I still try not to go to the doctor. I try. I don't want a bill. Every time I go to the doctor, they send me a bill in the mail. Here we go. Fax me this. Fax me that. Send me this. Prove this. Prove that. It's ridiculous. (Regina, Baltimore Marketplace)*
>
> *You get a procedure done that you're supposed to get done, a colonoscopy. You read the information in your health plan that says, "We cover screenings, screenings are free," but if you find something it's not covered. I went in and got it done thinking, I'm perfectly healthy, there's nothing wrong with me. "Oh no, we had to take something out." Well I'm glad they*

found it… Now it's like I get this series of bills. Now the premium is higher than it was and you have medical bills. What I've done is I've not gone in to get blood screens anymore because I don't know what they're going to pay for. (Margie, Columbus Marketplace)

I broke my arm and my hip and everything. I was covered by the insurance but the ambulance wasn't. It was $900 just to take me to the hospital... Nobody tells you; I didn't know that it wasn't covered. I thought it was a free service. (Laura, Tampa Marketplace)

We never hardly go to the eye doctor anymore, even though we both have glaucoma because it's like $300, one visit to the ophthalmologist. (Dave, St. Louis Marketplace)

A number Marketplace participants said they had problems affording services not covered by insurance, particularly dental and vision, and finding some doctors. In particular, participants consistently reported that vision care, glasses, some prescription drugs, and alternative treatments (such as acupuncture or chiropractic care) were not covered. Some said they had trouble getting dental care or certain medical supplies. For participants who needed these services and supplies, they either paid out of pocket for the care or did not get the care because they could not afford it. Some also reported difficulty finding certain doctors, particularly mental health providers. In some cases, participants were forced to pay out of pocket to see specialists who were out-of-network.

It covers children but not adult [vision]. I pay for my glasses out of pocket. It's cheaper than getting vision insurance. (JoAnna, Richmond Marketplace)

This year, I saw on my card that I had dental... I'd gone to the dentist and I said, "Oh good, I have dental." It turns out my dental, if somebody knocks my teeth off, I'm covered, but just to get x-rays, or cleaning, or fillings, or anything else I'm not covered. (David, St. Louis Marketplace)

5. Overall, most were positive about ACA coverage and grateful that coverage was available to them

Most participants were positive about their Medicaid and Marketplace coverage and were grateful that coverage was available to them, particularly those with pre-existing conditions. Many noted that they were able to get care and diagnose long-standing medical issues. Many with chronic needs like diabetes or asthma, highly valued their coverage and the ability to see doctors and get necessary medications. A number of individuals who had previously had private or employer coverage found Medicaid and Marketplace coverage comparable in benefits and much more affordable. Some participants who had been unable to get coverage in the individual market before the ACA due to pre-existing health conditions were especially grateful for the coverage.

For me I'm glad I have the healthcare because there's been a couple of situations this year if I didn't I would have been out of work for a lot longer making less money. In the long run I was able to work because of it. (Zak, Baltimore Marketplace)

I thank God for the marketplace because if I had to pay that [for surgery] out of pocket, I just would have had to live through the pain and I wouldn't be able to have kids anymore…if I'd had insurance before, we would've caught it much, much sooner. It wouldn't have been the issue that it is today. (Brandy, Columbus Marketplace)

I feel grateful too especially about my health care for my kids. My son has had to have surgery. He has had multiple broken bones. Things that would have been so expensive if I was uninsured and paying for it. (Rachel, Columbus Medicaid)

Insurers turned me down [because my wife had cancer]. That's why I was glad that they have this. Nobody can deny you because of previous or prior medical problem. That saved my wife because she has so many medical problems. We could never get insurance for her. (David, St. Louis Marketplace)

I feel blessed because having asthma and being uninsured, to get proper medication and not being able to work because of the asthma… I feel healthier and I am able to work when I can when I need to now. Those four or five years that I didn't have it [health insurance] was a very rough time. It was a struggle. (William, Columbus Medicaid)

While they were appreciative of the coverage, many Marketplace participants wanted better coverage that was more affordable. While people were grateful for coverage, unexpected bills, dealing with insurance companies, and facing known deductibles were sources of stress which made those with Marketplace coverage fearful to use the coverage they had. They were particularly frustrated by the out-of-pocket costs, which were unaffordable to many and wanted insurance that didn't come with so many hidden costs. They also wanted a more streamlined system that was easier to navigate and better information to know whether services would be covered and what their out-of-pocket costs would be.

Before my surgery, I would say, probably 10 hours a week on the phone, back and forth, getting things approved. Just, I was like, this is causing me more stress than anything I've ever dealt with in my whole life… How in God's name are we giving you so much money? There's no other industry where I would give you this much money to treat me this way. (Rebecca, Richmond, Marketplace)

I feel like I do somewhat well. I'm able to meet my bills. I own a home and everything. I have a modest savings, but at the same time, my deductible is extremely high. It's what I can afford. I know that all it takes is one accident or something to happen and all of my savings is wiped out. (Chris, Richmond Marketplace)

Yeah I have a mixed feeling…in my prior life when I was working full time and had health insurance. I never had to worry about if I got sick, would I be able to pay this bill or whatever. Now with this insurance and because I only work part time, it's kind of like, I have insurance but is it going to be covered? Is something not going to work out to my advantage? I'm going to owe money." (Joy, Columbus Marketplace)

Yeah, it's good to have coverage. Just in general I wish insurance was better in some way, but is this a better option? I'm not so sure it is, not the $6,600 [deductible]. I would rather if we had a choice and I would rather have a better choice. This is not the best thing. (Paul, St. Louis Marketplace)

Without coverage, many felt like they would be stressed, anxious and face negative health and financial consequences. Across Medicaid and Marketplace groups, participants said they would worry about their health and finances if they lacked coverage. For those with on-going issues, loss of coverage would mean that they could lose access to needed services or prescription drugs. For those without on-going health issues, they feared they would not be able to access primary and preventive care and that an emergency or accident would have devastating financial consequences.

I would probably suffer an anxiety attack from shock! I would limit my doctor's visits to extreme emergencies and take my medication every other day instead of daily. (Kym, Baltimore Medicaid)

I would not go to the doctor for well visits – or even if I were sick. I would only go to the emergency room in a crisis or to the free medical clinic at my church. I would definitely be worried and "what if I get sick" is always hanging over my head. (Corey Ann, Columbus Marketplace)

I feel very secure having the 87 silver plan from Covered CA. If I didn't have coverage I might move to Canada or to another country where I could buy health insurance. (Roger, Oakland Marketplace)

PANIC!! I would feel scared and vulnerable! I would cut back on utilization and wait longer to seek care. (Julia, Tampa Marketplace)

Conclusion

Millions of people have gained access to health insurance coverage under the ACA through Medicaid and the Marketplaces. Focus groups with low-income individuals who have Medicaid or Marketplace coverage in California, Florida, Maryland, Missouri, Ohio, and Virginia reveal that many are struggling financially—they have difficulty paying their bills each month and many are burdened by debt (including medical debt). Their new coverage did not change these underlying financial struggles. However, gaining coverage enabled many to access care they needed to treat ongoing conditions giving them peace of mind.

Participants with Medicaid were generally able to access care with few out-of-pocket costs. This protection from out-of-pocket costs provided by Medicaid was important as participants with Medicaid had incomes below 138% FPL, and thus, had limited capacity to shoulder any extra costs. For Marketplace participants, premiums were generally affordable largely due to the tax credits, but some struggled with their monthly payments. In addition, out-of-pocket costs and, the fear of unexpected bills were a constant worry for Marketplace participants and caused many to avoid needed care. In states that did not expand Medicaid, individuals with incomes between 100-138% FPL can receive coverage through the Marketplace, but coverage through Medicaid would be more affordable with fewer out-of-pocket costs if their state expanded.

Most participants were positive about gaining coverage and grateful that coverage was available to them, particularly those who had been barred from coverage due to pre-existing conditions. While many Marketplace participants wanted more affordable coverage and protection from unexpected costs, they agreed that without coverage, they would not be able to access needed care and would face more stress, anxiety and worry about getting sick and how to pay for care.

The authors gratefully acknowledge Nancy Belden and Catherine Heyward with Belden Russenello Strategists for conducting the focus groups upon which this report is based. They also extend their deep appreciation to all the focus group participants for sharing their experiences to inform this project.

Appendix A: Overview of Focus Group Participants												
		Medicaid				Marketplace						
		Baltimore	Columbus	Oakland	Medicaid Total	Baltimore	Columbus	Oakland	Richmond	St. Louis	Tampa	Marketplace Total
Total		**10**	**10**	**10**	**30**	**10**	**10**	**10**	**11**	**10**	**10**	**61**
Gender												
	Male	4	5	4	13	5	5	4	5	5	3	27
	Female	6	5	6	17	5	5	6	6	5	7	34
Age												
	22-35	3	4	3	10	4	3	0	5	3	1	16
	36-50	4	4	3	11	2	4	5	3	2	1	17
	51-64	3	2	4	9	4	3	5	3	5	8	28
Marital Status												
	Married	2	3	1	6	4	5	1	4	5	3	22
	Single	5	5	5	15	4	4	5	4	2	2	21
	Living with Partner		1	1	2	1	1	3	1	1	1	8
	Divorced / Separated	2	1	2	5	1	0	1	2	2	3	9
	Widowed	1		1	2						1	1
Employment Chacteristics												
	Full-Time	2	2	3	7	3	7	4	7	4	3	28
	Part-Time	4	7	3	14	6	2	4	4	6	5	27
	Unemployed	4	1	4	9	1	0	2	0	0	2	5
Educational Attainment												
	Did not Finish High School	0	0	0	0	1	0	0	0	0	0	1
	High School Graduate	2	3	2	7	0	2	1	3	2	0	8
	Some College	6	3	6	15	4	3	3	5	1	5	21
	College Graduate	2	4	2	8	5	5	6	3	7	5	31
Dependent Status												
	Children under 19	6	5	4	15	3	3	2	6	3	3	20
	No Children	4	5	6	15	7	7	8	5	7	7	41
Race/Ethnicity												
	White	3	6	4	13	4	7	6	6	5	6	34
	Black	6	2	3	11	6	2	3	4	4	1	20
	Hispanic	0	0	2	2	0	0	0	0	1	3	4
	Asian	0	0	0	0	0	0	1	0	0	0	1
	Other	1	0	1	2	0	1	0	1	0	0	2

Endnotes

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Differing Impacts Of Market Concentration On Affordable Care Act Marketplace Premiums

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ABSTRACT Recent increases in market concentration among health plans, hospitals, and medical groups raise questions about what impact such mergers are having on costs to consumers. We examined the impact of market concentration on the growth of health insurance premiums between 2014 and 2015 in two Affordable Care Act state-based Marketplaces: Covered California and NY State of Health. We measured health plan, hospital, and medical group market concentration using the well-known Herfindahl-Hirschman Index (HHI) and used a multivariate regression model to relate these measures to premium growth. Both states exhibited a positive association between hospital concentration and premium growth and a positive (but not statistically significant) association between medical group concentration and premium growth. Our results for health plan concentration differed between the two states: It was positively associated with premium growth in New York but negatively associated with premium growth in California. The health plan concentration finding in Covered California may be the result of its selectively contracting with health plans.

In July 2015 two major health plan mergers were announced: Anthem announced a $54 billion deal to buy Cigna, and Aetna announced a $37 billion deal to buy Humana. If these mergers pass regulatory scrutiny, the field of large national health plans will decrease from five to three, with UnitedHealthcare being the third. Medical providers are also merging: Hospital mergers and acquisitions increased by 44 percent from 2010 to 2014.[1] What impact will all of this consolidation have on consumers? In particular, how will health insurance premiums change as a result? These timely questions motivated us to examine the relationship between health insurance premiums and both health plan and provider market power in the Affordable Care Act (ACA) Marketplaces.

Health plans take on risk and serve as intermediaries between consumers and medical providers, including hospitals and medical groups. On the one hand, consolidation could produce scale economies for health plans and give them increased leverage in negotiations with hospitals and medical groups, both of which position health plans to potentially offer lower premiums to consumers. On the other hand, higher premiums could result from plans' exercising their increased market power. The impact of health plan consolidation will likely vary among markets. For example, a health plan's negotiation leverage with a provider depends partially on the plan's ability to exclude a provider from its networks, which may not be possible in markets with few providers because of consumers' preferences or network adequacy requirements.

This study explored the impact of health plan, hospital, and medical group market power on the growth of health insurance premiums between 2014 and 2015 in Covered California

and NY State of Health, two of the ACA's state-based Marketplaces. We selected these states because they both release health plan premium and enrollment data at the rating area level and because they are large and important states with different active-purchaser Marketplace policies.[2] Covered California stipulates a standard benefit design and selectively contracts and directly negotiates premiums with health plans. NY State of Health serves as a market organizer that manages product choices and places limits on the number and type of products that health plans can offer but does not selectively contract with health plans. It also has a standard benefit design requirement but allows health plans to offer up to three nonstandard products per county.[3]

Impact Of Concentration On Premiums

In this section we review studies on provider (hospital and medical group) and health plan concentration.[4]

PROVIDER CONCENTRATION Numerous studies suggest that greater hospital concentration is associated with higher hospital prices.[5] Hence, we expected hospital concentration to be positively associated with premium growth.

Until recently, there had been little work addressing how medical group concentration affects physician prices. In 1983, 20 percent of physicians worked in practices with eleven or more physicians, but by 2014 this percentage almost doubled to 39 percent.[6] With more physicians joining medical groups, studies show that today's physicians have the market power to negotiate higher reimbursement prices.[7–9]

HEALTH PLAN CONCENTRATION Unlike the case of provider concentration, where higher concentration is expected to lead to higher prices, the impact of health plan concentration on premiums is theoretically ambiguous.[10,11] As found in a number of studies, greater plan concentration can lead to higher premiums as health plans exercise market power over purchasers.[10,12–15] Although studies have found that greater plan concentration has given health plans the necessary bargaining power to negotiate lower provider prices,[16,17] there is little evidence that these savings are then passed through to consumers in the form of lower premiums.[10,15]

Pass-through to consumers becomes more likely as both the competitiveness of the health insurance market and the threat of market entry by other plans increase. Pass-through may also be more likely in light of changes made by the ACA. Health insurance premiums are now heavily regulated via federal and state rate review authority and the federal medical loss ratio requirement.[18] States' prior-approval authority over rates was found to be associated with lower health insurance premium growth from 2010 to 2013 in the individual market.[19] Victor Fuchs and Peter Lee argue that savings pass-through will occur because the federal medical loss ratio requires health plans in the individual market to spend 80 percent of every premium dollar on consumer medical claims and activities that improve the quality of care.[20]

There has been very little research on the effects of plan concentration in the post-ACA period. Early evidence from the Marketplaces suggests that increased health plan competition leads to lower premiums. Leemore Dafny and colleagues studied the impact of competition on premiums by exploiting variation in rating area-level competition induced by UnitedHealthcare's decision not to participate in any of the federally facilitated Marketplaces during the first year of open enrollment.[21] The authors estimate that the second-lowest-price silver premium (which is linked to federal subsidies) would have decreased by 5.4 percent, on average, had UnitedHealthcare participated.

Study Data And Methods

HEALTH INSURANCE PREMIUMS Health insurance premium data came from Covered California[22] and NY State of Health[23] for the 2014 and 2015 plan years. In each state there are five coverage tiers with the following actuarial values (percentage of medical expenses covered by the plan for an average individual): catastrophic (less than 60 percent), bronze (60 percent), silver (70 percent), gold (80 percent), and platinum (90 percent). We focused our analyses on silver-tier premiums because the majority of plan enrollment—63 percent in California and 58 percent in New York—was in the silver tier in 2015.[24,25]

In California we focused on premiums for forty-year-old individuals. Because premiums for other ages are proportional to premiums of forty-year-olds, our results would be similar for different age groups. In New York premiums were the same for each age group because New York does not allow age-based pricing.

An observation in our data set was the premium of a standard benefit product that was observed in both years.[26] Each standard product is defined by a health plan, rating area, and product type (health maintenance organization, exclusive provider organization, preferred provider organization, or point-of-service plan). In both states most health plans offered only one standard product in a rating area. In California there were ninety-one and ninety observations in 2014

and 2015, respectively, and eighty-two of these observations were in both years. In New York there were sixty-four and sixty-three observations in 2014 and 2015, respectively, and fifty-seven of these were in both years. Neither California nor New York had significant insurer entry into or exit out of its Marketplace between 2014 and 2015. California had one plan exit (Contra Costa Health Services). New York had one plan enter (WellCare of New York) and one plan exit (Today's Options of New York). Each of these one-year plans had less than 1 percent of statewide Marketplace enrollment in the year it participated.

CONCENTRATION MEASURES For each rating area, we calculated the health plan, hospital, and medical group Herfindahl-Hirschman Index (HHI).[27] The HHI is calculated by squaring the market shares of each firm and then summing the values across all firms.[28] The HHI can range from 0 to 10,000, with 10,000 corresponding to a market with one firm. The Horizontal Merger Guidelines, published by the Department of Justice and the Federal Trade Commission, classify markets by the HHI as follows: unconcentrated (below 1,500), moderately concentrated (between 1,500 and 2,500), and highly concentrated (above 2,500).[29] Increases in the HHI are thought to be associated with a decrease in competition and an increase of market power.

We calculated rating-area health plan HHIs in California and New York using ACA Marketplace rating-area enrollment shares for 2014.[22,30] We calculated rating-area hospital and medical group HHIs using county-level HHIs. When a rating area included two or more counties, we weighted county-level HHIs based on the county's population to calculate rating-area HHIs. Hospital market shares were based on the number of hospital beds, using data from the American Hospital Association's 2010 Annual Hospital Survey.[31] Medical-group market shares were based on the number of physicians in a group, using data from the 2011 IMS Health Physician Insights database.[32]

HEALTH CARE COST ADJUSTMENT The Medicare hospital prospective payment system adjusts payments to hospitals based on the local market conditions facing each hospital, including wage rates. We used the fiscal year 2015 Medicare area wage index tables to control for rating-area differences in the cost of providing care.[33]

STATISTICAL MODELS Our statistical models were designed to align with how health plans set premiums. Plans set 2015 premiums by starting with 2014 premiums, which we included in our model, and then made adjustments based on how health care expenditures compared to these premiums. Health care expenditures are driven by health care utilization, which we could not model, and unit prices, which we modeled using plan and provider concentration measures as well as the Medicare area wage index. Finally, plans may adjust premiums based on their goals, such as wanting to gain market share with lower premiums versus short-term profits with higher premiums.

In both states, more concentrated hospital markets were associated with higher premium growth.

We used a multivariate regression model to estimate the association between 2014 and 2015 premium growth and market concentration. Our model was estimated separately for California and New York. We regressed 2015 premiums on the health plan HHI (in 2014), the hospital HHI, the medical group HHI, and the Medicare area wage index. Importantly, we also controlled for 2014 premiums, which gave our model the interpretation of growth in premiums.

We natural-logged each variable to limit the influence of outliers and to allow our coefficients to be interpreted as elasticities. Our coefficients should be interpreted as follows: For a 1 percent increase in an HHI variable, we would expect an approximate beta percentage increase in 2015 premiums (the dependent variable), where beta is the regression coefficient of the HHI variable. Because premiums were correlated at the rating-area level, we clustered standard errors by rating area.

We tested two alternative premium growth model specifications to test the sensitivity of our results. The first alternative kept the log-log model form but used the difference of logged premiums as the dependent variable. This model produced results similar to those of our primary model.[34] We also estimated a log-level version of the model, where the concentration variables were levels. In this version, the results were directionally the same but with some reduced statistical significance.[35] In the end, we selected the lagged premium log-log model because it accounted for a nonlinear impact of our concentration measures and was less sensitive to outliers.

LIMITATIONS In our regression model, we were not able to separate the impact of adjusting 2015

We see direct premium negotiation as a promising path forward for the Marketplaces.

premiums for actuarial reasons versus exercising market power. Some health plans in 2014 may have underpriced relative to the health risk of the actual enrollees—above and beyond the risk compensated by risk adjustment, reinsurance, and risk corridors—causing them to raise premiums. However, we do not think these adjustments necessarily affected our results because they likely occurred across rating areas, including rating areas with a low, moderate, or high health plan HHI.

Our health plan concentration measures were based on only Marketplace enrollment, but a plan's market power is derived from all lines of business, including the individual market outside the Marketplaces, the employer-sponsored market, Medicare Advantage, and Medicaid managed care. For the major health plans in California, Marketplace enrollment shares generally reflect the shares across the commercial insurance market. Based on this measure in 2013, the top four health plans (percentage of total commercial enrollment) were as follows: Kaiser Permanente (42 percent), Anthem (20 percent), Blue Shield of California (15 percent), and Health Net (6 percent), for a combined share of 83 percent.[36] These four health plans also had the largest shares of enrollment in the California ACA Marketplace; their combined share was 95 percent in 2015 (see online Appendix Exhibit A1).[37]

In contrast, New York Marketplace enrollment shares are less closely linked to enrollment shares over the entire private insurance market, partly because Health Republic Insurance New York and Fidelis Care, the two health plans with the most Marketplace enrollment, do not offer employer-sponsored insurance. Therefore, as a sensitivity analysis, we estimated additional regression models excluding these two plans and found results similar to those derived from the model when all plans were included (the latter is shown in Appendix Exhibit A2).[37]

Another possible limitation could have been endogeneity, in which premiums influenced concentration measures. For example, plans may have chosen to enter rating areas where premiums were already excessive and thus influenced the health plan HHI measure. If the rating areas charging excessive premiums were correlated with health plan HHI, then health plan entry would result in reverse causation (expected premiums influencing concentration). We reduced the potential impact of this issue by lagging our concentration measures so that they were measured at points in time prior to when premiums were set.

Our provider concentration data came from 2010 for hospitals and from 2011 for medical groups. Therefore, our data did not capture the effects of numerous more recent hospital and medical group mergers, which introduces measurement error (biasing the parameter estimates toward 0) and understates our provider HHI measures (biasing the parameter estimates upward). Notably, however, this timing does capture the effects of New York State's statewide hospital restructuring between 2005 and 2008, when one-fourth of all hospitals in the state were reconfigured—that is, they closed, merged, or reduced in size.[38] Because of data limitations, our study did not explore the effects of vertical integration—when hospitals and medical groups or other types of providers merge, which have become increasingly common.[6]

Study Results

In California the mean premium among rating areas increased from $335 to $348 (or 3.9 percent) between 2014 and 2015, with the increase ranging from 1.2 percent to 6.3 percent by rating area (Exhibit 1). In New York the parallel increase was from $423 to $431 (or 1.9 percent), with the change ranging from −4.9 percent to 7.7 percent by rating area.

In 2014 the health plan markets in California and New York were highly concentrated, with mean HHIs of 3,763 and 2,750, respectively, and with the HHI ranging by rating area from 2,228 to 8,319 in California and from 1,171 to 3,598 in New York (Exhibit 1). For health plan–level detail, Appendix Exhibit A1 reports each health plan's statewide Marketplace enrollment share for 2014 and 2015.[37]

The hospital and medical group HHIs also varied significantly across rating areas in each state (Exhibit 1). The hospital markets in California and New York were moderately to highly concentrated, with mean HHIs of 2,259 and 3,708, respectively. The rating area mean medical group HHIs in California and New York were 776 and 423, respectively—well below the Horizontal Merger Guidelines' moderately concentrated

EXHIBIT 1

Covered California and NY State of Health monthly premiums and market concentration, by rating area, for 2014 and 2015 plan years

Covered California

Rating-area number[a]	Rating area	Average standard silver plan premium (40-year-old) 2014	2015	% change in premium	Herfindahl-Hirschman Index (HHI) Health plan	Hospital	Medical group
4	San Francisco County	$379	$403	6.3%	2,321	1,398	1,306
5	Contra Costa County	361	381	5.5	4,004	1,334	426
8	San Mateo County	394	412	4.6	3,029	1,881	440
3	Greater Sacramento	382	399	4.5	3,280	2,651	821
18	Orange County	292	305	4.5	2,963	485	169
9	Central Coast	382	398	4.2	4,786	5,247	1,609
1	Northern counties	328	341	4.0	8,319	5,574	669
12	Central Coast	327	340	4.0	4,336	2,606	190
2	North Bay counties	368	382	3.8	3,173	3,560	553
19	San Diego County	317	329	3.8	2,228	481	332
14	Central Valley	299	310	3.7	3,713	1,446	306
17	Inland Empire	273	283	3.7	2,433	1,020	524
6	Alameda County	350	361	3.1	3,429	965	613
13	Eastern region	376	386	2.7	4,919	7,013	4,632
7	Santa Clara County	362	371	2.5	4,244	1,164	745
15	Los Angeles County[b]	260	266	2.3	2,853	149	155
16	Los Angeles County[b]	279	285	2.2	2,284	149	155
11	Central Valley	311	316	1.6	3,941	2,437	159
10	Central Valley	334	338	1.2	5,250	3,353	947
Rating-area avg.	**—**	**335**	**348**	**3.9**	**3,763**	**2,259**	**776**

NY State of Health

Rating-area number[a]	Rating area	Average standard silver plan premium (40-year-old) 2014	2015	% change in premium	HHI Health plan	Hospital	Medical group
7	Utica area	$452	$487	7.7%	3,091	5,984	865
1	Albany area	424	447	5.4	2,831	5,881	452
6	Syracuse area	413	428	3.6	2,850	4,797	943
3	Mid-Hudson area	461	474	2.8	2,907	3,441	421
2	Buffalo area	392	401	2.3	2,703	3,598	191
5	Rochester area	352	358	1.7	3,598	3,836	302
8	Long Island area	442	430	−2.7	2,302	994	104
4	New York City area	448	426	−4.9	1,717	1,131	102
Rating-area avg.	**—**	**423**	**431**	**1.9**	**2,750**	**3,708**	**423**

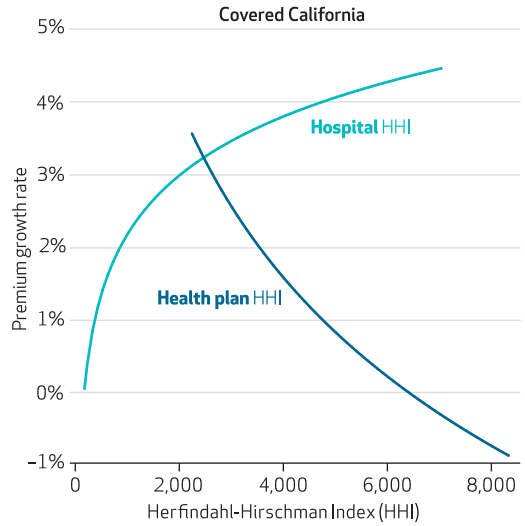
SOURCES Premium data from Covered California and NY State of Health, two Affordable Care Act state-based Marketplaces. Herfindahl-Hirschman Indices are based on authors' calculations using 2014 enrollment data from these Marketplaces, hospital data from the American Hospital Association's 2010 Annual Hospital Survey, and physician data from the 2011 IMS Health Physician Insights database. [a]Rank-ordered by percent change of average premium. [b]Los Angeles County was split into two rating areas.

HHI threshold of 1,500.[29]

The full results of our premium growth regression model for California and New York are shown in Appendix Exhibit A2.[37] In both California and New York the hospital HHI was positively associated with 2015 premiums ($p = 0.04$ and $p < 0.01$, respectively). Because the regression model controlled for 2014 baseline premiums, these results can be interpreted as the hospital HHI being positively associated with 2014-to-

EXHIBIT 2

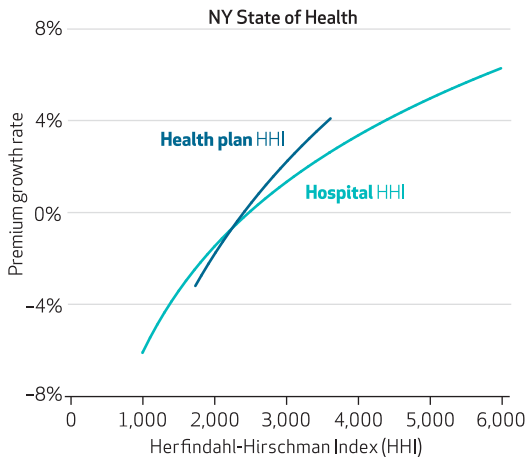
Predicted change in Covered California premiums between 2014 and 2015, by health plan and hospital market concentration



SOURCE Authors' analysis based on regression coefficient estimates in online Appendix Exhibit A2 (see Note 37 in text). **NOTES** Independent variables not plotted in the exhibit are set to their sample means. Similarly, the predicted premium growth rate is based on the growth rate from the 2014 mean product-level premium of $324. Plotted points extend through the range of Herfindahl-Hirschman Index levels observed in the data.

EXHIBIT 3

Predicted change in NY State of Health premiums between 2014 and 2015, by health plan and hospital market concentration



SOURCE Authors' analysis based on regression coefficient estimates in online Appendix Exhibit A2 (see Note 37 in text). **NOTES** Independent variables not plotted in the exhibit are set to their sample means. Similarly, the predicted premium growth rate is based on the growth rate from the 2014 mean product-level premium of $426. Plotted points extend through the range of Herfindahl-Hirschman Index levels observed in the data.

2015 premium growth. We found a positive, but not statistically significant, association between the medical group HHI and the 2015 premiums in both states.

For the health plan HHI, we found a differing impact on premium growth in the two states. In California the health plan HHI was statistically significant and negatively associated with 2014 to 2015 premium growth ($p = 0.06$). The regression model for California predicted a 3.3 percent growth in the mean premium ($324 to $334) from 2014 to 2015.[39] Based on the model's results, a 10 percent increase in the health plan HHI would have reduced this growth rate to 3.0 percent, and a 10 percent increase in the hospital HHI would have increased the original growth rate of 3.3 percent to 3.4 percent. The method used to compute these growth rates is outlined in the Appendix.[37]

In New York we observed a positive and significant association between the health plan HHI and premium growth ($p < 0.01$). The regression for New York predicted a 2.1 percent growth in premiums ($426 to $435) from 2014 to 2015. According to our regression model's results, a 10 percent increase in the health plan HHI would have increased this growth rate to 3.0 percent, and a 10 percent increase in the hospital HHI would have increased the original 2.1 percent growth rate to 2.7 percent.

Our premium growth rate predictions for California are shown in Exhibit 2. To calculate the growth rate from our regression results, the 2015 premium that our model predicted was compared to the 2014 premium mean that we were holding fixed. The 2014 premium mean of our California product-level observations was $324. For the health plan HHI at 2,500, our regression model predicted a 2015 monthly premium of $334. This implied a premium growth rate of [(334–324)/324]*
100 = 3.1 percent. For the health plan HHI at 5,000, our model predicted a 2015 premium of $326. Hence, we predicted the growth rate for the health plan HHI at 5,000 to be [(326–324)/324]*100 = 0.6 percent.

The same calculations for New York are shown in Exhibit 3. The 2014 premium mean of our New York product-level observations was $426. Hence, for the health plan HHI at 2,500, we predicted a premium growth rate of [(428–426)/426]*100 = 0.5 percent. For the health plan at 3,500, we predicted a premium growth rate of [(442–426)/426]*100 = 3.8 percent.

Discussion

In Covered California and NY State of Health, two large ACA state-based Marketplaces, we

found that hospital market concentration was associated with health plan premium growth between 2014 and 2015. In both states, more concentrated hospital markets were associated with higher premium growth. This result aligns with the broad literature on hospital concentration and premiums and prices.[5] We also found a positive, but not statistically significant, association between medical group concentration and premium growth.

Interestingly, we found that more concentrated health plan markets were associated with lower premium growth in California but higher premium growth in New York. The differences in California and New York may be due to differences in health plan goals as well as regulatory authority and enforcement in these states. In New York we found higher health plan concentration being associated with higher premium growth. This finding is consistent with the empirical evidence that increased health plan market power will lead to higher premiums.[10,12–15] Our finding in New York is consistent with the findings of Jon Gabel and colleagues, who—in a national study of the ACA Marketplaces—found that the addition of a health plan in a rating area was associated with an average decline in premiums of about 2 percent from 2014 to 2015.[40] However, premium increases in New York could have been larger. Although NY State of Health does not directly negotiate premiums, the state has prior-approval authority over health insurance rates, which may have reduced some of the premium growth.[19]

In contrast, for California we found that higher health plan concentration was associated with lower premium growth. One possibility is that health plans in rating areas with higher market concentration may have focused on maintaining or growing market share versus profits in the short run, leading to lower premium growth.

Another possibility stems from Covered California's authority to selectively contract and directly negotiate with plans. Although the two insurance regulators in the state—the California Department of Managed Health Care and the California Department of Insurance—do not have prior-approval authority over rates, one could argue that Covered California's negotiations with plans has the force of such authority. Health plan profits may have been higher in markets that were more concentrated because of their stronger negotiating position with providers. Covered California may have been able to use its regulatory authority to obtain a larger reduction in profits in these markets, leading to lower premiums. Both possibilities are consistent with the positive correlation between health plan concentration and premium growth.

The ACA Marketplaces provide a natural laboratory for studying the effects of competition and market power.

Policy Implications

Our results have a number of policy implications regarding providers and health plans. According to a recent report, hospital mergers and acquisitions increased by 44 percent from 2010 to 2014.[1] On the one hand, provider consolidation has the potential to reduce costs through economies of scale. However, there is very little evidence that horizontal mergers between hospitals generate efficiency or quality.[5] Hence, it is important for regulators to monitor hospital consolidation trends and to prevent mergers that harm competition.

With respect to health plan concentration, our differing results in California and New York make a one-size-fits-all policy recommendation more nuanced, but we see promise in two policy tools: selective contracting and direct premium negotiation with health plans, and prior-approval authority for health insurance rates. Besides California, only Massachusetts, Rhode Island, and Vermont operate Marketplaces that selectively contract with health plans.[2] Our results from California lend support to the idea that selective contracting and direct premium negotiation lead to lower growth in premiums. Covered California officials directly negotiated premiums with health plans and were selective in which health plans they allowed to enter the Marketplace. The threat of being excluded from the Marketplace was a significant source of leverage for Covered California during health plan negotiations. We see direct premium negotiation as a promising path forward for the Marketplaces, especially in states that lack prior-approval authority over rates.

More than half of the states (including New York, but excluding California) have prior-approval authority over health insurance rates.[19] For example, in 2015 health plans in New York requested a 13 percent average increase in individual market premiums, but prior-approval au-

thority enabled New York officials to reduce the average increase to 6 percent.[41] However, our results suggest that health plans may have still been able to exercise market power, but prior-approval authority may have partially mitigated their ability. State officials could not be overly stringent with rate reductions in the early years of the New York Marketplace because it could have hindered health plan Marketplace entry and continuity. A recent federal bill introduced by Sen. Dianne Feinstein (D-CA) and Rep. Jan Schakowsky (D-IL) seeks to give the secretary of health and human services the power to block premium increases determined to be unreasonable in the states that lack prior-approval authority.[42]

Ultimately, there may be a "tipping point" to health plan consolidation. Such consolidation might enable insurers to reduce costs through economies of scale and serve as a counterweight to provider market power. However, there is likely a point at which further increasing an insurer's size leads to no meaningful efficiency gains and gives the insurer a level of market power that translates to higher-price, lower-quality products for consumers. The insurer size that begins to tip this scale is an important empirical question that deserves further study.

Conclusion

The ACA Marketplaces provide a natural laboratory for studying the effects of competition and market power. The Marketplaces' structured competition among health plans, product standardization, and data transparency are valuable in enabling this research effort. We foresee that further research of the Marketplaces will provide important insights into whether competition is operating effectively in the market for health insurance. ■

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ASPE
ISSUE BRIEF

HEALTH INSURANCE MARKETPLACE PREMIUMS AFTER SHOPPING, SWITCHING, AND PREMIUM TAX CREDITS, 2015–2016

April 12, 2016

Health insurance rate information becomes available each spring as issuers file proposed rates with federal and state regulators. Rates then undergo review before being finalized in the fall, prior to the annual Health Insurance Marketplace Open Enrollment Period.[1] Neither the proposed nor final rates offered by any individual issuer provide a reliable basis for predicting what typical Marketplace consumers will pay in the following year. Consumers' actual health insurance premiums will be lower because public rate review can bring down proposed increases, shopping gives all consumers a chance to find the best deal, and tax credits reduce the cost of coverage for the vast majority of Marketplace consumers.

Key Highlights

- Initial issuer rate filings do not provide sufficient information to predict what premiums Marketplace consumers will actually pay next year because they do not account for rate review, consumer shopping behavior, or tax credits. For plan year 2016, early estimates based on rate filings alone suggested higher premium increases than what Marketplace consumers paid.
- Two-thirds (67 percent) of HealthCare.gov consumers selected a new plan in 2016: all new consumers, plus 43 percent of returning consumers. Taking into account shopping, the increase in the average premium was 8 percent between 2015 and 2016.
- Among the roughly 85 percent of HealthCare.gov consumers with premium tax credits, the average monthly net premium increased just $4, or 4 percent, from 2015 to 2016.

[1] "U.S. Department of Health and Human Services Rate Review Annual Report," December 2015, available at: https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/Rate-Review-Annual-Report_508.pdf

Rate Changes without Shopping or Tax Credits

The Marketplace is a dynamic environment. New consumers sign up during Open Enrollment, while returning consumers can explore their health coverage options and either remain with their plan or select a different plan. In addition, enrollees have the flexibility to come and go as their life circumstances change. For example, consumers may move to a new source of coverage because of a job with employer-sponsored insurance or may become eligible for Medicaid or Medicare. In addition, the vast majority of Marketplace consumers also qualify for tax credits that dramatically reduce their premiums.

By contrast, the average premium changes reported in insurers' rate announcements assume a scenario in which no consumer leaves the Marketplace, no new consumers enroll, nobody switches plans, no new plans are offered, and no one receives tax credits. That means that the average rate changes reported in issuer filings do not accurately represent the changes in the premiums consumers will actually pay. Using rate filing information alone, some observers last year suggested that consumers would see double-digit percentage increases in the premiums they paid in 2016. For example, a McKinsey analysis based on rate filings estimated that median premiums would rise by an average of 10 to 15 percent in 2016.[2]

Consumers' Shopping Sharply Reduces Premium Changes

During the Marketplaces' annual Open Enrollment Period, new consumers select plans and current consumers have the option to switch plans. Overall, 6.4 million individuals (67 percent) of HealthCare.gov consumers selected a new plan for 2016: 4.0 million new consumers, plus 2.4 million (43 percent) of returning consumers. After taking into account shopping, the average premium among all HealthCare.gov consumers increased 8 percent from 2015 to 2016 (Table 1), not much higher than the 7.2 percent increase in the second-lowest silver plan premium reported at the start of the 2016 open enrollment. The 8 percent increase in the average premium after shopping demonstrates that enrollees' actual premiums depend on the dynamics of the entire market not just issuers' pricing decisions.

Among 2015 consumers that re-enrolled in the Marketplace for 2016 coverage, 43 percent chose to switch plans. Compared to what they would have paid to remain in their 2015 plan, consumers that switched plans saved an average of $42 per month in premium costs, equivalent to over $500 in annual savings. (See Table 2 for average savings by state.) In addition, new consumers, who accounted for 42 percent of 2016 plan selections in the 38 HealthCare.gov states, necessarily shop around, and prior research shows they overwhelmingly gravitate toward low-premium plans.[3]

[2] McKinsey Center for U.S. Health System Reform, "2016 exchange market remains in flux: Pricing trends," November 2015, available at: http://healthcare.mckinsey.com/2016-exchange-market-remains-flux-pricing-trends.
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Shopping by new and returning consumers is important because the Marketplace is dynamic, which means that the issuer that offers a market's lowest price product one year is not necessarily the price leader in the next year. Each year, new issuers enter the Marketplace, and consumers have a wide variety of choices for coverage. Currently, the average HealthCare.gov consumer has a choice of 46 qualified health plans available in his or her county for 2016 coverage.[4] (See Table 3.)

Tax Credits Limit Premium Changes for the Overwhelming Majority of Consumers

The vast majority of HealthCare.gov consumers receive premium tax credits, which, like consumer shopping behavior, are not accounted for in the premium changes reported in insurers' rate filings. Among all Marketplace plan selections in HealthCare.gov states, 85 percent were with tax credits in 2016. The average monthly tax credit amount in 2016 is $290 and reduces a consumer's premium by 73 percent. (See Table 4 for details by state.)

Table 3 shows the resulting net premiums for the 85 percent of Marketplace consumers who receive tax credits. The average net premium—that is, taking into account tax credits— in 2016 among those who qualified for tax credits was $106 per month. The average net premium was $102 for tax credit recipients in 2015. Therefore, between 2015 and 2016, the average out-of-pocket premium obligation consumers' with tax credits paid rose just 4 percent, or $4 a month.

The fact that consumers saw only small premium increases after tax credits is not a coincidence. The premium tax credit is designed to ensure that affordable options are available to consumers. An eligible consumer's tax credit amount is based on the premium of the second-lowest cost silver plan (also known as the benchmark plan) available to him or her, and the tax credit amount a consumer is eligible for adjusts if the benchmark plan's premium changes. That means that if premiums for all plans in an area rise similarly, that increase is essentially fully offset for eligible consumers by a higher premium tax credit. After taking into account tax credits, nearly seven in 10 HealthCare.gov consumers had the option of coverage for $75 or less in monthly premiums for 2016 coverage, and 74 percent had an option for $100 or less. (See Table 5.)

[4] The weighted average numbers of issuers and plans per county were calculated using the March 21, 2016 version of the 2016 plan landscape file, weighting by number of 2016 plan selections, which produces a slightly different premium than what was reported in the March 2016 report. The plan landscape file is available at: https://www.healthcare.gov/health-and-dental-plan-datasets-for-researchers-and-issuers/

TABLE 1: Health Insurance Marketplace Monthly Premium Changes for 2015–2016 in HealthCare.gov States

	2015 Average Monthly Premium	2016 Average Monthly Premium	Increase in Average Monthly Premium	
			Dollars	% Change
Full monthly premium among all plan selections	$356	$386	$30	8%
Net monthly premium among plan selections with premium tax credits	$102	$106	$4	4%

Notes: Information is for enrollees in the 37 states that used the HealthCare.gov platform for 2015 and in the 38 states that used the HealthCare.gov platform for 2016. 2015 enrollees are those who selected plans during the second Open Enrollment Period. 2016 enrollees include those who had an active Marketplace plan selection as of 2/1/2016 but exclude those whose plans were terminated prior to that date.

Conclusion

Even after rate announcements begin for the Marketplaces' 2017 benefit year, more information will be needed to pinpoint how issuers' proposed rate changes will impact what consumers ultimately pay for coverage. Last year, rate filings alone led some to predict nationwide double-digit increases in the premiums paid by consumers. In fact, for the 85 percent of HealthCare.gov consumers eligible for tax credits, average net premiums increased only slightly, by $4 per month (or 4 percent).

The Marketplace was designed to foster issuer competition, facilitate consumers' comparison shopping, and ensure affordability through financial assistance. The experience of the past three years suggests that in the next Open Enrollment Period consumers will return to the Marketplaces to search for the best value to cover themselves and their families.

TABLE 2: Premium Savings from Switching Plans between 2015 and 2016 Coverage Years

State	Percent of Re-enrollees Who Chose a New Plan for 2016	Average Monthly Premium Savings of Switchers	Average Annual Premium Savings of Switchers
HealthCare.gov Total (37 States)	*43%*	*$42*	*$502*
Alabama	43%	$42	$504
Alaska	36%	$71	$852
Arizona	73%	$41	$492
Arkansas	22%	$20	$240
Delaware	30%	$39	$468
Florida	38%	$34	$408
Georgia	44%	$48	$576
Illinois	53%	$53	$636
Indiana	42%	$64	$768
Iowa	31%	$49	$588
Kansas	63%	$51	$612
Louisiana	39%	$38	$456
Maine	19%	$15	$180
Michigan	36%	$45	$540
Mississippi	35%	$40	$480
Missouri	41%	$31	$372
Montana	31%	$38	$456
Nebraska	37%	$28	$336
Nevada	52%	$20	$240
New Hampshire	29%	$27	$324
New Jersey	42%	$64	$768
New Mexico	58%	$46	$552
North Carolina	43%	$48	$576
North Dakota	24%	$25	$300
Ohio	36%	$54	$648
Oklahoma	32%	$26	$312
Oregon	47%	$36	$432
Pennsylvania	52%	$28	$336
South Carolina	62%	$33	$396
South Dakota	51%	$12	$144
Tennessee	43%	$52	$624
Texas	48%	$41	$492
Utah	56%	$31	$372
Virginia	28%	$28	$336

State	Percent of Re-enrollees Who Chose a New Plan for 2016	Average Monthly Premium Savings of Switchers	Average Annual Premium Savings of Switchers
West Virginia	26%	$33	$396
Wisconsin	39%	$59	$708
Wyoming	49%	$3	$36

Notes: Numbers may not sum due to rounding. Information is for enrollees in the 37 states that used the HealthCare.gov platform for both 2015 and 2016. 2015 enrollees include those who selected plans during the second Open Enrollment Period and those who selected plans during a Special Enrollment Period but exclude those who had terminated their plan as of 11/1/2015. 2016 enrollees include those who had an active Marketplace plan selection as of 2/1/2016 but exclude those whose plans were terminated prior to that date. The dollar amounts shown in this table differ from those in Appendix Table B5 on p. 47 of the ASPE Issue Brief titled "Health Insurance Marketplaces 2016 Open Enrollment Period: Final Enrollment Report" (March 11, 2016; available at: https://aspe.hhs.gov/health-insurance-marketplaces-2016-open-enrollment-period-final-enrollment-report) because the table above shows the premium savings among all plan switchers, not just those who switched within a metal tier.

TABLE 3: Issuers and Plans Available in the 2016 Health Insurance Marketplace

State	Total Issuers in State in 2016	Average Available per County for 2016 Coverage*	
		Qualified Health Plans	Issuers
HealthCare.gov Total (38 states)	*234*	*46*	*5*
Alaska	2	15	2
Alabama	3	13	2
Arkansas	5	40	5
Arizona	8	51	6
Delaware	3	28	3
Florida	10	52	5
Georgia	9	48	6
Hawaii	2	20	2
Iowa	4	26	3
Illinois	9	43	5
Indiana	8	61	6
Kansas	4	26	3
Louisiana	5	34	4
Maine	2	21	2
Michigan	14	80	8
Missouri	7	37	4
Mississippi	3	23	3
Montana	3	30	3
North Carolina	3	24	3
North Dakota	3	21	3
Nebraska	4	31	4
New Hampshire	4	29	4
New Jersey	6	54	6
New Mexico	4	25	4
Nevada	4	49	4
Ohio	17	81	10
Oklahoma	2	22	2
Oregon	10	69	7
Pennsylvania	13	32	5
South Carolina	4	56	3
South Dakota	2	19	2
Tennessee	4	57	3
Texas	19	51	6
Utah	4	59	3

State	Total Issuers in State in 2016	Average Available per County for 2016 Coverage*	
		Qualified Health Plans	Issuers
Virginia	11	35	4
Wisconsin	16	60	5
West Virginia	2	18	1
Wyoming	1	28	1

Note: QHP counts do not include catastrophic plans. Averages for QHPs and issuers represent the number available per county in the state, weighted by the number of 2016 plan selections in the county. Plan and issuer information is from the plan landscape file as of March 21, 2016 for states using the HealthCare.gov platform, which represents a snapshot of issuer participation and plans as of that date and does not reflect issuers or plan offerings that may have been available prior to that time. Numbers in this table may differ from those in reports based on earlier versions of the 2016 landscape file.

Issuer counts were tabulated on the basis of unique HIOS ID numbers. Comparing the March, 21, 2016 version of the PY2016 landscape file against the August 2015 version of the PY2015 landscape file, we find that 40 issuers "entered" the Marketplaces in 2016: that is, 40 issuers did not offer individual market health plans in the Marketplaces in 2015 but did in 2016. A total of 39 issuers "exited," meaning they were active in one of the Marketplaces in 2016 but not in 2016. Hawaii was not included in the entry/exit counts because Hawaii was new to the HealthCare.gov eligibility and enrollment platform in 2016.

TABLE 4: Reduction in Average Monthly Premiums from Advance Premium Tax Credits

State	Total Number of Individuals with 2016 Plan Selections	Percent of Plan Selections with APTC	Average Monthly Premiums among Consumers with Advance Premium Tax Credits (APTC)			
			Average Monthly Premium before APTC	Average Monthly APTC	Average Monthly Premium after APTC	Average Percent Reduction in Premium after APTC
HealthCare.gov Total (38 States)	*9,625,982*	*85%*	*$396*	*$290*	*$106*	*73%*
Alabama	195,055	89%	$410	$308	$102	75%
Alaska	23,029	86%	$863	$737	$126	85%
Arizona	203,066	74%	$324	$204	$120	63%
Arkansas	73,648	87%	$409	$286	$122	70%
Delaware	28,256	82%	$477	$328	$150	69%
Florida	1,742,819	91%	$386	$302	$84	78%
Georgia	587,845	86%	$385	$287	$98	75%
Hawaii	14,564	81%	$389	$270	$118	70%
Illinois	388,179	75%	$385	$233	$152	61%
Indiana	196,242	81%	$415	$259	$156	63%
Iowa	55,089	85%	$425	$303	$122	71%
Kansas	101,555	82%	$352	$246	$106	70%
Louisiana	214,148	89%	$448	$362	$86	81%
Maine	84,059	87%	$428	$325	$103	76%
Michigan	345,813	83%	$382	$239	$143	63%
Mississippi	108,672	90%	$388	$297	$91	76%
Missouri	290,201	87%	$407	$313	$94	77%
Montana	58,114	83%	$421	$306	$115	73%
Nebraska	87,835	88%	$400	$295	$105	74%
Nevada	88,145	87%	$372	$265	$107	71%
New Hampshire	55,183	66%	$396	$241	$155	61%
New Jersey	288,573	80%	$484	$323	$161	67%
New Mexico	54,865	68%	$332	$205	$127	62%
North Carolina	613,487	89%	$497	$399	$98	80%
North Dakota	21,604	85%	$405	$262	$142	65%
Ohio	243,715	80%	$405	$240	$164	59%
Oklahoma	145,329	84%	$376	$296	$80	79%
Oregon	147,109	71%	$392	$250	$142	64%
Pennsylvania	439,238	76%	$396	$251	$145	63%

State	Total Number of Individuals with 2016 Plan Selections	Percent of Plan Selections with APTC	Average Monthly Premiums among Consumers with Advance Premium Tax Credits (APTC)			
			Average Monthly Premium before APTC	Average Monthly APTC	Average Monthly Premium after APTC	Average Percent Reduction in Premium after APTC
South Carolina	231,849	89%	$406	$309	$97	76%
South Dakota	25,999	88%	$416	$306	$110	74%
Tennessee	268,867	85%	$400	$296	$104	74%
Texas	1,306,208	84%	$344	$257	$87	75%
Utah	175,637	86%	$271	$187	$84	69%
Virginia	421,897	82%	$366	$273	$93	75%
West Virginia	37,284	85%	$542	$387	$155	71%
Wisconsin	239,034	84%	$455	$330	$125	73%
Wyoming	23,770	90%	$571	$454	$117	80%

Notes: Information is for enrollees in the 38 states that used the HealthCare.gov platform for 2016. 2016 enrollees include those who had an active Marketplace plan selection as of 2/1/2016 but exclude those whose plans were terminated prior to that date. This table originally appeared as Appendix Table B1 on p. 39 of the ASPE Issue Brief titled "Health Insurance Marketplaces 2016 Open Enrollment Period: Final Enrollment Report" (March 11, 2016; available at: https://aspe.hhs.gov/health-insurance-marketplaces-2016-open-enrollment-period-final-enrollment-report).

TABLE 5: Availability of 2016 Plans with Monthly Premiums of $100 or Less after Applicable Advance Premium Tax Credits

State	Total Number of Individuals with 2016 Plan Selections	Percent Who Could Have Selected a Plan with a Monthly Premium of:	
		$75 or Less after APTC	$100 or Less after APTC
HealthCare.gov Total (38 States)	*9,625,982*	*68%*	*74%*
Alabama	195,055	72%	76%
Alaska	23,029	67%	71%
Arizona	203,066	59%	70%
Arkansas	73,648	62%	70%
Delaware	28,256	61%	67%
Florida	1,742,819	78%	82%
Georgia	587,845	72%	76%
Hawaii	14,564	63%	71%
Illinois	388,179	53%	61%
Indiana	196,242	55%	62%
Iowa	55,089	63%	70%
Kansas	101,555	62%	68%
Louisiana	214,148	81%	83%
Maine	84,059	63%	69%
Michigan	345,813	63%	72%
Mississippi	108,672	76%	80%
Missouri	290,201	71%	76%
Montana	58,114	61%	67%
Nebraska	87,835	69%	75%
Nevada	88,145	68%	74%
New Hampshire	55,183	45%	57%
New Jersey	288,573	50%	57%
New Mexico	54,865	50%	59%
North Carolina	613,487	76%	80%
North Dakota	21,604	60%	68%
Ohio	243,715	53%	61%
Oklahoma	145,329	76%	82%
Oregon	147,109	47%	57%
Pennsylvania	439,238	53%	60%
South Carolina	231,849	62%	69%
South Dakota	25,999	67%	74%
Tennessee	268,867	72%	77%
Texas	1,306,208	72%	78%

State	Total Number of Individuals with 2016 Plan Selections	Percent Who Could Have Selected a Plan with a Monthly Premium of:	
		$75 or Less after APTC	$100 or Less after APTC
Utah	175,637	72%	80%
Virginia	421,897	68%	72%
West Virginia	37,284	59%	65%
Wisconsin	239,034	63%	69%
Wyoming	23,770	60%	68%

Notes: Information is for enrollees in the 38 states that used the HealthCare.gov platform for 2016. 2016 enrollees include those who had an active Marketplace plan selection as of 2/1/2016 but exclude those whose plans were terminated prior to that date. This table originally appeared as Appendix Table B2 on p. 41 of the ASPE Issue Brief titled "Health Insurance Marketplaces 2016 Open Enrollment Period: Final Enrollment Report" (March 11, 2016; available at: https://aspe.hhs.gov/health-insurance-marketplaces-2016-open-enrollment-period-final-enrollment-report).

Benefits of Medicaid Expansion for Behavioral Health

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EXECUTIVE SUMMARY

Across the country, state and local officials are increasingly focused on improving health outcomes for people living with mental illness or substance use disorders. This brief analyzes national data on behavioral health and reviews published research focused on how Medicaid expansion under the Affordable Care Act advances the goal of improving treatment for people with behavioral health needs. The key findings are the following:

- Many of those who could benefit from Medicaid expansion have behavioral health needs. In 2014, an estimated 1.9 million low-income uninsured people with a substance use disorder or a mental illness lived in states that have not yet expanded Medicaid under the Affordable Care Act.[1] In addition, people with behavioral health needs make up a substantial share of all low-income uninsured individuals in these states: 28%. While some of these individuals had access to some source of health insurance in 2014, many will gain access to coverage only if their states expand Medicaid, and others would gain access to more affordable coverage.

- In states that have not yet expanded, Medicaid expansion would provide considerable benefits for individuals with behavioral health needs and their communities. Among low-income adults, Medicaid expansion is associated with a reduction in unmet need for mental health and substance use disorder treatment. For example, one study estimates

[1] Michigan, New Hampshire, Pennsylvania, Indiana, Alaska, and Montana expanded Medicaid during or after 2014; these states are not included in totals in this report. Louisiana has made the decision to expand but plans to implement expansion beginning July 1, 2016; it is included in these totals.

that low-income adults with serious mental illness are 30% more likely to receive treatment if they have Medicaid coverage. This will be especially important to states as they work to address opioid use disorder and serious mental illness.

- Access to appropriate treatment results in better health outcomes. For example, projections based on experimental research on the effects of Medicaid coverage expansions suggest that if the remaining states expanded Medicaid, there would be 371,000 fewer people experiencing symptoms of depression.

- States that choose to expand Medicaid may achieve significant improvement in their behavioral health programs without incurring new costs. State funds that currently directly support behavioral health care treatment for people who are uninsured but would gain coverage under expansion may become available for other behavioral health investments.

- Medicaid expansion also reduces costs that are incurred by state and local governments and state economies as a consequence of behavioral health problems. In addition to improving quality of life for individuals, treating behavioral health conditions has been shown to reduce rates of disability, increase employment productivity, and decrease criminal justice costs.

INTRODUCTION

There is a large literature on the benefits of Medicaid expansion under the Affordable Care Act for individuals and states. Drawing upon this literature, a June 2015 Council of Economic Advisers (CEA) report outlines a range of benefits from Medicaid expansion, including improved access to care and increased regular preventive care and screenings, resulting in better self-reported health and fewer deaths. Beyond the health benefits, those gaining coverage experience greater financial security, and state economies benefit from higher standards of living through the infusion of federal funds,[2] greater macroeconomic resilience, and healthier, more productive workers (Council of Economic Advisers, 2015).

This brief focuses on several major benefits of Medicaid expansion related to behavioral health. First, we examine how expansion improves states' ability to address unmet behavioral health needs, and the resulting benefits of expanded access to treatment for behavioral health conditions. Second, we also examine effects on state and local government budgets. Public expenditures for uninsured individuals with behavioral health conditions are significant because states have historically funded and operated public mental health and substance use disorder treatment systems and because the incidence of behavioral health conditions is generally higher in the uninsured population than in the general population. Medicaid expansion can free up state funds that currently directly support behavioral health treatment for people who are uninsured to meet a range of other behavioral health needs like prevention and early intervention programs.

[2] The Federal Financial Medical Assistance Percentage (FMAP) for the ACA Medicaid expansion is 100% in calendar years 2014-2016, 95% in 2017, 94% in 2018, 93% in 2019, and 90% in 2020 and beyond.

Finally, we survey evidence demonstrating that the social consequences of untreated behavioral health conditions frequently extend far beyond the affected individual to include the family, employer, and larger community, making the issue of behavioral health treatment and access a top priority for many states.

Behavioral Health Needs and Unmet Needs

In 2010-2014, among adults 18-64 living in the U.S., 37.6 million (19.5%) had a mental illness, and 19.2 million (9.9%) had a substance use disorder in the past year, according to analysis of data from the National Survey of Drug Use and Health for 2010 through 2014 by the Substance Abuse and Mental Health Administration (SAMHSA). This analysis pooled multiple survey years to provide a sample size large enough to permit state-level estimates.

Table 1 uses these data to estimate the prevalence of mental illnesses and substance use disorders among adults ages 18-64 during the 2010-2014 period. Among states that have not yet expanded Medicaid, 24.9% had either or both of these conditions. (This total is smaller than the sum of the shares of individuals with only one of these conditions, due to the high prevalence of co-occurring mental illness and substance use disorders (Mericle, Ta Park, Holck, & Arria, 2012; Nait, Fusar-Poli, & Brambilla, 2011)).

Table 1 also shows that non-elderly individuals without health insurance in Medicaid non-expansion states were somewhat more likely to have either a mental illness or substance use disorder, with about 28% of this group having such a disorder during the 2010-2014 period. Likewise, individuals with a mental or substance use disorder constitute 28% of all uninsured individuals age 18-64 with incomes below 138% of the Federal Poverty Level (FPL), the income limit for Medicaid coverage under expansion.[3]

As noted above, the estimates reported in Table 1 are based on data spanning the years 2010 through 2014 in order to ensure a sufficient sample size to support state-level estimates. Thus, most of the data underlying Table 1 are from before the Affordable Care Act's major coverage provisions took effect in 2014. While these states have not expanded Medicaid, individuals in these states with family income between 100 and 400% of the FPL are eligible for financial assistance to purchase coverage through the Health Insurance Marketplaces. Nevertheless, the data underlying Table 1 provide the best available guide to the characteristics of the uninsured population in these states. If anything, the percentages of people with a mental or substance use disorder reported in the last two columns of Table 1 are likely to be somewhat higher in updated data since the lowest-income individuals saw smaller coverage gains in these states and the data indicate that the prevalence of mental illness and substance use disorders is somewhat higher in lower-income uninsured populations.

In order to provide an accurate picture of the current number of uninsured individuals in these states with a substance use disorder or mental illness, we utilize the 2014 American Community Survey (ACS) that has more recent estimates of individuals that are uninsured by income

[3] Note that not all individuals who are eligible to enroll actually do so, and some of those that meet the income requirements may not be eligible to enroll, for example, due to immigration status.

category. We combine the data in Table 1 from the 2010-2014 pooled NSDUH data which provides us with the percentage of the population with a mental or substance use disorder in the income and insurance category with data from the 2014 American Community Survey (ACS) on each state's non-elderly population, number of non-elderly uninsured, and number of non-elderly uninsured with incomes below 138% of the FPL. Multiplying these estimates from the ACS by the appropriate percentages in Table 1 leads to the estimates reported in Table 2.

Table 1. Share of adults in non-expansion states aged 18-64 who had any mental illness (AMI) or substance use disorder (SUD) in the past year, 2010-2014

States	Share with AMI and SUD		
	Full Population	Uninsured Population	Uninsured Population with Income Below 138% FPL
Alabama	25.7	34.0	30.3
Florida	23.7	25.8	27.7
Georgia	23.3	25.1	25.0
Idaho	31.1	36.6	39.0
Kansas	25.5	30.3	31.3
Louisiana**	25.2	28.8	29.5
Maine	26.8	30.1	*
Mississippi	26	30.9	33.8
Missouri	26.6	31.2	34.2
Nebraska	26.2	30.3	31.3
North Carolina	22.6	22.3	26.7
Oklahoma	28.9	29.0	33.2
South Carolina	25.7	30.4	32.4
South Dakota	25.5	28.3	*
Tennessee	28	38.8	35.8
Texas	23.4	24.9	23.2
Utah	28	33.6	40.0
Virginia	25.8	31.9	34.8
Wisconsin	26.1	32.4	*
Wyoming	27.3	33.2	30.2
Total	**24.9**	**27.8**	**28.4**

Source: SAMHSA analysis of 2010-2014 National Survey on Drug Use and Health
Notes: These estimates do not include the institutional population (e.g., hospitals and prisons), and may therefore be low.
* Value suppressed due to low precision.
** Louisiana plans to expand its Medicaid program starting July 1, 2016.

As Table 2 shows, in 2014, an estimated 1.9 million uninsured people with a mental illness or substance use disorder lived in states that have not yet expanded Medicaid under the Affordable Care Act and had incomes below 138% of the FPL, the income limit for Medicaid coverage under expansion. Some in this group had incomes between 100 and 138% of the federal poverty level, meaning they had the option to pay premiums to purchase coverage through the Marketplace. In addition, some very low-income parents may have had access to Medicaid coverage. Other than Wisconsin, no non-expansion state covers childless adults, and the median

parent eligibility limit is about 40% of the federal poverty level.[4] But many in this group fall into the "coverage gap" and would gain access to health insurance only if their states expanded Medicaid, and others would gain access to more affordable coverage.

Table 2. Estimated number of adults in non-expansion states aged 18-64 who had any mental illness (AMI) or substance use disorder (SUD) in the past year, 2014

States	Full Population	Uninsured Population	Uninsured Population with Income Below 138% FPL
Alabama	754,000	181,000	85,000
Florida	2,800,000	726,000	309,000
Georgia	1,445,000	343,000	159,000
Idaho	296,000	67,000	30,000
Kansas	440,000	76,000	34,000
Louisiana**	712,000	176,000	81,000
Maine	221,000	35,000	*
Mississippi	463,000	118,000	61,000
Missouri	976,000	184,000	91,000
Nebraska	295,000	47,000	21,000
North Carolina	1,366,000	256,000	144,000
Oklahoma	666,000	145,000	71,000
South Carolina	748,000	176,000	87,000
South Dakota	128,000	20,000	*
Tennessee	1,120,000	270,000	114,000
Texas	3,830,000	1,047,000	406,000
Utah	482,000	94,000	42,000
Virginia	1,323,000	244,000	102,000
Wisconsin	924,000	116,000	*
Wyoming	98,000	20,000	6,000
Total	**19,107,000**	**4,352,000**	**1,908,000**

Source: SAMHSA analysis of 2010-2014 National Survey on Drug Use and Health; 2014 American Community Survey; ASPE calculations.
Notes: These estimates do not include the institutional population (e.g., hospitals and prisons), and may therefore be low.
* Value suppressed due to low precision.
** Louisiana plans to expand its Medicaid program starting July 1, 2016.

Medicaid Expansion and Access to Behavioral Health Care

Untreated behavioral health conditions have serious effects on individuals' lives and on health care spending. For example, co-occurring psychiatric conditions and chronic medical conditions are associated with significantly more expensive care due in large part to poor self-care and more acute episodes of needed healthcare (Blount, et al., 2007). These circumstances are in part reflected by the fact that people with serious mental illness have an average life expectancy that is shorter than for those without these conditions (Druss, Zhao, Von Esenwein, Morrato, & Marcus, 2011).

[4] For details on state eligibility levels, see Kaiser Family Foundation, "Where Are States Today? Medicaid and CHIP Eligibility Levels for Adults, Children, and Pregnant Women," March 2, 2016, http://kff.org/medicaid/fact-sheet/where-are-states-today-medicaid-and-chip/.

Research has consistently found that there are substantial delays from the time that a first episode of serious mental illness occurs and when people receive treatment for this condition (Mueser, et al., 2015). In the case of schizophrenia, this delay can worsen outcomes, while early comprehensive treatment can improve prognosis and is cost-effective (Rosenheck, et al., 2016). In 2014, among the 43.6 million adults with a mental illness, 55% did not receive mental health services in the past year; 31.5% of the 9.8 million adults with serious mental illness did not receive mental health services; and among the 21.5 million individuals who met criteria for a substance use disorder, only 11% received treatment (NSDUH, 2014).[5]

Table 3. Adults in non-expansion states aged 18-64 who received any treatment for mental illness or substance use disorder (excluding self-help groups) in the past year by uninsured, 2010-2014

States	Percentage of Insured Population Receiving Treatment for Mental Illness or Substance Use Disorder	Percentage of Uninsured Population Receiving Treatment for Mental Illness or Substance Use Disorder
Alabama	15.5	13.6
Florida	14.9	8.8
Georgia	15.8	9.5
Idaho	18.2	17.4
Kansas	17.0	13.6
Louisiana*	14.1	10.1
Maine	24.2	13.6
Mississippi	15.5	11.2
Missouri	18.5	15.8
Nebraska	17.1	14.1
North Carolina	18.5	13.0
Oklahoma	17.1	14.7
South Carolina	16.9	11.7
South Dakota	16.9	15.1
Tennessee	18.6	16.9
Texas	14.0	9.4
Utah	20.1	16.1
Virginia	17.9	15.6
Wisconsin	17.5	18.8
Wyoming	17.6	16.0
Total	**16.4**	**11.5**

Source: SAMHSA analysis of 2010-2014 National Survey on Drug Use and Health.
* Louisiana plans to expand its Medicaid program starting July 1, 2016.

Unsurprisingly, the uninsured also had lower treatment rates than the insured.[6] While 16.4% of individuals 18-64 that were insured in non-expansion states received treatment for mental illness or a substance use disorder,[7] among the uninsured in this age category, only 11.5% received treatment (see Table 3). This is despite the fact that the uninsured had higher rates of substance use disorder and mental illness. Lack of affordability was the most prevalent reason that

[5] This includes individuals 65 and older.
[6] As defined by having received treatment in the last 12 months.
[7] This excludes self-help groups.

individuals who are uninsured cited for not accessing treatment among those that thought they needed treatment in the last year and did not get it (over half, compared to 32% of the insured).[8]

Medicaid expansion can improve access to treatment for people with behavioral health needs. Among low-income adults, Medicaid expansion is associated with a reduction in the unmet need for mental health and substance use disorder treatment (Wen, Druss, & Cummings, 2015). Adjusting for differences in state programs, researchers found that among low income individuals with a serious mental illness, the likelihood of mental health treatment was 30% greater for individuals enrolled in Medicaid (Han, Gfroerer, Kuramoto, Ali, Woodward, & Teich, 2015). This finding is consistent with historical research, indicating that the utilization of mental health services is responsive to prices which are generally lower with insurance (Meyerhoefer & Zuvekas, 2010), and those with coverage through Medicaid are far more likely to get treatment.

Table 4. Projected effects on health outcomes if state expands Medicaid

State	Reduction in Number of People Experiencing Symptoms of Depression	Additional People Reporting Good, Very Good, or Excellent Health
Alabama	16,000	24,000
Florida	69,000	100,000
Georgia	36,000	52,000
Idaho	5,000	8,000
Kansas	7,000	10,000
Louisiana*	18,000	26,000
Maine	4,000	5,000
Mississippi	13,000	18,000
Missouri	17,000	25,000
Nebraska	4,000	6,000
North Carolina	29,000	42,000
Oklahoma	12,000	17,000
South Carolina	15,000	21,000
South Dakota	2,000	3,000
Tennessee	16,000	24,000
Texas	101,000	147,000
Utah	6,000	9,000
Virginia	16,000	24,000
Wisconsin	2,000	3,000
Wyoming	1,000	2,000
Total	**371,000**	**540,000**

Source: Council of Economic Advisers, 2015
* Louisiana plans to expand its Medicaid program starting July 1, 2016.

Depression is the most common psychiatric condition in the United States, affecting approximately 7% of the adult population at any time (Bishop, Ramsay, Casalino, Bao, Pincus, & Shortell, 2016). Access to Medicaid can increase the number of people who enter treatment for depression so that they and their families can experience a better quality of life. In addition to

[8] SAMHSA analysis of 2014 National Survey of Drug Use and Health. This included responses of couldn't afford cost, insurance didn't cover or not enough health insurance coverage.

the increased probability of individuals receiving treatment post-Medicaid expansion (Wen, Druss, & Cummings, 2015), Medicaid coverage has been found to reduce the probability of positive screening for depression in a randomized experiment of expanded Medicaid coverage in Oregon (Baicker, et al., 2013). This decreased probability is likely in part due to increased access to treatment, but may also reflect the increased financial security provided by Medicaid coverage. Using results from the Oregon experiment, a 2015 analysis by the Council of Economic Advisers projected that if the states that have not expanded Medicaid in 2015 had done so, there would be fewer people experiencing symptoms of depression. Table 4 below lists the Council of Economic Advisers estimates for the states that have still have not expanded Medicaid as of March 2016.[9]

After interviewing officials from six expansion states, the Government Accountability Office (GAO) found that Medicaid expansion had resulted in greater availability of behavioral health treatment. State officials noted that formerly uninsured individuals now had more options for care. For example, in Kentucky individuals were no longer limited to state-funded community mental health centers. Officials in Nevada noted that there were fewer delays in receiving care, and officials in West Virginia reported an increased availability of prescription drugs for individuals with behavioral health conditions (GAO, 2015).

One recent study focused on the relationship between a state's Medicaid expansion status and the growth in supply of physicians waivered to prescribe buprenorphine for opioid dependence from 2013-2015. The study found that states that had expanded their Medicaid programs and had state-based exchanges had higher growth in the supply of buprenorphine –waivered physicians than states that had not expanded their programs (Knudsen, Lofwall, Havens, & Walsh, 2015). This finding may bode well for the impact of Medicaid expansion on meeting the treatment needs of those with opioid use disorder.

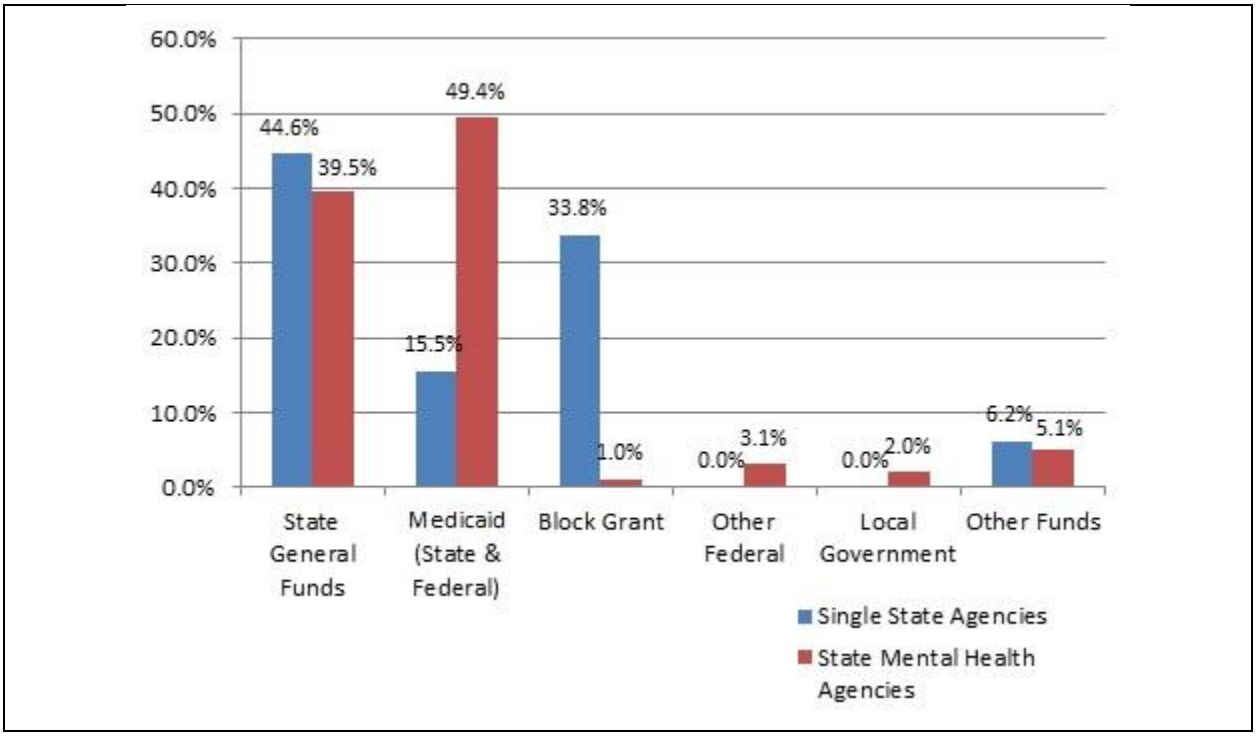
Behavioral Health and State Budgets

States spent more than $44.2 billion providing mental health and substance use disorder services in 2012.[10] State government general revenues were the largest source of funding for agencies that addressed substance use disorders, and, after Medicaid, they were the second largest funder of mental health services. Other sources of funds for treatment include SAMHSA block grants and local government funding (SAMHSA, 2015, see Figure 1, which shows funding sources for mental health agencies and single state agencies separately).

[9] Louisiana will expand Medicaid starting in July 2016.

[10] This amount represents the funding for single state agencies (SSAs) and state mental health agencies (SMHAs) which are the state government organizations responsible for planning, organizing, delivering, as well as monitoring mental health and substance use disorder services in each state.

Figure 1. Funding sources for state mental health agencies and single state agencies, FY 2012



Source: SAMHSA, 2015.

The Affordable Care Act (ACA) and the Mental Health Parity and Addiction Equity Act (MHPAEA) have already increased coverage of behavioral health conditions (Ali M. , Teich, Woodward, & Han, 2014). These changes are likely to lessen the number of individuals that require state and charitable support in order to receive treatment (Dorn & Francis, 2015). The ACA and the MHPAEA, which were enacted in 2010 and 2008 respectively, expand the financing, insurance eligibility and service coverage for mental health and substance abuse services (Beronio, Po, Skopec, & Glied, 2013). The coverage provisions from the ACA and MHPAEA took effect largely in 2014 and 2011 respectively. Mental health parity requirements in Medicaid managed care programs also expanded coverage of services in many states. For example, while Medicaid covered rehabilitative services that typically included substance use disorder treatment, in some states, prior to 2014, this coverage did not typically include more extensive benefits such as intensive day treatment, residential treatment or inpatient detoxification.

Beyond expanded coverage to individuals with behavioral health conditions, there were positive impacts on the budgets of states that expanded Medicaid as states no longer needed to use some of their general funds to pay for behavioral health treatment for the uninsured. While state behavioral health budgets saw state funding cuts during the recession, those that expanded Medicaid were able to find savings to restore former budget cuts, or increase general fund saving. Connecticut, Nevada and Washington State reduced their state general funds required for behavioral health (Dorn & Francis, 2015; GAO, 2015). Several states that expanded Medicaid reported that they expected reductions in general funds needing to be allocated to the

uninsured for treatment ranging from $7 million to $190 million in 2015 (Bachrach, Boozang, & Glanz, 2015).[11,12] States that choose to expand Medicaid may achieve significant improvement in their behavioral health programs without incurring new costs. State funds that currently provide direct support for behavioral health treatment of people that are uninsured would become available to meet other needs, including those in the behavioral health area if states were to expand Medicaid and cover this segment of the uninsured population. Key behavioral health investments may include prevention and early intervention programs for mental and substance use disorders.

The effects that Medicaid expansion would have on state budgets are likely to vary. States provide different levels of funding and services for behavioral health conditions. Some states that have not expanded Medicaid have Medicaid waivers in place that may meet some of the uninsured low-income population's needs (GAO, 2015). There is also great variability in the amount of services that are currently provided that would not be covered by Medicaid. Depending on current programming, Medicaid expansion may allow some states to enhance the continuum of care for behavioral health, including expanding recovery, peer and employment supports. States may face restrictions in redirecting funding, and reprogramming within behavioral health may be a requirement in some instances, due to federal or state requirements. For example, maintenance of effort requirements, which are part of SAMHSA's block grants, require states to maintain behavioral health funding at the level of the two year period prior to receipt of the grant.

In addition to impacts on state budgets, increased budget flexibility could also come from redirected Substance Abuse Prevention and Treatment Block Grants (SABG) and Mental Health Block Grant (MHBG) funding that formerly went to treating the uninsured. These funds could now go towards meeting a multitude of other needs, including workforce development, screening, prevention programs and provision of a continuum of care, not all of which is covered by Medicaid. Some block grant funding will remain as a safety net for individuals who continue to be uninsured (for example, enrollment in Medicaid is likely to remain low for some hard-to-reach individuals, see Woodward, 2016). Nonetheless, Medicaid expansion may free up other funding streams to provide more prevention and early intervention services, and "wraparound" services that are often not covered by Medicaid (Cannon, Burton, & Musumeci, 2015).

OTHER BENEFITS

Beyond the direct impacts on behavioral health treatment and spending, there is a great deal of evidence examining the intersection between behavioral health and other issues that may be of significance to states.

[11] The estimates reported are for the states of Washington and Michigan respectively.
[12] Researchers interviewed officials from eight states – Arkansas, Colorado, Kentucky, Michigan, New Mexico, Oregon, Washington and West Virginia. Of these states, only Arkansas, Kentucky, Michigan, and Washington broke out behavioral health spending. We also include New Mexico's reported savings included in their state budget and reported in Cross-Call, 2015.

Other Medical Costs

Medicaid expansion provides the opportunity to address the complicated physical and behavioral health needs of those it covers. Behavioral health conditions are costly to treat and are also associated with other medical costs. More than 68% of adults with mental illness are reported to have at least one general medical disorder, which is a substantially higher rate than for individuals without mental illness (Druss & Reisinger Walker, 2011). Improved access to care would improve the health and well-being of this population and in some cases produce savings. For example, for individuals with depression and diabetes, researchers found that improved treatment of depression not only led treated individuals to fewer days with depression, but also resulted in lower overall outpatient medical costs (Simon, et al., 2007).

Employment Productivity

Approximately 85% of uninsured families have one or more employed family members, with 73% having at least one full-time worker (The Kaiser Commission on Medicaid and the Uninsured, 2015). Behavioral health disorders affect the productivity of workers and have an impact on employer costs. Workers are more productive when they receive needed behavioral health treatment. Depression, which is one of the most prevalent mental health conditions, is associated with up to three times more short-term disability days for depressed workers compared to other employees (Kessler, et al., 1999). Indeed, average sick days from depression exceed the number of sick days due to hypertension, back problems, diabetes or heart disease (Druss, Rosenheck, & Sledge, 2000).

Treatment can improve worker productivity. Research studies have found reductions in the number of workers with substance use disorders who missed work, were late for work, were less productive than usual or had a conflict with management or a coworker after employees accessed specialized treatment (Jordan, Grisson, Alonzo, Dietzen, & Sangsland, 2008). Substance use disorder treatment was associated with $5,366 annually in employer savings from reduced absenteeism alone.[13] The overall economic benefit, including reduced absenteeism, improved productivity and reduced conflict, was $8,205 annually per worker with substance use disorder.[14]

Homelessness

Medicaid expansion offers states the opportunity to cover a significant proportion of individuals experiencing homelessness, many of whom have significant behavioral health conditions. Reducing homelessness improves community stability and reduces state costs across multiple service systems. Research indicates that individuals experiencing homelessness who frequently use emergency departments are more likely to be diagnosed with either mental illness or substance use disorder (Ku, Scott, Kertesz, & Pitts, 2010). Even in states that have expanded coverage, individuals experiencing homelessness are more likely to continue to have frequent emergency department visits, with homeless individuals with co-occurring mental illness and substance use disorders at greatest risk for hospitalization (Lin, Bharel, Zhang, O'Conneel, &

[13] Based on an average salary of $45,000 per year.
[14] Assuming a 50% fringe benefit rate on the $45,000 salary.

Clark, 2015). Much research has focused on the effectiveness of "supportive housing" which pairs affordable housing with health, behavioral health and supportive services for individuals who are experiencing homelessness. Supportive housing has been shown to be effective at maintaining housing stability. While Medicaid does not cover the housing costs, the health care, behavioral health care and supportive services can be covered through a state Medicaid program.[15] Supportive housing as an intervention has been shown to significantly reduce health care expenditures (Wright, Vartanian, Li, Royal, & Matson, 2016).

Criminal Justice Costs

An indirect effect of improved access to behavioral health treatment through Medicaid expansion may be reductions in criminal justice costs and increased provision of behavioral health treatment in behavioral health specialty settings that are best able to provide these services. An estimated 56% of state prisoners, 45% of federal prisoners, and 64% of jail inmates are affected by a mental health problem (US Department of Justice, Office of Justice Programs, 2006). On a typical day, over one million people with mental illness are in jail, in prison, on probation or parole (Odgers, et al., 2009). Additionally, 68% of inmates in jails and 50% of inmates in state prisons have diagnosable substance use disorders (Prins, 2014).

Medicaid expansion presents an opportunity to cover formerly incarcerated individuals, many of whom would meet the eligibility requirements. Facilitated enrollment in Medicaid (such as starting an application while in prison) and support for services following incarceration can make a significant difference in the health of this population, by improving individuals' ability to obtain health services that promote their well-being. Enrollment in Medicaid can also reduce recidivism among former inmates (Morrissey, Cuddeback, Cuellar, & Steadman, 2007).

There is evidence that state and local spending is reduced when Medicaid coverage is offered to the criminal justice population. After Washington State expanded state funding for substance abuse treatment to low-income individuals frequently involved with the criminal justice system, arrests declined by 17%, 18% and 33% for three different study groups, and resulted in almost $3 savings from criminal justice costs for every $1 invested in treatment. At the same time, medical expenditures went down (Mancuso & Felver, 2009). Specifically, this reduction in arrests saved local law enforcement, jails, courts, state corrections agencies, and crime victims $9,000 to $18,000 for each person treated, for a total of $275 million (Guyer, Bachrach, & Shine, 2015). In addition, when inpatient care is provided outside prison settings, states can claim federal matching funds for care provided in community mental health institutions. Six states that have implemented Medicaid expansion or are planning for an expansion, have estimated annual savings from using Medicaid to cover inmates' inpatient care ranging from $2.1 million to $19.2 million (Guyer, Bachrach, & Shine, 2015).

[15] See CMS Information Bulletin, June 26, 2015 "Coverage of Housing-Related Activities and Services for Individuals with Disabilities." https://www.medicaid.gov/federal-policy-guidance/downloads/CIB-06-26-2015.pdf.

CONCLUSION

Medicaid expansion under the Affordable Care Act can greatly improve the quality of life for state residents by improving access to treatment for behavioral health needs. Formerly uninsured individuals below 138% of the federal poverty level will generally be eligible for Medicaid coverage if states choose to expand. Among this population, there is great need for treatment, as approximately 30% have either a mental illness, substance use disorder or both. Not only will more of these individuals be likely to receive treatment, but this coverage expansion may reduce other medical costs, increase employment productivity and lower overall rates of depression. In some instances, individuals will be able to receive Medicaid covered treatment in place of state general revenue-funded treatment, possibly allowing for improvements in behavioral health programs at no new additional cost to the state. An influx of new funds may allow for screening and prevention programs that may better meet the behavioral health needs of state populations and further improve behavioral health programs. There is also compelling evidence of numerous other benefits associated with treatment of behavioral health disorders, such as reduced criminal justice costs.

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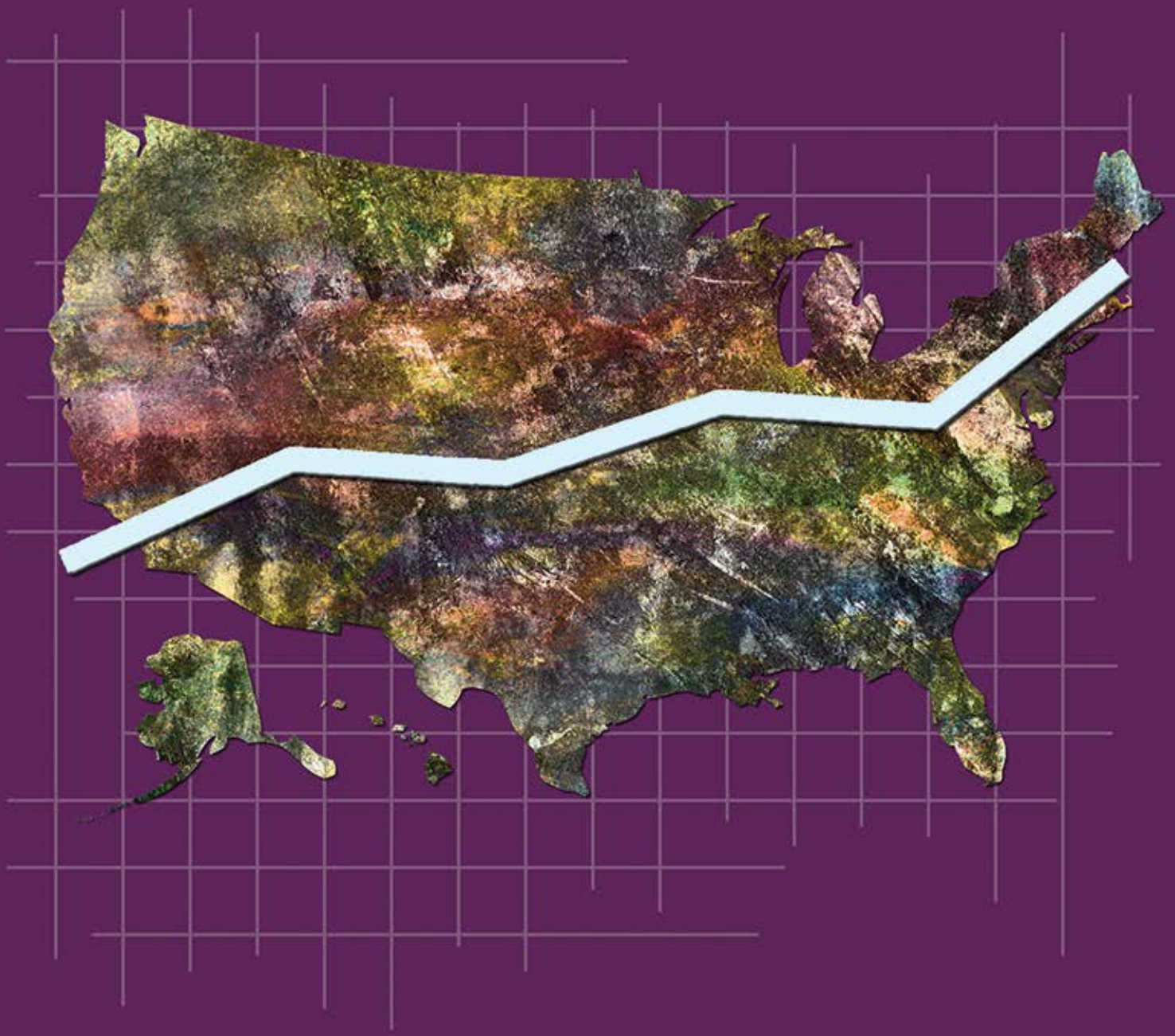
This Issue Brief, authored by Judith Dey, Emily Rosenoff and Kristina West (ASPE) and Mir M. Ali, Sean Lynch, Chandler McClellan, Ryan Mutter, Lisa Patton, Judith Teich and Albert Woodward (SAMHSA), presents information about the potential benefits of expanding Medicaid in the area of behavioral health. For additional information about this subject, visit the DALTCP home page at https://aspe.hhs.gov/office-disability-aging-and-long-term-care-policy-daltcp or contact the authors at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201 (Judith.Dey@hhs.gov or Emily.Rosenoff@hhs.gov).



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In Brief

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Introduction

Monitoring the health of the American people is an essential step in making sound health policy and setting research and program priorities. In a Chartbook and detailed tables, *Health, United States* provides an annual picture of the health of the entire nation. *Health, United States, 2015*—which includes a Special Feature on racial and ethnic health disparities—is the 39th report on the health status of the nation and is submitted by the Secretary of the Department of Health and Human Services to the President and the Congress of the United States in compliance with Section 308 of the Public Health Service Act. This report was compiled by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS).

Health, United States, 2015: In Brief is provided as a companion to the full report. This short report contains summary information on the health of the American people, including mortality and life expectancy, morbidity and risk factors such as cigarette smoking and overweight and obesity, health insurance coverage, access to and utilization of health care, and health expenditures. The At a Glance table and Highlights summarize some of these key indicators at the national level and are followed by 27 figures from *Health, United States, 2015*, that focus on these topics in addition to this year's Special Feature on racial and ethnic health disparities.

The full report—*Health, United States, 2015: With Special Feature on Racial and Ethnic Health Disparities*—is available at http://www.cdc.gov/nchs/hus.htm. On this website, users can find:

- The full searchable report in PDF format, consisting of a Preface, the At a Glance table and Highlights, the Chartbook with 27 figures including the Special Feature, 114 detailed Trend Tables, Data Sources, Definitions and Methods, and an Index.
- The Chartbook and Trend Tables available as downloadable PDFs and spreadsheet files.
- Additional years of data for selected Trend Tables, in spreadsheet format.
- Updated data for Trend Tables when available.
- Standard errors for selected estimates in the spreadsheets.
- All charts in PowerPoint format.
- Charts and tables conveniently grouped by specific topics, such as older adults, racial and ethnic groups, and state data.
- *Health, United States, 2015: In Brief* in PDF format.
- Previous editions of *Health, United States*, beginning with 1975.

Health, United States, 2015: At a Glance

	Value (year)			*Health, United States, 2015* Table No.
Life Expectancy and Mortality				
Life expectancy, in years				Table 15
At birth	76.8 (2000)	78.8 (2013)	78.8 (2014)	
Infant deaths per 1,000 live births				Table 11
All infants	6.91 (2000)	5.96 (2013)	5.82 (2014)	
Deaths per 100,000 population, age-adjusted				Table 17
All causes	869.0 (2000)	731.9 (2013)	724.6 (2014)	
Heart disease	257.6 (2000)	169.8 (2013)	167.0 (2014)	
Cancer	199.6 (2000)	163.2 (2013)	161.2 (2014)	
Chronic lower respiratory diseases	44.2 (2000)	42.1 (2013)	40.5 (2014)	
Unintentional injuries	34.9 (2000)	39.4 (2013)	40.5 (2014)	
Stroke	60.9 (2000)	36.2 (2013)	36.5 (2014)	
Alzheimer's disease	18.1 (2000)	23.5 (2013)	25.4 (2014)	
Diabetes	25.0 (2000)	21.2 (2013)	20.9 (2014)	
Influenza and pneumonia	23.7 (2000)	15.9 (2013)	15.1 (2014)	
Nephritis, nephrotic syndrome and nephrosis	13.5 (2000)	13.2 (2013)	13.2 (2014)	
Suicide	10.4 (2000)	12.6 (2013)	13.0 (2014)	
Morbidity and Risk Factors				
Fair or poor health, percent				Table 45
All ages	8.9 (2000)	10.2 (2013)	9.8 (2014)	
65 years and over	26.9 (2000)	23.1 (2013)	21.7 (2014)	
Heart disease (ever told), percent				Table 38
18 years and over	11.3 (2000–2001)	11.4 (2011–2012)	11.5 (2013–2014)	
65 years and over	30.9 (2000–2001)	30.3 (2011–2012)	29.4 (2013–2014)	
Cancer (ever told), percent				Table 38
18 years and over	5.0 (2000–2001)	6.2 (2011–2012)	6.4 (2013–2014)	
65 years and over	15.2 (2000–2001)	18.5 (2011–2012)	18.2 (2013–2014)	
Hypertension,[1] percent				Table 54
20 years and over	30.2 (1999–2002)	32.2 (2007–2010)	33.0 (2011–2014)	
Diabetes,[2] percent				Table 40
20 years and over	9.8 (1999–2002)	12.0 (2007–2010)	12.6 (2011–2014)	
Hypercholesterolemia,[3] percent				Table 55
20 years and over	25.0 (1999–2002)	28.7 (2007–2010)	29.8 (2011–2014)	
Obese, percent				Tables 58 and 59
Obese,[4] 20 years and over	30.5 (1999–2002)	34.9 (2007–2010)	36.5 (2011–2014)	
Obese (BMI at or above sex- and age-specific 95th percentile):				
2–5 years	10.3 (1999–2002)	11.1 (2007–2010)	8.9 (2011–2014)	
6–11 years	15.9 (1999–2002)	18.8 (2007–2010)	17.5 (2011–2014)	
12–19 years	16.0 (1999–2002)	18.2 (2007–2010)	20.5 (2011–2014)	
Cigarette smoking, percent				Table 47
18 years and over	23.2 (2000)	17.8 (2013)	16.8 (2014)	
Aerobic activity and muscle strengthening,[5] percent meeting both guidelines				Table 57
18 years and over	15.1 (2000)	20.4 (2013)	20.9 (2014)	

[1]Having measured high blood pressure (systolic pressure of at least 140 mm Hg or diastolic pressure of at least 90 mm Hg) and/or respondent report of taking antihypertensive medication.

[2]Includes physician-diagnosed and undiagnosed diabetes (fasting plasma glucose of at least 126 mg/dL or a hemoglobin A1c of at least 6.5%).

[3]Having high serum total cholesterol of 240 mg/dL or greater and/or respondent report of taking cholesterol-lowering medication.

[4]Obesity is a body mass index (BMI) greater than or equal to 30 for adults. Height and weight are measured rather than self-reported.

[5]Federal guidelines recommend at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic physical activity a week and muscle-strengthening activities at least twice a week.

	Value (year)			*Health, United States, 2015* Table No.
Health Care Utilization				
No health care visit in past 12 months, percent				Table 65
Under 18 years	12.3 (2000)	8.2 (2013)	7.9 (2014)	
18–44 years	23.4 (2000)	24.8 (2013)	23.2 (2014)	
45–64 years	14.9 (2000)	15.2 (2013)	15.0 (2014)	
65 years and over	7.4 (2000)	6.4 (2013)	5.6 (2014)	
Emergency room visit in past 12 months, percent				Tables 73 and 74
Under 18 years	20.3 (2000)	17.6 (2013)	16.7 (2014)	
18–44 years	20.5 (2000)	18.5 (2013)	18.4 (2014)	
45–64 years	17.6 (2000)	17.6 (2013)	17.5 (2014)	
65 years and over	23.7 (2000)	21.3 (2013)	21.2 (2014)	
Dental visit in past year, percent				Table 78
2–17 years	74.1 (2000)	83.0 (2013)	83.0 (2014)	
18–64 years	65.1 (2000)	61.7 (2013)	62.0 (2014)	
65 years and over	56.6 (2000)	60.6 (2013)	62.4 (2014)	
Prescription drug in past 30 days, percent				Table 79
Under 18 years	23.8 (1999–2002)	24.7 (2003–2006)	23.5 (2009–2012)	
18–44 years	35.9 (1999–2002)	37.4 (2003–2006)	38.1 (2009–2012)	
45–64 years	64.1 (1999–2002)	65.2 (2003–2006)	67.2 (2009–2012)	
65 years and over	84.7 (1999–2002)	89.4 (2003–2006)	89.8 (2009–2012)	
Hospitalization in past year, percent				Table 81
18–44 years	7.0 (2000)	6.1 (2013)	5.8 (2014)	
45–64 years	8.4 (2000)	7.8 (2013)	7.4 (2014)	
65 years and over	18.2 (2000)	15.3 (2013)	15.3 (2014)	
Health Insurance and Access to Care				
Uninsured, percent				Table 105
Under 65 years	17.0 (2000)	16.7 (2013)	13.3 (2014)	
Under 18 years	12.6 (2000)	6.6 (2013)	5.4 (2014)	
18–44 years	22.4 (2000)	24.2 (2013)	19.7 (2014)	
45–64 years	12.6 (2000)	15.4 (2013)	11.8 (2014)	
Delay or nonreceipt of needed medical care in past 12 months due to cost, percent				Table 63
Under 18 years	4.6 (2000)	3.1 (2013)	2.8 (2014)	
18–44 years	9.5 (2000)	11.9 (2013)	10.7 (2014)	
45–64 years	8.8 (2000)	13.2 (2013)	11.7 (2014)	
65 years and over	4.5 (2000)	4.2 (2013)	4.3 (2014)	
Health Care Resources				
Patient care physicians per 10,000 population[6]				Table 83
United States	22.7 (2000)	26.9 (2012)	27.6 (2013)	
Highest state	54.5 (DC) (2000)	65.9 (DC) (2012)	66.1 (DC) (2013)	
Lowest state	14.4 (ID) (2000)	18.0 (ID,MS) (2012)	18.6 (ID) (2013)	
Community hospital beds per 1,000 population[7]				Table 90
United States	2.9 (2000)	2.6 (2012)	2.5 (2013)	
Highest state	6.0 (ND) (2000)	5.7 (DC) (2012)	5.6 (DC) (2013)	
Lowest state	1.9 (NM,NV,OR,UT,WA) (2000)	1.7 (OR) (2012)	1.7 (OR,WA) (2013)	
Health Care Expenditures				
Personal health care expenditures, in dollars				Table 95
Total, in trillions	$1.2 (2000)	$2.4 (2013)	$2.6 (2014)	
Per capita	$4,121 (2000)	$7,727 (2013)	$8,054 (2014)	

NOTES: Estimates in this table are taken from the PDF, printed, or spreadsheet version of the cited tables. For more information and the spreadsheet version of the tables, see the *Health, United States* website: http://www.cdc.gov/nchs/hus.htm.

Highlights

This Highlights section presents selected data from the four major areas included in the report: health status and determinants, utilization of health resources, health care resources, and health care expenditures and payers, and from this year's Special Feature on racial and ethnic health disparities. The Highlights focus on topics of public health importance and illustrate the breadth of material included in *Health, United States, 2015*. The Highlights section generally presents trends for the recent 10-year period or examines information for the most recent data year available. Highlights from the 2015 Special Feature generally present data from 1999 to the most recent year available, or only data from the latest year (see Technical Notes for additional information). Each highlight includes a reference to the detailed trend table or figure where definitions of terms and additional data can be obtained.

Health Status and Determinants

Life Expectancy and Mortality

In 2014, life expectancy at birth in the United States for the total population was 78.8 years—76.4 years for males and 81.2 years for females (Table 15).

Between 2004 and 2014, life expectancy at birth increased 1.4 years for males and 1.1 years for females. The gap in life expectancy between males and females narrowed from 5.1 years in 2004 to 4.8 years in 2014 (Table 15).

Between 2004 and 2014, life expectancy at birth increased more for the black than for the white population, thereby narrowing the gap in life expectancy between these two racial groups. In 2004, life expectancy at birth for the white population was 5.2 years longer than for the black population; by 2014, the difference had narrowed to 3.4 years (Table 15).

Between 2013 and 2014, life expectancy at birth increased 0.2 years to 81.8 years for Hispanic persons, decreased 0.1 years to 78.8 years for non-Hispanic white persons, and increased 0.1 years to 75.2 years for non-Hispanic black persons. For males between 2013 and 2014, life expectancy at birth increased 0.1 years to 79.2 years for Hispanic males, remained stable at 76.5 years for non-Hispanic white males, and increased 0.2 years to 72.0 years for non-Hispanic black males. For females between 2013 and 2014, life expectancy at birth increased 0.2 years to 84.0 years for Hispanic females, decreased 0.1 years to 81.1 years for non-Hispanic white females, and remained stable at 78.1 years for non-Hispanic black females (Table 15).

Between 2004 and 2014, the death rate for black men aged 45–54 decreased 28%, from 933.3 to 671.8 deaths per 100,000 resident population, while the death rate for non-Hispanic white men remained stable (511.2 in 2014). Between 2004 and 2014, the death rate for black women aged 45–54 decreased 18%, from 558.9 to 455.8, while the death rate for non-Hispanic white women increased 11%, from 293.4 to 325.5 (Table 21).

Between 2004 and 2014, the infant mortality rate decreased 14%, from 6.79 to 5.82 deaths per 1,000 live births and the neonatal mortality rate (among infants under age 28 days) decreased 13%, from 4.52 to 3.94. Between 2004 and 2014, the postneonatal mortality rate (among infants aged 28 days through 11 months) decreased 17%, from 2.27 to 1.88 (Table 11).

In 2014, the 10 leading causes of death were heart disease, cancer, chronic lower respiratory diseases, unintentional injuries, stroke, Alzheimer's disease, diabetes, influenza and pneumonia, kidney disease, and suicide. These 10 causes of death accounted for 74% of the 2.6 million deaths in 2014 (Table 19).

Between 2004 and 2014, the age-adjusted heart disease death rate decreased 25%, from 221.6 to 167.0 deaths per 100,000 resident population. In 2014, 23% of all deaths in the United States were from heart disease (Tables 19 and 22).

Between 2004 and 2014, the age-adjusted cancer death rate decreased 14%, from 186.8 to 161.2 deaths per 100,000 resident population. In 2014, 23% of all deaths in the United States were from cancer (Tables 19 and 24).

Between 2004 and 2014, the suicide death rate increased 21%, from 11.1 to 13.4 deaths per 100,000 resident population. Among adults aged 45–64, suicide death rates increased 27% between 2004 and 2014 (Table 30).

Between 2004 and 2014, the drug poisoning death rate involving heroin increased more than five times, from 0.6 to 3.3 deaths per 100,000 resident population. In 2014, the drug poisoning death rate involving heroin was highest among those aged 25–34 (8.0), followed by those aged 35–44 (5.9), and those aged 45–54 (4.7) (Table 27).

Fertility and Natality

Between 2004 and 2014, the birth rate among teenagers aged 15–19 fell 40%, from 40.5 to 24.2 live births per 1,000 females—a record low for the United States (Table 3).

In 2014, 8.00% of infants were low-birthweight (weighing less than 2,500 grams [5.5 pounds] at birth); low-birthweight was more common among non-Hispanic black infants (13.17%) and Puerto Rican infants (9.54%) than among infants in other racial and ethnic groups (Table 5).

Health Risk Factors for the Noninstitutionalized Population

Children

In 2011–2014, the prevalence of children with obesity among those aged 2–5 years was 8.9%, 17.5% among children aged 6–11, and 20.5% among adolescents aged 12–19 (Table 59 and Figure 8).

In 2014, 4.9% of adolescents aged 12–17 reported smoking cigarettes in the past month. Smoking prevalence has declined since 2004, when 11.9% of adolescents reported smoking cigarettes in the past month (Table 50).

Adults

In 2014, 20.9% of adults aged 18 and over met the 2008 federal physical activity guidelines for both aerobic activity and muscle strengthening (Table 57).

Between 1999–2002 and 2011–2014, the percentage of adults aged 20 and over with Grade 1 obesity (a body mass index [BMI] of 30.0–34.9) increased from 17.9% to 20.6%. Those with Grade 2 obesity (BMI of 35.0–39.9) rose from 7.6% to 8.8%, and those with Grade 3 obesity (BMI of 40 or higher) increased from 4.9% to 6.9% (percentages are age-adjusted) (Table 58).

In 2014, 16.8% of adults aged 18 and over were current cigarette smokers, a decline from 2004 (20.9%). Men (18.8%) were more likely than women (14.8%) to be current cigarette smokers in 2014 (Table 47).

Measures of Health and Disease Prevalence for the Noninstitutionalized Population

In 2012–2014, 4.9% of children under age 18 had an asthma attack in the past year, and 5.6% had a food allergy (Table 35).

Among children aged 5–17, 10.2% were diagnosed with attention deficit/hyperactivity disorder and 5.4% had serious emotional or behavioral difficulties in 2012–2014 (Table 35).

Between 2003 and 2013, the incidence rates of four selected notifiable diseases—tuberculosis, hepatitis A, hepatitis B, and meningococcal disease—decreased, while the incidence rates of Lyme disease increased 57%, to 11.62 new cases per 100,000 population in 2013, and pertussis (a vaccine-preventable disease also known as whooping cough) more than doubled to 9.12 new cases per 100,000 population in 2013. Despite the long-term decline in acute hepatitis B cases, there was a 5% increase in the number of reported cases from 2012 to 2013 (Table 33 and Figure 5).

In 2014, the percentage of adults who reported their health as fair or poor ranged from 6.1% of those aged 18–44 to 24.9% of those aged 75 and over (Table 45).

In 2013–2014, 12.0% of adults aged 45–64 and 29.4% of adults aged 65 and over had ever been told by a physician or other health professional that they had heart disease (Table 38).

In 2013–2014, 6.7% of adults aged 45–64 and 18.2% of adults aged 65 and over had ever been told by a physician or other health professional that they had cancer (excluding squamous and basal cell skin cancers) (Table 38).

In 2011–2014, one-third of adults aged 20 and over had hypertension (having measured high blood pressure or reporting taking antihypertensive medication). Of these adults aged 20 and over with hypertension, nearly one-half (47.0%) had uncontrolled high blood pressure (measured systolic pressure of at least 140 mm Hg or diastolic pressure of at least 90 mm Hg) (Table 54).

In 2014, the prevalence of self-reported serious difficulty concentrating, remembering, or making decisions was highest among men and women aged 75–84 and 85 and over and was similar among men and women in each age group. Difficulty doing errands alone increased with age, and was higher among women than men in all age groups (Figure 6).

Utilization of Health Resources for the Noninstitutionalized Population

Use of Health Care Services

In 2014, 14.9% of persons had no health care visits in the past 12 months, 49.8% had 1–3 health care visits, 23.3% had 4–9 visits, and 11.9% had 10 or more visits. Health care visits for illness, preventive care, or injury include visits to physician offices, emergency departments, clinics, or other locations, in addition to home visits made by health care professionals (Table 65).

In 2014, 83.0% of children aged 2–17 years, 62.0% of adults aged 18–64, and 62.4% of adults aged 65 and over had visited a dentist in the past year (Table 78).

Use of Preventive Medical Care Services for the Noninstitutionalized Population

In 2014, 71.6% of children aged 19–35 months had completed the combined 7-vaccine series of childhood vaccinations (4 or more doses of diphtheria and tetanus toxoids and pertussis vaccine [DTP], diphtheria and tetanus toxoids vaccine [DT], or diphtheria and tetanus toxoids and acellular pertussis vaccine [DTaP]; 3 or more doses of any poliovirus vaccine; 1 or more doses of a measles-containing vaccine [MCV]; 3 or more doses or 4 or more doses of *Haemophilus influenzae* type b vaccine [Hib] depending on Hib vaccine product type [full series Hib]; 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella vaccine; and

4 or more doses of pneumococcal conjugate vaccine [PCV]) (Table 66).

Between 2013 and 2014, receipt of the recommended three doses of human papillomavirus (HPV) vaccine for adolescents aged 13–17 increased among females from 36.8% to 39.7% and among males from 13.4% to 21.6% (Table 67).

In 2013, Pap test utilization was highest among women currently recommended for routine cervical cancer screening; 81.6% of women aged 21–44 and 73.9% of women aged 45–64 received a Pap test in the past 3 years (Table 71 and Figure 10).

In 2014, 42.2% of adults aged 18 and over had received an influenza vaccination in the past 12 months. Influenza vaccination increased with age, with 30.2% of those aged 18–44, 43.3% of those aged 45–64, and 70.1% of those aged 65 and over reporting an influenza vaccination in the past 12 months (Table 68).

In 2014, 61.3% of adults aged 65 and over had ever received a pneumococcal vaccination (Table 69).

Difficulty Accessing Needed Medical Care, Prescription Drugs, and Dental Care Due to Cost for the Noninstitutionalized Population

In 2014, 8.2% of persons reported delaying or not receiving needed medical care due to cost, 5.6% reported not receiving needed prescription drugs due to cost, and 10.0% reported not receiving needed dental care due to cost in the past 12 months (Table 63).

Among adults aged 18–64, the percentage who reported delaying or not receiving needed medical care, not receiving needed prescription drugs, and not receiving needed dental care due to cost in the past 12 months increased 22%–31% during 2004–2010, and then declined 24%–32% during 2010–2014 (Table 63).

Health Care Resources

In 2013, there were 27.6 physicians in patient care per 10,000 civilian population in the United States. The number of patient care physicians per 10,000 population ranged from 18.6 in Idaho to 43.0 in Massachusetts and 66.1 in the District of Columbia (Table 83).

In 2013, the United States had 4,974 community hospitals and 795,603 community hospital beds. Community hospital occupancy averaged 62.9% in 2013, down from 67.3% in 2005 (Table 89).

In 2013, there were 60.46 professionally active dentists per 100,000 civilian population in the United States. The number of dentists per 100,000 population ranged from 40.90 in Arkansas to 81.22 in New Jersey and 89.20 in the District of Columbia (Table 86).

In 2013, about 8 of every 10 office-based physicians had computerized electronic health record components that recorded patient history and demographic information, ordered prescriptions, and submitted prescriptions to the pharmacy. About 7 of 10 had components to provide electronic warnings of drug interactions and contraindications and to order lab tests electronically (Figure 13).

In 2014, there were 15,643 certified nursing homes with 1,693,943 nursing home beds. U.S. nursing home occupancy averaged 80.8% in 2014. Nursing home occupancy rates were highest in North Dakota (92.4%), Rhode Island (91.9%), South Dakota (91.9%), and the District of Columbia (91.8%) in 2014. The lowest occupancy rates were in Oregon (60.1%), Utah (64.3%), and Idaho (64.5%) (Table 92).

Health Care Expenditures and Payers

Health Care Expenditures

In 2014, personal health care expenditures in the United States totaled $2.6 trillion—a 5.0% increase from 2013. The per capita personal health care expenditure for the total U.S. population was $8,054 in 2014—up from $7,727 in 2013 (Table 93).

Expenditures for hospital care accounted for 37.9% of all personal health care expenditures in 2014. Physician and clinical services accounted for 23.5% of total personal health care expenditures, prescription drugs for 11.6%, and nursing care facilities and continuing care retirement communities for 6.1%; the remaining spending was for other types of personal health care expenditures (Table 94).

In 2014, prescription drug expenditures totaled $297.7 billion—up 12.2% from $265.3 billion in 2013 (Table 94).

In 2013, the average cost for the entire hospitalization involving a heart valve procedure was $51,415; a coronary artery bypass graft procedure was $41,274; cardiac pacemaker or defibrillator insertion, revision, replacement, or removal was $35,074; and spinal fusion was $28,696 (Table 96).

Health Care Payers

In 2014, 33.9% of all personal health care expenditures were paid by private health insurance, 22.7% were paid by Medicare, and 17.4% by Medicaid; consumers paid 12.9% out-of-pocket; and the remaining expenditures were paid by other types of insurance, payers, and programs (Table 95).

In 2014, the Medicare program had 53.8 million enrollees and expenditures of $613.3 billion—up from 52.5 million enrollees and $582.9 billion in expenditures the previous year. Expenditures for the Medicare drug program (Part D)

were $78.1 billion in 2014—up from $69.7 billion in 2013 (Table 107).

Health Insurance Coverage for the Noninstitutionalized Population

The Affordable Care Act (ACA) of 2010's major provisions were in effect by January 2014. Many of these provisions are intended to expand health insurance and health benefits coverage. Between 2013 and 2014, the percentage of adults aged 18–64 who were uninsured decreased 20%, from 20.5% to 16.3% (Table 105).

From 2014 to June 2015 (preliminary data), the percentage of adults aged 18–64 who were uninsured declined 22%, to 12.7% (Martinez ME, Cohen RA. Health insurance coverage: Early release of estimates from the National Health Interview Survey, January–June 2015. NCHS; 2015. Available from: (http://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201511.pdf) (Table 105).

A provision of ACA requires insurers to extend dependent coverage on a family plan until age 26, effective in 2010. This provision, along with other ACA provisions and changes in insurance coverage, has contributed to the 42% decrease in the percentage of adults aged 19–25 who were uninsured, from 33.8% in 2010 to 19.7% in 2014 (Table 105).

From 2014 to June 2015 (preliminary data), the percentage of adults aged 19–25 who were uninsured declined 19%, to 15.9% (Martinez ME, Cohen RA. Health insurance coverage: Early release of estimates from the National Health Interview Survey, January–June 2015. NCHS; 2015. Available from: (http://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201511.pdf) (Table 105).

Between 2004 and 2014, the percentage of the population under age 65 with private health insurance obtained through the workplace declined from 64.0% to 56.8% (Table 103).

Between 2004 and 2014, among children in families with income of 100%–199% of the poverty level, the percentage of uninsured children under age 18 decreased from 15.1% to 8.7%, while Medicaid or Children's Health Insurance Program (CHIP) coverage among children in families with income of 100%–199% of poverty increased from 40.2% to 60.0% (Tables 104 and 105).

In 2014, Massachusetts (3.9%), Vermont (5.4%), Hawaii (5.7%), and the District of Columbia (6.1%) had the lowest percentages of persons uninsured (i.e., without public or private coverage) among those under age 65, while Alaska (19.2%), Florida (20.1%), and Texas (21.2%) had the highest percentages uninsured (Table 114).

Special Feature on Racial and Ethnic Health Disparities

The difference between the highest (non-Hispanic black) and lowest (non-Hispanic Asian or Pacific Islander) infant mortality rates among the five racial and ethnic groups narrowed from 9.41 deaths per 1,000 live births in 1999 to 7.21 in 2013 (Figure 19).

In 2014, non-Hispanic black mothers had the highest percentage of preterm births before 37 weeks gestation (11.1%) and non-Hispanic Asian or Pacific Islander mothers had the lowest percentage (6.8%) (Figure 20).

In 2011–2014, among children and adolescents aged 2–19, Hispanic children and adolescents had the highest prevalence of obesity (21.9%) and non-Hispanic Asian children and adolescents had the lowest prevalence (8.6%) (Figure 22).

In 2011–2014 among men aged 20 and over, non-Hispanic black men had the highest prevalence of hypertension (42.4%) and Hispanic men had the lowest (27.7%); among women aged 20 and over, non-Hispanic black women had the highest prevalence of hypertension (44.0%) and non-Hispanic Asian women had the lowest (25.0%) (percentages are age-adjusted) (Figure 23).

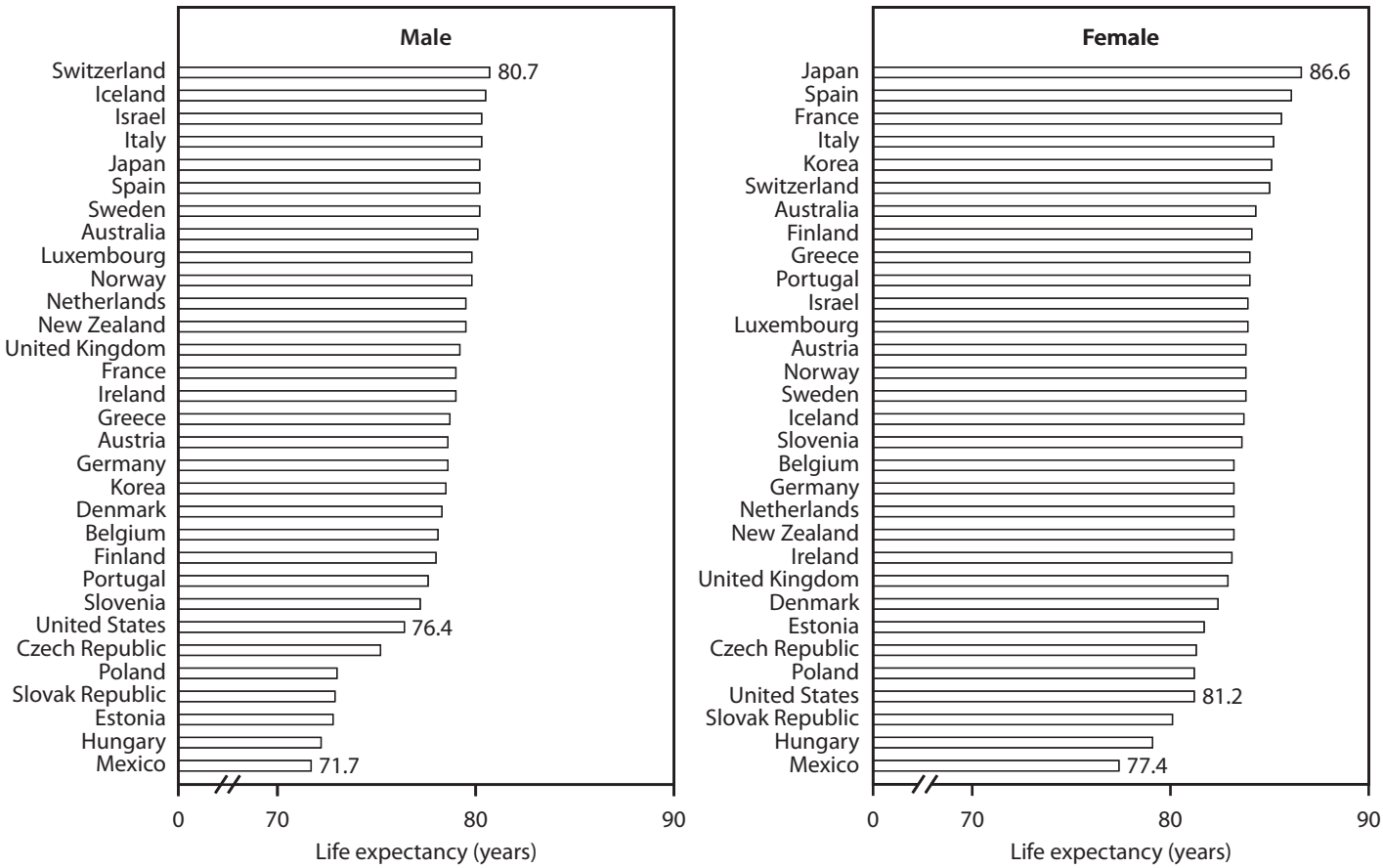
The difference for women between the highest (non-Hispanic white) and lowest (non-Hispanic Asian) percentages of current cigarette smokers among the four racial and ethnic groups narrowed from 17.5 percentage points in 1999 to 13.2 in 2014 (percentages are age-adjusted) (Figure 24).

In 2014 among adults aged 18–64, Hispanic adults had the highest percentage of nonreceipt of dental care in the past 12 months due to cost (15.7%) and non-Hispanic Asian adults had the lowest percentage (6.3%) (Figure 27).

Mortality

Life Expectancy at Birth, by Country

Figure 1. Life expectancy at birth, by sex and country: Organisation for Economic Co-operation and Development (OECD) countries, 2013



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig01

In 2013, U.S. males and females ranked 25th and 27th, respectively, in life expectancy compared with males and females in other OECD countries.

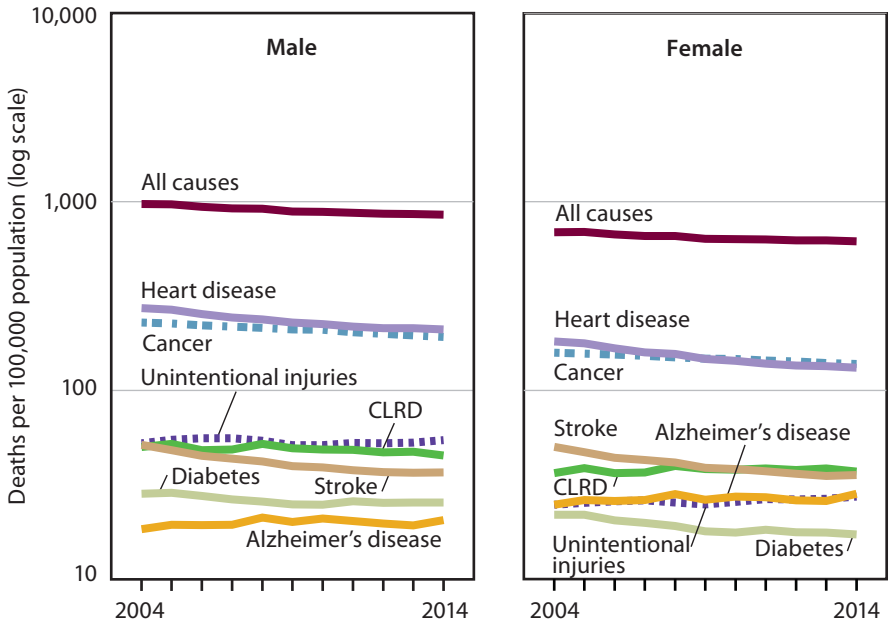
Life expectancy is often used to evaluate the overall health of a population (1). Life expectancy at birth for males and females in the United States was compared with those for males and females in 30 other countries. In 2013, life expectancy at birth for males ranged from a low of 71.7 years for Mexico to a high of 80.7 years for Switzerland, with the United States (76.4 years) ranking 25th out of 31 countries. Life expectancy at birth for females ranged from a low of 77.4 years for Mexico to a high of 86.6 years for Japan, with the United States (81.2 years) tied with Poland and ranking 27th out of 31 countries.

NOTES: Countries with estimated life expectancies or series breaks for 2013 are not presented. Differences in life expectancy may reflect differences in reporting methods, which can vary by country, in addition to actual differences in mortality rates.

SOURCE: CDC/NCHS, *Health, United States, 2015*, Tables 14 and 15. Data for the United States from the National Vital Statistics System (NVSS); all other data from the Organisation for Economic Co-operation and Development (OECD).

Mortality
Selected Causes of Death

Figure 2. Age-adjusted death rates for selected causes of death for all ages, by sex: United States, 2004–2014



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig02

Between 2004 and 2014, the all-cause, age-adjusted death rate decreased 12% among males and 11% among females.

During 2004–2014, age-adjusted death rates among males declined 29% for stroke, 23% for heart disease, 16% for cancer, and 10% for both diabetes and CLRD, and increased 11% for Alzheimer's disease and 4% for unintentional injuries. Among females, age-adjusted death rates declined 29% for stroke, 27% for heart disease, 21% for diabetes, and 13% for cancer, and increased 15% for Alzheimer's disease and 11% for unintentional injuries. In 2014, age-adjusted death rates among males were higher than among females for heart disease, cancer, CLRD, diabetes, stroke, and unintentional injuries and were lower among males than females for Alzheimer's disease.

NOTES: CLRD is chronic lower respiratory diseases. A change in the coding rules for nephritis, nephrotic syndrome and nephrosis caused an increase in the number of deaths attributed to diabetes beginning with 2011 data. Thus, the trend for diabetes death rates should be interpreted with caution.

SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 17. Data from the National Vital Statistics System (NVSS).

Mortality
Suicide and Homicide

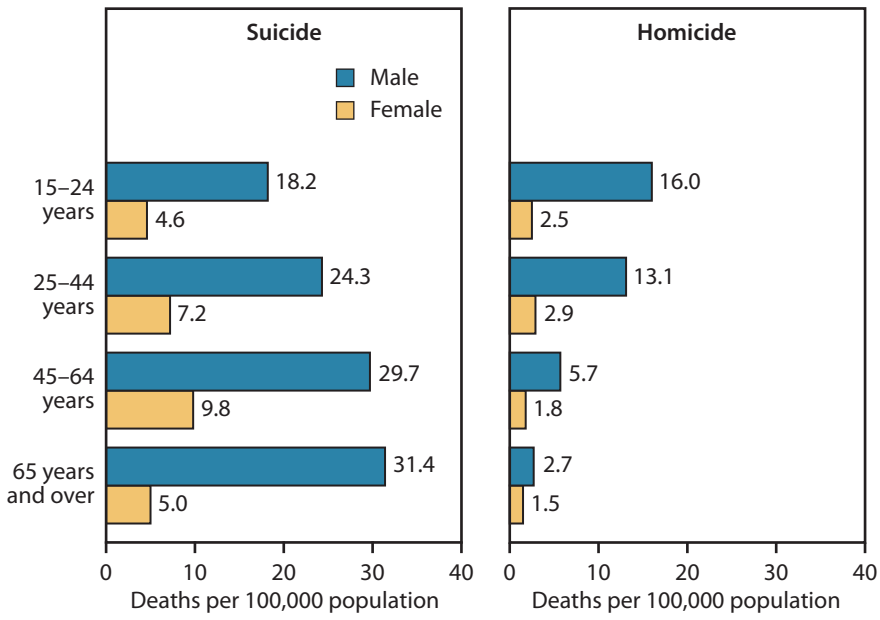
In 2014, suicide rates were higher than homicide rates for males and females of all age groups.

In 2014, suicide was the 10th and homicide the 17th leading cause of death in the U.S. (Table 19) (2). Suicide and homicide deaths impose emotional and financial costs on both families and society, and death rates for these causes differ by age and other factors (3–7). Suicide rates were higher among males than among females overall (21.1 deaths per 100,000 population compared with 6.0) (Table 30) and within each age group. Among males in 2014, suicide rates were higher among those aged 45–64 and 65 and over than among younger age groups. Among females, suicide rates were highest among those aged 45–64.

Homicide rates were higher among males than among females overall (8.0 deaths per 100,000 population compared with 2.0) (Table 29) and within each age group. Among both males and females, homicide rates were higher among those aged 15–24 and 25–44 than among older age groups in 2014.

SOURCE: CDC/NCHS, *Health, United States, 2015,* Tables 29 and 30. *Data from the National Vital Statistics System (NVSS).*

Figure 3. Suicide and homicide death rates among persons aged 15 and over, by age and sex: United States, 2014



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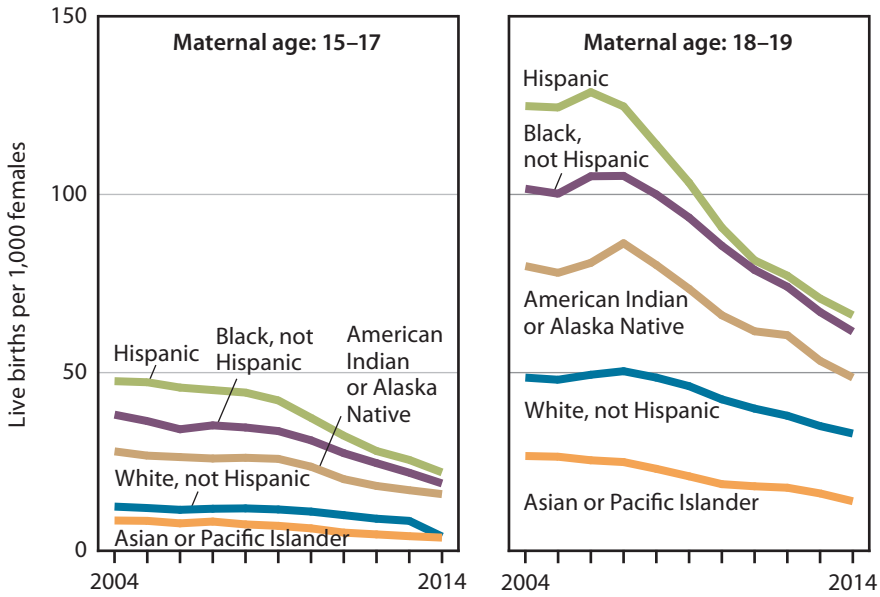
Natality

Teenage Childbearing

Figure 4. Teenage childbearing, by maternal age and race and Hispanic origin: United States, 2004–2014



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Between 2004 and 2014, teenage birth rates declined among all racial and ethnic groups.

Teen childrearing often limits the mother's educational and occupational opportunities, and female babies born to teen mothers are more likely to become teen mothers themselves (8,9). In 2014, teen childbearing fell to a historic low of 24.2 per 1,000 females overall and for each race and Hispanic-origin group (8). Between 2004 and 2014, birth rates declined 50% for teenagers aged 15–17 and 36% for those aged 18–19 (Table 3). Among teenagers aged 15–17, birth rates decreased 44% for non-Hispanic white, 51% for American Indian or Alaska Native, 54% for non-Hispanic black, 59% for Hispanic, and 61% for Asian or Pacific Islander females. Among teenagers aged 18–19, birth rates decreased 32% for non-Hispanic white, 39% for American Indian or Alaska Native, 39% for non-Hispanic black, 47% for Hispanic, and 48% for Asian or Pacific Islander females.

SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 3. Data from the National Vital Statistics System (NVSS).

Morbidity

Notifiable Disease Rates

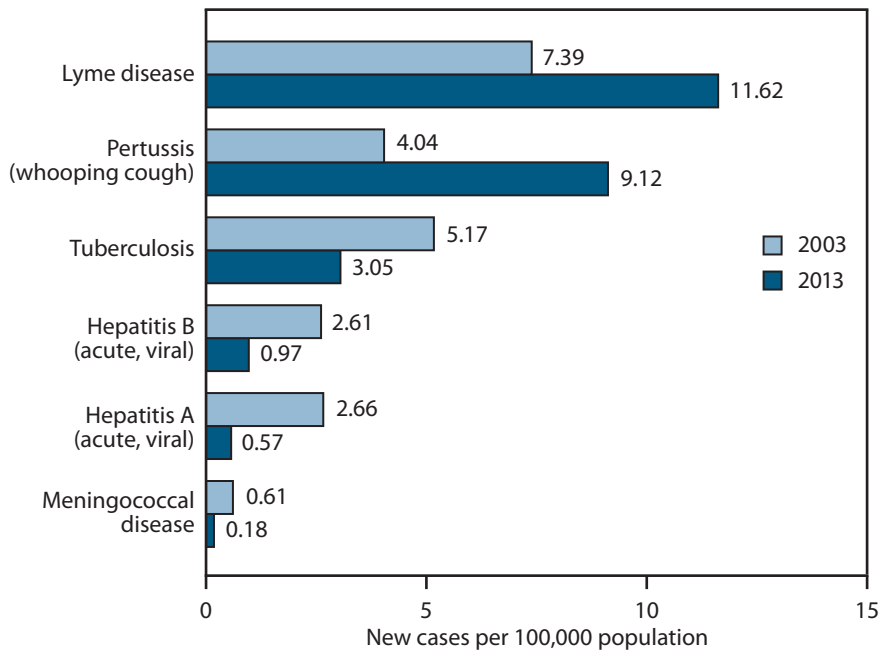
Between 2003 and 2013, the rates for pertussis—a vaccine-preventable disease—and Lyme disease increased, while rates for tuberculosis, hepatitis A, hepatitis B, and meningococcal disease decreased.

Public health officials rely on regular, frequent, timely reporting of notifiable diseases to identify at-risk groups, monitor trends, and control the spread of infectious diseases (10,11). Between 2003 and 2013, the incidence rates of four selected diseases decreased—hepatitis A (79% decrease), meningococcal disease (70%), hepatitis B (63%), and tuberculosis (41%)—while the rates of Lyme disease (57%) and pertussis (whooping cough) (126%) increased. The hepatitis B rate declined in the past decade, but reported cases increased 5% from 2012 to 2013.

NOTES: Diseases with consistent definitions and the greatest changes between 2003 and 2013 were selected for display. Food-borne illnesses were not selected due to year-to-year variation. Rates used the postcensal total resident population and may differ from those elsewhere if different population estimates were used to calculate rates.

SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 33. Data from the National Notifiable Diseases Surveillance System (NNDSS).

Figure 5. Selected notifiable disease rates: United States, 2003 and 2013



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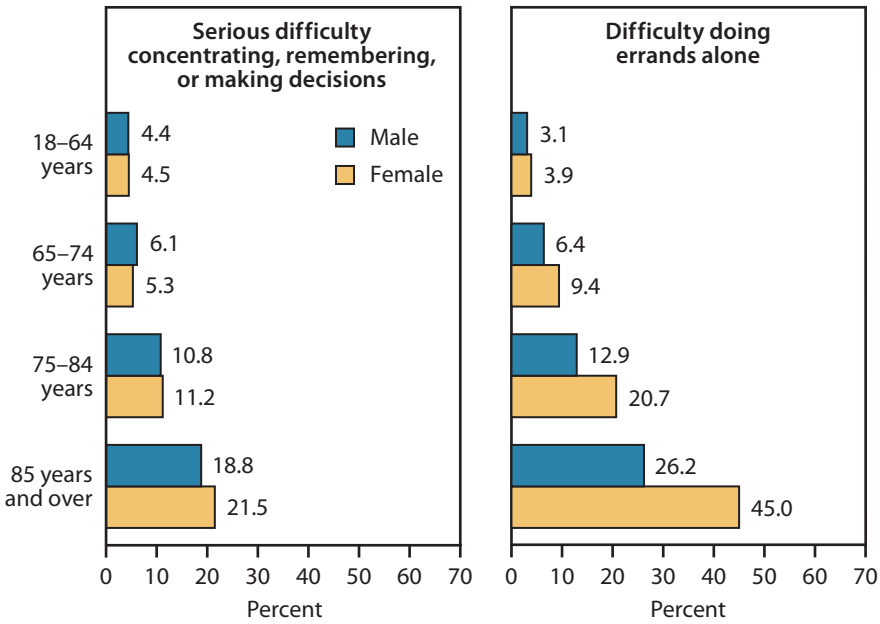
Functional Limitations

Disability

Figure 6. Selected disability indicators among adults aged 18 and over, by sex and age: United States, 2014



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig06

In 2014, disabilities related to cognition and independent living were highest in older age groups; more women than men in each age group reported difficulty doing errands alone.

In 2014, among noninstitutionalized men and women, the prevalence of self-reported serious difficulty concentrating, remembering, or making decisions was higher among older age groups (75–84 and 85 and older) than among younger age groups (18–64 and 65–74) and was similar among men and women in each age group. Difficulty doing errands alone—another disability measure—increased with age. Women in all age groups were more likely than men to report difficulty doing errands alone, ranging from 26% more likely among women aged 18–64 to 72% more likely among women aged 85 and over, compared with men in the same age groups.

NOTE: See data table for Figure 6.
SOURCE: CDC/NCHS, National Health Interview Survey (NHIS).

Health Risk Factors

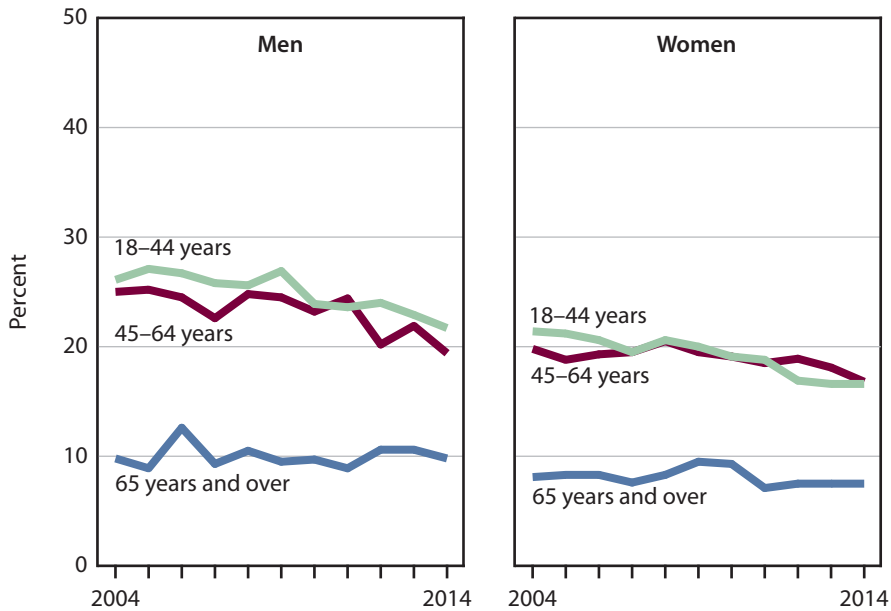
Current Cigarette Smoking

During 2004–2014, cigarette smoking prevalence declined among women aged 18–44 and adults aged 45–64.

Smoking is associated with an increased risk of heart disease, stroke, lung and other types of cancers, and chronic lung diseases (12). During 2004–2014, the percentage of adults who smoked cigarettes declined for women aged 18–44 and for both men and women aged 45–64, and remained stable for men and women aged 65 and over. For men aged 18–44, smoking prevalence was stable from 2004–2009 and then declined through 2014. The prevalence of smoking generally was higher for men aged 18–44 and 45–64 than for women in the same age groups (except for 2012). Among adults aged 65 and over, the prevalence for men and women was similar for most years; from 2011–2014, prevalence was higher among men than women. In 2014, 18.8% of men and 14.8% of women aged 18 and over were current cigarette smokers (Table 47).

SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 47.
Data from the National Health Interview Survey (NHIS).

Figure 7. Current cigarette smoking among adults aged 18 and over, by sex and age: United States, 2004–2014



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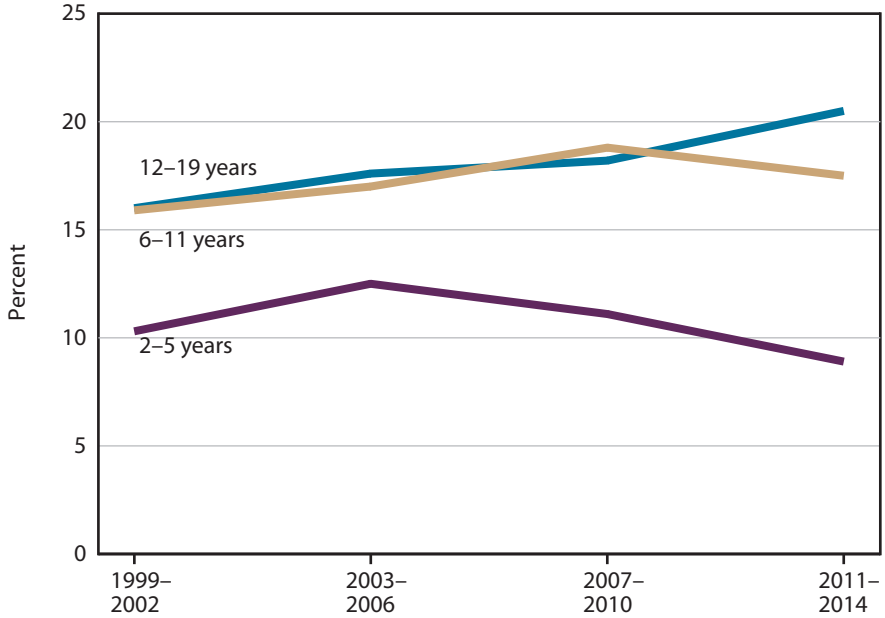
Health Risk Factors

Children and Adolescents With Obesity

Figure 8. Obesity among children and adolescents aged 2–19 years, by age: United States, 1999–2002 through 2011–2014



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig08

Between 1999–2002 and 2011–2014, the prevalence of obesity was stable among children aged 6–11; increased among adolescents aged 12–19; and increased from 1999–2002 to 2003–2006 among those aged 2–5, then declined through 2011–2014.

Excess body weight in children is associated with excess morbidity during childhood and excess body weight in adulthood (13–16). Obesity among children is defined as a body mass index at or above the sex- and age-specific 95th percentile of the CDC growth charts (15,16). From 1988–1994 to 1999–2002, obesity increased among children aged 2–19. Among children aged 2–5, the prevalence of obesity increased from 1999–2002 to 2003–2006 and then declined through 2011–2014. Among children aged 6–11, the prevalence of obesity was stable from 1999–2002 to 2011–2014. Between 1999–2002 and 2011–2014, the prevalence of obesity among adolescents aged 12–19 increased 28%.

SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 59. Data from the National Health and Nutrition Examination Survey (NHANES).

Health Risk Factors

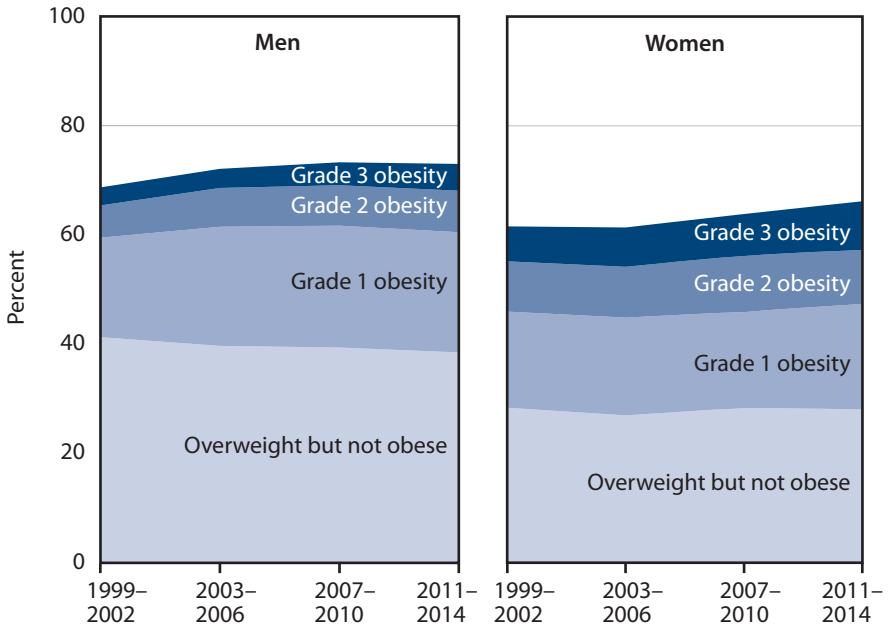
Adults With Overweight and Obesity

Between 1999–2002 and 2011–2014, the prevalence of obesity among men (Grades 1, 2, and 3) and women (Grade 3 only) increased, while the prevalence of overweight but not obese declined among men and remained stable among women aged 20 and over.

Reducing the prevalence of obesity is a public health priority because obesity is correlated with excess morbidity and mortality (17–19). In particular, Grade 2 or higher obesity significantly increases the risk of death (20). Between 1999–2002 and 2011–2014, the percentage of adults aged 20 and over with Grades 1, 2, and 3 obesity increased among men. For women, the percentage of Grade 1 obesity and Grade 2 obesity remained stable while Grade 3 obesity increased. Meanwhile, the percentage of men aged 20 and over who were overweight but not obese declined and was stable among women. In 2011–2014, women were almost twice as likely to have Grade 3 obesity as men (8.9% compared with 4.9%).

NOTES: BMI is body mass index. Overweight but not obese (25 ≤ BMI < 30), Grade 1 obesity (30 ≤ BMI < 35), Grade 2 obesity (35 ≤ BMI < 40), and Grade 3 obesity (BMI ≥ 40).
SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 58. Data from the National Health and Nutrition Examination Survey (NHANES).

Figure 9. Overweight and obesity among adults aged 20 and over, by sex and grade of obesity: United States, 1999–2002 through 2011–2014



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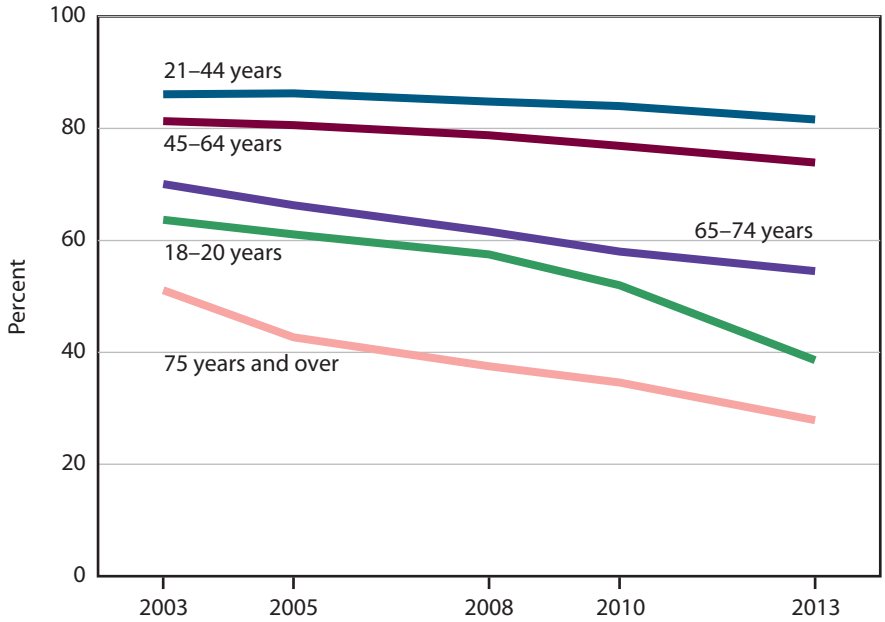
Utilization

Pap Test Use

Figure 10. Pap test utilization within the past 3 years, by age: United States, 2003–2013



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig10

From 2003 to 2013, Pap test utilization decreased for all age groups; the largest decreases were for women aged 18–20 and 65 and over (age groups no longer recommended for routine testing).

Pap tests have reduced cervical cancer deaths by detecting cases at earlier and more treatable stages (21). Current Pap test recommendations suggest limiting routine testing to women aged 21–65 and vary based on individual risk factors including cervical cancer risk, human papillomavirus (HPV) testing, and screening history (22). From 2003 to 2013, recent Pap testing declined for all age groups. The refined recommendations may help explain the decrease for women aged 21–44 (5%) and 45–64 (9%). The greatest decreases were for age groups for which routine testing is no longer recommended: 18–20 (39%), 65–74 (22%), and 75 and over (45%).

NOTES: Pap tests (Pap smears) may be used for screening or diagnostic purposes; the purpose cannot be determined from NHIS. See Appendix II, Pap smear. The 65–74 group includes women aged 65 who are still recommended to have routine testing.
SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 71. Data from the National Health Interview Survey (NHIS).

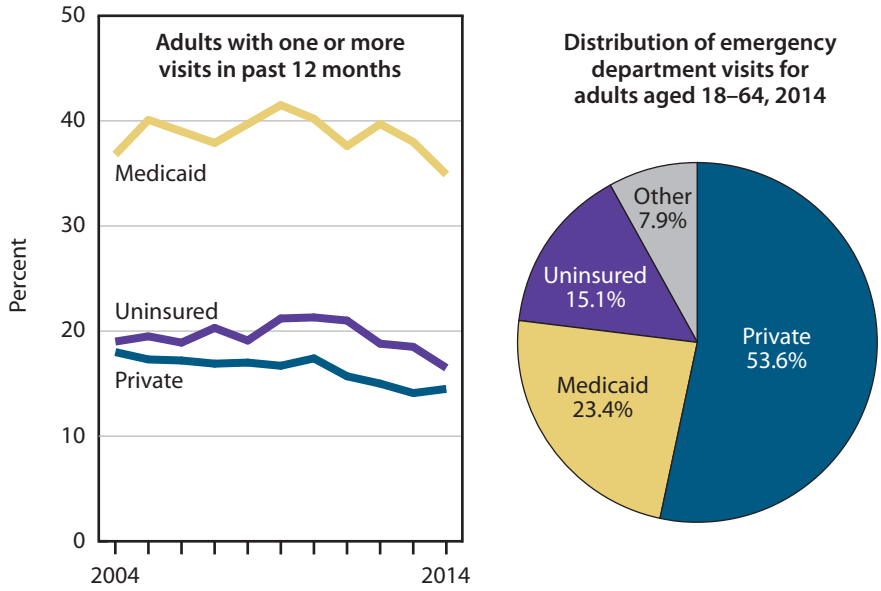
Utilization

Emergency Department Use

During 2004–2014, adults aged 18–64 with Medicaid coverage were more likely to have visited an emergency department within the past year than those with private coverage or the uninsured.

Emergency departments (EDs) are critical in the U.S. health care system, providing emergency and after hours care (23–25). During 2004–2014, adults aged 18–64 with Medicaid coverage were about twice as likely as those with private coverage or the uninsured to have had an ED visit in the past year. During 2004–2014, the percentage with a recent ED visit was stable for adults with Medicaid; for those with private coverage, the percentage was stable through 2010, then declined through 2014; and for the uninsured, the percentage increased during 2004–2011, then declined through 2014. Although adults with Medicaid were more likely to have an ED visit, only 23.4% of all 2014 ED visits were by those with Medicaid; 15.1% were by the uninsured, and 53.6% were by those with private coverage, reflecting the larger percentage of adults with private coverage.

Figure 11. Emergency department utilization within the past 12 months among adults aged 18–64, by type of coverage: United States, 2004–2014



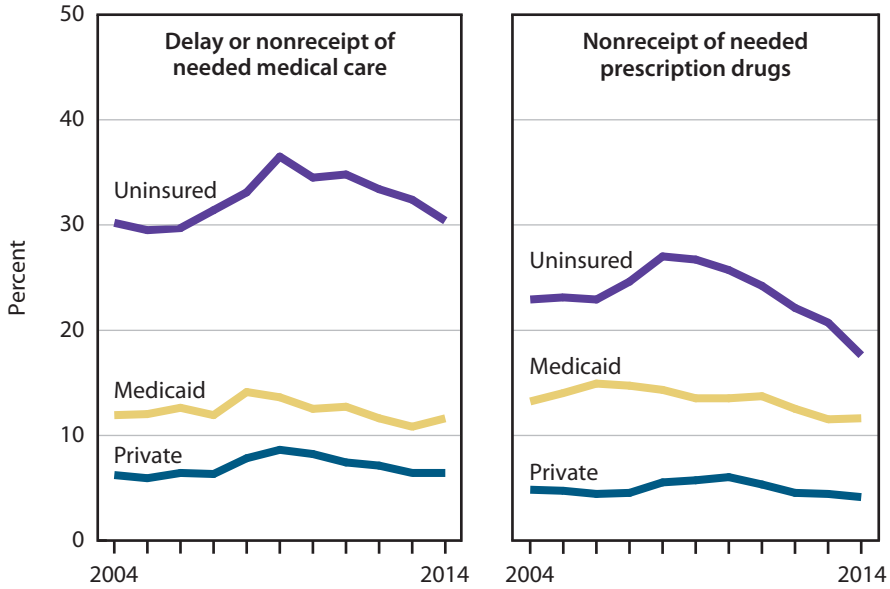
NOTE: See data table for Figure 11.
SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 74. Data from the National Health Interview Survey (NHIS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig11

Utilization

Difficulty Accessing Needed Medical Care or Prescription Drugs Due to Cost

Figure 12. Delay or nonreceipt of needed medical care and nonreceipt of needed prescription drugs in the past 12 months due to cost among adults aged 18–64, by health insurance coverage: United States, 2004–2014



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig12

Uninsured adults aged 18–64 are more likely than those with Medicaid or private coverage to report difficulties affording needed medical care and prescription drugs.

Uninsured adults are more likely than the insured to delay or forego needed medical care and prescription drugs due to cost (26,27). During 2004–2014, uninsured adults were 4–5 times more likely than those with private coverage and 1½–3 times more likely than those with Medicaid to report medical care and prescription access problems. For adults with Medicaid, medical care access problems were stable until 2008 and then decreased through 2014. For those with private insurance, medical care access problems increased until 2009 and then declined through 2014. For the uninsured, medical care and prescription access problems increased (until 2010 and 2009, respectively) and then were stable for medical care and decreased through 2014 for access to drugs. Drug access problems were stable in 2004–2014 for those with private insurance but decreased for adults with Medicaid.

SOURCE: CDC/NCHS, *Health, United States, 2015,* Table 63. Data from the National Health Interview Survey (NHIS).

Health Care Resources

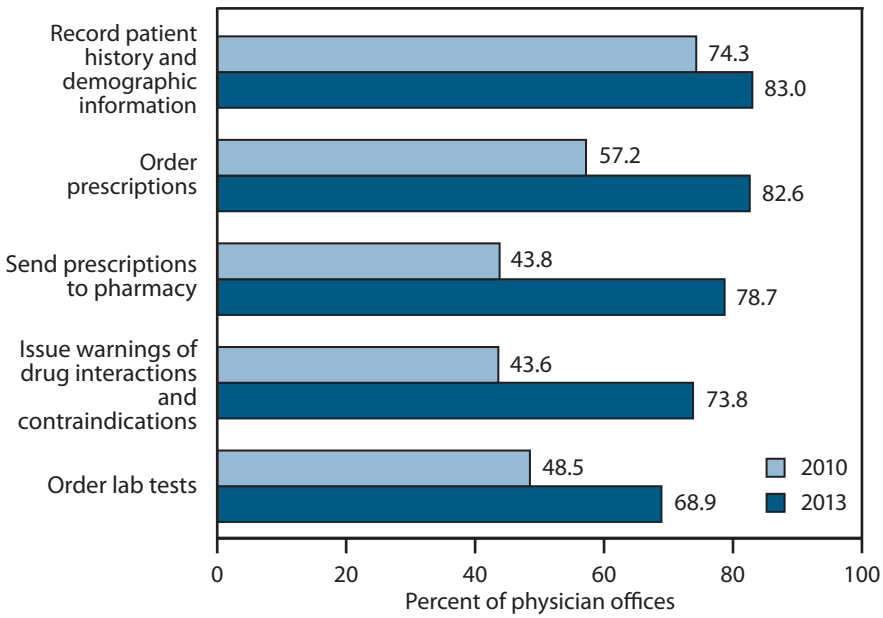
Electronic Health Record Systems

In 2013, most physician offices had electronic health record (EHR) systems that record patient history and demographic information (83.0%), order prescriptions (82.6%), send prescriptions to the pharmacy (78.7%), warn of drug interactions and contraindications (73.8%), and order lab tests (68.9%).

EHR systems are thought to make health care delivery more efficient by improving clinician decision-making, care coordination, health care safety, and patient outcomes (28–30). In 2013, about 8 of every 10 office-based physicians had computerized components that recorded patient history and demographic information, ordered prescriptions, and sent prescriptions to the pharmacy. About 7 of every 10 had a component that warned of drug interactions and contraindications and ordered lab tests. From 2010 to 2013, the percent increase in the use of these EHR components ranged from 12% for components to record patient history and demographic information to 80% for components to send prescriptions to the pharmacy.

NOTE: See data table for Figure 13.
SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey (NAMCS)—National Electronic Health Records Survey.

Figure 13. Electronic health record system components in physician offices, by selected component type: United States, 2010 and 2013

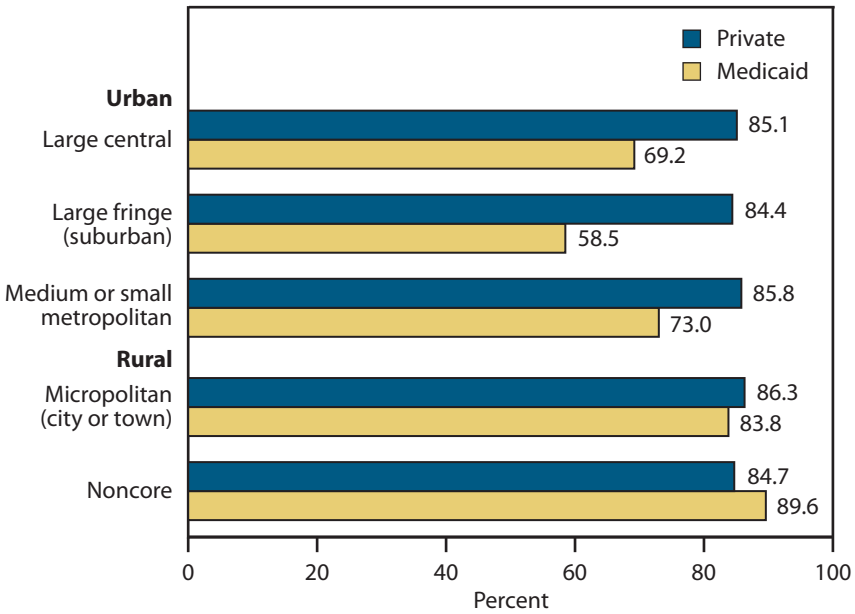


Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig13

Health Care Resources

Physicians Accepting New Patients

Figure 14. Office-based physicians accepting new patients, by patient source of payment and urban–rural status: United States, 2013



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig14

In 2013, physicians in urban large fringe areas (suburbs) were less likely to accept new Medicaid patients than physicians in any other urban–rural category.

Under the ACA, more Americans have health care coverage. In some areas, finding a physician who is accepting new patients may be difficult (31–33). Physician acceptance of new patients was examined by urban–rural status, which classifies physicians by the location of their practice (34). In 2013, Medicaid acceptance rates varied across urban–rural categories, with the lowest acceptance rates for physicians in urban large fringe counties (suburbs). Physicians in rural areas (micropolitan and noncore) were more likely to accept new Medicaid patients than those in urban areas. Comparing physicians' acceptance of new private to new Medicaid patients, physicians in urban areas were less likely to accept new Medicaid than new private patients, while acceptance rates for new Medicaid and private patients were similar for physicians in rural areas.

NOTE: See data table for Figure 14.
SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey (NAMCS)—National Electronic Health Records Survey.

Personal Health Care Expenditures

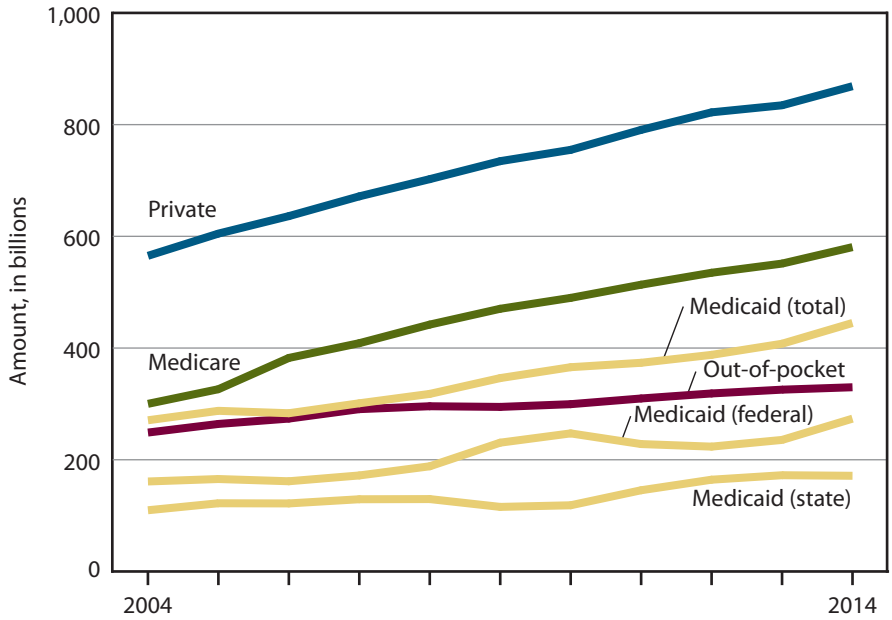
Major Source of Funds

Between 2004 and 2014, Medicare expenditures for personal health care grew more rapidly than out-of-pocket, private insurance spending, and total Medicaid.

Between 2004 and 2014, total personal health care expenditures grew from $1.6 trillion to $2.6 trillion (Table 95). During 2004–2014, the average annual growth in expenditures was 6.8% for Medicare, 5.4% for Medicaid (federal), 4.6% for Medicaid (state), 5.1% for Medicaid (total), 4.4% for private health insurance, and 2.9% for out-of-pocket spending. In 2014, private health insurance accounted for the highest spending on personal health care at $868.8 billion, followed by Medicare at $580.7 billion. Out-of-pocket spending by individuals reached $329.8 billion in 2014, and spending on Medicaid reached $273.6 billion in federal dollars and $171.3 billion in state dollars for a total of $444.9 billion in Medicaid spending. The remainder was paid for by other types of insurance, payers, and programs (Table 95) (35).

NOTES: Personal health care expenditures are outlays relating directly to patient care. See Appendix II, Health expenditures, national.
SOURCE: CDC/NCHS, *Health, United States, 2015*, Table 95. Data from the Centers for Medicare & Medicaid Services, National Health Expenditure Accounts (NHEA).

Figure 15. Personal health care expenditures, by source of funds: United States, 2004–2014

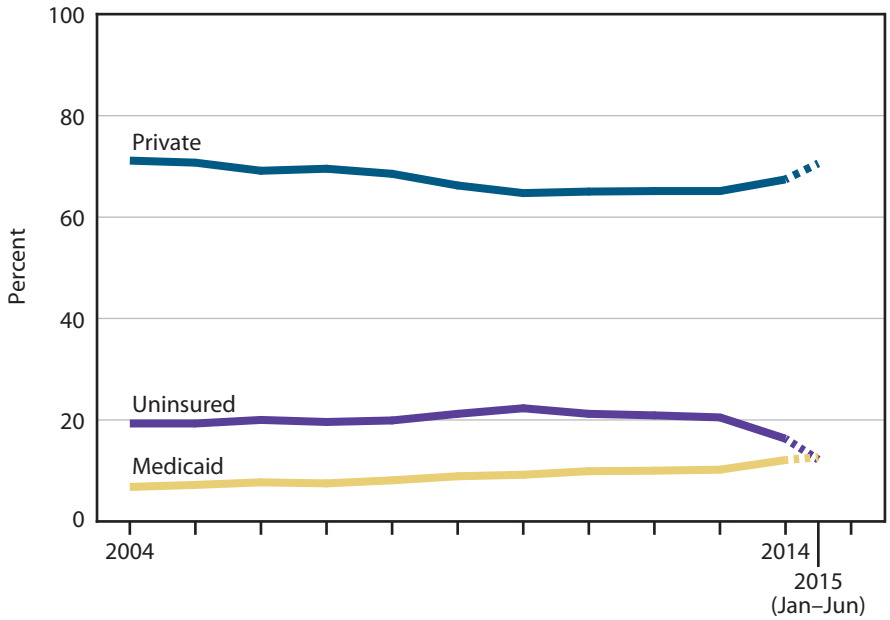


Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig15

Health Insurance

Coverage Among Adults Aged 18–64

Figure 16. Health insurance coverage among adults aged 18–64, by type of coverage: United States, 2004–June 2015 (preliminary data)



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig16

From 2004 to June 2015, the percentage of adults aged 18–64 with Medicaid coverage increased, the percentage with private coverage decreased through 2012 and then increased through June 2015, and the percentage uninsured increased through 2013 and then declined through June 2015.

Health insurance is a major determinant of access to health care (26). Among adults aged 18–64, the percentage with private coverage declined from 2004 (71.1%) to 2012 (65.1%) and then increased through June 2015 (70.6%) (Table 102) (36). As of June 2015, 8.9 million adults aged 18–64 were covered by private plans obtained through the Health Insurance Marketplace or state-based exchanges (36). The percentage with Medicaid coverage increased from 2004 (6.8%) to June 2015 (12.2%) (Table 104) (37). The percentage of adults aged 18–64 who were uninsured increased from 2004 (19.3%) to 2013 (20.5%) and then declined through June 2015 (12.7%) (Table 105) (36).

NOTE: Preliminary estimates for the first 6 months of 2015 are shown with a dashed line (36).
SOURCE: CDC/NCHS, *Health, United States, 2015*, Tables 102, 104, 105. Data from the National Health Interview Survey (NHIS).

Health Insurance

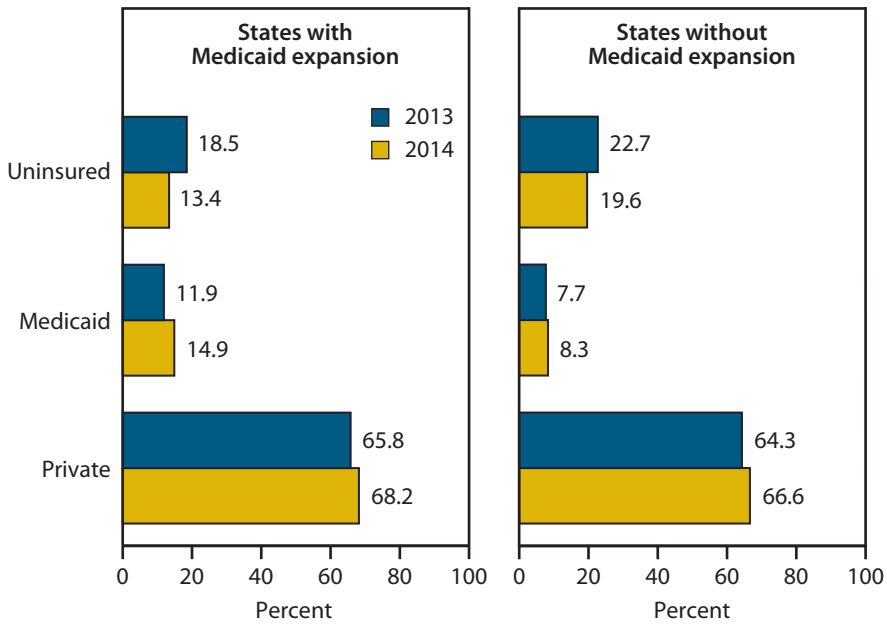
Coverage by Medicaid Expansion State

Between 2013 and 2014, the percentage of adults aged 18–64 who were uninsured declined in both Medicaid expansion states (by 28%) and nonexpansion states (by 14%), and the percentage covered by Medicaid increased by 25% in Medicaid expansion states.

Under the ACA (38), states are authorized to expand Medicaid coverage to adults with low incomes, up to and including 138% of the poverty level (39). Between 2013 and 2014, the percentage of adults aged 18–64 who were uninsured declined in both Medicaid expansion states and nonexpansion states; however, the decline in the uninsured percentage was greater for states that expanded their Medicaid programs (28% compared with 14%). The percentage covered by private insurance increased by about 4% in both Medicaid expansion and nonexpansion states. Medicaid coverage increased 25% in states that expanded their programs and was stable in states that did not expand their programs.

NOTES: States were classified based on their decision to expand Medicaid as of January 1, 2014 (40). See data table for Figure 17.
SOURCE: CDC/NCHS, National Health Interview Survey (NHIS).

Figure 17. Health insurance coverage among adults aged 18–64, by state Medicaid expansion status: United States, 2013 and 2014



Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig17

Special Feature on Racial and Ethnic Health Disparities: 30 Years After the Heckler Report

Introduction

The 1985 Report of the Secretary's Task Force on Black and Minority Health, released by then Secretary of Health and Human Services Margaret Heckler, documented significant disparities in the burden of illness and mortality experienced by blacks and other minority groups in the U.S. population compared with whites (41). The report laid out an ambitious agenda, including improving minority access to high-quality health care, expanding health promotion and health education outreach activities, increasing the number of minority health care providers, and enhancing federal and state data collection activities to better report on minority health issues. In the 30 years since the Heckler Report, national efforts to improve minority health through outreach, programming, and monitoring have included the formation of the Department of Health and Human Services (HHS) Office of Minority Health in 1986 (42); the annual National Healthcare Quality and Disparities Reports first issued in 2003 (43); the adoption of disparities elimination as an overarching goal of Healthy People 2010 (44); and most recently, an HHS Action Plan to Reduce Racial and Ethnic Health Disparities—a comprehensive federal commitment to reduce and eventually eliminate disparities in health and health care (45).

Race is a social construct influenced by a complex set of factors (46,47). Because of the complexity and difficulty in conceptualizing and defining race, as well as the increasing representation of racial and ethnic subgroups in the United States, racial classification and data collection systems continue to evolve and expand. In 1977, the Office of Management and Budget (OMB) required that all federal data collection efforts collect data on a minimum of four race groups (American Indian or Alaskan Native, black, Asian or Pacific Islander, and white) and did not allow the reporting of more than one race (48). In 1997, in response to growing interest in more detailed reporting on race and ethnicity, OMB mandated data collection for a minimum of five race groups, splitting Asian or Pacific Islander into two categories (Asian, and Native Hawaiian or Other Pacific Islander) (49). In addition, the 1997 standards allowed respondents to report more than one race. A minimum of two categories for data collection on ethnicity, "Hispanic or Latino" and "Not Hispanic or Latino," were also required under the 1997 OMB standards. Consequently, whereas the Heckler Report primarily documented black–white differences in health and mortality due to data limitations, this Special Feature is able to report on more detailed racial and ethnic groups. For example, Figures 19–21 display trends in infant mortality and low-risk cesarean section deliveries, and the current data on preterm births for five Hispanic-origin groups.

At the time of the Heckler Report, 22.3% of the population were considered racial or ethnic minorities (Table 1). Current Census (2014) estimates identify 37.9% of the population as racial or ethnic minorities (50). In 2014, Hispanic persons, who may be of any race, comprised 17.4% of the U.S. population. Non-Hispanic multiple race persons were 2.0% of the population. For the single race groups, non-Hispanic American Indian or Alaska Native persons were 0.7%, non-Hispanic Asian persons were 5.3%, non-Hispanic black persons were 12.4%, non-Hispanic Native Hawaiian or Other Pacific Islander persons were 0.2%, and non-Hispanic white persons were 62.1% of the U.S. population in 2014 (50).

Understanding the demographic and socioeconomic composition of U.S. racial and ethnic groups is important because these characteristics are associated with health risk factors, disease prevalence, and access to care, which in turn drive health care utilization and expenditures. Non-Hispanic white persons are, on average, older than those in other racial and ethnic groups, with a median age of 43.1 years, and Hispanic individuals are the youngest, with a median age of 28.5 years in 2014 (50). About one-quarter of black only persons (26.2%) and Hispanic persons (23.6%) lived in poverty compared with 10.1% of non-Hispanic white only persons and 12.0% of Asian only persons in 2014 (51). Non-Hispanic black only children and Hispanic children were particularly likely to live in poverty (37.3% and 31.9%, respectively, in 2014) (52). However, Hispanic individuals are often found to have quite favorable health and mortality patterns in comparison with non-Hispanic white persons and particularly with non-Hispanic black persons, despite having a disadvantaged socioeconomic profile—a pattern termed the epidemiologic paradox (53).

HHS defines a racial or ethnic health disparity as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group" (54). There are many different ways to measure racial and ethnic differences in health and mortality, which can lead to different conclusions (55–58). This Special Feature on Racial and Ethnic Health Disparities (Special Feature) uses the maximal rate difference, one of three overall measures used in Healthy People 2020 to measure differences among groups of people (see Technical Notes). The maximal rate difference is an overall measure of health disparities calculated as the absolute difference between the highest and lowest group rates in the population for a given characteristic (59). The identification of groups that experience the highest and lowest rates in this Special Feature was based on observed rates and was not tested for a statistically significant difference against other rates. Ties in highest or lowest rates

were resolved by examining decimal places. With respect to changes in health disparities over time, tracking the maximal rate difference over time enables one to determine whether the absolute difference between the highest and lowest group rates is increasing, decreasing, or stable.

The Special Feature charts that follow provide detailed comparisons of key measures of mortality, natality, health conditions, health behaviors, and health care access and utilization, by race, race and ethnicity, or by detailed Hispanic origin, depending on data availability. A majority of the 10 graphs in this year's Special Feature present trends in health from 1999–2014. Results indicate that trends in health were generally positive for the overall population and several graphs illustrate success in narrowing gaps in health by racial and ethnic group. Differences in life expectancy, infant mortality, cigarette smoking among women, influenza vaccinations among those aged 65 and over, and health insurance coverage narrowed among the racial and ethnic groups. For example, the absolute difference in infant mortality rates between infants born to non-Hispanic black mothers (highest rate) and infants born to non-Hispanic Asian or Pacific Islander mothers (lowest rate) narrowed between 1999–2014. Differences by racial and ethnic group in the prevalence of high blood pressure and smoking among adult men remained stable throughout the study period, with non-Hispanic black adults more likely to have high blood pressure than adults in other racial and ethnic groups throughout the period, and non-Hispanic black and non-Hispanic white males more likely to be current smokers than Hispanic and non-Hispanic Asian men. For low-risk cesarean sections, influenza vaccinations among adults aged 18–64, and unmet dental care needs, the gap widened among the racial and ethnic groups between 1999–2014.

Despite improvements over time in many of the health measures presented in this Special Feature, disparities by race and ethnicity were found in the most recent year for all 10 measures, indicating that although progress has been made in the 30 years since the Heckler Report, elimination of disparities in health and access to health care has yet to be achieved.

Life Expectancy at Birth

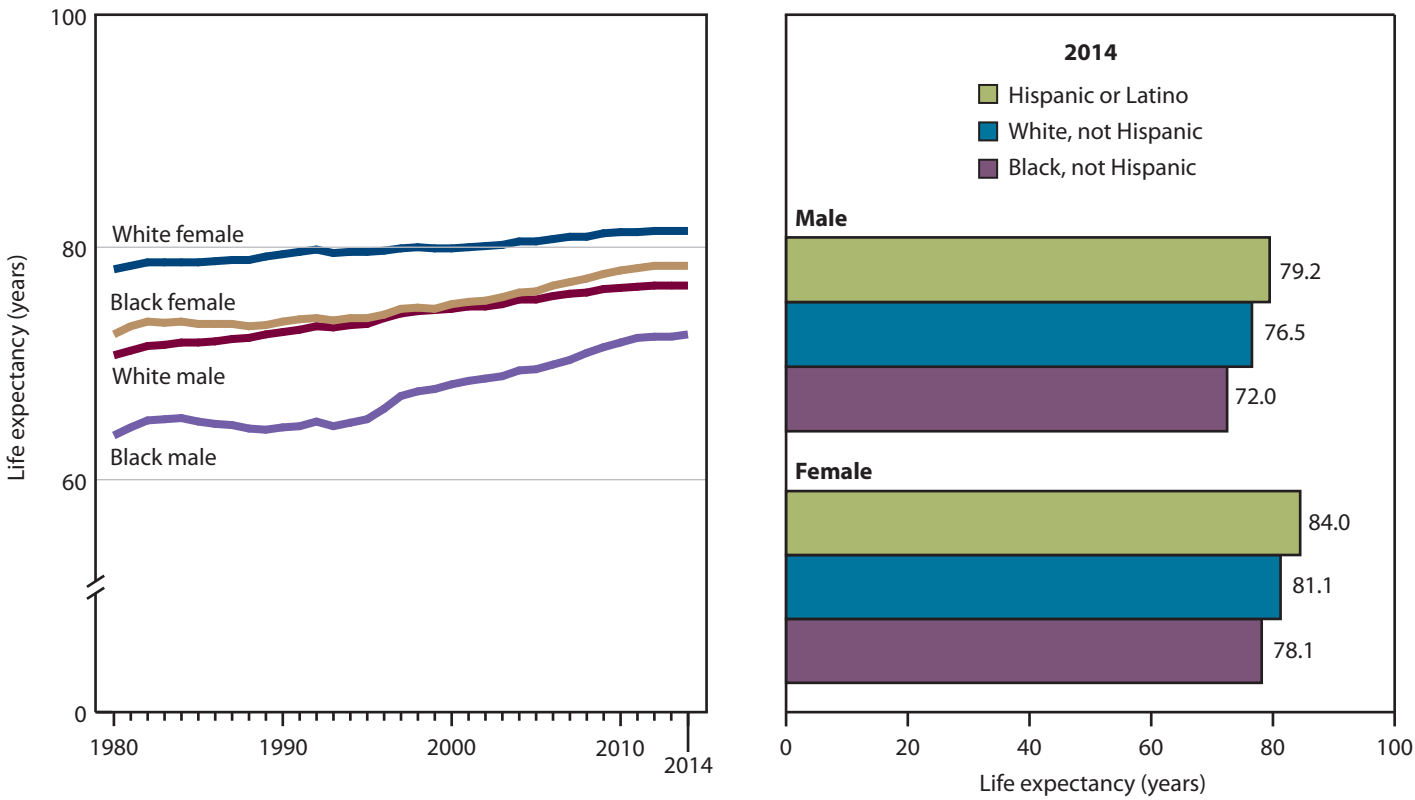
In 2014, life expectancy was longer for Hispanic men and women than for non-Hispanic white or non-Hispanic black men and women.

Life expectancy is a measure often used to gauge the overall health of a population. Life expectancy at birth represents the average number of years that a group of infants would live if the group were to experience the age-specific death rates present in the year of birth. Differences in life expectancy among various demographic subpopulations, including racial and ethnic groups, may reflect subpopulation differences in a range of factors such as socioeconomic status, access to medical care, and the prevalence of specific risk factors in a particular subpopulation (60,61).

During 1980–2014, life expectancy at birth in the United States increased from 70.0 to 76.4 years for males and from 77.4 to 81.2 years for females (Table 15, and data table for Figure 18). During this period, life expectancy at birth for males and females was longest for white persons and shortest for black persons. For both males and females, racial differences in life expectancy at birth narrowed, but persisted during 1980–2014. Life expectancy at birth was 6.9 years longer for white males than for black males in 1980, and this difference narrowed to 4.2 years in 2014. In 1980, life expectancy at birth was 5.6 years longer for white females than for black females, and this difference narrowed to 3.0 years in 2014.

In 2014, Hispanic males and females had the longest life expectancy at birth, and non-Hispanic black males and females had the shortest. In 2014, life expectancy at birth was 7.2 years longer for Hispanic males than for non-Hispanic black males and 5.9 years longer for Hispanic females than for non-Hispanic black females.

Figure 18. Life expectancy at birth, by sex, race and Hispanic origin: United States, 1980–2014



NOTES: Life expectancy data by Hispanic origin were available starting in 2006 and were corrected to address racial and ethnic misclassification. See Technical Notes and data table for Figure 18.

SOURCE: CDC/NCHS, National Vital Statistics System (NVSS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig18

Infant Mortality

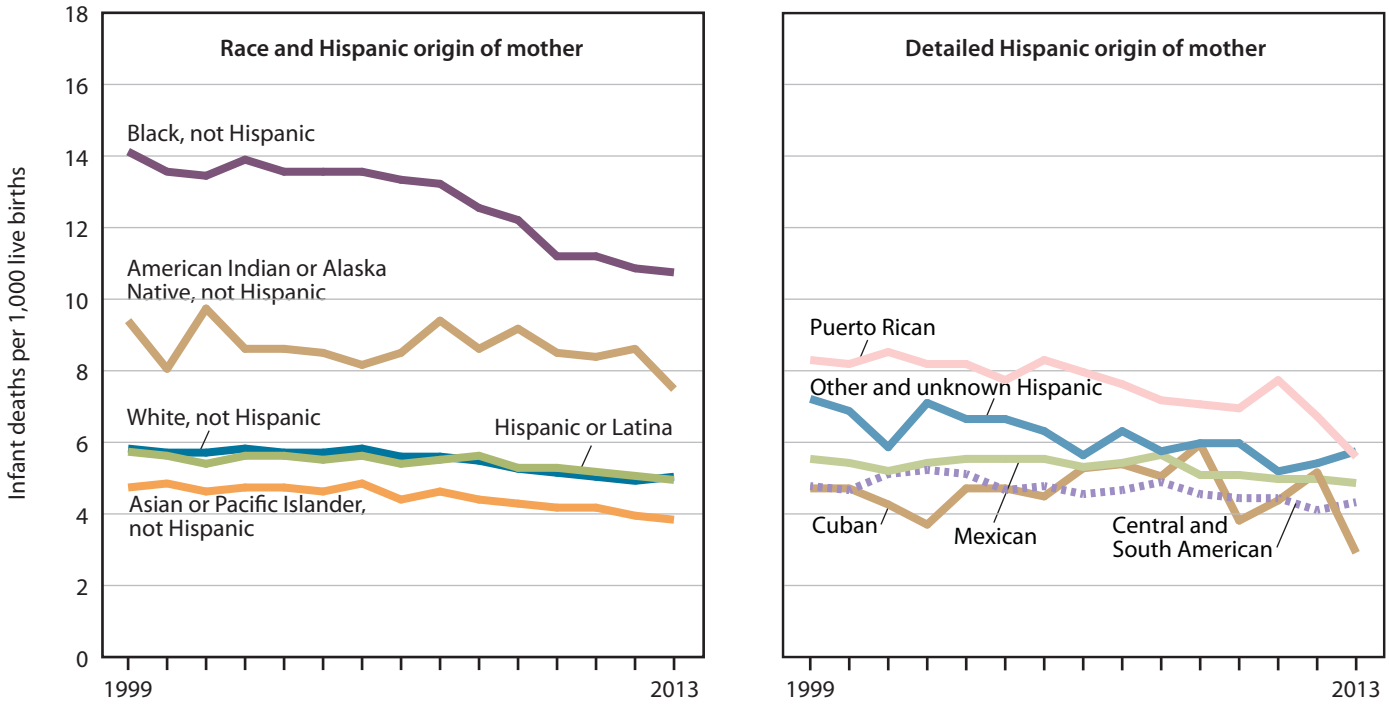
During 1999–2013, infant mortality rates were highest among infants born to non-Hispanic black women (11.11 infant deaths per 1,000 live births in 2013).

Infant mortality, the death of a baby before his or her first birthday, is an important indicator of the health and wellbeing of a country. It not only measures the risk of infant death but it is used as an indicator of maternal health, community health status, and availability of quality health services and medical technology (62,63).

The infant mortality rate in the United States decreased from 7.04 infant deaths per 1,000 live births in 1999 to 6.75 in 2007, and then decreased at a faster rate to 5.96 in 2013. Trends in infant mortality rates during 1999–2013 varied among the five racial and ethnic groups. During 1999–2013, infants born to non-Hispanic black mothers experienced the highest rates of infant mortality (11.11 in 2013) and infants born to non-Hispanic Asian or Pacific Islander mothers experienced the lowest rates (3.90 in 2013). The difference between the highest and lowest infant mortality rates among the five racial and ethnic groups was stable from 1999 to 2006 and then narrowed from 2006 to 2013. The difference between the highest (non-Hispanic black) and lowest (non-Hispanic Asian or Pacific Islander) infant mortality rates was 9.41 deaths per 1,000 live births in 1999, compared with 7.21 in 2013.

For infants born to Hispanic mothers, the infant mortality rate remained stable during 1999–2008 (5.71 infant deaths per 1,000 live births in 1999) and then decreased to 5.00 in 2013. During 1999–2013, the infant mortality rate for Hispanic infants varied by the mother's Hispanic-origin group. Throughout this period, infants born to Puerto Rican mothers experienced the highest mortality rates. In all years except 2009, infants born to Cuban mothers and those born to Central and South American mothers experienced the lowest mortality rates at alternate times throughout 1999–2013. The difference between the highest (Puerto Rican) and lowest (Cuban) infant mortality rates among Hispanic-origin groups narrowed from 3.71 deaths per 1,000 live births in 1999 to 2.88 in 2013. During 1999–2013, the difference in infant mortality rates was narrower for mothers in the Hispanic-origin groups than for mothers in the five racial and ethnic groups.

Figure 19. Infant mortality rates, by race and Hispanic origin and detailed Hispanic origin of mother: United States, 1999–2013



NOTES: Highest and lowest rates are based on observed rates and were not tested for statistically significant differences against other rates. Ties in highest and lowest rates were resolved by looking at additional decimal places. See Technical Notes and data table for Figure 19.

SOURCE: CDC/NCHS, National Vital Statistics System (NVSS), Linked Birth/Infant Death Data Set.

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig19

Preterm Births

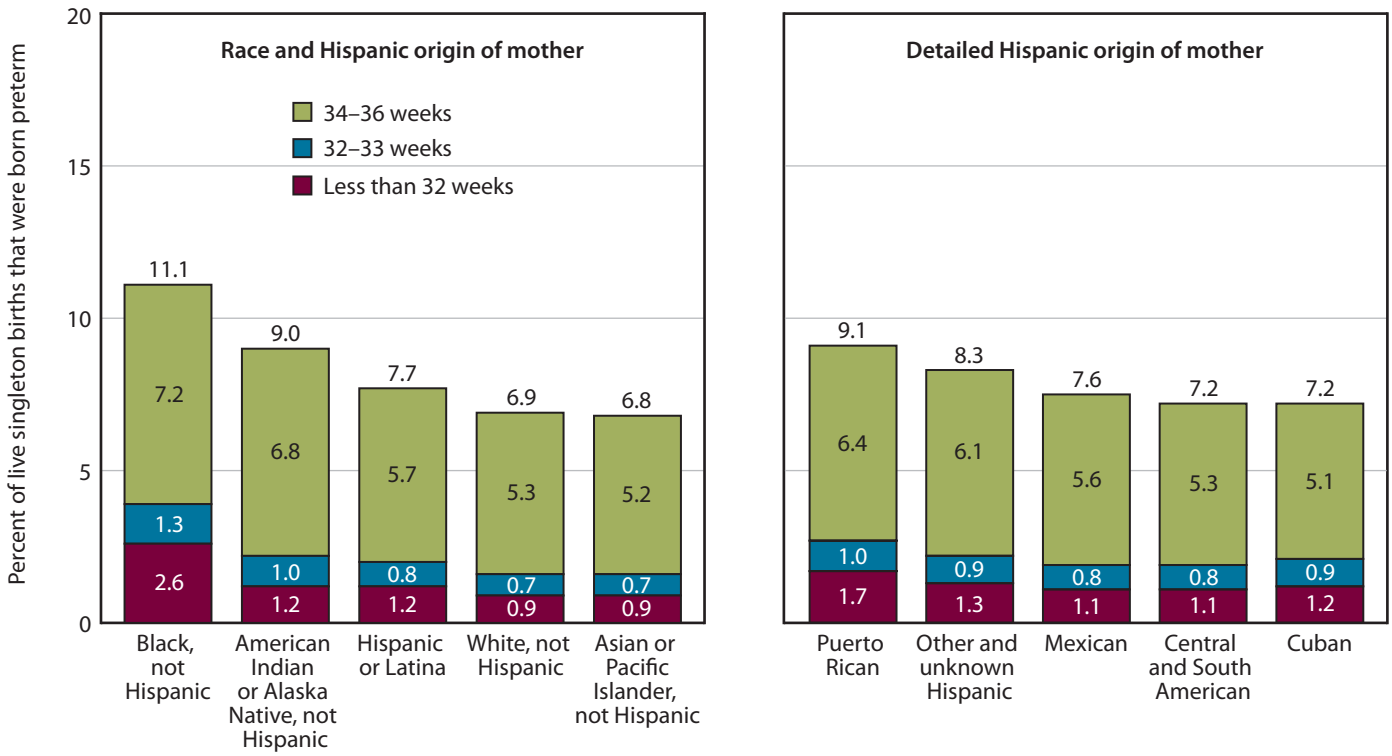
In 2014, non-Hispanic black mothers had the highest percentage of preterm births of the five racial and ethnic groups, and Puerto Rican mothers had the highest percentage of preterm births of the five Hispanic-origin groups.

An infant's gestational age is an important predictor of his or her survival and subsequent health (64–70). Preterm birth prior to 37 weeks gestation affects infant mortality rates and racial and ethnic disparities in infant mortality (Figure 19) (71). The degree of prematurity matters—infants born prior to 32 weeks gestation are at greatest risk of death during infancy, with the risk of infant death decreasing as gestational age increases (72).

In 2014, 7.7% of singleton births occurred before 37 weeks of gestation; 5.7% at 34–36 weeks; 0.8% at 32–33 weeks gestation; and 1.2% before 32 weeks (data table for Figure 20). In 2014, among the five racial and ethnic groups, non-Hispanic black women had the highest percentage of singleton births before 37 weeks (11.1%) and non-Hispanic Asian or Pacific Islander women had the lowest percentage (6.8%). Non-Hispanic black women also had the highest percentage of singleton preterm births at each preterm gestational age. The difference between the highest (non-Hispanic black) and lowest (non-Hispanic Asian or Pacific Islander) percentages of singleton preterm births among the five racial and ethnic groups was 4.3 percentage points (before 37 weeks), 2.0 percentage points (34–36 weeks), 0.6 percentage points (32–33 weeks), and 1.7 percentage points (before 32 weeks).

Among Hispanic-origin groups in 2014, Puerto Rican mothers had the highest percentage of singleton births before 37 weeks (9.1%) and Cuban mothers had the lowest percentage (7.2%). The difference between the highest (Puerto Rican) and lowest (Cuban) percentages of singleton preterm births among the Hispanic-origin groups was 1.9 percentage points (before 37 weeks) and 1.3 percentage points (34–36 weeks). Central and South American mothers had the lowest percentage of singleton births before 34 weeks. For preterm births before 34 weeks, the difference between the highest (Puerto Rican) and lowest (Central and South American) percentages was 0.2 percentage points (32–33 weeks) and 0.6 percentage points (before 32 weeks).

Figure 20. Preterm births, by gestational age and race and Hispanic origin and detailed Hispanic origin of mother: United States, 2014



NOTES: Preterm births are based on the obstetric estimate of gestational age and are for all singleton births (73). Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. Ties in highest and lowest percentages were resolved by looking at additional decimal places. See Technical Notes and data table for Figure 20.

SOURCE: CDC/NCHS, National Vital Statistics Survey (NVSS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig20

Low-risk Births Delivered by Cesarean Section

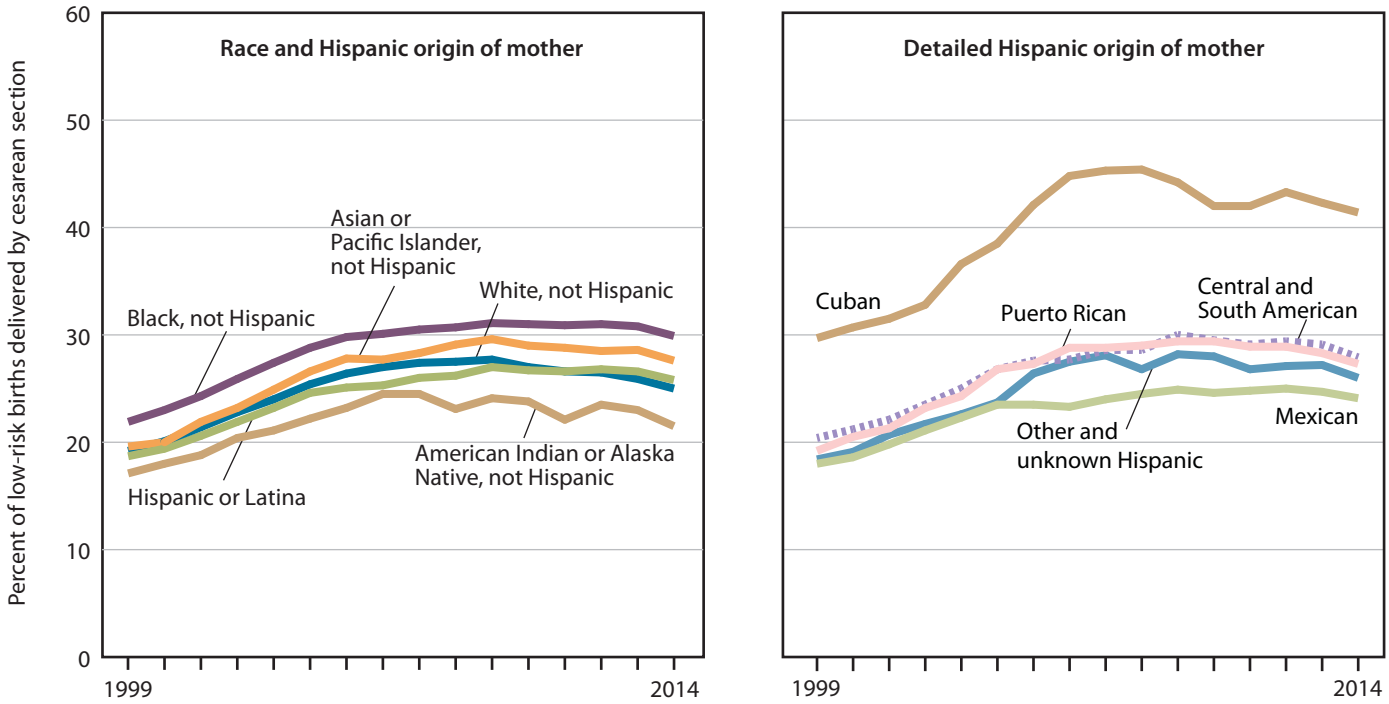
During 1999–2014 non-Hispanic black mothers experienced the highest percentage of low-risk cesarean deliveries among the five racial and ethnic groups (29.9% in 2014); Cuban mothers experienced the highest percentage of low-risk cesarean deliveries among the five Hispanic-origin groups (41.4% in 2014).

Cesarean deliveries comprise approximately one-third of all births in the United States (32.2% in 2014) and can place mothers and infants at increased risk for poor health outcomes (74). Over the past decade, professional medical groups have attempted to reduce low-risk cesarean deliveries defined as cesarean deliveries among full term (37 or more completed weeks of gestation), singleton, vertex (head first) births to women giving birth for the first time (75,76).

The percentage of low-risk births that were delivered by cesarean section increased from 19.5% to 26.6% during 1999–2005, stabilized during 2005–2009, and then decreased to 26.0% in 2014 (data table for Figure 21). Throughout the period 1999–2014, non-Hispanic black mothers experienced the highest percentage of low-risk cesarean deliveries (29.9% in 2014) among the five racial and ethnic groups, while non-Hispanic American Indian or Alaska Native mothers experienced the lowest percentage (21.5% in 2014). The difference between the highest (non-Hispanic black) and lowest (non-Hispanic American Indian or Alaska Native) percentages widened from 4.8 percentage points in 1999 to 8.4 percentage points in 2014.

Among Hispanic mothers, the percentage of low-risk births that were delivered by cesarean section increased from 18.7% to 24.6% during 1999–2004, increased at a slower rate from 2004–2009, and then remained stable during 2009–2014 (data table for Figure 21). Throughout the period 1999–2014 Cuban mothers experienced the highest percentage of low-risk cesarean deliveries (41.4% in 2014), while Mexican mothers experienced the lowest percentage (24.1% in 2014). Among Hispanic-origin groups, the difference between the highest and lowest percentages of low-risk cesarean deliveries was stable during 1999–2002, widened sharply during 2002–2006, and then narrowed during 2006–2014. The difference between the highest (Cuban) and lowest (Mexican) percentages was 11.7 percentage points in 1999, 21.5 percentage points in 2006, and 17.3 percentage points in 2014.

Figure 21. Low-risk births delivered by cesarean section, by race and Hispanic origin and detailed Hispanic origin of mother: United States, 1999–2014



NOTES: The term low-risk cesarean delivery is not meant to imply that a cesarean delivery may not be medically necessary for low-risk women (75). Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. Ties in highest and lowest percentages were resolved by looking at additional decimal places. See Technical Notes and data table for Figure 21.

SOURCE: CDC/NCHS, National Vital Statistics System (NVSS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig21

Children and Adolescents With Obesity

In 2011–2014 for children and adolescents aged 2–19 years, Hispanic children and adolescents had the highest prevalence of obesity and non-Hispanic Asian children had the lowest prevalence.

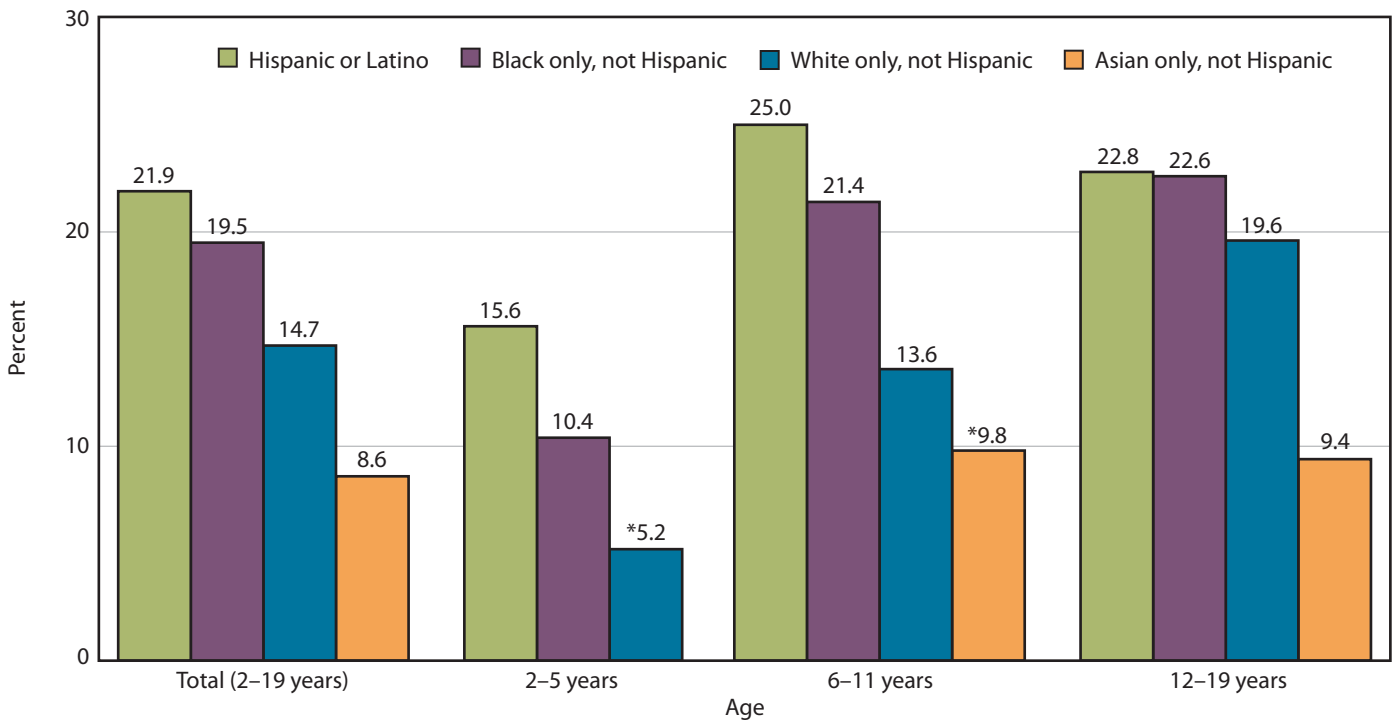
Childhood obesity is a serious public health challenge in the United States and many other industrialized nations in the world (Figure 8) (19,77,78). Excess body weight in children is associated with excess morbidity in childhood and excess body weight in adulthood (13,14). Obesity among children and adolescents is defined as a body mass index at or above the sex- and age-specific 95th percentile of the CDC growth charts (15). Between 1999–2000 and 2013–2014, the percentage of children and adolescents aged 2–19 with obesity increased from 13.9% to 17.2% (79). However, among youth aged 2–19, the prevalence of obesity did not change from 2003–2004 through 2013–2014 (79).

In 2011–2014 for children and adolescents aged 2–19, the percentage with obesity was highest for Hispanic children and adolescents and lowest for non-Hispanic Asian children and adolescents. For those aged 2–19, the difference between the highest (Hispanic) and lowest (non-Hispanic Asian) percentages was 13.3 percentage points.

For children aged 2–5, the percentage with obesity was highest for Hispanic children and lowest for non-Hispanic white children. (The estimate for non-Hispanic Asian children aged 2–5 was not stable and is not shown.) The difference between the highest (Hispanic) and lowest (non-Hispanic white) percentages was 10.4 percentage points for children aged 2–5. For children aged 6–11, the percentage with obesity was highest for Hispanic children and lowest for non-Hispanic Asian children. For children aged 6–11, the difference between the highest (Hispanic) and lowest (non-Hispanic Asian) percentages was 15.2 percentage points.

In 2011–2014 for adolescents aged 12–19, the percentage with obesity was highest for Hispanic adolescents and lowest for non-Hispanic Asian adolescents. The difference between the highest (Hispanic) and lowest (non-Hispanic Asian) percentages was 13.4 percentage points for adolescents aged 12–19 years.

Figure 22. Obesity among children and adolescents aged 2–19 years, by age and race and Hispanic origin: United States, 2011–2014



* Relative standard error (RSE) of 20%–30%. The estimate for non-Hispanic Asian children aged 2–5 is not shown because the RSE is greater than 30%.

NOTES: Obesity is defined as a body mass index at or above the sex- and age-specific 95th percentile of the CDC growth charts. Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. See Technical Notes and data table for Figure 22.

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey (NHANES).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig22

Hypertension

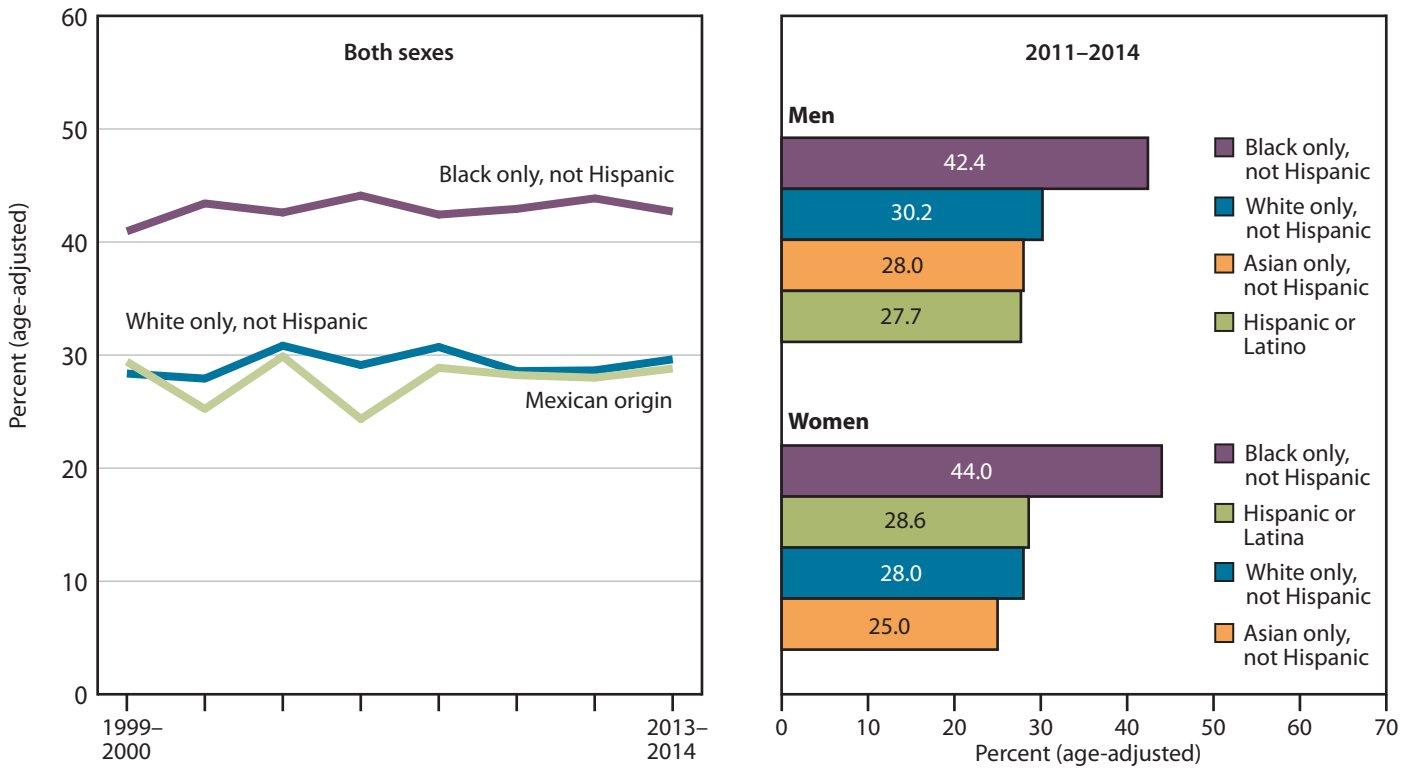
In 2011–2014, non-Hispanic black men and women were the most likely to have hypertension compared with adults in the other racial and ethnic groups.

Hypertension is an important risk factor for cardiovascular disease, stroke, kidney failure, and other health conditions (80,81). In 2011–2014, 84.1% of adults with hypertension were aware of their status, and 76.1% were taking medication to lower their blood pressure (82). Despite improvement in increasing the awareness, treatment, and control of hypertension, diagnosis and treatment of hypertension among minority groups remains a challenge (83).

Hypertension is defined as reporting taking antihypertensive medication and/or having a measured systolic blood pressure of at least 140 mm Hg or a measured diastolic blood pressure of at least 90 mm Hg. The age-adjusted percentage of adults aged 20 and over with hypertension was stable during 1999–2014 (30.8% in 2013–2014) (data table for Figure 23). During 1999–2014, non-Hispanic black adults had the highest percentage with hypertension among the three racial and ethnic groups (42.7%, age-adjusted in 2013–2014), while with the exception of 1999–2000, adults of Mexican origin had the lowest percentage with hypertension (28.8%, age-adjusted in 2013–2014). The difference between the highest and lowest age-adjusted percentages of adults with hypertension among the three racial and ethnic groups was stable during 1999–2014; in 2013–2014, the difference between the highest (non-Hispanic black) and lowest (Mexican-origin) percentages was 13.9 percentage points.

In 2011–2014, the age-adjusted percentage of adult men and women with hypertension was similar (31.0% and 29.7%, respectively, data table for Figure 23). The difference between the highest (non-Hispanic black) and lowest (Hispanic) age-adjusted percentages of men with hypertension among the four racial and ethnic groups was 14.7 percentage points; for women, the difference between the highest (non-Hispanic black) and lowest (non-Hispanic Asian) was 19.0 percentage points in 2011–2014.

Figure 23: Hypertension among adults aged 20 and over, by sex and race and Hispanic origin: United States, 1999–2000 through 2013–2014



NOTES: Estimates are age-adjusted. Hypertension is having measured high blood pressure (systolic pressure of at least 140 mm Hg or diastolic pressure of at least 90 mm Hg) and/or respondent report of taking antihypertensive medication. Data for Hispanic adults were available starting in 2007–2008 and for non-Hispanic Asian adults in 2011–2012. Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. See Technical Notes and data table for Figure 23.

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey (NHANES).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig23

Current Cigarette Smoking

During 1999–2014, differences in cigarette smoking between racial and ethnic groups were larger for women than for men.

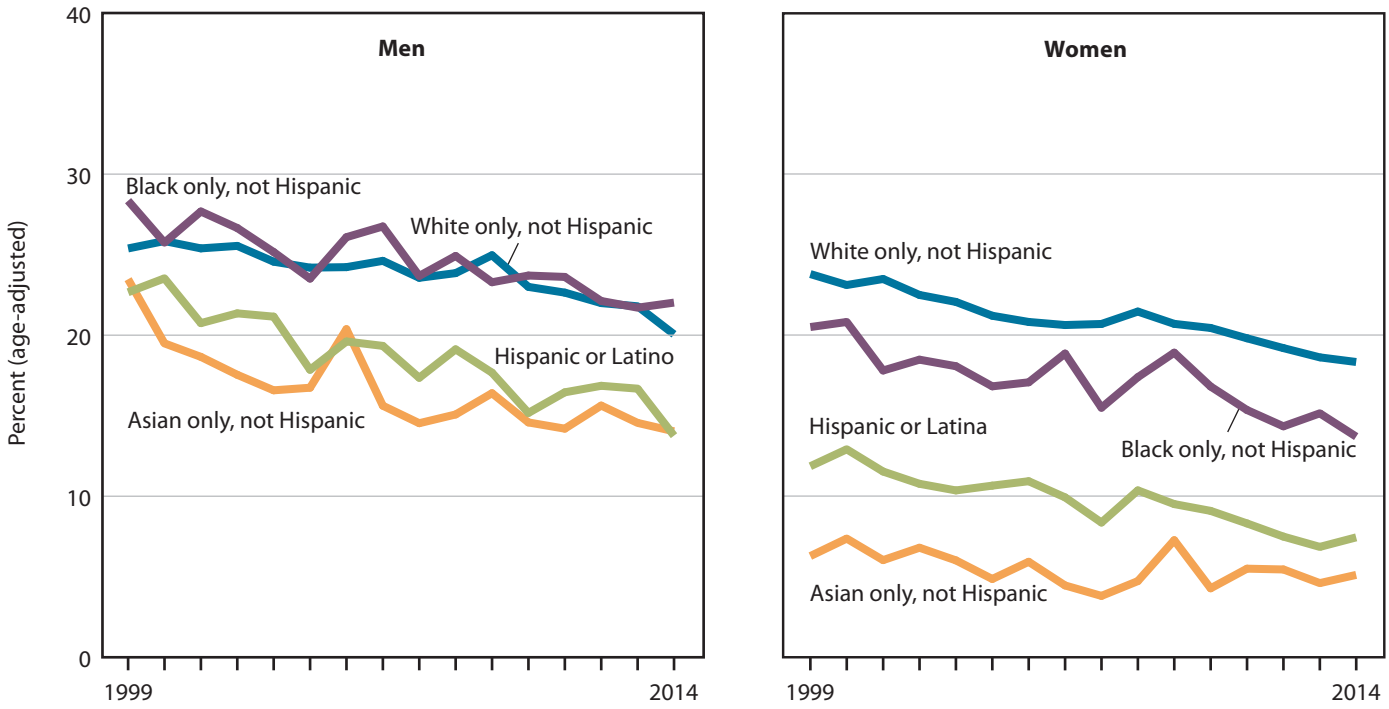
Smoking causes more than 480,000 deaths each year, accounting for about one in five deaths in the United States (84). Smokers are more likely to develop heart disease, stroke, and cancer. Smoking also increases the risk for diabetes, cataracts, rheumatoid arthritis, and stillbirth (85).

During 1999–2014, the age-adjusted percentage of adults aged 18 and over who were current cigarette smokers decreased from 25.2% to 19.0% for men and from 21.6% to 15.1% for women (data table for Figure 24). Within each of the four racial and ethnic groups, men were more likely to be current cigarette smokers than women.

In 2014 for men, the age-adjusted percentage of current cigarette smokers was highest for non-Hispanic black men (22.0%) and lowest for Hispanic men (13.8%). The difference between the highest and lowest age-adjusted percentages of current cigarette smokers among the four racial and ethnic groups remained stable during 1999–2014 because levels for men in all racial and ethnic groups declined similarly during this period. The difference between the highest (non-Hispanic black) and lowest (Hispanic) percentages for men was 8.2 percentage points in 2014.

For women, non-Hispanic white women consistently had the highest age-adjusted percentage of current cigarette smokers among the four racial and ethnic groups throughout 1999–2014 (18.3% in 2014), while non-Hispanic Asian women had the lowest age-adjusted percentage (5.1% in 2014). For women, the difference between the highest (non-Hispanic white) and lowest (non-Hispanic Asian) percentages narrowed from 17.5 percentage points in 1999 to 13.2 in 2014. During 1999–2014, racial and ethnic differences in cigarette smoking prevalence were larger for women than for men.

Figure 24. Current cigarette smoking among adults aged 18 and over, by sex and race and Hispanic origin: United States, 1999–2014



NOTES: Estimates are age-adjusted. Three-year average annual estimates for the American Indian or Alaska Native population are available in the data table for Figure 24. Estimates for non-Hispanic Asian women in 2001 and 2005 have a relative standard error of 20%–30%. Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. Ties in highest and lowest percentages were resolved by looking at additional decimal places. See Technical Notes and data table for Figure 24.

SOURCE: CDC/NCHS, National Health Interview Survey (NHIS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig24

Influenza Vaccination

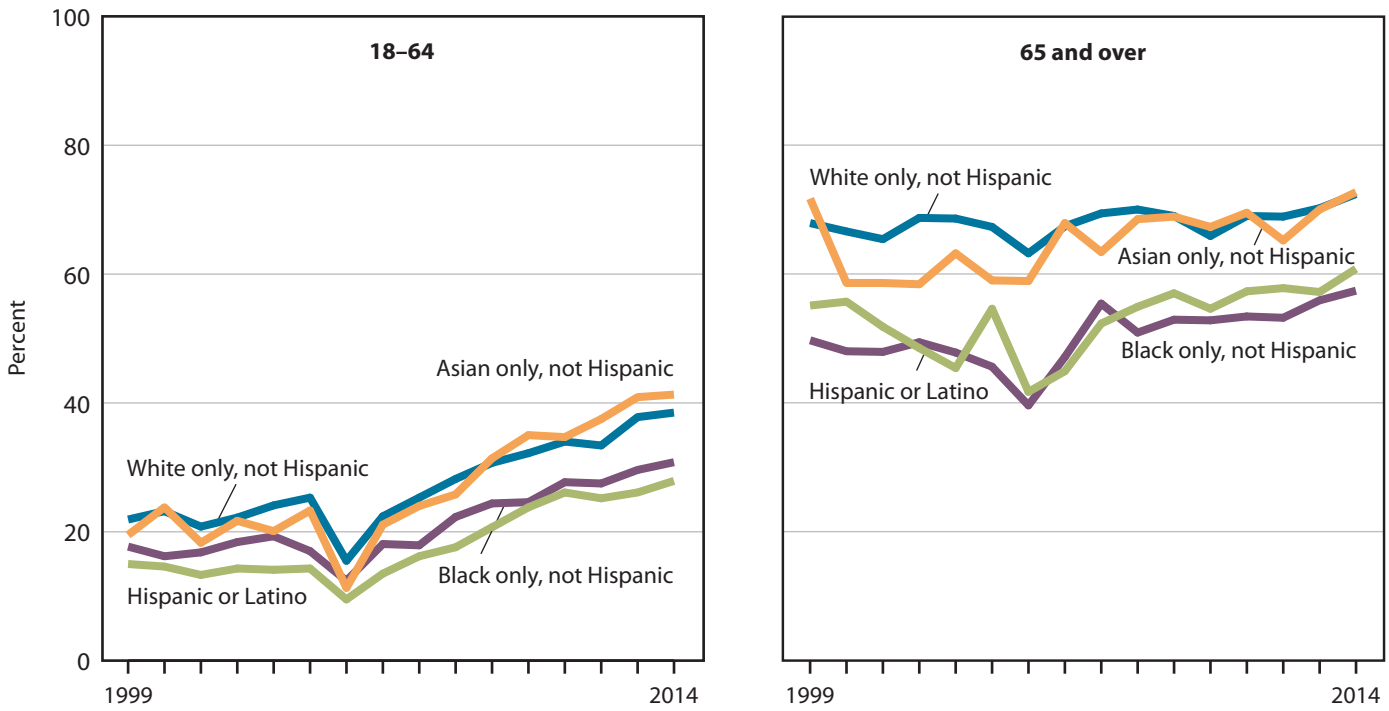
During 1999–2014, influenza vaccination was highest for those aged 65 and over and lowest for those aged 18–64, for all racial and ethnic groups.

Influenza is a serious illness that can lead to hospitalization and sometimes death. Influenza vaccination is especially important for people who are at risk of getting seriously ill from influenza, including those with chronic conditions, older adults, and young children.

The percentage of adults aged 18–64 who received an influenza vaccination in the past 12 months remained stable during 1999–2006 and then increased to 35.8% in 2014 (data table for Figure 25). This pattern was present for all racial and ethnic groups. Decreases in influenza vaccination coverage in 2005 were related to a vaccine shortage (86). For those aged 18–64, no racial and ethnic group was consistently the most likely to receive influenza vaccination during 1999–2014. In 2014, non-Hispanic Asian adults had the highest percentage for influenza vaccination receipt (41.3%) and Hispanic adults had the lowest percentage (27.9%). For adults aged 18–64, the difference between the highest and lowest percentages of adults receiving an influenza vaccination among the four racial and ethnic groups widened from 6.9 percentage points in 1999 (non-Hispanic white compared with Hispanic) to 13.4 in 2014 (non-Hispanic Asian compared with Hispanic).

For adults aged 65 and over, the percentage who received an influenza vaccination in the past 12 months increased from 65.7% to 70.1% during 1999–2014. During this period, trends in influenza vaccination coverage varied by racial and ethnic group, and no racial and ethnic group was consistently the most or least likely to receive influenza vaccination. In 2014, non-Hispanic Asian adults had the highest percentage for receipt of influenza vaccination (72.7%) and non-Hispanic black adults had the lowest (57.4%). For adults age 65 and over, the difference between the highest (non-Hispanic Asian) and lowest (non-Hispanic black) percentages of older adults receiving an influenza vaccination among the four racial and ethnic groups was stable during 1999–2003 and then narrowed to 15.3 percentage points in 2014.

Figure 25. Influenza vaccination among adults aged 18 and over, by age and race and Hispanic origin: United States, 1999–2014



NOTES: Three-year average annual estimates for the American Indian or Alaska Native population are available in the data table for Figure 25. Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. Ties in highest and lowest percentages were resolved by looking at additional decimal places. See Technical Notes and data table for Figure 25.

SOURCE: CDC/NCHS, National Health Interview Survey (NHIS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig25

Health Insurance Coverage

During 1999 through the first 6 months of 2015 among adults aged 18–64, lack of health insurance coverage was highest among Hispanic adults.

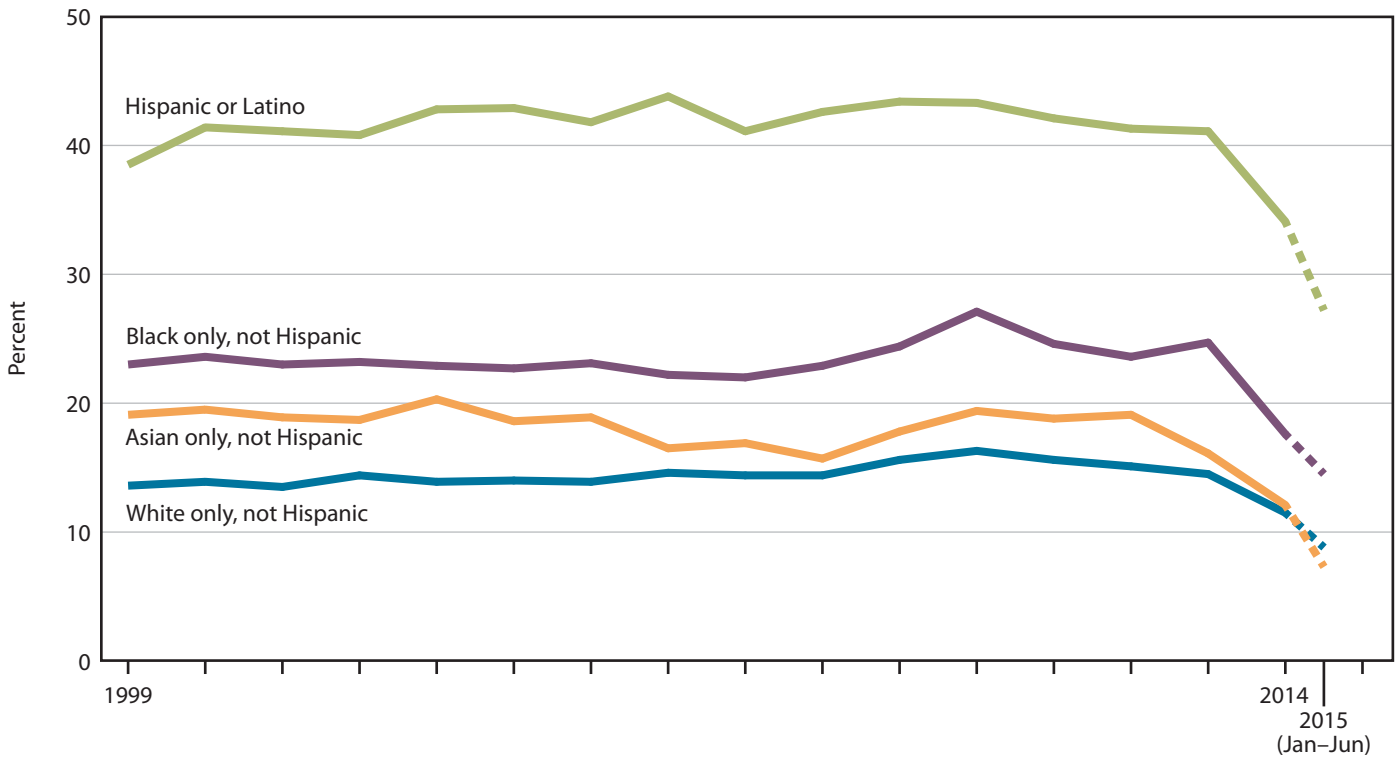
Health insurance is a major determinant of access to health care. Children are less likely to be uninsured than adults aged 18–64 because they are more likely to qualify for public coverage, primarily Medicaid and the Children's Health Insurance Program (CHIP) (see data table for Figure 26 for estimates for children) (26,87). Passage of the Affordable Care Act (ACA) in 2010 (38) authorized states to expand Medicaid eligibility (88) and to establish the health insurance marketplace in 2014.

For adults aged 18–64, the percentage without coverage increased from 17.9% to 20.5% during 1999–2013, and then decreased to 12.7% in the first 6 months of 2015 (36). During this period, the trend for lack of coverage varied by racial and ethnic group.

During 1999–June 2015, Hispanic adults aged 18–64 had the highest percentage without coverage (27.2% in the first 6 months of 2015), and non-Hispanic white adults aged 18–64 had the lowest, except in the first 6 months of 2015, when non-Hispanic Asian adults had the lowest percentage without coverage.

The difference between the highest and lowest percentages of adults aged 18–64 without health insurance among the four racial and ethnic groups narrowed from 1999–June 2015. This difference was 24.9 percentage points in 1999 (Hispanic adults compared with non-Hispanic white adults) and 19.9 percentage points in the first 6 months of 2015 (Hispanic adults compared with non-Hispanic Asian adults).

Figure 26. No health insurance coverage among adults aged 18–64, by race and Hispanic origin: United States, 1999–June 2015 (preliminary data)



NOTES: Preliminary estimates for the first 6 months of 2015 are shown with a dashed line (36). Three-year average annual estimates for the American Indian or Alaska Native population are available in the data table for Figure 26. Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. Ties in highest and lowest percentages were resolved by looking at additional decimal places. See Technical Notes and data table for Figure 26.

SOURCE: CDC/NCHS, National Health Interview Survey (NHIS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig26

Difficulty Accessing Needed Dental Care Due to Cost

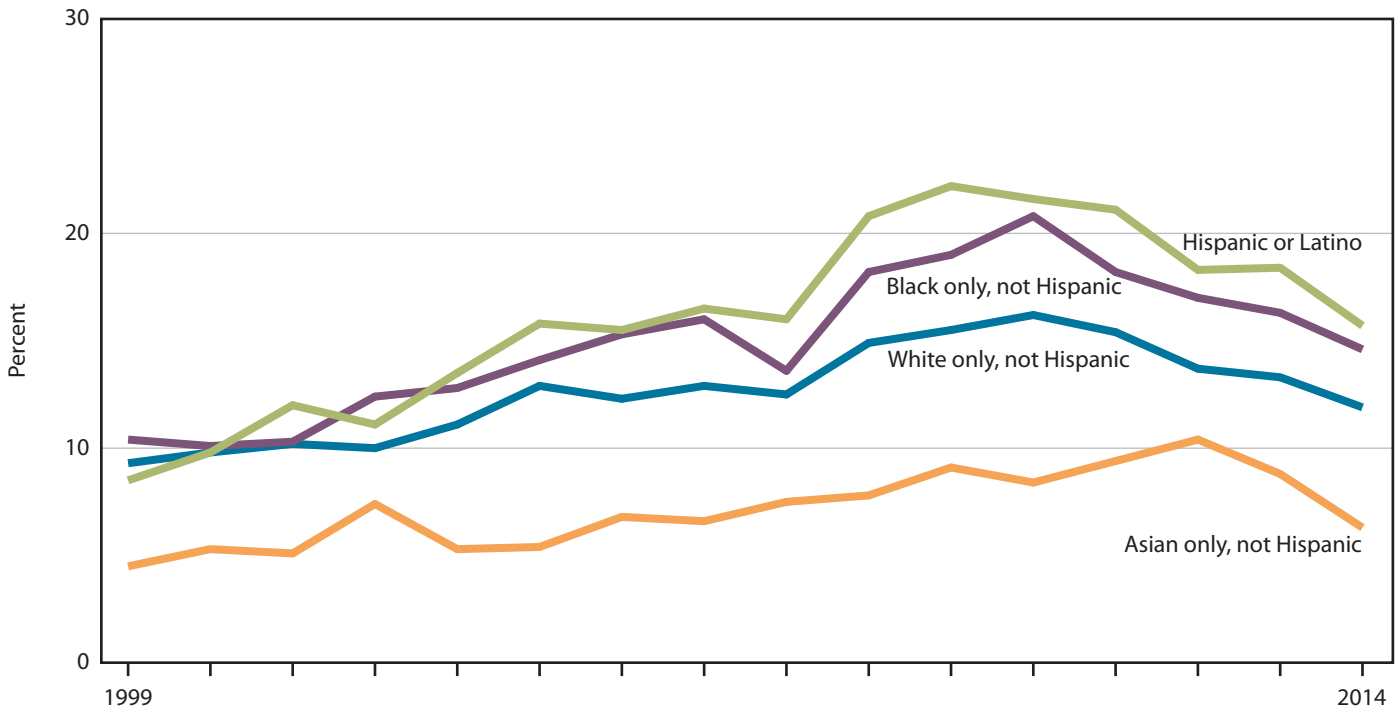
During 1999–2014 among adults aged 18–64, nonreceipt of needed dental care due to cost was lowest among non-Hispanic Asian adults.

Oral health is integral to general health and wellbeing, and forgoing needed dental health care can have serious health effects (89). In general, fewer adults have dental coverage than medical coverage, and dental coverage tends to be less comprehensive (90–92). In 2012, 44% of dental expenditures among adults aged 18–64 were paid out of pocket, a higher out-of-pocket percentage than for any other type of personal health care expenditure (93).

The percentage of adults aged 18–64 who did not receive needed dental care in the past 12 months due to cost increased from 9.3% to 17.3% during 1999–2010, and then decreased to 12.6% in 2014 (data table for Figure 27).

During 1999–2014, non-Hispanic Asian adults aged 18–64 had the lowest percentage of not receiving needed dental care due to cost (6.3% in 2014) among the four racial and ethnic groups. No racial and ethnic group consistently had the highest percentage of not receiving needed dental care due to cost during 1999–2014. The difference between the highest and lowest percentages of adults not receiving needed dental care due to cost among the four racial and ethnic groups widened during 1999–2010, and then remained stable from 2010–2014 for those aged 18–64. This difference was 5.9 percentage points in 1999 (non-Hispanic black compared with non-Hispanic Asian) and 9.4 percentage points in 2014 (Hispanic compared with non-Hispanic Asian).

Figure 27. Nonreceipt of needed dental care in the past 12 months due to cost among adults aged 18–64, by race and Hispanic origin: United States, 1999–2014



NOTES: Three-year average annual estimates for the American Indian or Alaska Native population are available in the data table for Figure 27. Highest and lowest percentages are based on observed percentages and were not tested for statistically significant differences against other percentages. See Technical Notes and data table for Figure 27.

SOURCE: CDC/NCHS, National Health Interview Survey (NHIS).

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig27

All 27 chartbook figures have an accompanying data table either in this section or the Trend Table section.

Data table for Figure 6. Selected disability indicators among adults aged 18 and over, by sex and age: United States, 2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig06

Sex and age	*Serious difficulty concentrating, remembering, or making decisions*		*Difficulty doing errands alone*	
	Percent	*SE*	*Percent*	*SE*
Male				
18–64 years	4.4	0.2	3.1	0.2
65–74 years	6.1	0.6	6.4	0.7
75–84 years	10.8	1.3	12.9	1.3
85 years and over	18.8	2.9	26.2	3.3
Female				
18–64 years	4.5	0.2	3.9	0.2
65–74 years	5.3	0.5	9.4	0.7
75–84 years	11.2	1.1	20.7	1.4
85 years and over	21.5	2.1	45.0	2.6

SE is standard error.

NOTES: Respondents were asked, ‘‘Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?’’ See Appendix II, Instrumental activities of daily living (IADL). Proxy reporting was 3.3% for those aged 18–64, 4.8% for those aged 65–74, 6.9% for those aged 75–84, and 14.4% for those aged 85 and over. Respondents were asked, ‘‘Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor’s office or shopping?’’ Proxy reporting was 3.7% for those aged 18–64, 6.5% for those aged 65–74 and 75–84, and 8.8% for those aged 85 and over.

SOURCE: CDC/NCHS, National Health Interview Survey. Sample family disability questionnaire. See Appendix I, National Health Interview Survey (NHIS).

Data table for Figure 11. Distribution of emergency department visits within the past 12 months for adults aged 18–64, by type of coverage: United States, 2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig11

Insurance coverage	*Percent*	*SE*
Private	53.6	1.0
Medicaid	23.4	0.8
Uninsured	15.1	0.7
Other	7.9	0.5

SE is standard error.

NOTES: Insurance categories are based on coverage at the time of interview and are mutually exclusive. Persons who reported both Medicaid and private coverage are classified as having private coverage. Medicaid coverage includes persons covered by state-sponsored health plans or the Children's Health Insurance Program (CHIP). The other insured category includes military, other government, and Medicare coverage. Persons not covered by private insurance, Medicaid, or other plans are classified as uninsured. Persons with only Indian Health Service coverage are considered uninsured. The count of emergency department visits in 2014 was determined by using the midpoint of the response categories and then summing the count. Response category None was recoded to 0 visits. Response category 1 was recoded to 1 visit. Response category 2–3 was recoded to 2.5 visits. Response category 4–5 was recoded to 4.5 visits. Response category 6–7 was recoded to 6.5 visits. Response category 8–9 was recoded to 8.5 visits. Response category 10–12 was recoded to 11 visits. Response category 13–15 was recoded to 14 visits. Response category 16 or more was recoded to 16 visits. See Appendix II, Emergency department or emergency room visit; Health insurance coverage.

SOURCE: CDC/NCHS, National Health Interview Survey (NHIS). Family core and sample adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).

Data table for Figure 13. Electronic health record system components in physician offices, by selected component type: United States, 2010 and 2013

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig13

Type of component	2010		2013	
	Percent	SE	Percent	SE
Record patient history and demographic information	74.3	0.9	83.0	0.9
Order prescriptions	57.2	1.0	82.6	0.9
Send prescriptions to pharmacy	43.8	1.1	78.7	1.0
Issue warnings of drug interactions and contraindications	43.6	1.0	73.8	1.1
Order lab tests	48.5	1.1	68.9	1.1

SE is standard error.

NOTES: Missing values are included in the denominator. Estimates for 2010 are based on the combined in-person and mail survey file. Estimates for 2013 are based on the mail survey file. The Health Information Technology for Economic and Clinical Health (HITECH) Act authorizes Medicare and Medicaid incentive payments to providers for the ''meaningful use'' of EHR—that is, using EHR components to improve care. The selected components in Figure 13 are among those designated ''meaningful use.'' For more information see: Hsiao CJ, Hing E. Use and characteristics of electronic health record systems among office-based physician practices: United States, 2001–2013. NCHS data brief, no 143. Hyattsville, MD: NCHS; 2014. Available from: http://www.cdc.gov/nchs/data/databriefs/db143.htm.

SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey—National Electronic Health Records Survey. See Appendix I, National Ambulatory Medical Care Survey (NAMCS).

Data table for Figure 14. Office-based physicians accepting new patients, by patient source of payment and urban–rural status: United States, 2013

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig14

Insurance coverage and urban–rural category	*Percent*	*SE*
Accepting new patients	95.9	0.5
Urban:		
Large central metropolitan	97.1	0.9
Large fringe metropolitan (suburbs)	95.9	1.1
Medium or small metropolitan	94.7	0.8
Rural:		
Micropolitan (city/town)	93.6	1.6
Noncore	97.8	0.8
Accepting new Medicaid patients	69.5	1.2
Urban:		
Large central metropolitan	69.2	2.3
Large fringe metropolitan (suburbs)	58.5	2.4
Medium or small metropolitan	73.0	1.8
Rural:		
Micropolitan (city/town)	83.8	3.2
Noncore	89.6	3.3
Accepting new privately insured patients	85.2	0.9
Urban:		
Large central metropolitan	85.1	1.8
Large fringe metropolitan (suburbs)	84.4	1.8
Medium or small metropolitan	85.8	1.3
Rural:		
Micropolitan (city/town)	86.3	2.2
Noncore	84.7	3.4

SE is standard error.

NOTES: The target universe consists of physicians classified as providing direct patient care in office-based practices. Radiologists, anesthesiologists, and pathologists are excluded. Physician offices were classified by the 2013 NCHS urban–rural classification scheme for counties. The medium and small metropolitan categories were combined for this analysis. For more information, see: Ingram DD, Franco SJ. 2013 NCHS urban–rural classification scheme for counties. Vital and health statistics reports; series 2 no 166. Hyattsville, MD: NCHS. 2014. Available from: http://www.cdc.gov/nchs/data_access/urban_rural.htm. Estimates presented here may differ from estimates based on the same data presented elsewhere if different rules were used for including observations in the analysis.

SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey—National Electronic Health Records Survey. See Appendix I, National Ambulatory Medical Care Survey (NAMCS).

Data table for Figure 17. Health insurance coverage among adults aged 18–64, by state Medicaid expansion status: United States, 2013 and 2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig17

Medicaid expansion status and insurance coverage	2013		2014	
	Percent	SE	Percent	SE
States that expanded Medicaid program				
Private	65.8	0.5	68.2	0.5
Medicaid	11.9	0.3	14.9	0.4
Uninsured	18.5	0.3	13.4	0.3
States that did not expand Medicaid program				
Private	64.3	0.6	66.6	0.6
Medicaid	7.7	0.2	8.3	0.3
Uninsured	22.7	0.5	19.6	0.4

SE is standard error.

NOTES: Insurance categories are mutually exclusive. Insurance is at the time of interview. See Appendix II, Health insurance coverage. Under provisions of the Affordable Care Act (ACA) of 2010 (P.L. 111–148, P.L. 111–152), states are authorized to expand Medicaid to a new adult population. There is no deadline for states to implement the Medicaid expansion, and they may do so at any time. States were classified based on their decision to expand Medicaid as of January 1, 2014. As of January 1, 2014, 25 states and the District of Columbia have expanded their Medicaid program (40). They were: Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Hawaii, Illinois, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Rhode Island, Vermont, Washington, and West Virginia. States that had not expanded their Medicaid programs as of January 1, 2014, were: Alabama, Alaska, Florida, Georgia, Idaho, Indiana, Kansas, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, New Hampshire, North Carolina, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wisconsin, and Wyoming.

SOURCE: CDC/NCHS, National Health Interview Survey. See Appendix I, National Health Interview Survey (NHIS).

Data table for Figure 18 (page 1 of 2). Life Expectancy at birth, by sex, race and Hispanic origin: United States, 1980–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig18

Year	All races			White			Black or African American		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
	Life expectancy (years)								
1980	73.7	70.0	77.4	74.4	70.7	78.1	68.1	63.8	72.5
1981	74.1	70.4	77.8	74.8	71.1	78.4	68.9	64.5	73.2
1982	74.5	70.8	78.1	75.1	71.5	78.7	69.4	65.1	73.6
1983	74.6	71.0	78.1	75.2	71.6	78.7	69.4	65.2	73.5
1984	74.7	71.1	78.2	75.3	71.8	78.7	69.5	65.3	73.6
1985	74.7	71.1	78.2	75.3	71.8	78.7	69.3	65.0	73.4
1986	74.7	71.2	78.2	75.4	71.9	78.8	69.1	64.8	73.4
1987	74.9	71.4	78.3	75.6	72.1	78.9	69.1	64.7	73.4
1988	74.9	71.4	78.3	75.6	72.2	78.9	68.9	64.4	73.2
1989	75.1	71.7	78.5	75.9	72.5	79.2	68.8	64.3	73.3
1990	75.4	71.8	78.8	76.1	72.7	79.4	69.1	64.5	73.6
1991	75.5	72.0	78.9	76.3	72.9	79.6	69.3	64.6	73.8
1992	75.8	72.3	79.1	76.5	73.2	79.8	69.6	65.0	73.9
1993	75.5	72.2	78.8	76.3	73.1	79.5	69.2	64.6	73.7
1994	75.7	72.4	79.0	76.5	73.3	79.6	69.5	64.9	73.9
1995	75.8	72.5	78.9	76.5	73.4	79.6	69.6	65.2	73.9
1996	76.1	73.1	79.1	76.8	73.9	79.7	70.2	66.1	74.2
1997	76.5	73.6	79.4	77.1	74.3	79.9	71.1	67.2	74.7
1998	76.7	73.8	79.5	77.3	74.5	80.0	71.3	67.6	74.8
1999	76.7	73.9	79.4	77.3	74.6	79.9	71.4	67.8	74.7
2000	76.8	74.1	79.3	77.3	74.7	79.9	71.8	68.2	75.1
2001	77.0	74.3	79.5	77.5	74.9	80.0	72.0	68.5	75.3
2002	77.0	74.4	79.6	77.5	74.9	80.1	72.2	68.7	75.4
2003	77.2	74.5	79.7	77.7	75.1	80.2	72.4	68.9	75.7
2004	77.6	75.0	80.1	78.1	75.5	80.5	72.9	69.4	76.1
2005	77.6	75.0	80.1	78.0	75.5	80.5	73.0	69.5	76.2
2006	77.8	75.2	80.3	78.3	75.8	80.7	73.4	69.9	76.7
2007	78.1	75.5	80.6	78.5	76.0	80.9	73.8	70.3	77.0
2008	78.2	75.6	80.6	78.5	76.1	80.9	74.3	70.9	77.3
2009	78.5	76.0	80.9	78.8	76.4	81.2	74.7	71.4	77.7
2010	78.7	76.2	81.0	78.9	76.5	81.3	75.1	71.8	78.0
2011	78.7	76.3	81.1	79.0	76.6	81.3	75.3	72.2	78.2
2012	78.8	76.4	81.2	79.1	76.7	81.4	75.5	72.3	78.4
2013	78.8	76.4	81.2	79.1	76.7	81.4	75.5	72.3	78.4
2014	78.8	76.4	81.2	79.0	76.7	81.4	75.6	72.5	78.4

See footnotes at end of table.

Data table for Figure 18 (page 2 of 2). Life Expectancy at birth, by sex, race and Hispanic origin: United States, 1980–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig18

Year	Hispanic[1]			Not Hispanic or Latino					
				White			Black or African American		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
2014	81.8	79.2	84.0	78.8	76.5	81.1	75.2	72.0	78.1

[1]Persons of Hispanic origin may be of any race. See Appendix II, Hispanic origin. Life expectancies for the Hispanic population are adjusted for underreporting of Hispanic ethnicity on the death certificate, but are not adjusted to account for the potential effects of return migration. To address the effects of age misstatement at the oldest ages, the probability of death for Hispanic persons ages 80 and over is estimated as a function of non-Hispanic white mortality with the use of the Brass relational logit model. See Appendix II, Race, for a discussion of sources of bias in death rates by race and Hispanic origin.

NOTES: Populations for computing life expectancy for 1991–1999 are 1990-based postcensal estimates of the U.S. resident population. Populations for computing life expectancy for 2001–2009 were based on intercensal population estimates of the U.S. resident population. Populations for computing life expectancy for 2010 were based on 2010 census counts. Life expectancy for 2011 and beyond was computed using 2010-based postcensal estimates. See Appendix I, Population Census and Population Estimates. In 1997, life table methodology was revised to construct complete life tables by single years of age that extend to age 100. (Anderson RN. Method for constructing complete annual U.S. life tables. NCHS. Vital Health Stat 2(129). 1999.) Previously, abridged life tables were constructed for 5-year age groups ending with 85 and over. In 2000, the life table methodology was revised. The revised methodology is similar to that developed for the 1999–2001 decennial life tables. In 2008, the life table methodology was further refined. See Appendix II, Life expectancy. Starting with 2003 data, some states allowed the reporting of more than one race on the death certificate. The multiple-race data for these states were bridged to the single-race categories of the 1977 Office of Management and Budget standards, for comparability with other states. The race groups, white and black include persons of Hispanic and non-Hispanic origin. Persons of Hispanic origin may be of any race. See Appendix II, Race. Life expectancy is not currently available for persons of other racial and ethnic groups. Also see Table 15 and Figure 1.

SOURCE: CDC/NCHS, National Vital Statistics System, public-use Mortality Files; Arias E. United States life tables by Hispanic origin. Vital health statistics; vol 2 no 152. Hyattsville, MD: NCHS. 2010. NCHS. Deaths: Final data for 2014. National vital statistics reports (forthcoming). Available from: http://www.cdc.gov/nchs/products/nvsr.htm. See Appendix I, National Vital Statistics System (NVSS).

Data table for Figure 19. Infant mortality rates, by race and Hispanic origin of mother: United States, 1999–2013

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig19

Year	Total[2]	Race and Hispanic origin of mother[1]				
		Hispanic or Latina	Not Hispanic or Latina			
			White	Black or African American	Asian or Pacific Islander	American Indian or Alaska Native
	Infant deaths per 1,000 live births[3]					
1999	7.04	5.71	5.76	14.14	4.73	9.35
2000	6.89	5.59	5.70	13.59	4.79	8.19
2001	6.84	5.44	5.72	13.46	4.65	9.67
2002	6.95	5.62	5.80	13.89	4.66	8.67
2003	6.84	5.65	5.70	13.60	4.68	8.72
2004	6.78	5.55	5.66	13.60	4.55	8.62
2005	6.86	5.62	5.76	13.63	4.77	8.31
2006	6.68	5.41	5.58	13.35	4.40	8.64
2007	6.75	5.51	5.63	13.32	4.60	9.38
2008	6.61	5.59	5.53	12.67	4.39	8.66
2009	6.39	5.29	5.33	12.40	4.28	9.17
2010	6.14	5.25	5.18	11.46	4.17	8.65
2011	6.07	5.15	5.07	11.45	4.18	8.52
2012	5.98	5.11	5.04	11.19	3.97	8.74
2013	5.96	5.00	5.06	11.11	3.90	7.72

Year	Detailed Hispanic origin of mother[1]				
	Mexican	Puerto Rican	Cuban	Central and South American	Other and unknown Hispanic or Latina
	Infant deaths per 1,000 live births[3]				
1999	5.51	8.35	4.64	4.67	7.24
2000	5.43	8.20	4.57	4.64	6.88
2001	5.22	8.53	4.25	4.97	6.02
2002	5.42	8.19	3.74	5.06	7.15
2003	5.49	8.18	4.59	5.04	6.66
2004	5.47	7.82	4.57	4.65	6.72
2005	5.53	8.31	4.45	4.69	6.44
2006	5.34	8.02	5.06	4.52	5.78
2007	5.42	7.72	5.21	4.57	6.41
2008	5.58	7.29	4.88	4.76	5.86
2009	5.12	7.19	5.75	4.47	6.06
2010	5.12	7.09	3.81	4.43	6.09
2011	4.99	7.84	4.34	4.35	5.41
2012	5.02	6.86	4.99	4.14	5.59
2013	4.90	5.92	3.04	4.30	5.88

[1]Persons of Hispanic origin may be of any race. Starting with 2003 data, some states reported multiple-race data. The multiple-race data for these states were bridged to the single-race categories of the 1977 Office of Management and Budget standards, for comparability with other states. See Appendix II, Hispanic origin; Race.

[2]Includes all infant deaths not shown separately.

[3]Infant is under age 1 year.

NOTES: Rates based on a period file using weighted data. Also see Table 10.

SOURCE: CDC/NCHS, National Vital Statistics System, public-use Linked Birth/Infant Death Data Set. See Appendix I, National Vital Statistics System (NVSS).

Data table for Figure 20. Preterm births, by gestational age and race and Hispanic origin and detailed Hispanic origin of mother: United States, 2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig20

Preterm births by gestational age, in weeks[2]	Total[3]	Race and Hispanic origin of mother[1]				
		Hispanic or Latina	Not Hispanic or Latina			
			White	Black or African American	Asian or Pacific Islander	American Indian or Alaska Native
	Percent of live singleton births that were preterm					
Less than 37	7.7	7.7	6.9	11.1	6.8	9.0
34–36	5.7	5.7	5.3	7.2	5.2	6.8
32–33	0.8	0.8	0.7	1.3	0.7	1.0
Less than 32	1.2	1.2	0.9	2.6	0.9	1.2
	Standard error					
Less than 37	0.01	0.03	0.02	0.04	0.05	0.15
34–36	0.01	0.02	0.02	0.03	0.04	0.13
32–33	0.00	0.01	0.01	0.02	0.02	0.05
Less than 32	0.01	0.01	0.01	0.02	0.02	0.06

Preterm births by gestational age, in weeks[2]	Detailed Hispanic origin of mother[1]				
	Mexican	Puerto Rican	Cuban	Central and South American	Other and unknown Hispanic or Latina
	Percent of live singleton births that were preterm				
Less than 37	7.6	9.1	7.2	7.2	8.3
34–36	5.6	6.4	5.1	5.3	6.1
32–33	0.8	1.0	0.9	0.8	0.9
Less than 32	1.1	1.7	1.2	1.1	1.3
	Standard error				
Less than 37	0.04	0.11	0.18	0.07	0.07
34–36	0.03	0.09	0.16	0.06	0.06
32–33	0.01	0.04	0.07	0.02	0.03
Less than 32	0.01	0.05	0.08	0.03	0.03

0.00 Quantity more than zero but less than 0.005.

[1]Persons of Hispanic origin may be of any race. Starting with 2003 data, some states reported multiple-race data. The multiple-race data for these states were bridged to the single-race categories of the 1977 Office of Management and Budget standards, for comparability with other states. See Appendix II, Hispanic origin; Race.

[2]Preterm births are based on the obstetric estimate of gestational age and are for all singleton births. For more information on the obstetric estimates, see: Martin JA, Osterman MJK, Kirmeyer SE, Gregory ECW. Measuring gestational age in vital statistics data: Transitioning to the obstetric estimate. National vital statistics reports; vol 64 no 5. Hyattsville, MD: NCHS. 2015. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_05.pdf.

[3]Includes all preterm births not shown separately.

NOTES: Ties in highest and lowest rates were resolved by looking at additional decimal places. See Technical Notes.

SOURCE: CDC/NCHS, National Vital Statistics System, public-use Birth File. See Appendix I, National Vital Statistics System (NVSS).

Data table for Figure 21 (page 1 of 2). Low-risk births delivered by cesarean section, by race and Hispanic origin and detailed Hispanic origin of mother: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig21

Year	Total[2]	Race and Hispanic origin of mother[1]				
			Not Hispanic or Latina			
		Hispanic or Latina	White	Black or African American	Asian or Pacific Islander	American Indian or Alaska Native
	Percent of low-risk births delivered by cesarean section[3]					
1999	19.5	18.7	19.2	21.9	19.6	17.1
2000	20.3	19.4	20.1	23.0	20.0	18.0
2001	21.6	20.6	21.4	24.3	21.9	18.8
2002	23.1	21.9	22.8	25.9	23.2	20.4
2003	24.3	23.2	24.0	27.4	24.9	21.1
2004	25.7	24.6	25.4	28.8	26.6	22.2
2005	26.6	25.1	26.4	29.8	27.8	23.2
2006	27.1	25.3	27.0	30.1	27.7	24.5
2007	27.5	26.0	27.4	30.5	28.3	24.5
2008	27.8	26.2	27.5	30.7	29.1	23.1
2009	28.1	27.0	27.7	31.1	29.6	24.1
2010	27.6	26.7	27.0	31.0	29.0	23.8
2011	27.3	26.6	26.6	30.9	28.8	22.1
2012	27.3	26.8	26.5	31.0	28.5	23.5
2013	26.9	26.6	25.9	30.8	28.6	23.0
2014[4]	26.0	25.8	25.0	29.9	27.6	21.5
	Standard error					
1999	0.03	0.08	0.04	0.10	0.15	0.37
2000	0.03	0.08	0.04	0.10	0.14	0.37
2001	0.04	0.08	0.05	0.10	0.15	0.37
2002	0.04	0.08	0.05	0.10	0.15	0.38
2003	0.04	0.08	0.05	0.11	0.15	0.38
2004	0.04	0.08	0.05	0.11	0.15	0.39
2005	0.04	0.08	0.05	0.11	0.15	0.39
2006	0.04	0.08	0.05	0.11	0.15	0.39
2007	0.04	0.08	0.05	0.11	0.15	0.39
2008	0.04	0.08	0.05	0.11	0.15	0.38
2009	0.04	0.08	0.05	0.11	0.15	0.39
2010	0.04	0.09	0.05	0.11	0.15	0.39
2011	0.04	0.09	0.05	0.11	0.15	0.39
2012	0.04	0.09	0.05	0.11	0.15	0.40
2013	0.04	0.09	0.05	0.11	0.15	0.40
2014[4]	0.04	0.09	0.05	0.11	0.14	0.40

See footnotes at end of table.

Data table for Figure 21 (page 2 of 2). Low-risk births delivered by cesarean section, by race and Hispanic origin and detailed Hispanic origin of mother: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig21

Year	Detailed Hispanic origin of mother[1]				
	Mexican	Puerto Rican	Cuban	Central and South American	Other and unknown Hispanic or Latina
	Percent of low-risk births delivered by cesarean section[3]				
1999	18.0	19.2	29.7	20.4	18.4
2000	18.6	20.5	30.7	21.2	19.1
2001	19.8	21.3	31.5	22.1	20.7
2002	21.1	23.2	32.8	23.5	21.7
2003	22.3	24.3	36.6	25.0	22.6
2004	23.5	26.8	38.5	26.8	23.7
2005	23.5	27.3	42.1	27.6	26.4
2006	23.3	28.8	44.8	27.7	27.5
2007	24.0	28.8	45.3	28.6	28.1
2008	24.5	29.0	45.4	28.6	26.8
2009	24.9	29.4	44.2	30.0	28.2
2010	24.6	29.4	42.0	29.5	28.0
2011	24.8	28.9	42.0	29.1	26.8
2012	25.0	28.9	43.3	29.4	27.1
2013	24.7	28.3	42.3	29.1	27.2
2014[4]	24.1	27.3	41.4	27.9	26.0
	Standard error				
1999	0.09	0.29	0.66	0.22	0.30
2000	0.09	0.30	0.65	0.21	0.31
2001	0.09	0.30	0.63	0.21	0.32
2002	0.09	0.31	0.63	0.21	0.32
2003	0.10	0.31	0.63	0.20	0.33
2004	0.10	0.32	0.64	0.20	0.34
2005	0.10	0.31	0.64	0.20	0.32
2006	0.10	0.31	0.63	0.20	0.30
2007	0.10	0.30	0.62	0.20	0.28
2008	0.10	0.30	0.62	0.21	0.23
2009	0.10	0.30	0.62	0.22	0.23
2010	0.11	0.31	0.62	0.22	0.23
2011	0.11	0.30	0.61	0.23	0.21
2012	0.11	0.31	0.62	0.24	0.21
2013	0.11	0.30	0.58	0.24	0.22
2014[4]	0.11	0.30	0.55	0.22	0.21

[1]Persons of Hispanic origin may be of any race. Starting with 2003 data, some states reported multiple-race data. The multiple-race data for these states were bridged to the single-race categories of the 1977 Office of Management and Budget standards, for comparability with other states. See Appendix II, Hispanic origin; Race.

[2]Includes all low-risk cesarean section births not shown separately.

[3]Low-risk cesarean delivery is defined as singleton, term (37 or more weeks of gestation by last menstrual period estimate for data years 1999–2013 and the obstetric estimate for 2014), vertex (not breech) cesarean delivery to women having a first birth per 100 women delivering singleton, term, vertex, first births.

[4]For 2014, the definition of term birth was based on the obstetric estimate of gestational age. For more information on the obstetric estimate, see: Martin JA, Osterman MJK, Kirmeyer SE, Gregory ECW. Measuring gestational age in vital statistics data: Transitioning to the obstetric estimate. National vital statistics reports; vol 64 no 5. Hyattsville, MD: NCHS. 2015. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_05.pdf. Use of the obstetric estimate instead of the last menstrual period had a statistically significant but small impact on the percentage of women with low-risk cesarean section births.

NOTES: Ties in highest and lowest rates were resolved by looking at additional decimal places. See Technical Notes.

SOURCE: CDC/NCHS, National Vital Statistics System, public-use Birth File. See Appendix I, National Vital Statistics System (NVSS).

Data table for Figure 22. Obesity among children and adolescents aged 2–19, by age and race and Hispanic origin: United States, 2011–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig22

Age	Total[2]	Race and Hispanic origin[1]			
		Hispanic or Latino	Not Hispanic or Latino		
			White only	Black or African American only	Asian only
	Percent with obesity[3]				
2–19	17.0	21.9	14.7	19.5	8.6
2–5 years	8.9	15.6	*5.2	10.4	*
6–11 years	17.5	25.0	13.6	21.4	*9.8
12–19 years	20.5	22.8	19.6	22.6	9.4
	Standard error				
2–19	0.7	0.9	1.2	1.2	1.1
2–5 years	0.9	1.6	1.2	1.5	*
6–11 years	1.2	1.4	2.0	2.0	2.0
12–19 years	1.4	1.6	2.5	2.3	1.6

[1]Persons of Hispanic origin may be of any race. Starting with 1999 data, race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity.* The three non-Hispanic race categories shown in the table conform to the 1997 Standards. Race-specific estimates are for persons who reported only one racial group. See Appendix II, Hispanic origin; Race.

[2]Includes all persons not shown separately.

[3]Obesity is defined as a body mass index at or above the sex- and age-specific 95th percentile of the CDC growth charts. Pregnant women are excluded.

NOTE: Also see Table 59 and Figure 8.

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey. See Appendix I, National Health and Nutrition Examination Survey (NHANES).

Data table for Figure 23 (page 1 of 2). Hypertension among adults aged 20 and over, by sex and race and Hispanic origin: United States, 1999–2000 through 2013–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig23

Characteristic	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014
				Percent with hypertension[1]				
Both sexes								
20 years and over, crude[2]	28.9	28.9	32.5	31.7	32.6	31.9	32.5	33.5
20 years and over, age-adjusted[2,3]	30.0	29.7	32.1	30.5	31.2	30.0	30.0	30.8
Race and Hispanic origin[3,4]								
Mexican origin	29.4	25.2	29.9	24.4	28.9	28.2	28.0	28.8
Not Hispanic or Latino:								
White only	28.4	27.9	30.8	29.1	30.7	28.6	28.6	29.6
Black only	40.9	43.4	42.6	44.1	42.4	42.9	43.9	42.7
				Standard error				
Both sexes								
20 years and over, crude[2]	1.5	1.3	1.3	1.2	0.9	1.3	1.5	1.0
20 years and over, age-adjusted[2,3]	1.4	1.0	1.0	1.2	0.7	0.8	0.7	0.8
Race and Hispanic origin[3,4]								
Mexican origin	1.5	1.1	2.0	1.6	1.4	1.1	2.5	1.5
Not Hispanic or Latino:								
White only	1.7	1.1	1.2	1.3	1.0	1.1	0.8	0.9
Black only	1.1	1.9	1.8	1.7	1.8	1.6	1.0	1.5

See footnotes at end of table.

Data table for Figure 23 (page 2 of 2). Hypertension among adults aged 20 and over, by sex and race and Hispanic origin: United States, 1999–2000 through 2013–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig23

Characteristic	*2011–2014*	
	Percent	Standard error
Both sexes		
20 years and over, crude[2]	33.0	0.9
20 years and over, age-adjusted[2,3]	30.4	0.5
Race and Hispanic origin[3,4]		
Hispanic or Latino	28.2	1.1
Not Hispanic or Latino:		
White only	29.1	0.6
Black only	43.3	0.9
Asian only	26.5	1.1
Men		
20 years and over, crude[2]	32.6	1.1
20 years and over, age-adjusted[2,3]	31.0	0.7
Race and Hispanic origin[3,4]		
Hispanic or Latino	27.7	1.5
Not Hispanic or Latino:		
White only	30.2	1.0
Black only	42.4	1.2
Asian only	28.0	2.0
Women		
20 years and over, crude[2]	33.4	1.0
20 years and over, age-adjusted[2,3]	29.7	0.8
Race and Hispanic origin[3,4]		
Hispanic or Latina	28.6	1.1
Not Hispanic or Latina:		
White only	28.0	0.8
Black only	44.0	1.4
Asian only	25.0	1.0

[1]Hypertension is having measured high blood pressure (systolic pressure of at least 140 mm Hg or diastolic pressure of at least 90 mm Hg) and/or respondent report of taking antihypertensive medication. Excludes pregnant women.

[2]Includes all persons not shown separately.

[3]Estimates are age-adjusted to the year 2000 standard population using five age groups: 20–34 years, 35–44 years, 45–54 years, 55–64 years, and 65 years and over. Age-adjusted estimates in this table may differ from other age-adjusted estimates based on the same data and presented elsewhere if different age groups are used in the adjustment procedure. See Appendix II, Age adjustment.

[4]Persons of Mexican or Hispanic origin may be of any race. Starting with 1999 data, race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity* and are not strictly comparable with estimates for earlier years. The three non-Hispanic race categories shown in the table conform to the 1997 Standards. Starting with 1999 data, race-specific estimates are for persons who reported only one racial group. Data for Hispanic adults became available in 2007–2008 and for Asian adults starting in 2011–2012. See Appendix II, Hispanic origin; Race.

NOTE: Also see Table 54.

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey. See Appendix I, National Health and Nutrition Examination Survey (NHANES).

Data table for Figure 24 (page 1 of 3). Current cigarette smoking among adults aged 18 and over, by sex and race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig24

Sex, age, and year	Total[2]		Race and Hispanic origin[1]			
				Not Hispanic or Latino[3]		
	Crude	Age-adjusted[3]	Hispanic or Latino[3]	White only	Black only	Asian only
Men, 18 years and over	Percent current smokers[4]					
1999	25.7	25.2	22.7	25.4	28.4	23.5
2000	25.6	25.2	23.5	25.8	25.7	19.5
2001	25.1	24.6	20.7	25.4	27.7	18.7
2002	25.1	24.6	21.4	25.5	26.7	17.5
2003	24.1	23.7	21.2	24.6	25.2	16.6
2004	23.4	23.0	17.9	24.2	23.5	16.7
2005	23.9	23.4	19.6	24.2	26.1	20.4
2006	23.9	23.6	19.3	24.6	26.8	15.6
2007	22.3	22.0	17.4	23.6	23.7	14.5
2008	23.1	22.8	19.1	23.9	24.9	15.1
2009	23.5	23.2	17.7	25.0	23.3	16.4
2010	21.5	21.2	15.2	23.0	23.7	14.6
2011	21.6	21.2	16.5	22.6	23.6	14.2
2012	20.5	20.6	16.9	22.0	22.1	15.6
2013	20.5	20.5	16.7	21.8	21.7	14.6
2014	18.8	19.0	13.8	20.1	22.0	14.0
Women, 18 years and over						
1999	21.5	21.6	11.9	23.8	20.5	*6.3
2000	20.9	21.1	12.9	23.1	20.8	7.4
2001	20.6	20.7	11.5	23.5	17.8	*6.0
2002	19.8	20.0	10.8	22.5	18.5	6.8
2003	19.2	19.4	10.4	22.1	18.1	6.0
2004	18.5	18.7	10.6	21.2	16.8	*4.9
2005	18.1	18.3	10.9	20.8	17.1	*5.9
2006	18.0	18.1	9.9	20.6	18.8	4.5
2007	17.4	17.5	8.4	20.7	15.5	*3.8
2008	18.3	18.5	10.4	21.5	17.4	4.7
2009	17.9	18.1	9.5	20.7	18.9	7.3
2010	17.3	17.5	9.1	20.4	16.8	4.3
2011	16.5	16.8	8.3	19.8	15.3	5.5
2012	15.8	15.9	7.5	19.2	14.3	5.4
2013	15.3	15.5	6.8	18.6	15.1	4.6
2014	14.8	15.1	7.4	18.3	13.7	5.1

See footnotes at end of table.

Data table for Figure 24 (page 2 of 3). Current cigarette smoking among adults aged 18 and over, by sex and race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig24

Sex, age, and year	Total[2]		Race and Hispanic origin[1]			
				Not Hispanic or Latino[3]		
	Crude	Age-adjusted[3]	Hispanic or Latino[3]	White only	Black only	Asian only
Men, 18 years and over			Standard error			
1999	0.5	0.5	1.1	0.6	1.5	2.9
2000	0.5	0.4	1.1	0.5	1.2	2.1
2001	0.4	0.4	1.0	0.5	1.3	2.4
2002	0.5	0.4	1.0	0.5	1.3	2.1
2003	0.4	0.4	1.1	0.5	1.2	2.1
2004	0.4	0.4	0.9	0.5	1.2	2.1
2005	0.5	0.5	0.9	0.6	1.3	2.3
2006	0.5	0.5	1.2	0.7	1.6	1.6
2007	0.6	0.5	1.3	0.7	1.4	1.6
2008	0.6	0.6	1.3	0.7	1.5	1.9
2009	0.5	0.5	0.9	0.7	1.2	1.5
2010	0.5	0.5	0.9	0.6	1.1	1.6
2011	0.4	0.4	0.9	0.6	1.1	1.3
2012	0.4	0.4	0.9	0.6	1.1	1.4
2013	0.5	0.5	1.0	0.6	1.2	1.6
2014	0.4	0.4	0.8	0.6	1.1	1.6
Women, 18 years and over						
1999	0.4	0.4	0.7	0.5	0.9	1.3
2000	0.4	0.4	0.8	0.5	0.9	1.4
2001	0.4	0.4	0.7	0.5	0.8	1.2
2002	0.4	0.4	0.7	0.5	0.9	1.3
2003	0.4	0.4	0.7	0.5	0.9	1.1
2004	0.4	0.4	0.7	0.5	0.9	1.1
2005	0.4	0.4	0.7	0.5	0.9	1.2
2006	0.4	0.4	0.8	0.6	1.0	0.8
2007	0.5	0.5	0.7	0.6	0.9	0.8
2008	0.5	0.5	0.8	0.7	1.0	0.8
2009	0.4	0.4	0.7	0.6	1.1	1.3
2010	0.4	0.4	0.6	0.6	0.9	0.7
2011	0.4	0.4	0.6	0.5	0.8	0.8
2012	0.4	0.4	0.6	0.5	0.7	0.8
2013	0.4	0.4	0.5	0.6	0.8	0.8
2014	0.4	0.4	0.5	0.7	0.8	0.9

See footnotes at end of table.

Data table for Figure 24 (page 3 of 3). Current cigarette smoking among adults aged 18 and over, by sex and race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig24

Sex, age, and year[5]	Race and Hispanic origin[1]					
		Not Hispanic or Latino[3]				
	Hispanic or Latino[3]	White only	Black only	Asian only	American Indian or Alaska Native only	2 or more races
Men, 18 years and over	Percent current smokers[4]					
1999–2001	22.2	25.5	27.2	20.1	32.6	35.2
2003–2005	19.5	24.3	24.9	18.1	36.4	31.4
2006–2008	18.6	24.0	25.1	15.2	39.2	24.8
2009–2011	16.4	23.5	23.5	15.0	31.1	28.9
2012–2014	15.7	21.3	21.9	14.8	28.0	29.8
Women, 18 years and over						
1999–2001	12.1	23.5	19.7	6.6	36.3	31.6
2003–2005	10.6	21.4	17.3	5.6	29.0	27.0
2006–2008	9.5	20.9	17.2	4.3	28.2	25.9
2009–2011	9.0	20.3	17.0	5.6	26.2	24.8
2012–2014	7.3	18.7	14.4	5.0	24.0	25.1
Men, 18 years and over	Standard error					
1999–2001	0.6	0.3	0.8	1.4	4.4	2.6
2003–2005	0.6	0.3	0.8	1.3	3.8	2.7
2006–2008	0.7	0.4	0.9	1.0	5.7	2.7
2009–2011	0.5	0.4	0.7	0.9	4.6	2.6
2012–2014	0.5	0.4	0.7	0.9	3.5	2.2
Women, 18 years and over						
1999–2001	0.4	0.3	0.5	0.7	3.5	2.5
2003–2005	0.4	0.3	0.5	0.7	3.6	2.4
2006–2008	0.4	0.4	0.6	0.5	3.8	2.4
2009–2011	0.4	0.4	0.6	0.6	3.4	2.0
2012–2014	0.3	0.3	0.5	0.5	3.2	2.1

* Estimates are considered unreliable. Data preceded by an asterisk have a relative standard error of 20%–30%.

[1]Persons of Hispanic origin may be of any race. Race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity*. The single-race categories plus multiple-race category shown in the table conform to the 1997 Standards. Starting with 2003 data, race responses of other race and unspecified multiple race were treated as missing, and then race was imputed if these were the only race responses. Almost all persons with a race response of other race were of Hispanic origin. See Appendix II, Hispanic origin; Race.

[2]Includes all persons not shown separately.

[3]Estimates are age-adjusted to the year 2000 standard population using five age groups: 18–24 years, 25–34 years, 35–44 years, 45–64 years, and 65 years and over. Age-adjusted estimates in this table may differ from other age-adjusted estimates based on the same data and presented elsewhere if different age groups are used in the adjustment procedure. See Appendix II, Age adjustment.

[4]Current cigarette smokers are defined as ever smoking 100 cigarettes in their lifetime and now smoke every day or some days. See Appendix II, Cigarette smoking.

[5]Three-year average annual estimates are shown in order to present estimates for the American Indian or Alaska Native and the multiple-race populations. Annual estimates are not stable for smaller population groups.

NOTES: Ties in highest and lowest rates were resolved by looking at additional decimal places. See Technical Notes. Also see Figure 7.

SOURCE: CDC/NCHS, National Health Interview Survey. Family core and sample adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).

Data table for Figure 25 (page 1 of 3). Influenza vaccination among adults aged 18 and over, by age and race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig25

Age and year	Total[2]	Race and Hispanic origin[1]			
		Hispanic or Latino	Not Hispanic or Latino		
			White only	Black only	Asian only
18–64 years		Percent with influenza vaccination in the past year[3]			
1999	20.6	15.0	21.9	17.7	19.5
2000	21.4	14.6	23.2	16.2	23.8
2001	19.3	13.3	20.8	16.8	18.3
2002	20.8	14.3	22.2	18.4	21.7
2003	22.1	14.1	24.1	19.3	20.1
2004	22.7	14.3	25.3	17.0	23.3
2005	14.1	9.5	15.5	12.4	11.3
2006	20.5	13.5	22.4	18.1	21.1
2007	23.0	16.2	25.3	17.9	24.0
2008	25.8	17.6	28.2	22.3	25.8
2009	28.3	20.7	30.7	24.4	31.4
2010	30.1	23.8	32.2	24.6	35.0
2011	31.9	26.1	34.0	27.7	34.7
2012	31.5	25.2	33.4	27.5	37.5
2013	35.0	26.1	37.8	29.6	40.9
2014	35.8	27.9	38.5	30.8	41.3
65 years and over					
1999	65.7	55.1	67.9	49.7	71.7
2000	64.4	55.7	66.6	48.0	58.6
2001	63.1	51.8	65.4	47.9	58.6
2002	65.7	48.5	68.7	49.4	58.4
2003	65.5	45.4	68.6	47.8	63.3
2004	64.6	54.6	67.3	45.6	59.0
2005	59.7	41.7	63.2	39.6	58.9
2006	64.3	44.9	67.4	47.1	67.9
2007	66.7	52.3	69.4	55.4	63.4
2008	67.2	54.9	70.0	50.9	68.5
2009	66.8	57.0	69.0	52.9	68.9
2010	63.9	54.6	65.9	52.8	67.3
2011	66.9	57.3	69.0	53.4	69.5
2012	66.5	57.8	68.9	53.2	65.2
2013	67.9	57.2	70.2	55.9	70.0
2014	70.1	60.8	72.4	57.4	72.7

See footnotes at end of table.

Data table for Figure 25 (page 2 of 3). Influenza vaccination among adults aged 18 and over, by age and race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig25

Age and year	Total[2]	Race and Hispanic origin[1]			
		Hispanic or Latino	Not Hispanic or Latino		
			White only	Black only	Asian only
		Standard error			
18–64 years					
1999	0.3	0.7	0.4	0.8	1.7
2000	0.3	0.7	0.4	0.7	1.9
2001	0.3	0.6	0.4	0.8	1.5
2002	0.3	0.7	0.4	0.8	1.7
2003	0.3	0.6	0.4	0.8	1.6
2004	0.3	0.6	0.4	0.8	1.7
2005	0.3	0.5	0.3	0.7	1.3
2006	0.4	0.7	0.5	0.9	1.5
2007	0.4	0.8	0.6	0.9	1.8
2008	0.4	0.8	0.5	1.0	1.7
2009	0.4	0.8	0.5	1.1	1.8
2010	0.4	0.8	0.6	0.9	1.6
2011	0.4	0.8	0.5	0.9	1.4
2012	0.4	0.8	0.5	0.9	1.6
2013	0.4	0.8	0.5	1.0	1.6
2014	0.4	0.9	0.6	1.0	1.6
65 years and over					
1999	0.8	2.7	0.8	2.3	5.9
2000	0.7	2.6	0.8	2.3	5.9
2001	0.7	2.6	0.8	2.4	6.2
2002	0.7	2.7	0.8	2.3	5.5
2003	0.7	2.7	0.8	2.3	6.0
2004	0.7	2.7	0.8	2.4	6.0
2005	0.8	2.8	0.8	2.1	4.7
2006	0.9	2.9	1.1	2.3	3.9
2007	0.8	3.1	1.0	2.3	4.5
2008	0.9	3.1	1.0	2.5	3.7
2009	0.8	2.9	0.9	2.3	3.3
2010	0.8	2.6	0.9	2.1	3.5
2011	0.7	2.2	0.8	1.8	3.4
2012	0.8	2.3	0.9	2.1	3.2
2013	0.7	2.2	0.9	2.0	3.4
2014	0.7	2.2	0.8	2.0	2.8

See footnotes at end of table.

Data table for Figure 25 (page 3 of 3). Influenza vaccination among adults aged 18 and over, by age and race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig25

Age and year[4]	Race and Hispanic origin[1]					
		Not Hispanic or Latino				
	Hispanic or Latino	White only	Black only	Asian only	American Indian or Alaska Native	2 or more races
	Percent with influenza vaccination in the past year[3]					
18–64 years						
1999–2001	14.3	22.0	16.9	20.5	24.1	20.2
2003–2005	12.6	21.6	16.2	18.1	20.9	20.8
2006–2008	15.8	25.3	19.4	23.6	26.8	24.5
2009–2011	23.6	32.3	25.5	33.7	33.4	24.8
2012–2014	26.4	36.5	29.3	39.9	43.0	30.8
65 years and over						
1999–2001	54.2	66.6	48.5	62.8	54.9	67.5
2003–2005	47.2	66.4	44.3	60.2	60.4	63.6
2006–2008	50.9	68.9	51.1	66.8	69.9	59.2
2009–2011	56.3	68.0	53.0	68.6	63.0	71.9
2012–2014	58.7	70.6	55.6	69.5	65.1	56.5
	Standard error					
18–64 years						
1999–2001	0.4	0.2	0.4	1.0	2.2	1.7
2003–2005	0.4	0.2	0.4	0.9	2.4	1.7
2006–2008	0.5	0.4	0.5	1.0	4.5	2.1
2009–2011	0.5	0.3	0.5	0.9	3.1	1.7
2012–2014	0.5	0.3	0.5	0.9	3.1	1.7
65 years and over						
1999–2001	1.6	0.5	1.4	3.6	8.1	5.2
2003–2005	1.6	0.5	1.4	3.2	7.7	5.3
2006–2008	1.7	0.6	1.4	2.4	6.5	5.2
2009–2011	1.5	0.5	1.2	2.1	7.9	4.4
2012–2014	1.3	0.5	1.2	1.9	6.1	4.1

[1]Persons of Hispanic origin may be of any race. Race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity*. The single-race categories plus multiple-race category shown in the table conform to the 1997 Standards. Starting with 2003 data, race responses of other race and unspecified multiple race were treated as missing, and then race was imputed if these were the only race responses. Almost all persons with a race response of other race were of Hispanic origin. See Appendix II, Hispanic origin; Race.

[2]Includes all persons not shown separately.

[3]Influenza vaccination is based on respondent report of receipt of a seasonal flu shot or influenza nasal spray (starting in 2005). Questions concerning use of influenza vaccination differed slightly on the National Health Interview Survey across the years for which data are shown. See Appendix II, Vaccination.

[4]Three-year average annual estimates are shown in order to present estimates for the American Indian or Alaska Native and the multiple-race populations. Annual estimates are not stable for smaller population groups.

NOTES: Also see Table 68. Ties in highest and lowest rates were resolved by looking at additional decimal places. See Technical Notes. Prevalence of influenza vaccination during the past 12 months is different from season-specific coverage, see: CDC. Surveillance of influenza vaccination coverage—United States, 2007–08 through 2011–12 influenza seasons. MMWR 2013;62(ss04):1–29. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w; and CDC. FluVaxView. Available from: http://www.cdc.gov/flu/fluvaxview/. The recommendations of the Advisory Committee on Immunization Practices regarding who should receive an influenza vaccination have changed over the years, and changes in coverage estimates may reflect changes in recommendations. An influenza vaccine shortage occurred during the 2004–2005 influenza season. Delays in the availability of influenza shots also occurred in fall 2000 and, to a lesser extent, in fall 2001.

SOURCE: CDC/NCHS, National Health Interview Survey. Family core and sample adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).

Data table for Figure 26 (page 1 of 3). No health insurance coverage among persons under age 65, by age and race and Hispanic origin: United States, 1999–June 2015 (preliminary data)

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig26

Age and year	Total[2]	Race and Hispanic origin[1]			
		Hispanic or Latino	Not Hispanic or Latino		
			White only	Black only	Asian only
		Percent without health insurance coverage[3]			
Under 18 years					
1999	11.9	26.7	8.1	11.9	10.4
2000	12.6	25.9	8.7	12.2	12.5
2001	11.2	24.6	7.2	10.6	12.6
2002	10.9	21.9	7.5	10.0	13.4
2003	9.8	20.2	6.4	8.9	12.0
2004	9.2	19.5	6.4	6.9	10.5
2005	9.3	17.5	6.5	8.9	11.4
2006	9.5	19.4	6.2	7.8	8.3
2007	9.0	15.3	7.1	6.2	8.0
2008	9.0	16.8	6.7	7.5	6.5
2009	8.2	14.7	6.0	6.6	7.5
2010	7.8	13.0	5.8	6.4	8.7
2011	7.0	12.3	4.8	5.5	7.8
2012	6.6	10.9	5.2	4.4	7.8
2013	6.6	11.8	4.7	5.1	5.9
2014	5.4	9.7	4.1	3.5	*4.3
2015, Jan–Jun[4]	4.5	8.0	3.6	2.9	*
18–64 years					
1999	17.9	38.5	13.6	23.0	19.1
2000	18.9	41.4	13.9	23.6	19.5
2001	18.5	41.1	13.5	23.0	18.9
2002	19.3	40.8	14.4	23.2	18.7
2003	19.3	42.8	13.9	22.9	20.3
2004	19.3	42.9	14.0	22.7	18.6
2005	19.3	41.8	13.9	23.1	18.9
2006	20.0	43.8	14.6	22.2	16.5
2007	19.6	41.1	14.4	22.0	16.9
2008	19.9	42.6	14.4	22.9	15.7
2009	21.2	43.4	15.6	24.4	17.8
2010	22.3	43.3	16.3	27.1	19.4
2011	21.2	42.1	15.6	24.6	18.8
2012	20.9	41.3	15.1	23.6	19.1
2013	20.5	41.1	14.5	24.7	16.1
2014	16.3	34.1	11.5	17.6	12.1
2015, Jan–Jun[4]	12.7	27.2	8.8	14.5	7.3

See footnotes at end of table.

Data table for Figure 26 (page 2 of 3). No health insurance coverage among persons under age 65, by age and race and Hispanic origin: United States, 1999–June 2015 (preliminary data)

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig26

Age and year	Total[2]	Race and Hispanic origin[1]			
		Hispanic or Latino	Not Hispanic or Latino		
			White only	Black only	Asian only
		Standard error			
Under 18 years					
1999	0.3	0.9	0.4	0.8	1.5
2000	0.3	0.9	0.4	0.8	1.9
2001	0.4	0.9	0.4	0.9	2.1
2002	0.3	0.8	0.4	0.8	1.9
2003	0.3	0.8	0.4	0.7	2.1
2004	0.3	0.8	0.4	0.6	1.8
2005	0.3	0.7	0.4	0.7	1.9
2006	0.3	0.9	0.4	0.7	1.3
2007	0.4	0.8	0.5	0.6	1.4
2008	0.4	0.8	0.6	0.8	1.1
2009	0.4	0.8	0.5	0.6	1.1
2010	0.3	0.6	0.3	0.6	1.1
2011	0.3	0.6	0.3	0.6	1.1
2012	0.3	0.6	0.3	0.5	1.4
2013	0.3	0.6	0.3	0.6	1.0
2014	0.2	0.5	0.3	0.4	0.9
2015, Jan–Jun[4]	0.4	0.7	0.5	0.6	*
18–64 years					
1999	0.3	0.8	0.3	0.7	1.4
2000	0.3	0.9	0.3	0.7	1.4
2001	0.3	0.8	0.3	0.7	1.3
2002	0.3	0.8	0.3	0.7	1.3
2003	0.3	0.8	0.3	0.7	1.4
2004	0.3	0.8	0.3	0.6	1.4
2005	0.3	0.7	0.3	0.7	1.2
2006	0.3	0.9	0.3	0.7	1.1
2007	0.3	0.8	0.3	0.7	1.1
2008	0.3	0.9	0.3	0.7	1.0
2009	0.3	0.9	0.3	0.7	1.1
2010	0.3	0.8	0.4	0.7	0.9
2011	0.3	0.7	0.3	0.6	0.9
2012	0.3	0.7	0.3	0.7	1.0
2013	0.3	0.8	0.3	0.6	0.8
2014	0.3	0.7	0.3	0.6	0.7
2015, Jan–Jun[4]	0.3	0.9	0.3	0.7	0.6

See footnotes at end of table.

Data table for Figure 26 (page 3 of 3). No health insurance coverage among persons under age 65, by age and race and Hispanic origin: United States, 1999–June 2015 (preliminary data)

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig26

Age and year[5]	Race and Hispanic origin[1]					
		Not Hispanic or Latino				
	Hispanic or Latino	White only	Black only	Asian only	American Indian or Alaska Native only	2 or more races
	Percent without health insurance coverage[3]					
Under 18 years						
1999–2001	25.7	8.0	11.6	11.9	34.1	10.3
2003–2005	19.1	6.4	8.2	11.3	31.6	6.3
2006–2008	17.1	6.7	7.2	7.6	*24.2	9.2
2009–2011	13.3	5.5	6.2	8.0	*26.1	6.0
2012–2014	10.8	4.7	4.3	5.9	13.8	4.6
18–64 years						
1999–2001	40.4	13.7	23.2	19.2	39.8	21.1
2003–2005	42.5	13.9	22.9	19.2	36.9	21.1
2006–2008	42.5	14.5	22.4	16.4	39.1	22.4
2009–2011	42.9	15.8	25.4	18.7	39.9	25.3
2012–2014	38.8	13.7	22.0	15.7	33.2	19.4
	Standard error					
Under 18 years						
1999–2001	0.6	0.2	0.5	1.1	4.0	1.1
2003–2005	0.5	0.2	0.4	1.1	4.0	0.9
2006–2008	0.5	0.3	0.4	0.8	7.2	1.0
2009–2011	0.4	0.2	0.4	0.7	7.3	0.7
2012–2014	0.4	0.2	0.3	0.7	2.6	0.5
18–64 years						
1999–2001	0.6	0.2	0.4	0.8	3.2	1.3
2003–2005	0.5	0.2	0.4	0.8	2.7	1.3
2006–2008	0.6	0.2	0.4	0.7	5.8	1.2
2009–2011	0.5	0.2	0.4	0.6	6.0	1.2
2012–2014	0.6	0.2	0.4	0.5	2.8	1.0

* Estimates are considered unreliable. Data preceded by an asterisk have a relative standard error (RSE) of 20%–30%. Data not shown have an RSE greater than 30%.

[1]Persons of Hispanic origin may be of any race. Race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity*. The single-race categories plus multiple-race category shown in the table conform to the 1997 Standards. Starting with 2003 data, race responses of other race and unspecified multiple race were treated as missing, and then race was imputed if these were the only race responses. Almost all persons with a race response of other race were of Hispanic origin. See Appendix II, Hispanic origin; Race.

[2]Includes all persons not shown separately.

[3]Persons not covered by private insurance, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government-sponsored health plans (starting in 1997), Medicare, or military plans are considered to have no health insurance coverage. Persons with only Indian Health Service coverage are considered to have no health insurance coverage. Health insurance coverage is at the time of interview.

[4]Preliminary data based on the National Health Interview Survey's Early Release program. Estimates based on the preliminary 6-month file may differ from estimates based on the final annual file and have larger standard errors associated with them than standard errors based on a final annual file. Available from: Martinez ME, Cohen RA. Health insurance coverage: Early release of estimates from the National Health Interview Survey, January–June 2015. NCHS. November 2015. Available from: http://www.cdc.gov/nchs/nhis/releases.htm and National Health Interview Survey, 2015 preliminary file. For more information, visit: http://www.cdc.gov/nchs/nhis.htm.

[5]Three-year average annual estimates are shown in order to present estimates for the American Indian or Alaska Native and the multiple-race populations. Annual estimates are not stable for smaller population groups.

NOTES: Also see Tables 102–105 and Figure 16. Ties in highest and lowest rates were resolved by looking at additional decimal places. See Technical Notes.

SOURCE: CDC/NCHS, National Health Interview Survey. Family core and sample adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).

Data table for Figure 27 (page 1 of 2). Nonreceipt of needed dental care in the past 12 months due to cost among adults aged 18–64, by race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig27

Age and year	Total[2]	Race and Hispanic origin[1]			
		Hispanic or Latino	Not Hispanic or Latino		
			White only	Black only	Asian only
18–64 years	Percent who did not receive needed dental care in the past 12 months due to cost[3]				
1999	9.3	8.5	9.3	10.4	4.5
2000	9.7	9.8	9.8	10.1	5.3
2001	10.4	12.0	10.2	10.3	5.1
2002	10.4	11.1	10.0	12.4	7.4
2003	11.5	13.5	11.1	12.8	5.3
2004	13.2	15.8	12.9	14.1	5.4
2005	13.0	15.5	12.3	15.3	6.8
2006	13.6	16.5	12.9	16.0	6.6
2007	13.0	16.0	12.5	13.6	7.5
2008	15.9	20.8	14.9	18.2	7.8
2009	16.8	22.2	15.5	19.0	9.1
2010	17.3	21.6	16.2	20.8	8.4
2011	16.4	21.1	15.4	18.2	9.4
2012	14.8	18.3	13.7	17.0	10.4
2013	14.3	18.4	13.3	16.3	8.8
2014	12.6	15.7	11.9	14.6	6.3
		Standard error			
1999	0.2	0.5	0.3	0.7	0.9
2000	0.2	0.6	0.3	0.6	0.9
2001	0.2	0.6	0.3	0.6	0.9
2002	0.2	0.6	0.3	0.8	1.1
2003	0.3	0.7	0.3	0.7	0.9
2004	0.3	0.7	0.3	0.7	0.8
2005	0.3	0.6	0.3	0.8	1.0
2006	0.3	0.8	0.4	0.9	1.0
2007	0.3	0.8	0.4	0.8	0.9
2008	0.4	1.1	0.5	0.9	1.0
2009	0.4	1.0	0.5	0.9	1.0
2010	0.3	0.8	0.4	0.8	0.9
2011	0.3	0.7	0.4	0.8	0.9
2012	0.3	0.7	0.4	0.8	1.0
2013	0.3	0.7	0.4	0.7	0.9
2014	0.3	0.6	0.4	0.8	0.7

See footnotes at end of table.

Data table for Figure 27 (page 2 of 2). Nonreceipt of needed dental care in the past 12 months due to cost among adults aged 18–64, by race and Hispanic origin: United States, 1999–2014

Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2015.htm#fig27

Age and year[4]	Race and Hispanic origin[1]					
		Not Hispanic or Latino				
	Hispanic or Latino	White only	Black only	Asian only	American Indian or Alaska Native only	2 or more races
	Percent who did not receive needed dental care in the past 12 months due to cost[3]					
18–64 years						
1999–2001	10.2	9.8	10.3	5.0	11.6	18.7
2003–2005	14.9	12.1	14.1	5.8	18.9	19.5
2006–2008	17.8	13.5	15.9	7.3	15.8	21.7
2009–2011	21.6	15.7	19.4	9.0	19.6	25.2
2012–2014	17.4	12.9	16.0	8.5	11.1	19.5
	Standard error					
1999–2001	0.3	0.2	0.4	0.5	1.7	1.7
2003–2005	0.4	0.2	0.4	0.5	2.8	1.6
2006–2008	0.5	0.3	0.5	0.6	3.0	2.0
2009–2011	0.5	0.3	0.5	0.5	2.6	1.8
2012–2014	0.4	0.3	0.5	0.5	1.9	1.5

[1]Persons of Hispanic origin may be of any race. Race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity*. The single-race categories plus multiple-race category shown in the table conform to the 1997 Standards. Starting with 2003 data, race responses of other race and unspecified multiple race were treated as missing, and then race was imputed if these were the only race responses. Almost all persons with a race response of other race were of Hispanic origin. See Appendix II, Hispanic origin; Race.

[2]Includes all persons not shown separately.

[3]Based on persons responding to the question, "During the past 12 months was there any time when [person] needed dental care (including checkups) but didn't get it because [person] couldn't afford it?"

[4]Three-year average annual estimates are shown in order to present estimates for the American Indian or Alaska Native and the multiple-race populations. Annual estimates are not stable for smaller population groups.

NOTE: Also see Table 63.

SOURCE: CDC/NCHS, National Health Interview Survey. Family core and sample adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).

Data Sources

Data for the *Health, United States, 2015* Chartbook come from many surveys and data systems and cover a broad range of years. Detailed descriptions of the data sources included in the Chartbook are provided in Appendix I. Data Sources. Additional information clarifying and qualifying the data is included in the table notes and in Appendix II. Definitions and Methods.

Data Presentation

Many measures in the Chartbook are shown for people in specific age groups because of the strong effect of age on most health outcomes. Age-adjusted rates and age-adjusted percentages are computed to eliminate differences in observed rates that result from age differences in population composition (see Appendix II, Age adjustment). Age-adjusted rates and age-adjusted percentages are noted as such in the text; rates and percentages without this notation are crude rates and crude percentages. For some charts, data years are combined to increase sample size and the reliability of the estimates. Some charts present time trends, and others focus on differences in estimates among population subgroups for the most recent time point available. Figures 1–17 and the Highlights section generally present trends for the recent 10-year period. For some indicators, a slightly longer or shorter period may be shown due to design or data comparability issues. Trends are generally shown on a linear scale to emphasize absolute differences over time. The time trends for the overall mortality measures are shown on a logarithmic (log) scale to enable measures with large differences in magnitude to be shown on the same chart.

Point estimates and standard errors for Figures 1–17 are available either in the Trend Table and Excel spreadsheet specified in the note below the chart, or in the Chartbook tables section. For the Special Feature on racial and ethnic health disparities (Figures 18–27), data tables with point estimates and standard errors are contained in the Chartbook tables section. These data tables may include additional data that were not graphed because of space considerations.

Reliability of Estimates

Overall estimates generally have relatively small sampling errors, but estimates for certain population subgroups may be based on small numbers and have relatively large sampling errors. Numbers of deaths obtained from the National Vital Statistics System represent complete counts and therefore are not subject to sampling error. They are, however, subject to random variation, which means that the number of events that actually occur in a given year may be considered as one of a large series of possible results that could have arisen under the same circumstances. When the number of events is small and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the charts. Estimates that are unreliable because of large sampling errors or small numbers of events have been noted with an asterisk. The criteria used to designate or suppress unreliable estimates are indicated in the notes to the applicable tables or charts.

For NCHS surveys, point estimates and their corresponding variances were calculated using the SUDAAN software package, which takes into consideration the complex survey design (94). Standard errors for other surveys or data sets were computed using the methodology recommended by the programs providing the data, or were provided directly by those programs.

Statistical Testing

Data trends can be described in many ways. For most trend analyses presented in the Chartbook, increases or decreases in the estimates during the entire time period shown are assessed by the weighted least squares regression method in the National Cancer Institute's Joinpoint software (with Grid search and Bayesian Information Criterion (BIC) model selection). The default maximum number of joinpoints based on the number of available data points in the trend was used. Statistically significant changes in the trend were assessed at the 0.05 level. For more information on Joinpoint, see: http://surveillance.cancer.gov/joinpoint. Statistical significance of differences between regression coefficients at the 0.05 level was also taken into account to select a model with the fewest joinpoints or changes in trend. For some trend charts, there were too few observations for Joinpoint analysis. In those cases, either the difference between two points was assessed for statistical significance using *z*-tests or the statistical testing methods recommended by the data systems were used. Trend analyses using weighted least squares regression for Figures 1–17 were carried out on the log scale so that results provide estimates of percent change. However, as discussed below, trend analyses for figures in the Special Feature were carried out on the linear scale.

For analyses that show two time points, differences between the two points were assessed for statistical significance at the 0.05 level using two-sided significance tests (*z*-tests) without correction for multiple comparisons. Trend and data tables include point estimates and standard errors for users who would like to perform additional statistical tests.

Terms such as "similar," "stable," and "no difference" used in the text indicate that the statistics being compared were not significantly different. Lack of comment regarding the difference between statistics does not necessarily suggest that the difference was tested and found to be not significant. Because statistically significant differences or trends are partly a function of sample size (the larger the sample, the smaller the change that can be detected), they do not necessarily have public health significance (95).

Special Feature on Racial and Ethnic Health Disparities (Figures 18–27)

In general, the starting time period for trend analysis in the Special Feature is 1999. This is the earliest year for which National Health Interview Survey (NHIS) data were available for detailed racial and ethnic groups (see Appendix II, Race). Trend data on race and ethnicity are presented in the greatest detail possible after taking into account the quality of the data, the amount of missing data, and the number of observations. These issues significantly affect the availability of reportable data for certain populations, such as the Native Hawaiian or Other Pacific Islander population and the American Indian or Alaska Native population. Estimates for the Native Hawaiian or Other Pacific Islander population were unstable and are not presented. Three years of data were combined in order to present estimates for the American Indian or Alaska Native population in the data tables that accompany Figures 24–27.

There are various ways to quantify racial and ethnic differences in health and mortality, and different measures of disparity may lead to different conclusions (55–58). This Special Feature uses the maximal rate difference, one of three overall measures used in Healthy People 2020, to measure racial and ethnic disparities (59). The maximal rate difference is an overall measure of health disparities calculated as the absolute difference between the highest and lowest group rates in the population for a given characteristic, irrespective of other, intermediate rates (59). A decrease in the maximal rate difference does not capture whether the population health outcome overall is improving; rather it reflects progress toward eliminating disparities. As the absolute difference between the highest and lowest rates decreases toward 0, all the pairwise absolute differences between population subgroups will tend to 0. For determination of the highest and lowest group rates, estimates were ranked from highest to lowest based on the observed value to six decimal places, to avoid ties. Tests of statistical significance against other rates were not conducted. For consistency with the use of the absolute difference to measure disparity, all analyses in the Special Feature are carried out on the linear scale. For each figure in the Special Feature that shows trends (Figures 19, 21, 23–27) the following analyses were carried out:

(a) trend analysis of overall estimates;
(b) trend analysis of estimates for each racial and ethnic group; and
(c) trend analysis of the maximal rate difference.

These trend analyses provide information used to:

(a) describe the trend in overall estimates as increasing, decreasing, or stable, and any changes in trend over the time period;
(b) indicate whether the trend in estimates for different racial and ethnic groups is similar to the overall trend; and
(c) describe the trend in disparity as measured by the maximal difference in rates as increasing, decreasing, or stable and any changes in trend over the time period.

In addition, a one-sided *z*-test was conducted to test whether the maximal difference in rates was 0 vs. >0 at the most recent time point (59). For figures in the Special Feature that only show estimates at a single time point, the maximal rate difference was calculated for that time point, and a one-sided *z*-test was conducted to test whether the maximal difference in rates was 0 vs. >0.

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Trend Tables in *Health, United States, 2015*

The Chartbook section of *Health, United States, 2015* is followed by 114 Trend Tables organized around four major subject areas: health status and determinants, utilization of health resources, health care resources, and health care expenditures and payers. Trend Tables present data for selected years, to highlight major trends in health statistics. A key criterion used in selecting topics for the Trend Tables is the availability of comparable national data over a period of several years. A summary of the Trend Table topics for the 2015 edition is given below. Earlier editions of *Health, United States* may present data for additional years that are not included in the current printed report. Where available, these additional years of data are provided in spreadsheet files on the *Health, United States* website at: http://www.cdc.gov/nchs/hus.htm.

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ACA insurance marketplaces: Evaluating market growth

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Milliman

January 31, 2016, marked the end of the third open enrollment period in the insurance marketplaces. The U.S. Department of Health and Human Services (HHS) reported that 12.7 million[1] Americans purchased coverage in the insurance marketplaces during the 2016 open enrollment period, an increase of approximately 1 million individuals from the 2015 open enrollment period.[2] *Does this signal that the insurance marketplace is functioning* well or struggling? Evaluating the health of the insurance marketplace and the broader individual health insurance market, based solely on aggregate open enrollment selection changes in the marketplace, is problematic for several reasons. We examine three key issues and offer some suggestions for insurers and policymakers to consider when assessing the market:

1. *Medicaid expansion and the Basic Health Program (BHP).* In states that elect to expand Medicaid or implement a BHP, insurance marketplace enrollment may shrink as a result of marketplace enrollees shifting to these insurance programs. There is evidence of this occurring in several states between the 2015 and 2016 open enrollment periods.

First, in states that have not yet expanded Medicaid as of January 2016,[3] the population with household income between 100% of the federal poverty level (FPL) and 138% FPL is eligible for premium assistance in the insurance marketplaces. Since the calendar year 2015 open enrollment period, four states (Alaska, Indiana, Montana, and Pennsylvania[4]) have elected to expand Medicaid under the Patient Protection and Affordable Care Act (ACA), which removes the population with income between 100% FPL and 138% FPL from the insurance marketplace.[5] As shown by the table in Figure 1, this resulted in a decrease in plan selections for individuals with income between 100% FPL and 150% FPL in these four states. It is important to keep these changes in mind when reviewing the growth or decline in overall marketplace enrollments in these states.

In the 19 non-expansion states using the federal insurance marketplace, almost 3 million plan selections were made by individuals with household income between 100% FPL and 150% FPL, with nearly 1.5 million in Texas and Florida alone.

FIGURE 1: 100%-150% FPL PLAN SELECTION CHANGES

STATE	2015	2016	DECREASE
ALASKA	5,800	4,300	(1,500)
INDIANA	64,500	36,800	(27,700)
MONTANA	17,800	11,800	(6,000)
PENNSYLVANIA	131,500	84,000	(47,500)
SUBTOTAL	219,600	136,900	(82,700)

Note: Data from HHS open enrollment reports. Selections limited to 100% to 138% FPL are not available.

Given the likelihood that many of these 3 million individuals would otherwise be eligible for the Medicaid program, future state decision-making may significantly alter the growth of the marketplace in states electing to expand Medicaid. For example, Louisiana, which had nearly 46% of its open enrollment selections made by individuals with income between 100% FPL and 150% FPL, has announced it will implement Medicaid expansion on July 1, 2016.[6]

Similarly, states implementing the Basic Health Program[7] (currently New York and Minnesota) have moved the population with income between 138% FPL and 200% FPL outside the insurance marketplace. Between these two states,

1 Department of Health & Human Services (March 11, 2016). Health Insurance Marketplaces 2016 Open Enrollment Period: Final Enrollment Report. Retrieved April 13, 2016, from: https://aspe.hhs.gov/sites/default/files/pdf/187866/Finalenrollment2016.pdf.

2 Department of Health & Human Services (March 10, 2015). Health Insurance Marketplaces 2015 Open Enrollment Period: March Enrollment Report. Retrieved April 13, 2016, from: https://aspe.hhs.gov/sites/default/files/pdf/83656/ib_2015mar_enrollment.pdf.

3 See https://www.advisory.com/daily-briefing/resources/primers/medicaidmap for a listing of states that have expanded Medicaid under the ACA.

4 In the case of Pennsylvania, it appears a change from an alternative to standard Medicaid expansion program resulted in individuals moving from the marketplace to Medicaid.

5 See http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/ for a list of states expanding Medicaid under the ACA.

6 Litten, K. (January 12, 2016). John Bel Edwards signs Medicaid expansion to make 300,000 eligible for federal program. New Orleans Times-Picayune. Retrieved April 5, 2016, from http://www.nola.com/politics/index.ssf/2016/01/john_bel_edwards_medicaid.html.

7 See http://us.milliman.com/uploadedFiles/insight/healthreform/healthcare-reform-basic-health.pdf for an overview of the Basic Health Program.

400,000 individuals have signed up for the BHP in 2016.[8] The January 1, 2016, implementation of the BHP in New York resulted in total marketplace selections decreasing from over 400,000 in 2015 to under 275,000 in 2016.[9]

Insurers assessing market growth opportunities in the marketplace should take these potential changes in public program eligibility into account when evaluating the long-term growth potential of the marketplace.

2. *Premium increases and market bifurcation.* The ACA permits individuals with annual household incomes between 100% FPL (approximately $12,000 for a single household) and 400% FPL (approximately $48,000 for a single household), who do not qualify for other forms of minimum essential coverage, to receive premium assistance through the insurance marketplace. This is conditioned on the premium of the subsidy benchmark plan costing more than a certain percentage of an individual's household income. To the extent the subsidy benchmark plan costs less than the maximum amount the individual must pay under the ACA, the value of premium assistance is $0. This results in the value of premium assistance reaching $0 well below 400% FPL for younger individuals in many states.

For example, in 2016, the Kaiser Premium Subsidy Calculator[10] indicates that the average national subsidy benchmark premium for a 25-year-old is $235 per month ($2,818 per year). For a single individual with income of approximately $32,400 (275% FPL), the ACA requires the individual to pay up to 8.92% of income for the benchmark plan ($2,886 per year). Because the premium cost is less than the maximum amount required under the ACA at this income level, no premium assistance is available for individuals age 25 who are at or above this income level.

To the extent a state's insurance market experiences significant premium increases from one year to the next, this can significantly alter the population that qualifies for premium assistance by increasing the income level where premium assistance reaches $0. In the table in Figure 2, we have summarized the income level where premium assistance ended in 2015 and 2016 for single individuals ages 25 and 40 for federal marketplace states experiencing an increase in the average subsidy benchmark premium of more than 20% from 2015 to 2016.

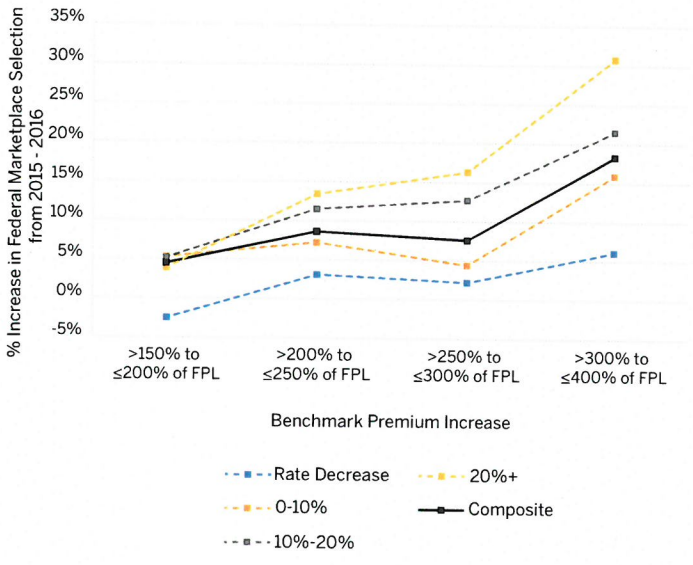
FIGURE 2: INCOME LEVEL WHERE PREMIUM ASSISTANCE ENDS

STATE	SUBSIDY BENCHMARK CHANGE	25-YEAR-OLD		40-YEAR-OLD	
		2015	2016	2015	2016
OKLAHOMA	36%	238%	275%	269%	324%
MONTANA	35%	245%	283%	277%	340%
ALASKA	32%	400%	400%	400%	400%
SOUTH DAKOTA	25%	257%	286%	292%	347%
TENNESSEE	23%	242%	266%	274%	304%
OREGON	23%	237%	260%	268%	295%
NORTH CAROLINA	23%	283%	322%	340%	400%
ARIZONA	21%	223%	242%	250%	273%

As Figure 2 indicates, in many states experiencing large premium increases, the population qualifying for premium assistance was expanded to higher income levels. Alaska did not experience this phenomenon because premiums in 2015 were high enough to generate subsidy value up to 400% FPL even for a 25-year-old.

As illustrated in the chart in Figure 3, federal marketplace states with significant benchmark premium increases from 2015 to 2016 had greater increases in marketplace plan selections at higher subsidy-qualifying income levels relative to states with rate decreases or moderate premium increases. Less variance between states was observed in marketplace selection changes at lower income levels, where much of the population was likely eligible for premium assistance in 2015 and 2016. It should also be noted that the population with income between 300% FPL and 400% FPL experienced larger percentage increases in marketplace plan selections from 2015 to 2016 relative to lower-income cohorts regardless of state premium changes, potentially driven by higher individual mandate penalties in 2016.

FIGURE 3: CY 2015-CY 2016 PERCENTAGE CHANGE IN FEDERAL MARKETPLACE PLAN SELECTIONS SEGMENTED BY INCOME LEVEL AND SUBSIDY BENCHMARK PREMIUM INCREASE



8 Jacob, J.A. (March 22/29, 2016). Open enrollment increased by about 1 million people over last year. "Journal of the American Medical Association." Retrieved April 5, 2016, from http://jama.jamanetwork.com/article.aspx?articleid=2504796.

9 HHS open enrollment reports for 2015 and 2016.

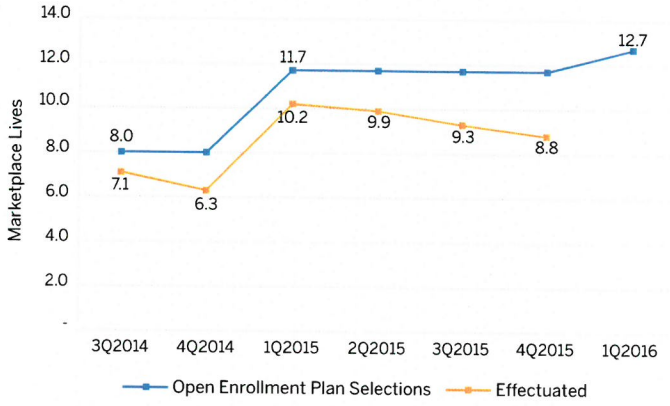
10 The subsidy calculator is available at: http://kff.org/interactive/subsidy-calculator/.

Although other factors such as the individual mandate may influence future marketplace enrollment growth, some enrollment increases may occur solely as a result of the value of premium assistance rising in the future because of annual premium trend. Premium increases over time may result in a much greater proportion of younger adults becoming eligible for premium assistance in the marketplace. *Whether growth in the individual marketplace is a result of greater overall health insurance participation, or simply shifting insurance coverage from off-marketplace to marketplace products, will influence future changes in the health of the individual market's overall risk pool.* For example, if the entire growth in marketplace enrollment from one year to the next was simply a result of individuals shifting from off-exchange to exchange products, the overall morbidity of the individual market risk pool would not improve. Conversely, if the growth was entirely newly insured individuals, it may be an indication of the risk pool becoming healthier. For insurers developing premiums for 2017 and future years, this issue should be strongly considered in the development of morbidity factors used in pricing individual market products.

3. *Plan selections versus effectuated enrollment.* During the first two full years of the insurance marketplace's operation, HHS has announced significant differences between the number of plan selections during each year's open enrollment period and the actual number of individuals paying and maintaining coverage ("effectuated enrollment"). The chart in Figure 4 illustrates open enrollment plan selections from 2014 through 2016, as well as quarterly effectuated enrollment. While 2015 open enrollment plan selections increased by 3.7 million relative to 2014, year-end effectuated enrollment only increased by 2.5 million (from 6.3 million to 8.8 million).[11] HHS has estimated that 10 million individuals will have effectuated enrollment at the end of 2016.[12]

For insurers, the material decreases in marketplace enrollment over the course of the calendar year make financial projections particularly challenging. Insurers should study lapse rate patterns from prior years (such as by income and age cohorts) to better estimate premium and claim expenses for the current calendar year.

FIGURE 4: OPEN ENROLLMENT PLAN SELECTIONS VS. EFFECTUATED ENROLLMENT: INSURANCE MARKETPLACE NATIONAL VALUES



Note: 3Q2014 effectuated enrollment reflects reported October 2014 values.

Conclusion

While much attention gets paid to open enrollment aggregate selection counts, insurers and policy makers should study the underlying changes in plan selections by age and income to better understand the health of the insurance marketplaces. As the marketplaces enter their 10th quarter of operation, state healthcare policy decisions and premium rate changes may have a significant influence on future enrollment changes within the marketplace for certain demographic cohorts.

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12 HHS.gov (October 15, 2016). 10 million people expected to have Marketplace coverage at end of 2016. Press release. Retrieved April 5, 2016, from http://www.hhs.gov/about/news/2015/10/15/10-million-people-expected-have-marketplace-coverage-end-2016.html.

By Richard A. Hirth, Elizabeth Q. Cliff, Teresa B. Gibson, M. Richard McKellar, and A. Mark Fendrick

Connecticut's Value-Based Insurance Plan Increased The Use Of Targeted Services And Medication Adherence

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ABSTRACT **In 2011 Connecticut implemented the Health Enhancement Program for state employees. This voluntary program followed the principles of value-based insurance design (VBID) by lowering patient costs for certain high-value primary and chronic disease preventive services, coupled with requirements that enrollees receive these services. Nonparticipants in the program, including those removed for noncompliance with its requirements, were assessed a premium surcharge. The program was intended to curb cost growth and improve health through adherence to evidence-based preventive care. To evaluate its efficacy in doing so, we compared changes in service use and spending after implementation of the program to trends among employees of six other states. Compared to employees of other states, Connecticut employees were similar in age and sex but had a slightly higher percentage of enrollees with chronic conditions and substantially higher spending at baseline. During the program's first two years, the use of targeted services and adherence to medications for chronic conditions increased, while emergency department use decreased, relative to the situation in the comparison states. The program's impact on costs was inconclusive and requires a longer follow-up period. This novel combination of VBID principles and participation requirements may be a tool that can help plan sponsors increase the use of evidence-based preventive services.**

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Faced with rising health care expenditures and evidence that service use often is not aligned with evidence-based metrics, employers are exploring ways to generate more value from their health spending. Many employers have opted to implement high-deductible health plans to transfer costs to employees and encourage consumer engagement.[1] Instead of increasing point-of-care financial obligations, the State of Connecticut opted in 2011 to remove financial barriers for services known to be clinically valuable and coupled that change with requirements that enrollees receive certain primary and secondary preventive care services. This plan, still in use, follows the principles of value-based insurance design (VBID), a concept that matches a patient's out-of-pocket spending with the clinical value of care that he or she is consuming.[2] VBID was designated as a federal policy priority in the Affordable Care Act (ACA), and many states are considering VBID policies for their own employees (for example, Oregon), their exchanges (for example, Maryland), or their Medicaid programs (for example, Michigan).

This article provides key data on the implementation and early results of a collectively bargained state-based application of VBID. It is one

of the first such programs in any context to use enrollee requirements in conjunction with reduced cost sharing to encourage patients to participate in their preventive and chronic disease care. The impact on utilization and spending of adding programs with VBID features can inform the optimal design of similar programs going forward.

Value-Based Insurance Design

VBID is an innovative approach to providing health benefits that aims to enhance patients' clinical outcomes. A consumer-focused intervention, it is one mechanism to encourage consumers to use high-value medical services. The key to a VBID plan is clinical nuance, which recognizes that medical services vary in the benefits provided. Therefore, such a plan seeks to align patients' out-of-pocket spending with clinical value using either the "carrot" of reduced cost sharing for high-value services or the "stick" of increased cost sharing for low-value services. In VBID plans, copayments are often reduced or eliminated for treatments that have a strong evidence base regarding their ability to improve clinical outcomes, increase health system efficiency, or both.

This clinical nuance stands in contrast to the blunt designs of traditional cost sharing, in which cost sharing is applied equally to all services or based solely on acquisition cost. Traditional plans have been shown to result in the underuse of high-value services and the overuse of low-value services.[3–6]

Early adopters of VBID primarily employed not "sticks" but "carrots": They reduced cost sharing for medications considered important for controlling chronic conditions. There have been a number of studies of these plans,[7,8] and a recent literature review concluded that the plans improved medication adherence by an average of 3 percentage points over one year.[9]

Beyond medications, few studies have looked at the effect of decreased cost sharing on preventive services. Some have found no effect.[10] Others have found that aligning cost sharing with a service's clinical value can shift utilization away from discouraged services, but it has limited effects when reductions in cost sharing are used to encourage the use of preventive services such as cervical cancer screening and mammography.[11]

Additionally, there have been relatively few studies of VBID plans that bundle carrot-based approaches with other features such as sticks (higher cost sharing), disease management services, and enrollee engagement measures. Some work has shown that value-based cost reductions enhance disease management programs and lead to increased medication adherence, compared with disease management alone.[12,13] For services beyond pharmaceuticals, a benefit change for the Oregon public employees program that increased cost sharing for targeted overused or "preference sensitive" services such as diagnostic imaging led to reduced use of those services.[14]

Overall, the available evidence suggests that carrots often moderately increase the use of targeted high-value services. However, achieving greater clinical impact may require employing sticks or bundling VBID with complementary initiatives. Given the number of such initiatives (for example, wellness programs, patient education, disease management, provider pay-for-performance, enrollee accountability requirements, and price and quality transparency) and the different populations in which they could be employed, much more research is required to inform the optimal design of insurance plans that use VBID.

Connecticut's Health Enhancement Program

In 2011 the State of Connecticut faced a projected budget gap of $3.8 billion. State employees were asked to help address this deficit, in part through changes in employee health care costs. As a result, employees' unions and the Office of the State Comptroller jointly designed the Health Enhancement Program in the summer of 2011, with the twin goals of improving employees' health and generating savings.

This complex effort required ongoing collaboration by a number of partners. Given the new and central role of beneficiary participation requirements in the novel plan design, preliminary versions were carefully scrutinized. Shortly after union ratification of the Health Enhancement Program provisions, the program was launched on October 1, 2011, and open enrollment began. The program was voluntary: Employees could instead have coverage similar to what they had had in previous plan years, though to do so they would have to pay a surcharge of $100 per month more than what program participants paid. Bargaining between the unions and the state had delayed the launch, so the program began three months into the plan year. However, services received during those three months were counted toward compliance with the new program requirements.

As of 2014, Connecticut was spending about $3.9 million per year on the Health Enhancement Program, partly for chronic condition disease management. The program requires a staff of approximately twenty full-time-equivalent

workers, about half of whom are nurses engaged in disease management and patient education (Thomas Woodruff, Connecticut Office of the State Comptroller, personal communication, October 25, 2013). We did not assess the program's return on investment, which would have required us to use data that were not available to us—including measures such as absenteeism and productivity.

Key Features Of The Health Enhancement Program

Before the implementation of the Health Enhancement Program, Connecticut's state employee health plan did not distinguish between high- and low-value services in determining cost sharing. The Health Enhancement Program introduced incentives to align patient costs with the value of care, including the elimination of office visit copayments for chronic conditions (a savings of $15 per visit) and the reduction or elimination of copays for medications associated with the management of the five following chronic conditions targeted by the program: asthma or chronic obstructive pulmonary disease (COPD), diabetes, heart disease, hypertension, and hyperlipidemia. Copays for drugs for diabetes were eliminated. Copays for drugs for the other chronic diseases were $0 for generic drugs, $5 for preferred brand-name drugs, and $12.50 for other brand-name drugs, compared with $5, $10, and $25, respectively, for employees not enrolled in the program.

Additionally, the program assessed a new $35 copay for emergency department (ED) visits when there is a reasonable medical alternative and the member is not admitted to the hospital. This copay applies to all employees, both members and nonmembers of the program.

A novel feature of the program is its attempt to engage patients in preventive care by holding them accountable for receiving it. Members who desire to maintain Health Enhancement Program benefits must satisfy a number of requirements, including obtaining health risk assessments, screenings, and physical examinations that are appropriate for people of their age and sex. In some cases these are annual requirements, but in many cases they are not (for details, see online Appendix Exhibit 1).[15] Enrollees with certain chronic conditions must also obtain guideline-based clinical services and participate in disease management.

While the program is voluntary, it provides significant incentives to participate. These include exemption from the monthly $100 health insurance premium surcharge and the elimination of deductibles, which could amount to additional annual savings of $350 per person and of $1,400 per family. Members with chronic conditions who comply with all of the program's requirements receive annual $100 incentive payments.

Members may be disenrolled from the Health Enhancement Program if they do not comply with its requirements. The program strives to avoid this outcome through regular reminders and other forms of outreach using multiple methods of communication, including e-mail, mail, telephone, and website posts. Compliance is evaluated annually, beginning with a claims evaluation by a third party. Enrollees are given opportunities to regain their compliance status before being disenrolled. A joint labor and management company makes final determinations of compliance status.

In this study we evaluated the impact of Connecticut's implementation of the Health Enhancement Program on the use of targeted services and, secondarily, on spending. The program's experience can inform initiatives to implement novel insurance packages by public and private employers.

Study Data And Methods

DATA AND SAMPLE We evaluated enrollment and claims data for Connecticut state employees and their dependents (collectively, 64,165 people) ages 18–64 who were continuously enrolled in the state's employer-sponsored insurance plan for the period July 1, 2010–June 30, 2013. This period encompasses the plan year before implementation of the Health Enhancement Program as a baseline and the first two plan years after the program began. The data included inpatient, outpatient, and prescription drug claims for the entire study period and demographic characteristics and comorbid conditions at baseline. Only active employees were included, since those who retired before the program was initiated were ineligible to participate in it. Claims include actual payment amounts and both insurer and patient obligations.

To establish a comparison group, we obtained a sample of state government employees and dependents from the Truven MarketScan Commercial Claims and Encounters Database for the same period. That sample included employees of six state employers and their dependents ages 18–64 (collectively, 215,314 people) who were continuously enrolled in employer-sponsored insurance in the study period.

Because of a confidentiality agreement with data contributors, Truven is unable to reveal which states were in the control group, but it confirmed that, like the State of Connecticut,

all six state employers are in the eastern half of the United States. Truven also screened state benefit plans to ensure that there were no major structural changes during the study period. Within each state, "contracts" (that is, employees and their covered dependents) were randomly selected to be representative of that state. However, the same number of enrollees was drawn from each state to ensure that the number of enrollees could not be used to identify states.

OUTCOME AND DISEASE COHORT DEFINITIONS We examined the use of targeted services for the entire sample and for the five subpopulations with a targeted chronic disease retrospectively through the use of *Current Procedural Terminology* (CPT) and *International Classification of Diseases*, Ninth Revision (ICD-9), codes. The specific outcomes we analyzed for the entire sample were preventive office visits, colonoscopy or fecal occult blood test for enrollees ages fifty and older, mammograms for women ages thirty-five and older, Papanicolaou (Pap) tests for women ages eighteen and older, lipid screenings for all adults, and ED use. For the subpopulation of people with diabetes at baseline, the outcomes we analyzed were lipid screening, hemoglobin A1c tests, and eye exams. For the subpopulations of people with heart disease or with COPD or asthma at baseline, the outcomes were lipid screening and bone density tests for patients taking corticosteroids, respectively. In all five subpopulations, we examined adherence to relevant medications and ED use.

Disease subpopulations were defined through claims from the baseline year based on ICD-9 codes or through receipt of prescriptions specific to a given condition (for specific prescriptions, codes, and method of identifying subpopulations, see Appendix Exhibit 5).[15] For medication classes specific to each subpopulation, medication possession ratios were calculated as the percentage of days in each year for which a filled prescription was available (that is, days of filled prescriptions divided by 360), top-coded at 100 percent.

STATISTICAL METHODS We used a difference-in-differences framework to assess changes before and after implementation of the Health Enhancement Program in the use of targeted services and in total and out-of-pocket spending, relative to the control group of state employees and dependents from other states. Our models included all beneficiaries eligible for the Health Enhancement Program, regardless of their enrollment status (that is, we used the intention-to-treat approach).

We used this approach for two reasons. First, the intervention is aimed at the entire population of employees and dependents. Thus, we allowed for the impact of nonparticipation on the program outcomes. Second, it was not possible to identify and exclude beneficiaries from the comparison group who would not have participated had they been offered a program similar to the Health Enhancement Program.

We used linear probability models to estimate binary outcomes. The key variables of interest were interaction terms between the year indicators for the period after the Health Enhancement Program was implemented and the indicator for the intervention group (beneficiaries in Connecticut) versus the comparison group (beneficiaries in the other states). The linear probability model was chosen because of difficulties in interpreting the sign and significance of interaction terms in nonlinear models, such as logistic regression.[16]

Models for the continuous spending outcomes were ordinary least squares models of spending and log spending. We estimated a model with actual dollars spent and with standardized prices, to mitigate the potential effect of differential changes in price growth. Sensitivity analyses were estimated for total spending models by dropping outliers (people who spent $50,000 or more annually) and by estimating using generalized linear models. (Appendix Exhibit 4 describes the full regression equation, and Appendix Exhibit 7 shows results.)[15]

LIMITATIONS This study had several limitations. First, our intervention group was state employees in a single state. Therefore, the study results may be limited in their generalizability to other states or other populations. We note that the intervention group was fairly similar to the comparison group in terms of baseline demographic characteristics. Given the functional similarities across state governments, the two groups probably also included a similar mix of occupational categories.

Second, despite the similar demographic characteristics, there were differences between the intervention and comparison groups in some clinical characteristics, which could reflect differences in unmeasured factors such as smoking, medical practice patterns, and coding patterns. Because we used a difference-in-differences approach, baseline differences in levels would not necessarily bias the analysis as long as those differences were consistent over time. However, the existence of such differences does raise concern about the possibility of baseline differences in trends.

Third, the ACA was signed into law just before our study period and eliminated cost sharing for the general population in nongrandfathered plans for the primary preventive services included in the Health Enhancement Program. This

change may mean that the effects of the program on the full sample (as opposed to the chronic disease subpopulations) reflect the impact of enrollee participation requirements instead of cost-sharing differences between the intervention and control groups, since cost-sharing changes could be similar in the two groups after passage of the ACA. Given that participation requirements were the most novel aspect of the Health Enhancement Program, the suggestion that accountability measures had an impact beyond that of reduced cost sharing is particularly notable.

Last, we used claims data to measure primary outcomes. While this has many advantages, one disadvantage is that multiple codes can be used for the same encounter. Thus, it is impossible, using codes alone, to distinguish changes in behavior from changes in coding. This issue is most problematic in areas such as office visits, and less so in the use of screening tests and prescription drugs.

Study Results

BASELINE CHARACTERISTICS OF CONNECTICUT AND COMPARISON STATE ENROLLEES The Connecticut and comparison groups at baseline (the plan year before implementation of the Health Enhancement Program) were quite similar in terms of age and sex, but the Connecticut group had a slightly higher percentage of enrollees with a positive Charlson comorbidity score (Exhibit 1). Baseline spending was considerably higher in Connecticut than in the other states. An examination of the twenty services with the highest spending in the comparison group revealed that the difference in baseline spending was driven by both higher prices and greater utilization in Connecticut, but that prices accounted for most of the difference (data not shown). In addition, high-spending outlier cases were substantially more common in Connecticut than in the comparison states (Exhibit 1). As a result of these baseline differences, the spending analyses were not the primary focus of this evaluation and should be interpreted cautiously.

ENROLLMENT AND USE OF TARGETED SERVICES

▶ **FULL SAMPLE:** Connecticut's actuaries predicted that as many as 50 percent of people eligible for the Health Enhancement Program would not enroll in it, but first-year enrollment exceeded 98 percent. Compliance with accountability standards was equally high. About 98 percent of enrollees were deemed compliant at the end of each of the first two program years. Therefore, if we had excluded nonparticipants or people who did not comply with the program's requirements, our results would have been very similar to the results from our intention-to-treat analysis.

We found significant changes in the percentages of the eligible population receiving high-value medical services across a range of out-

EXHIBIT 1

Baseline demographic characteristics and spending among HEP enrollees and comparison-group enrollees

	HEP (n = 64,165)	Comparison group (n = 215,314)	Standardized differences
Mean age (years)	41.6 ****	42.2	4.74
Female	53.8%****	57.8%	8.05
Dependent	41.0%****	30.9%	21.16
Charlson comorbidity index			
1	14.8%****	11.4%	9.94
2	6.0****	4.5	7.02
Chronic condition			
Has diabetes	6.5%****	7.6%	4.31
Has heart disease	6.1****	7.5	5.61
Has COPD or asthma	14.5****	8.8	17.68
Has hypertension	20.4****	23.5	7.46
Has hyperlipidemia	24.2****	19.5	11.31
Has any chronic disease	42.3****	39.6	5.57
Average spending	$7,913.69	$4,375.27	18.07
Share of enrollees with spending ≥ $50,000	2.15%****	0.79%	11.31
Likelihood of preventive office visit	53.0%****	36.9%	32.86

SOURCE Authors' analysis of claims data from the State of Connecticut and from the Truven MarketScan Commercial Claims and Encounters Database, July 2010–June 2013. **NOTES** Baseline is the plan year before the implementation of the Health Enhancement Program (HEP). Significance refers to the probability that the value for the HEP group is equal to that of the comparison group using a t-test. COPD is chronic obstructive pulmonary disease. ****$p \leq 0.001$

comes in Connecticut, relative to the comparison states. Preventive office visits and nearly all of the targeted preventive screenings showed significant gains from baseline in both the first and second program years, relative to the comparison group (Exhibit 2). For example, the share of Health Enhancement Program enrollees versus the share of the comparison group receiving a preventive office visit increased by 13.5 percentage points in year 1 and 4.8 percentage points in year 2, relative to baseline. The largest jump was for lipid screenings for the population ages fifty and older, which increased by 20.1 percentage points in the program enrollees versus the comparison group in year 1 and by 7.8 percentage points in year 2, relative to baseline. The only screening that did not show a significant gain in both program years was Pap tests.

The Health Enhancement Program increased copays for some ED visits that did not result in hospitalization. Given that increased cost sharing as well as the possibility that increased preventive care may lead to offsets in emergency medicine use, we examined the use of the ED. We separately evaluated the likelihood that an enrollee would have any ED visits and the total number of visits (counting each visit separately).

Relative to the comparison group, we found no evidence of changes in the likelihood of having an ED visit without a resulting hospital admission between baseline and the first year of the program, but there was a significant 1.0-percentage-point decrease in the probability of an ED visit between baseline and the second year (Exhibit 2).[17] In contrast, the total number of ED visits without a resulting hospital admission decreased significantly in both years. At baseline in the Health Enhancement Program, the average use of the ED without a resulting inpatient stay was 249 visits per 1,000 enrollees. Relative to the comparison group, the number of such visits decreased by 10 visits per 1,000 enrollees in year 1, and by 25 visits per 1,000 enrollees in year 2.

▶ **CHRONIC DISEASE SAMPLE:** The Health Enhancement Program reduced cost sharing and required the use of additional services for employees diagnosed with certain chronic diseases. Our difference-in-differences results examined changes in use of services for enrollees relative to the comparison group for the subpopulations of people diagnosed with these conditions at baseline. Thus, they reflect changes in use outcomes for each disease subpopulation, not changes in the prevalence of the chronic conditions.

Across all chronic conditions, there were significant increases in physician office visits, relative to the comparison group. The likelihood of having an office visit increased by 1.6 percentage points in year 1 and by 1.2 percentage points in year 2 (Exhibit 3). For people with diabetes, there was an increased likelihood of receiving all required services in year 1, compared to the baseline. However, in year 2 we did not find

EXHIBIT 2

Changes in use of preventive services and emergency department by HEP and comparison-group enrollees

	Enrollees who used the service						Difference-in-differences between groups (percentage points)	
	Baseline		Year 1		Year 2			
	HEP	Comparison group	HEP	Comparison group	HEP	Comparison group	Year 1 vs. baseline	Year 2 vs. baseline
PREVENTIVE SERVICES								
Preventive office visit	53.0%	36.9%	68.4%	38.8%	60.0%	39.2%	13.5***	4.8***
Colonscopy[a]	13.3	11.0	18.2	10.2	15.1	10.0	5.6***	2.8***
Fecal occult blood test[a]	14.1	10.7	18.7	10.7	16.6	10.6	4.7***	2.6***
Mammogram[b]	47.0	40.4	56.7	41.8	51.5	42.1	8.1***	2.6***
Pap test[c]	50.3	43.9	55.5	43.9	47.4	41.4	5.2***	−0.4
Lipid screening	42.4	38.1	58.5	38.8	49.5	39.2	15.4***	6.1***
Lipid screening[a]	61.5	54.4	80.8	53.7	69.1	54.3	20.1***	7.8***
EMERGENCY DEPARTMENT VISITS WITHOUT HOSPITALIZATION								
Likelihood of visit	17.1%	11.6%	16.9%	11.8%	16.4%	12.0%	-0.28	−1.0***
No. of visits (per 1,000 enrollees)	249	159	244	164	233	168	−10[d]***	−25[d]***

SOURCE Authors' analysis of claims data from the State of Connecticut and from the Truven MarketScan Commercial Claims and Encounters Database, July 2010–June 2013. **NOTES** The exhibit shows the results of linear probability models estimated with robust standard errors. All models controlled for age, sex, dependent status, Charlson comorbidity index score, time period (plan year), and baseline differences in outcome measures. Baseline is the plan year before the implementation of the Health Enhancement Program (HEP). Significance refers to a p value at a level that allows us to reject the null hypothesis of no difference in the Connecticut population compared with the comparison group. [a]For enrollees ages fifty and older. [b]For female enrollees ages thirty-five and older. [c]For female enrollees ages eighteen and older. [d]Change in number of visits instead of percentage point change. **$p < 0.05$ ***$p < 0.01$

EXHIBIT 3

Changes in use of preventive services and emergency department by HEP and comparison-group enrollees with chronic conditions

	Number of enrollees and baseline percentage who used service or baseline possession ratio		Difference-in-differences between groups (percentage points)	
Enrollees with:	**HEP**	**Comparison group**	**Year 1 vs. baseline**	**Year 2 vs. baseline**
Diabetes (*n*)	4,158	16,322		
Lipid screening	83.4%	76.5%	5.6***	0.11
Hemoglobin A1c test	87.1%	82.7%	4.0***	0.33
Eye exam	98.3%	97.7%	1.8***	1.4***
Metformin medication PR	0.38	0.37	2.1**	2.1**
Heart disease (*n*)	3,888	16,079		
Lipid screening	70.8%	64.6%	9.5***	1.3
Beta blocker medication PR	0.57	0.47	1.3	1.3
Loop diuretics medication PR	0.06	0.10	0.18	0.47
COPD or asthma (*n*)	9,306	19,053		
Bone density test[a]	0.28%	4.8%	0.4	0.2
Inhaled corticosteroid medication PR	0.12	0.09	1.7***	1.8***
Hypertension (*n*)	13,073	50,504		
Thiazide medication PR	0.11	0.10	0.5	0.6
ACE inhibitor medication PR	0.22	0.21	1.0*	1.0**
ARB medication PR	0.11	0.07	0.5	0.8**
Hyperlipidemia (*n*)	15,518	42,027		
Statin medication PR	0.42	0.43	3.3***	3.9***
Any chronic disease (*n*)	27,149	85,206		
Office visit	95.9%	96.4%	1.6***	1.2***
Emergency department visit[b]	19.7%	14.4%	−0.5	−1.3***

SOURCE Authors' analysis of claims data from the State of Connecticut and from the Truven MarketScan Commercial Claims and Encounters Database, July 2010–June 2013. **NOTES** The exhibit shows the results of linear probability models estimated with robust standard errors. All models controlled for age, sex, dependent status, Charlson comorbidity index score, time period (plan year), and baseline differences in outcome measures. Baseline is the plan year before the implementation of the Health Enhancement Program (HEP). Possession ratio (PR) is the percentage of days in each year for which a filled prescription was available (that is, days of filled prescriptions divided by 360), top-coded at 100 percent. COPD is chronic obstructive pulmonary disease. ACE is angiotensin-converting enzyme. ARB is angiotensin receptor blocker. [a]For patients taking corticosteroids. [b]Without hospitalization. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$

evidence of changes relative to baseline for any of the services except for eye exams. For people with heart disease, the pattern was similar: The likelihood of lipid testing was 9.5 percentage points higher in year 1, compared to the baseline, but in year 2 we were not able to rule out the possibility of no change from baseline. We found no significant changes in the use of bone screening for patients with asthma or COPD who were taking corticosteroids.

For asthma or COPD, hyperlipidemia, diabetes, and hypertension (in some drug classes), medication possession ratios for enrollees in the Health Enhancement Program increased significantly relative to the comparison group between baseline and subsequent years, with the effects often slightly larger in year 2. For example, for patients diagnosed with hyperlipidemia, the possession ratio of 0.42 is interpreted as the mean share of days a statin was available from a filled prescription, or 42 percent of days at baseline for enrollees in the Health Enhancement Program (it was 43 percent for the comparison group) (Exhibit 3). The difference between the two groups increased by 3.3 percentage points between baseline and year 1 and by 3.9 percentage points between baseline and year 2. For people with heart disease, medication possession ratios did not change significantly.

As was the case in the full sample, in the subsample of enrollees with a chronic disease we were unable to discern any effect of the Health Enhancement Program on the likelihood of having an ED visit not resulting a hospitalization between baseline and year 1, but we found a significant decrease between baseline and year 2, relative to the comparison group (Exhibit 3). At baseline, 19.7 percent of the program enrollees with a chronic disease and 14.4 percent of their peers in the comparison group had at least one ED visit without hospitalization. The difference between the groups decreased by 1.3 per-

centage points in year 2, compared to baseline.

SPENDING Relative to the comparison group, spending in year 1 of the Health Enhancement Program increased by about $730 per enrollee from baseline and in year 2 by about $961 per enrollee from baseline, both significant changes (Exhibit 4). Generalized linear model regressions and regressions that trimmed outliers showed substantively the same result (Appendix Exhibit 7).[15] The increase in spending was primarily driven by increases in nonpharmaceutical spending (data not shown). Enrollees' out-of-pocket spending dropped by about $66 in year 1 and about $76 in year 2, compared to baseline. Much of the spending appeared to be driven by outliers in the Health Enhancement Program group, which had more than twice the percentage of outliers than the comparison group did (Exhibit 1).

Because of large differences in baseline spending, we also measured differences in spending trends by standardizing all actual prices to the comparison group's median procedure or diagnosis price. (For a full description of this procedure, see Appendix Exhibit 6.)[15] Essentially, this measure focused on changes in use by removing the effects of different prices at any point in time or of changes in prices over time. Using price-standardized spending as the outcome modified our results: There were insignificant differences in spending in year 1 compared to baseline and a statistically significant decrease of $190.46 in year 2 compared to baseline. This result suggests that the positive difference in spending relative to the comparison group in the primary regressions may be a result of growth of prices in Connecticut and not a result of changes in service utilization.

Discussion

This analysis demonstrates substantial increases in the use of medical services targeted by a value-based insurance design program that combined reductions in cost sharing with novel participation requirements for enrollees. This program aimed to enhance enrollees' engagement with health care decisions. Compared to earlier work,[10] which showed little to no effect of reduced cost sharing on the use of preventive screening services, the Health Enhancement Program boosted the use of preventive services significantly across nearly all outcomes. For example, relative to the comparison group, lipid testing for program enrollees increased by 15.4 percentage points from baseline to the first year of the program, and colonoscopy increased by 5.6 percentage points.

There were differences in results between the first two years of the program compared to baseline (all relative to trends in the comparison group). Many utilization measures were higher

EXHIBIT 4

Changes in average annual spending by HEP and comparison-group enrollees

	Baseline		Difference-in-differences between groups	
	HEP	Comparison group	Year 1 vs. baseline	Year 2 vs. baseline
FULL SAMPLE				
Total spending	$7,913.69	$4,375.27	$730.38***	$961.12***
Ln(total spending)[a]	—[b]	—[b]	0.23***	0.11***
Out-of-pocket spending	$176.51	$656.93	−$65.64***	−$75.55***
Standardized prices				
Total spending	$3,565.96	$3,159.29	$32.78	−$190.46***
Out-of-pocket spending	$478.90	$381.80	−$16.69***	−$49.79***
CHRONIC DISEASE SAMPLE				
Total spending	$11,430.68	$6,867.46	$816.92***	$743.65**
Ln(total spending)[a]	—[b]	—[b]	0.14***	0.09***
Out-of-pocket spending	$256.81	$989.76	−$71.60***	−$90.00***

SOURCE Authors' analysis of claims data from the State of Connecticut and from the Truven MarketScan Commercial Claims and Encounters Database, July 2010–June 2013. **NOTES** The exhibit shows the results of linear probability models estimated with robust standard errors. All models controlled for age, sex, dependent status, Charlson comorbidity index score, time period (that is, plan year), and baseline differences in outcome measures. Baseline is the plan year before the implementation of the Health Enhancement Program (HEP). Significance refers to a p value at a level that allows us to reject the null hypothesis of no difference in the Connecticut population compared with the comparison group. [a]The natural log of total spending, constructed by taking the natural log of the total spending for each enrollee in each period plus $1 (to avoid ln(0)). Multiplying the coefficients by 100 is roughly interpreted as the percent change in a period relative to comparison group and baseline spending. [b]Not applicable. **$p < 0.05$ ***$p < 0.01$

in year 2 than at baseline but lower than in year 1. However, some measures reverted to baseline in year 2. This result was more frequent in the subpopulations with a chronic disease, whose baseline use of targeted services was high. Conversely, changes in medication possession ratios between year 1 and baseline were maintained or slightly increased in year 2, and decreases in ED use from baseline occurred primarily in year 2.

We explored several reasons for the dip in changes for some utilization measures between year 2 and year 1. Most important, for screenings that occur less often than once a year, such as colonoscopies or Pap tests, the smaller differences between groups in year 2 than in year 1 relative to baseline may reflect a natural decline in use: People who had the service in year 1 were exempt from the requirement in year 2.

For annual screenings, the reason is less clear. There were likely changes in the comparison group's cost sharing for preventive medical services relative to the Health Enhancement Program group because of ACA requirements that began taking effect for nongrandfathered plans in September 2010. Nonetheless, the comparison group showed relatively steady use of preventive services targeted by the program. In any case, the use of Health Enhancement Program accountability and cost sharing boosted the use of many targeted services beyond baseline levels in both years compared to use in other states, and differences between the two groups in medication adherence and ED use were as large or larger in year 2 than in year 1, relative to baseline.

Our spending results were sensitive to the model specification we used. Models of total spending that standardized and thus mitigated the effect of differential rates of price increases between Connecticut and the comparison states showed decreases in costs between the groups in the second year of the program, relative to baseline. Because it is implausible the Health Enhancement Program changed prices, this model makes most sense to us as a representation of the effect of the program on utilization. However, models that used actual dollars spent, including models that took into account the fact that the data were skewed by a small number of high spenders, showed increases in both program years. Because of this discrepancy, we are hesitant to draw firm conclusions about the magnitude or direction of costs following implementation of the program.

We do note that there was a significant decrease in Connecticut, compared to the other states, between baseline and year 2 in (often costly) ED visits. It's unclear whether this decrease is a result of the effect of the increased cost sharing for ED visits or an offset to increases in preventive care. Other states or private payers considering this type of a program will want to balance the potential for improved health and productivity that comes from increasing the use of high-value services with the potential for higher costs resulting from that increased use.

Conclusion

Overall, we believe that our results show that adding enrollee participation requirements to value-based insurance design cost-sharing changes can have a meaningful impact on the use of targeted services. Other states or payers considering VBID plans should strongly consider these types of schemes to boost the use of specific services.

The intervention in Connecticut was also one of the first to go beyond prescription drugs and reduce cost sharing across the spectrum of care, including medical services for chronic disease. The positive results in this case should encourage other payers to incorporate reduced cost sharing for high-value services across entire episodes of care in their benefit plans.

Also, the inclusion of higher ED cost sharing for nonemergency visits and premium surcharges for nonparticipation is just a small step toward implementing higher cost sharing (or sticks, as opposed to carrots) for low-value services. The impact on spending from raising cost sharing for low-value services can be more immediate than that of lowering cost sharing for high-value services. However, raising cost sharing is more challenging than lowering it from an implementation standpoint, and the expansion of increased cost sharing relies on improving knowledge of its clinical and economic effects. Such expansion could be built upon platforms already being created, such as the Choosing Wisely initiative, which aims to identify and avoid unnecessary medical services.

The Health Enhancement Program's focus on chronic conditions could also be replicated by other payers. A substantial majority of overall health care spending is devoted to chronic disease. Most common chronic diseases have evidence-based quality metrics, with ample evidence of suboptimal performance on these metrics. Patient out-of-pocket spending contributes to this underuse.

The expansion of VBID is likely to continue, as public payers focus on services that are of the highest clinical value to them. Notably, Connecticut was one of the seven states selected to participate in the Medicare Advantage Value-Based Insurance Design Model, which allows Medicare Advantage plans to offer supplemental benefits

or reduced cost sharing to enrollees with certain chronic conditions specified by the Centers for Medicare and Medicaid Services.[18] Within a larger context, VBID is one type of consumer-focused initiative that, along with provider-focused initiatives, is transforming health care from a volume-based to value-based system. Notably, as the Health Enhancement Program continues to be refined, Connecticut is working toward integrating its VBID features into other statewide initiatives, such as its State Innovation Model and an accountable care organization structure.

The findings presented from the first two years of the Health Enhancement Program have important implications for other states. Because of their size, states as employers can potentially affect the benefits structure of enough consumers to catalyze changes that affect the functioning of health care markets. Moreover, as public and private payers increasingly adopt alternative payment models, it is critical that they align consumer incentives with these provider-focused programs. As momentum grows for a transition from a volume-driven to a value-based health care delivery system, the addition of clinically nuanced payment reform and consumer initiatives can improve the quality of care and enhance the consumer experience. ■

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Enhancing Shared Decision Making Through Carefully Designed Interventions That Target Patient And Provider Behavior

ABSTRACT Patient-provider communication and shared decision making are essential for primary care delivery and are vital contributors to patient experience and health outcomes. To alleviate communication shortfalls, we designed a novel, multidimensional intervention aimed at nudging both patients and primary care providers to communicate more openly. The intervention was tested against an existing intervention, which focused mainly on changing patients' behaviors, in four primary care clinics involving 26 primary care providers and 300 patients. Study results suggest that compared to usual care, both the novel and existing interventions were associated with better patient reports of how well primary care providers engaged them in shared decision making. Future research should build on the work in this pilot to rigorously examine the comparative effectiveness and scalability of these interventions to improve shared decision making at the point of care.

Patient experience with health care is significantly shaped by patients' encounters with providers, which in turn can affect patients' understanding of their health conditions[1–3] and the quality of care.[4–6] The growing importance of patient experience[7] has led some to term this the "era of the patient,"[8] as provider compensation is increasingly linked with patients' feedback.[9] The asymmetry of clinical knowledge between physicians and patients and issues of personal preference, however, pose significant challenges in providing patient-centered health services.[10,11] Shared decision making is not only conducive to reducing information asymmetry but also is ethically the right thing to do. Systematic reviews of the preconditions for improving health care delivery have emphasized the importance of shared decision making as a mediator and moderator of health care quality.[12]

It has been well documented, however, that patients often hesitate in being completely open about their concerns and preferences during clinical encounters out of fear of being labeled "difficult."[13,14] This fear is a major barrier to engaging in shared decision making. Other research indicates that even when patients do ask questions, physicians' answers vary in quality.[15] When patients are more engaged in their visits, some are met with discouraging reactions from unprepared clinicians.[16]

There have been increasing efforts to improve providers' communication skills.[17] Likewise, efforts to activate patients and facilitate shared decision making through the use of decision aids have been documented.[18] But little has been done to simultaneously enhance patient and provider communication with interventions that change both patients' and physicians' behaviors. Some believe that expecting effective communication to result from an intervention directed toward either the physician or the patient might be akin to anticipating an elegant waltz emerging on the ballroom floor when only one partner has taken

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dance lessons.[12] A systematic review of communication interventions showed that very few randomized controlled trials targeted both patients' and physicians' behavior.[12,19–21] One notable recent study, the Values and Options in Cancer Care (VOICE) trial, however, has targeted the behavior or both patients and physicians during cancer care visits.[22] Intensive interventions like the VOICE study have not been undertaken in primary care.

With a team of patients, health care team stakeholders, and user-experience design consultants, we codesigned a multidimensional intervention, drawing on psychology and behavioral economics research, current evidence, and promising practices to target both patients' and providers' communication behavior during primary care visits. We then conducted a pilot study to examine its efficacy compared to an existing intervention, Ask Share Know (ASK), which targets mainly patients' behavior.[23] The goals of the pilot were to design a novel intervention, compare it with ASK, and obtain preliminary data to guide the design of a large-scale comparative effectiveness study.

Study Data And Methods

THE DESIGN PHASE Psychology research suggests that priming (applying subtle cues to influence people) can be a powerful means to change behavior.[24,25] After multiple brainstorm sessions, a day-long design workshop, and user tests, we arrived at a few guiding design principles that focused on changing patients' and primary care providers' behavior so that care encounters might unfold purposefully, as outlined in the Four Habits Model: Invest in the beginning, elicit the patient's preferences, demonstrate empathy, and invest in the end.[12,26] We wanted to enable patients to focus attention; prepare for visits; document action plans; and engage in oral "teach-back," a learning and retention technique, to ensure understanding. We wanted to nudge primary care providers to learn their patients' agendas before a visit, acknowledge what is important to the patient, and set the agenda jointly.

A multidimensional intervention, called Open Communication (OpenComm), emerged from our work. The first element of this intervention was a two-minute animated video, developed to illustrate open communication behaviors for patients and primary care providers.[27] The video normalized setting a joint agenda, asking questions, and requesting information on other options.

The second component was a Visit Companion booklet for patients that enabled them to delineate issues that matter the most to them before their visit and to review and record their next steps during the visit. This booklet provided a mechanism for patients to use in focusing their attention on what was most important by writing out their main concerns. Prompts included the following: "Today, I really want to talk about: ... [List your health concerns, and circle the most important one below]." The booklet contained three differently shaded boxes to subtly suggest a place for three main concerns, but the entire left side of the booklet was available for patients to document their concerns more extensively if they wished. Following the literature on learning styles, which suggests that combining visual, auditory, and tactile learning is more effective than listening alone,[28] we used the right-hand side of the booklet to prompt patients to write out "My next steps..." and to "teach back" by stating those steps out loud to the provider. Teach-back has been shown to increase learning and retention[29–31] as well as to improve medication adherence[30,32–34] and has been recommended by the Joint Commission and the National Quality Forum as an effective means of assessing patients' understanding.[35,36] (The booklet is provided in the online Appendix.)[37]

Lastly, in an initiative modeled after the VOICE study,[22] a standardized patient instructor provided communication coaching for primary care providers, consisting of two thirty-minute, individually tailored sessions that occurred during usual clinic time at the providers' practices. These sessions occurred approximately one month apart. Primary care providers were coached to start the visit by acknowledging the patient's main concerns and jointly setting the visit agenda, so that unexpected or late-arising concerns could be minimized.[38–41] The providers were also coached to check the patient's understanding of next steps and to encourage oral teach-back. The medical assistants who worked with these providers most frequently also received training. They would look at the patient's booklet and would ask the patient about the concerns listed and what was the most important thing the patient wanted to discuss with the primary care provider. They then took the booklet and communicated these issues to the primary care provider during the warm handoff. During the interval between the first and second standardized patient instructor coaching sessions, a "practice patient" from among that provider's regularly scheduled patients was recruited to use the intervention materials in his or her visit. The provider rehearsed the new communication skills with this practice patient. The visit was audio-recorded for the standardized patient instructor to review and use in tailoring the coach-

The growing importance of patient experience has led some to term this the "era of the patient."

ing approach for the next formal coaching session.

Audio recordings from the coaching visits of standardized patient instructors were also analyzed by a trainer for fidelity and consistency. Fidelity checks suggested that the majority of providers did well in identifying patients' concerns and negotiating a joint agenda. Areas that needed more practice included incorporating the writing of next steps and teach-back.

As we stated earlier, our pilot examined the efficacy of our novel intervention by comparing it to an existing intervention, ASK, which poses three questions: "What are my options? What are the possible benefits and risks of each option? How likely are the benefits and risks of each option to occur?"[23] ASK has been used to improve patients' involvement in health care consultations.[42] To undertake this comparison, we handed patients a one-page ASK handout before their visits. Primary care providers and medical assistants were also shown the handout so that they were informed of the questions. The appropriate Institutional Review Board approved the study (ClinicialTrials.gov, No. NCT02522286).

THE CLUSTER RANDOMIZED PILOT TRIAL We implemented a cluster randomized controlled pilot between June 2014 and April 2015 in a delivery organization in California. We compared OpenComm (which we designed), ASK, OpenComm plus ASK, and usual care, in a fully crossed 2x2 factorial design. Four primary care clinics were randomized, one to each arm. Given that a patient's experience with health care involves all interactions within the clinic, we worked with clinic managers, medical assistants, and patient service representatives (receptionists) to minimize impact on clinic workflow and to inform them of the study. Ten visits from each site were randomly selected for digital audio recording to check the application of the intervention, beginning with medical assistants' entering the room with the patient until the end of the visit with the primary care provider. The flow of recruitment of participants is described and visually displayed in the CONSORT chart in the Appendix.[37]

OUTCOME MEASURES A one-page patient survey was collected immediately after the visits to obtain patient participants' views on their experience with their primary care providers. The primary outcome measure was CollaboRATE, a patient-reported experience with care, which consisted of three questions: "How much effort was made to help you understand your health issues? How much effort was made to listen to the things that matter most to you about your health issues? How much effort was made to include what matters most to you in choosing what to do next?"[43] A scale of 0 ("definitely disagree") to 9 ("definitely agree") was used. The outcome measure was whether or not the patient gave the top score of 9 on all three questions. This top-score method gave more variation than mean score and accounted for many patients' viewing these kinds of surveys as dichotomous—that is, 9 was good, all the rest were not good.[44]

The secondary outcome measure was adapted from a measure of patients' perception of how well primary care providers did on facilitation of shared decision making. This measure was the facilitation subscale of the Perceived Involvement in Care scale, a vetted research tool.[45] It consisted of five statements for patients to rate on a 0–9 scale, from 0 ("definitely disagree") to 9 ("definitely agree"). They were as follows: My doctor asked me whether I agree with his/her decisions; gave me a complete explanation for my medical symptoms or treatment; asked me what I believe is causing my medical symptoms; encouraged me to talk about personal concerns related to my medical symptoms; and encouraged me to give my opinion about my medical treatment. Although some of these items might not have been applicable for those having a wellness visit, even those patients sometimes still had health issues, such as skin rashes, which enabled them to rate the five items. For patients without any medical issues, we suggested that they answer based on what had been covered in the visit as they saw fit. We also defined a top-score measure: 1 if all five items were rated a 9, and 0 otherwise.

Lastly, a statement from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey—"My doctor showed respect for what I had to say"—was included for patients to respond to.[46] The CAHPS survey is a federal initiative to support the assessment of consumers' experiences with health care, using a four-point scale, from 1 (definitely disagree) to 4 (definitely agree). We used a top-score measure here as well: 1 if the patient rated this item as 4, and 0 otherwise.

STATISTICAL ANALYSES Descriptive analyses and generalized estimating equations (GEE) binary logistic regression were used to examine the association between the intervention groups and providing the highest possible CollaboRATE score and the highest possible facilitation score. Because multiple patients of each primary care provider participated (11.5 patients per provider), we accounted for clustering of patients within individual provider practices but not clustering within clinics because of the small number of clinics.[47] The models controlled for patient age, sex, race/ethnicity, and education and provider sex and race/ethnicity. Notably, we chose 5 percent as the minimum clinically important absolute difference between patient outcomes in the intervention clinics and in the usual care clinic. GEE logistic regression analyses were done on CollaboRATE and facilitation because the differences exceeded 5 percent. Furthermore, because this was a pilot study, we report estimations and 75 percent confidence intervals to infer the size and direction of intervention effects, instead of relying on the traditional statistical significance level.[48] For sensitivity analyses, we used a structural equations method employing patients' actual scores, and we obtained similar results. (Results are not shown but are available upon request.) Stata software version 14 was used.

SEMISTRUCTURED INTERVIEWS To better understand what occurred at each of the three intervention clinics during the study, we conducted fifteen semistructured interviews with members of the care team—primary care providers, medical assistants, clinic managers, and patient service representatives. We also asked some patients about their experience.

LIMITATIONS Our study had several limitations. First, it was limited by the small number of clinics involved. Although the four clinics were randomized into four study arms, there were too few clinics to definitively rule out the impact of clinic-level variations on the results. Furthermore, the Institutional Review Board–mandated recruitment procedures appeared to have reduced response rates because many people did not have time to arrive fifteen to twenty minutes before their scheduled appointment to provide written informed consent. Efforts that don't require formal written consent could likely improve response rates. In addition, although we had randomly selected ten visits per site to be audio-recorded, we did not check on the fidelity of the actual intervention from all visits. Furthermore, the approach of collecting patient-reported experiences in the clinic, while lowering recall bias associated with mailed surveys, could be subject to positive response bias. Lastly, we did not account for the length of the patient-provider relationship, although a mix of new and existing patients took part in our study.

The findings from our work offer the promise of improvement in shared-decision-making tools and experience.

Study Results

Patient demographics, unadjusted patient-reported outcomes, and provider characteristics are shown in Exhibit 1. Overall, 72 percent of patients gave the highest possible score for CollaboRATE, 43 percent gave the highest possible facilitation score, and 96 percent gave the top score on the respect item (Exhibit 2).

FACTORS ASSOCIATED WITH PATIENT-REPORTED OUTCOMES

▶ **COLLABORATE SCORES:** Exhibit 3 shows the relationship, from regression analyses, between patient-reported outcomes and clinic assignments in the four experimental arms. Compared with visits in the usual-care clinic, patients in the OpenComm clinic had 1.523 times higher odds of giving their primary care providers the highest possible CollaboRATE score. While the odds ratios from the ASK clinic (OR: 1.417) and the OpenComm plus ASK clinic (OR: 1.134) were greater than 1, their 75% confidence intervals included 1, which suggests no difference from the usual-care clinic. The results also show that older patients tended to give more top scores, while men were disinclined to do so (Exhibit 3).

▶ **FACILITATION SCORES:** OpenComm clinic patients had 1.548 times higher odds of giving top scores for all facilitation items, while ASK clinic patients had 1.647 times higher odds of doing so (Exhibit 3). OpenComm plus ASK clinic patients had higher odds of giving all top scores (OR: 1.212), although the confidence interval covered 1. Again, older patients had higher odds, while men had lower odds, of giving all top scores. Non-Caucasian primary care providers also had lower odds of receiving all top scores.

▶ **RESPECT:** No statistically significant results

EXHIBIT 1

Patient and provider characteristics and patient-reported outcomes, by pilot trial assignments, June 2014–April 2015

Characteristic	Clinics participating in pilot trial				
	All	Usual care	OpenComm	ASK	OpenComm plus ASK
PATIENT CHARACTERISTICS					
Sample size	300	75	75	75	75
Average age (mean in years)	54.0	54.7	49.0	50.7	61.4
Male	39.3%	33.3%	41.3%	54.7%	28.0%
Race/ethnicity					
Caucasian	63.3%	60.0%	58.7%	50.7%	84.0%
Asian/Pacific Islander	20.7	20.0	26.7	32.0	4.0
Other	16.0	20.0	14.7	17.3	12.0
Not college graduate	24.3	20.0	18.7	16.0	42.7
PATIENT-REPORTED OUTCOMES					
CollaboRATE: percent with top score					
Mean	72.0%	66.7%	74.7%	72.0%	74.7%
Standard deviation	15.2	17.0	14.0	17.3	12.5
Interquartile range	19.9	30.0	18.6	13.3	11.9
Facilitation: percent with top score					
Mean	43.0%	37.3%	45.3%	42.7%	46.7%
Standard deviation	14.2	16.6	12.7	11.5	14.8
Interquartile range	20.0	25.0	21.5	20.0	22.2
CAHPS respect question: percent with top score					
Mean	95.7%	96.0%	97.3%	98.7%	90.7%
Standard deviation	4.9	4.6	2.4	3.0	6.6
Interquartile range	6.7	5.0	0.0	0.0	11.1
PROVIDER CHARACTERISTICS					
Sample size	26	8	6	5	7
Male (no.)	12	2	4	3	3
Non-Caucasian (no.)	7	2	2	2	1

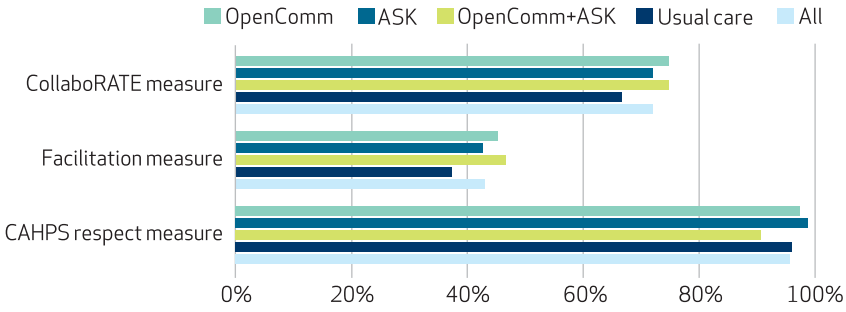
SOURCE Authors' analysis of data from the study. **NOTES** Open Communication (OpenComm) is the test intervention developed by the authors. ASK is the AskShareKnow existing intervention. Standard deviations and interquartile ranges for CollaboRATE, facilitation, and the Consumer Assessment for Healthcare Providers and Systems (CAHPS) survey question about respect were calculated on physician-level scores.

were found across the four arms on the measure gauging respect (data not shown), which suggests that almost all patients were very satisfied with the respect shown by their primary care providers. It could also suggest a possible ceiling effect that made it difficult to differentiate variations in patients' experience of respect.

QUALITATIVE INFORMATION Our qualitative findings come from the audio-recorded visits, postintervention interviews with clinic members, and conversations with patients. Analysis of the forty audio-recorded visits focused on these basic tasks: agenda setting, next steps, teach-back, and ASK. Compared to only one medical assistant each in usual-care and ASK clinics, half of the medical assistants in OpenComm and OpenComm plus ASK clinics clarified with patients what the most important concern was that they wanted to discuss with their primary care provider. Eight of ten OpenComm clinic visits had a teachback, compared to two of ten in OpenComm plus ASK clinic visits, three of ten in ASK clinic visits, and one of ten in usual-care clinic

EXHIBIT 2

Percentage of patients who gave all top scores on each measure, June 2014–April 2015



SOURCE Authors' analysis of data from the study. **NOTES** OpenComm is the Open Communication test intervention developed by the authors. ASK is the AskShareKnow existing intervention. CAHPS respect is the Consumer Assessment for Healthcare Providers and Systems survey question about respect.

EXHIBIT 3

Factors associated with having the highest possible patient-reported experience scores, June 2014–April 2015

	CollaboRATE (n = 300)			Facilitation (n = 297)		
	Odds ratio	Standard error	75% CI	Odds ratio	Standard error	75% CI
INTERVENTION GROUP[a]						
OpenComm	1.523	0.522	1.026, 2.259	1.548	0.454	1.104, 2.169
ASK	1.417	0.617	0.858, 2.338	1.647	0.480	1.178, 2.304
OpenComm plus ASK	1.134	0.432	0.731, 1.758	1.212	0.285	0.925, 1.589
PATIENT CHARACTERISTICS[b]						
Age	1.023	0.009	1.013, 1.033	1.018	0.007	1.009, 1.026
Male	0.620	0.167	0.455, 0.845	0.690	0.195	0.498, 0.956
Asian/Pacific Islander	1.030	0.491	0.596, 1.783	0.676	0.254	0.439, 1.041
Other ethnicity	1.058	0.413	0.675, 1.659	1.053	0.296	0.761, 1.455
Not a college graduate	1.288	0.340	0.951, 1.746	1.075	0.349	0.740, 1.562
PHYSICIAN CHARACTERISTICS[c]						
Male	1.357	0.380	0.983, 1.873	0.952	0.198	0.750, 1.209
Non-Caucasian	0.966	0.283	0.690, 1.354	0.735	0.120	0.608, 0.887

SOURCE Authors' analysis of data from the study. **NOTES** Open Communication (OpenComm) is the test intervention developed by the authors. ASK is the AskShareKnow existing intervention. [a]Odds ratios refer to the comparison of each intervention group with usual-care clinics. [b]Odds ratios refer to the comparison of each characteristic with female, Caucasian, and college graduates. [c]Odds ratios refer to the comparison of each characteristic with female and Caucasian.

visits; five of ten ASK clinic visits had some discussion of ASK components.

Primary care providers gave a lot of positive feedback about OpenComm, particularly about the formal standardized patient instructor training as "a safe place to practice communicating with patients." While many acknowledged the value of the teach-back, few said that they would continue to do it after the study. Scalability was mentioned as a concern because the in-person standardized patient instructor coaching took effort. Some suggested substituting it with small-group standardized patient instructor coaching. A few providers in ASK reported that this intervention reminded them to use lay terminology when talking to patients.

Patient feedback about OpenComm was generally positive: Patients stated that they should prepare for doctor visits as they do for lawyer or accountant visits. One patient commented: "The [patient Visit Companion booklet] helps you make sure you didn't forget anything. I walked out feeling like everything I wanted covered was talked about."

"The main difference is the teachback component during the appointment, making sure that both the patient and their doctor are on the same page," another patient responded.

Patients also liked being able to have the ASK handout to refer to during the visit to remind them to discuss the ASK questions.

Discussion

Enhanced shared decision making can be achieved through carefully designed interventions targeting the behavior of both patients and primary care providers. While behavior change takes effort, many providers might be motivated to change how they engage with patients because it is not only important to patients, but it is also the ethical thing to do—not to mention that their incomes are increasingly tied to patient-reported experiences with care.[49] Our findings suggest that something can be done that could improve patient experience.

This pilot study followed the best practice of codesigning an intervention with stakeholders and developed a multidimensional intervention that aimed to change the communication behaviors of both patients and primary care providers. We view the results as promising evidence of the intervention's efficacy and as meaningful signals of its likely effects on patient experience. While it is not uncommon that an absolute difference of 5 percent or less could influence a physician's ranking in patient satisfaction performance dashboards, additional research is needed to assess the clinical importance of such a difference.[50–52]

The strengths of our evaluation approach included asking patients about their experiences with specific aspects of patient-physician interaction—the aspect of care for which patient-reported measures are most credible.[9] Future research needs to evaluate these interventions in more clinics in pragmatic trials designed

to test their comparative effectiveness. Answers to practical questions about the risks and benefits of these interventions need to be gathered from a greater variety of practice settings. Further studies will also need to address the challenges of scalability and integration with other quality improvement efforts, so that organizational leaders can be well informed in helping their health care systems become learning health care systems.[53]

Conclusion

By engaging patients, primary care providers, and clinical staff, we codesigned a multidimensional intervention, Open Communication, to promote shared decision making. The findings from our work offer the promise of improvement in shared-decision-making tools and experience, using two patient-reported experience measures of specific physician behaviors in primary care office visits.[9] The existing intervention, ASK, was also promising, although was associated with only one of the two outcome measures.

As the nation transitions physician payment incentive from rewarding volume to rewarding value, accountability should be anchored on patient-centered care, delivered through patient-centered communication. It is incumbent upon health care systems to empower and enable patients to inform their primary care providers about the issues that matter most to them, to truly understand their options, and to share in decision making to the extent that they prefer. ■

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Examining A Health Care Price Transparency Tool: Who Uses It, And How They Shop For Care

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ABSTRACT Calls for transparency in health care prices are increasing, in an effort to encourage and enable patients to make value-based decisions. Yet there is very little evidence of whether and how patients use health care price transparency tools. We evaluated the experiences, in the period 2011–12, of an insured population of nonelderly adults with Aetna's Member Payment Estimator, a web-based tool that provides real-time, personalized, episode-level price estimates. Overall, use of the tool increased during the study period but remained low. Nonetheless, for some procedures the number of people searching for prices of services (called *searchers*) was high relative to the number of people who received the service (called *patients*). Among Aetna patients who had an imaging service, childbirth, or one of several outpatient procedures, searchers for price information were significantly more likely to be younger and healthier and to have incurred higher annual deductible spending than patients who did not search for price information. A campaign to deliver price information to consumers may be important to increase patients' engagement with price transparency tools.

Slowing the growth of health care costs is critical to the long-term fiscal stability of the United States, and it is the focus, either directly or indirectly, of the majority of health policy initiatives today. One tactic for reducing spending is to increase price transparency in health care—that is, to publish the prices that providers charge or patients and insurers pay for medical care. The intended mechanism is for patients (or their advocates) to use information about costs (either a patient's out-of-pocket expenses or total health care costs) as one factor in their decision about whether and where to receive health care.

Previous studies have found wide variation in medical prices across US markets.[1,2] This suggests that there is substantial opportunity for increased transparency to save money by shifting patients from high- to low-cost providers. The rising prevalence of high deductibles in health plans is creating large populations of patients who have financial incentives to choose a low-cost provider.[3] Technological innovations and their capability to deliver real-time estimated health care prices (for example, via the Internet) represent another driver of price transparency.

Efforts to introduce price transparency to the US health care system are increasing. In 2013 the Centers for Medicare and Medicaid Services (CMS) publicly released data on physician payment amounts for the first time, and in 2014 CMS implemented regulations stemming from the Affordable Care Act that require hospitals to annually publish prices of all the services they provide.[4] States are also taking action to make health care price information publicly available.[5,6] In 2012, 70 percent of enrollees in a private insurance plan were estimated to have ac-

cess to some form of price transparency tool, up from 35 percent in 2011.[1] Finally, consumers have demonstrated growing interest in health care price information, in some cases creating price databases through crowdsourcing.[7,8]

However, the functionality, comprehensiveness, and usability of these price data vary considerably. Health care pricing is complicated. Often a provider's billed charges (such as the physician's fee for knee replacement surgery), which often are what are publicly available as a result of transparency initiatives, do not reflect the prices that most patients and others actually pay. For price information to be helpful and usable to patients, it must provide a meaningful estimate of a patient's total expected costs as opposed to an average unit cost.[9] Health plans are well positioned to provide complete (episode-level) and personalized price information to consumers, because of their access to historical claims data that can be analyzed for patterns of service use, real-time information on a consumer's health plan benefits and out-of-pocket spending to date, and proprietary information on negotiated provider rates.

Certain unique aspects of health care inherently limit the usefulness of and demand for price information in important ways. For example, not all health care services lend themselves to consumer shopping. In many cases, health care needs are acute, and patients do not have the time or—in cases of critically ill patients in ambulances—even the ability to shop for and choose a provider. In addition, when the cost of a service dramatically exceeds a patient's deductible, or when a patient's share of the cost is a fixed amount (such as an office visit copayment), patients do not have an incentive to shop for the best price because their out-of-pocket expense would be the same across all providers.

A growing number of sources are providing the type of meaningful price transparency information described above through online tools, but there is very little evidence as to whether and how consumers use the tools. A publicly available web-based tool supported by the State of New Hampshire provides information on total and out-of-pocket expenses for episodes of care across different providers, yet early evidence suggests that only 1 percent of the state's population has used the tool.[10]

Christopher Whaley and coauthors analyzed the use of Castlight, a customized price transparency tool, for three services by employees at eighteen large self-insured employers.[11] The authors reported that 1 percent of households used the tool to search for any imaging service, 3 percent searched for any lab service, and 20 percent searched for any office visit. Consumers who searched for price information on Castlight were significantly more likely to be female (52.8 percent) than male (50.5 percent), though this difference was small.

Aetna's Member Payment Estimator

We evaluated how nonelderly adult enrollees insured at Aetna, a major commercial carrier, used a customized price transparency tool developed by the carrier. In 2010 Aetna launched the Member Payment Estimator, a web-based tool that uses claims adjudication logic to provide real-time, personalized, episode-level estimates of both total prices and a patient's out-of-pocket expenses at specific providers for over 650 medical services. The services included on the tool were considered by Aetna to be those that offered the biggest opportunities to save on health care expenses and those for which consumers were most likely to comparison shop.

Aetna enrollees who searched the Member Payment Estimator for price information about a medical care service are called *searchers* in this article. Typically, searchers log into the Member Payment Estimator and specify, through a series of screens and menus, the person in their family for whom they are seeking the estimated price (that is, the searcher, a spouse, or a child), the ZIP code where they want to find a provider, and the service or type of physician they need. As of 2012 the Member Payment Estimator automatically generates cost estimates for up to ten providers in the specified geographical area (up from three in 2011). Enrollees can also query the Member Payment Estimator to obtain an estimate for a specific physician or facility by name.

The first set of search results provides information about providers, an estimate of providers' distance from the ZIP code the searcher entered, and estimated out-of-pocket expense at each provider. Physician estimates also indicate whether a doctor has an "Aexcel" designation, which indicates that the physician has met Aetna's criteria for quality and efficiency. Estimates are listed from lowest to highest cost, but they can also be sorted by provider name or distance from the chosen ZIP code.

Clicking on a link labeled "cost details" for any specific estimate shows the following estimated information: total charges; Aetna's "member rate" (the allowed amount); the amount the plan would pay; and the amount the patient would pay divided among the enrollee's deductible, coinsurance, and copayments.

In 2011–12, our study period, over 90 percent of the enrollees in any of Aetna's commercial plans had access to price estimates on the Mem-

ber Payment Estimator. They could either do an online search or call a customer service representative, who would search on their behalf.

Previous studies looked at the use of transparency tools in more limited populations (for example, employees at a collection of firms that elected to use Castlight, or residents of New Hampshire, a small state).[10,11] In contrast, our study's enrollees included people in large-group, small-group, and nongroup plans across the United States. We analyzed nonelderly adults' rates of use of the Member Payment Estimator, compared the characteristics of people who used the tool and received a service with those of people who received a service but did not use the tool, and analyzed enrollees' search patterns. Having such detailed evidence is critical both to determining whether injecting price transparency into health care via searchable and customized web-based tools has the potential to affect patient decision making, and to identifying areas where changes in the design and targeting of these tools could increase their potential impact on the value of health care spending.

Study Data And Methods

SAMPLE Aetna is a national health insurance company with over sixteen million enrollees in a range of commercial medical insurance products sold to large employers, small groups, and individuals. We obtained deidentified administrative enrollment and medical claims data for all enrollees who had searched the Member Payment Estimator tool and for the following two samples of nonsearchers: a random sample of enrollees who had never used the tool and a stratified random sample of enrollees who received a service during 2011 or 2012 but never used the tool even though it included price estimates for their service.

The sample was limited to adults ages 19–64 and, to improve the precision with which we were able to observe health status and out-of-pocket spending, to people enrolled for at least seven months in a given year. The sample consisted of 616,779 enrollees, of whom 332,255 searched the Member Payment Estimator; 159,909 were randomly selected nonsearchers; and 124,615 were enrollees who received a service in 2011–12 for which price estimates were available on the Member Payment Estimator but who never used the tool. All analyses and presentation of results were weighted to account for oversampling of searchers.

METHODOLOGY We constructed variables that measured patient age, sex, comorbidities, category of eligibility (that is, single or family coverage), annual deductible spending, and location

A growing number of sources are providing meaningful price transparency information through online tools.

of residence. Comorbidities were measured using the Elixhauser comorbidity index, which is commonly used in this type of analysis.[12] For Member Payment Estimator searchers we obtained a record of every search (conducted either by the member or by a family member or customer service representative on the member's behalf), the date of the search, and the service searched for. These data were linked to claims for the searchers.

We compared the characteristics of searchers to those of all nonsearchers. The significance of differences between the two groups was examined using two-tailed *t*-tests for continuous variables and chi-square tests for dichotomous variables.

We focused several analyses on a set of twenty-four services for which price estimates were available on the Member Payment Estimator. These services were selected because they were among those most commonly searched by enrollees or because they were determined by our research team to be potentially good candidates for patient shopping since they were not emergency services.

The selected services fell into the following categories: preventive services (colonoscopy, flu shot, and mammogram), imaging services (echocardiogram; magnetic resonance imaging [MRI] of brain with or without dye, neck without contrast, lower back without dye, and lower extremity joint without dye; and computed tomography [CT] scan of abdomen and pelvis without dye and abdomen, pelvis, and chest with dye), procedures (carpal tunnel release, cataract or lens procedures, cesarean section, inguinal herniorrhaphy [hernia repair], sleep study, tonsillectomy with or without adenoidectomy, total hip replacement, total knee replacement, upper gastrointestinal endoscopy, and vaginal delivery), and physician office visits (new patient primary care office visit, new patient gynecological visit, established patient primary care office vis-

Searchers do not all receive the medical service they search: They are simply individuals who get price information.

it, and established patient gynecological visit).

To identify the association between individual characteristics and searching the Member Payment Estimator, we estimated logistic regression models on a stratified sample of *patients*, defined as all enrollees who had a claim for one of our twenty-four selected services. The dependent variable was a dichotomous indicator of whether the patient ever searched the Member Payment Estimator. Independent variables included in the models were sex, age, whether the patient had a health condition or comorbidity, and whether the patient's annual spending toward the deductible was greater than $1,250 in the year of the claim. The models also included procedure, quarterly, and state dummy variables.

We report results from two pooled models: one that included the five services received by women only (mammogram, cesarean section, vaginal delivery, and gynecological office visits for new and established patients) and one that included the remaining nineteen selected services. As a sensitivity analysis, we estimated (but do not show in this article) models that controlled for geography using dummy variables for hospital referral regions instead of states. The results from this sensitivity analysis were similar to our primary results.

We also conducted descriptive analyses of the search-level Member Payment Estimator data to identify patterns of use of the tool, including the medical services most frequently searched, rates of search, and characteristics of repeat searchers. For the twenty-four selected services, we analyzed the proportion of searches for price information relative to the overall patient volume for each service.

For twenty-two of these services (all but established patient office visits) we report rates of enrollees with no previous history of receiving a service who searched for price estimates and received the service within 90 days or within 180 days of the date of their first search. We had data on medical care utilization from January 1, 2011, through December 31, 2012. Thus, for these analyses we examined Member Payment Estimator searches that were conducted from January 1, 2011, through September 30 or June 30, 2012, respectively.

LIMITATIONS Our study had several limitations. First, the study data were from the period 2011–12, so they covered only the first two years of price transparency for consumers. Despite the age of the data, this analysis provides new evidence on individual use of an online price transparency tool and can inform policy makers and insurers about possible new efforts for increasing the use of such tools. Importantly, the lag in time since people searched the tool allowed us to observe whether searchers actually received the care for which they sought price information.

Second, because of limitations in our data set, we could not link individuals within the same family to each other. Thus, we were unable to observe patterns of searching within families.

Finally, we report on the experience of enrollees with commercial coverage from a single health plan. Although this population was large and geographically diverse, the generalizability of our findings to other groups could not be determined.

Study Results

The primary insured individual in a health plan (that is, the subscriber) could query the Member Payment Estimator for price estimates for him- or herself or for a dependent in the plan. In the first full year that the tool was available, 112,372 subscribers (1.6 percent of those eligible) queried the tool to get a price estimate for themselves at least once (Exhibit 1). Use increased by 43 percent in the second year, to 160,307 subscribers (2.4 percent of all those eligible). The vast majority of subscribers who used the Member Payment Estimator in 2012 were first-time searchers: In absolute terms, 3.5 percent of subscribers used the tool one time in 2011–12.

Three-quarters of the searches returned a price estimate for the subscriber (that is, the person doing the searching) him- or herself, and the remaining 25 percent of searches were on behalf of a dependent (data not shown). Price estimates were more likely to be for women. Among the whole subscriber population, searchers were more likely to be younger or to have a major health condition or comorbidity, and they were significantly more likely to have used medical care, compared to nonsearchers (95 percent versus 62 percent; $p < 0.01$).

Collectively, the top twenty services queried in each year represented about half of all searches.

EXHIBIT 1

Selected characteristics of searchers and nonsearchers on the Aetna Member Payment Estimator price tool

	2011		2012	
	Nonsearchers	Searchers	Nonsearchers	Searchers
Number of plan subscribers	6,797,912	112,372	6,651,128	160,307
Share of subscribers	98.4%	1.6%	97.6%	2.4%
Female	45.3%	57.7%****	44.6%	56.5%****
Mean age (years)	41.8	40.6****	42.5	41.7****
Age				
19–34	32.6%	37.3%****	31.3%	34.6%****
35–44	23.3	25.3	22.6	24.4
45–54	25.1	22.3	24.7	22.5
55–64	19.0	15.1	21.3	18.5
Had a medical claim	62.3%	94.6%****	64.5%	94.0%****
Had a comorbidity	3.3%	5.5%****	3.5%	5.7%****
Residence region				
East North Central	10.8%	10.3%****	10.4%	11.3%****
East South Central	2.7	1.3	2.6	1.6
Middle Atlantic	21.0	16.5	20.5	17.8
Mountain	6.4	8.3	6.2	8.1
New England	5.1	5.7	5.5	5.4
Pacific	12.9	11.5	13.2	12.0
South Atlantic	22.2	24.4	22.7	23.1
West North Central	3.5	3.1	3.9	3.4
West South Central	15.5	18.8	15.0	17.4

SOURCE Authors' analysis of Aetna administrative enrollment, medical claims, and Member Payment Estimator (MPE) search data. **NOTES** The sample included all people ages 19–64 who were the primary subscriber on the plan, who were enrolled for at least seven months of the year, and who had access to the MPE. Results were weighted to adjust for the oversampling of searchers. Significance indicates that the difference between searchers and nonsearchers was statistically significant in two-tailed *t*-tests for continuous variables and chi-square tests for dichotomous variables. ****$p < 0.001$

Preventive screening services (colonoscopy and mammogram) were the two most common services searched in 2011 and the first and third most common in 2012, together accounting for 15 percent of searches in 2011 and 14 percent in 2012 (Exhibit 2). Several imaging services were also well represented in the top twenty services. Other common searches were for obstetrical care, physician office visits, and selected outpatient procedures.

One measure of the demand for price information on the Member Payment Estimator is to compare the number of searchers with the volume for that service in the population. Searchers do not all receive the medical service they search: They are simply individuals who get price information.

There was wide variation in the number of searchers relative to volume across the services. The number of searchers represented 5 percent or less of the volume for physician office visits, imaging services, flu shots, and mammograms (data not shown). In contrast, the number of searchers for tonsillectomy (with or without adenoidectomy) was 54 percent of the volume for those services among the population. Other services with a comparatively high volume of searchers relative to use were total knee replacement (searchers represented 48 percent of the volume), inguinal herniorrhaphy (27 percent), cataract or lens procedures (18 percent), vaginal delivery or cesarean section (16 percent), and carpal tunnel release (12 percent).

A second measure of the demand for price information is the share of patients (enrollees who had a medical service) who searched for price information for that service. Among the twenty-four selected services, those with the highest share of patients searching for price information were vaginal delivery or cesarean section (4.8 percent and 4.3 percent of patients, respectively), tonsillectomy with or without adenoidectomy (4.5 percent), total knee replacement (4.4 percent), cataract or lens procedures (4.0 percent), and inguinal herniorrhaphy (3.4 percent) (data not shown).

We sorted the twenty-four selected services into whether they were exclusively for women or for both men and women. Regression results indicated that searching for procedures exclusively for women was significantly associated with younger age, having no comorbidity, and having annual deductible spending of more than $1,250 (Exhibit 3). Patients who searched for

EXHIBIT 2

Most frequently searched health care services on the Aetna Member Payment Estimator price tool

	Percent of searches		Rank	
Service	**2011**	**2012**	**2011**	**2012**
Colonoscopy	9.92	9.32	1	1
Mammogram	5.00	4.23	2	3
Vaginal delivery	4.95	6.09	3	2
Physician office consult, on request of another physician	3.74	3.61	4	4
MRI of lower extremity joint without dye	2.95	2.51	5	6
Cesarean section	2.80	2.95	6	5
MRI of lower back without dye	2.73	2.43	7	8
Vasectomy in a facility	2.69	2.01	8	10
Intrauterine device insertion	2.32	1.72	9	12
Upper gastrointestinal endoscopy	2.24	2.08	10	9
Established patient nonprimary care office visit	2.21	1.79	11	11
Cataract or lens procedure	1.92	1.44	12	15
MRI of brain without dye	1.89	1.62	13	13
CT scan of abdomen, pelvis, and chest with dye	1.83	1.25	14	21
Ultrasound after 14 weeks gestation	1.82	0.76	15	36
Established patient primary care office visit	1.71	0.64	16	43
Laparoscopic cholecystectomy	1.62	1.33	17	18
MRI of neck without contrast	1.55	1.33	18	16
Dermatology new patient office visit	1.39	1.33	19	17
Chiropractic manipulative treatment, spinal	1.37	1.27	20	20
Echocardiogram	—[a]	1.51	—[a]	14
Total knee replacement	—[a]	1.30	—[a]	19
Sleep study	—[a]	2.49	—[a]	7

SOURCE Authors' analysis of Aetna's Member Payment Estimator (MPE) search data. **NOTES** Multiple searches by the same person for the same service on the same day were treated as a single search. Primary care is family practice, general practice, and internal medicine. MRI is magnetic resonance imaging. CT is computed tomography. [a]Service was not included in the MPE in that year.

price information on procedures for both sexes were less likely to have a comorbidity.[13]

Ninety-four percent of Member Payment Estimator searchers for twenty-two of our selected services (all except established patient office visits) had no previous history of receiving the service for which they searched the tool (Exhibit 4). Among searchers with no previous history of receiving the service, for whom prices were most likely new information, the proportions who received the service within 90 days or within 180 days of their first search varied considerably. The highest proportions of searchers who then received the service were those who searched for prices of mammograms (47.7 percent had this procedure within 180 days of their search), new patient primary care office visits (43.8 percent), and upper gastrointestinal endoscopy (41.2 percent). Although tonsillectomy procedures had a high number of searchers relative to volume of the procedures in the population (as noted above), only 7.3 percent of the searchers went on to have the procedure within 180 days.

Finally, we examined the frequency and characteristics of searches on the Member Payment Estimator. On average, the search results

EXHIBIT 3

Patient characteristics associated with searching on the Aetna Member Payment Estimator price tool, 2011–12

Characteristic	Relative odds of using the tool
SERVICES FOR WOMEN ONLY	
Older than median patient age	0.392****
Has a comorbidity	0.902**
Annual deductible spending more than $1,250	1.558****
SERVICES FOR MEN AND WOMEN	
Ages 35–44	0.778****
Ages 45–54	0.615****
Ages 55–64	0.502****
Female	0.956**
Has a comorbidity	0.853****
Annual deductible spending more than $1,250	1.807****

SOURCE Authors' analysis of Aetna administrative enrollment, medical claims, and Member Payment Estimator (MPE) search data. **NOTES** The results presented are odds ratios from logistic regression models that also included service, state, quarter, and year fixed effects. The services for women only were childbirth, gynecological office visits, and mammograms (71,124 of these services were provided in 2011–12). Services for men and women were colonoscopy; magnetic resonance imaging of brain with or without dye, neck without contrast, lower back without dye or lower extremity joint without dye; computed tomography scan of abdomen and pelvis without dye or abdomen, pelvis, and chest with dye; primary care office visits for new or established patients; total knee or hip replacement; sleep study; flu shot; carpal tunnel release; cataract or lens procedures; inguinal herniorrhaphy; echocardiogram; upper gastrointestinal endoscopy; and tonsillectomy with or without adenoidectomy (665,552 of these services were provided in 2011–12). **$p < 0.05$ ****$p < 0.001$

EXHIBIT 4

Rates of service use by searchers on the Aetna Member Payment Estimator price tool, 2011–12

		Searchers with no history of the service		
	All searchers		Days between search and receipt of service	
Service	Number	Number	Up to 90	Up to 180
PREVENTIVE				
Colonoscopy	41,538	39,789	29.0%	32.7%
Flu shot	4,846	4,599	31.7	33.6
Mammogram	21,471	18,496	41.4	47.7
IMAGING				
Echocardiogram	4,301	3,808	24.8	26.6
Selected MRI and CT scans	57,078	52,804	25.2	26.3
PROCEDURES				
Carpal tunnel release	2,070	2,034	13.0	14.3
Cataract or lens procedure	7,794	7,659	16.5	19.3
Cesarean section	13,196	12,587	12.8	18.6
Inguinal herniorrhaphy	4,233	4,198	10.5	11.2
Sleep study	6,701	6,266	21.5	23.7
Tonsillectomy with or without adenoidectomy	7,427	7,384	6.4	7.3
Total hip replacement	1,275	1,256	14.4	18.6
Total knee replacement	3,603	3,576	6.8	8.4
Upper gastrointestinal endoscopy	10,112	9,448	39.0	41.2
Vaginal delivery	23,926	23,177	13.2	20.7
PHYSICIAN OFFICE VISITS				
New patient gynecological visit	5,961	5,718	34.9	39.6
New patient primary care office visit	6,522	5,636	37.7	43.8
Total	**222,054**	**208,435**	**24.7**	**28.2**

SOURCE Authors' analysis of Aetna administrative enrollment, medical claims, and Member Payment Estimator (MPE) search data. **NOTES** Selected magnetic resonance imaging (MRI) and computed tomography (CT) scans were MRI of brain with or without dye, neck without contrast, lower back without dye, and lower extremity joint without dye; and CT scan of abdomen and pelvis without dye and abdomen, pelvis, and chest with dye. Primary care is family practice, general practice, and internal medicine.

showed prices for six different providers (data not shown). However, the distribution was highly skewed: 59 percent of searches returned a price estimate for only one provider. Searches with only one price estimate were most commonly for an established patient office visit.

Sixty-four percent of people who used the Member Payment Estimator searched for price information on one medical service, 20 percent queried the tool for price information on two services, and 15 percent searched for price information on three or more services (data not shown). Enrollees who searched the tool for more than one service were more likely to be female, to be younger than thirty-four, and to have higher annual deductible spending in a year compared to searchers who used the tool for only one service.

Discussion

During the first two years that the Member Payment Estimator was available, low but growing rates of consumers searched the price transparency tool.[14] Searchers were more likely than nonsearchers to have at least one medical claim during a year. This result makes economic sense, as health care price information is more useful to users of medical care than to enrollees who don't use care.

The overall rate of use of a price transparency tool among a population of insured consumers is arguably not the correct statistic to consider when evaluating the tool's impact. Health care price information is most useful to those patients expecting to use medical care, who can learn the price of their potential care and incorporate the information into their care-seeking decisions. In fact, it is medical care services with these characteristics—including preventive screenings (mammography and colonoscopy), childbirth, imaging, and nonemergency outpatient procedures—that are most frequently searched by enrollees. A subset of these services, including tonsillectomy, total knee replacement, inguinal herniorrhaphy, cataract or lens procedures, childbirth, and carpal tunnel release, had the highest rates of searching relative to service volume in the population. We therefore refer to this group as *shoppable services*.

Searchers were more likely than nonsearchers to have at least one medical claim during a year.

Among patients who received one of a selected set of services, Member Payment Estimator searchers were more likely to be younger and healthier and to have higher annual deductible spending, compared to nonsearchers. Our finding that people with greater out-of-pocket expenses were more likely to search the Member Payment Estimator likely reflects the fact that consumers with generous insurance are insulated from price variation and are less sensitive to price. The lower use of the tool by people with comorbidities may reflect either a lower propensity within this population to comparison shop or the fact that they already have knowledge about prices and providers because of their greater experience with the health care system, compared to people without comorbidities.

Enrollees who used the tool were also more likely to be women, whose patterns of health care utilization differ from those of men.[15,16] That difference may contribute to women's higher demand for health care price information.

Rates of use of the Member Payment Estimator by patients who ended up receiving one of the shoppable services were low, though similar to rates observed among patients using other transparency tools.[11] This result may be because of informational barriers: Consumers might not have known about the tool or might not have been accustomed to shopping for providers.

For consumers who have plans that offer very little cost sharing or who bear small portions of the costs associated with their choice of providers, taking the time to shop for the best price might not be worth the effort. Our regression results showing that patients who incur higher annual deductible spending were more likely to use the Member Payment Estimator support this hypothesis. Surprisingly, preventive services, which typically have full insurance coverage, tended to be among the most commonly searched services. Further analysis revealed that searchers for preventive services were more likely to get a price estimate for only one provider per search than were consumers searching for other services. This suggests that the tool could be a source of information on benefit design, informing patients whether or not an office visit would be covered by their health plan.

Exhibit 4 shows that for many of the shoppable services, significant numbers of enrollees used the Member Payment Estimator, but over half of these searchers did not end up receiving the service. For some of these consumers, knowledge of the price of the service may contribute to a decision not to receive it. Alternatively, consumers may simply be gathering information out of general interest. Enrollees may also be searching for price information on behalf of their family members—a possibility we could not investigate because of data limitations. Future research should explore these hypotheses further.

This study also did not address the question of whether a price transparency tool that provides personalized price estimates to patients reduces overall health care spending. Whaley and coauthors found that searching for price information was associated with lower payments for advanced imaging and laboratory tests, compared to payments for these services for nonsearchers.[11] However, because users of price transparency tools are a selected sample and represent a small proportion of the population, we cannot infer whether introducing price transparency into a population lowers costs overall.

Policy Implications

Despite documentation of wide variation in health care prices across providers and the increased availability of price transparency tools, our findings suggest that increased education to raise awareness of the tools and efforts to engage consumers in shopping will be important if they are to incorporate information about costs into their decisions about whether and where to receive health care. Our study findings are particularly important because they were obtained in the context of a sophisticated online price transparency tool comparable to those commonly available via private health plans and other third-party vendors.

Targeting older and sicker patients, who—according to our findings—are using the Member Payment Estimator less than younger and healthier patients and who are more likely to be high-volume users of care, could increase the impact of these tools. Interventions that use output from price transparency tools and send patients price information when they need to make decisions about care seeking have been shown to lead to cost savings.[17] This strategy, where feasible, may increase the impact of price transparency tools.

However, identifying patients when price information is most salient to them is difficult, except in cases where preauthorization is required. An alternative approach could be to support providers in serving as navigators for patient price shopping. Such an approach could improve the timing of the information delivery and allow price information to be coupled with information on the risks and benefits of the service and, potentially, comparative quality information.

Conclusion

Patients who searched for price information were more likely to be younger, to be users of medical care, and to have fewer comorbidities, compared to patients who did not search. Services most often searched were planned, not emergency, services.

Ultimately, proponents of price transparency hope that health care price information will become an integral part of patient decision making, so that patients will be able to choose high-quality and high-value care—which in turn will influence overall spending and utilization in a meaningful way. Above all, our findings suggest that to achieve this goal, innovative approaches to engaging more consumers with these tools may be the next critical frontier for price transparency. ■

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REGIONAL MARKETS ISSUE BRIEF / APRIL 2016

Fresno:
As Uninsured Rate Falls, Capacity Constraints Grow

Summary of Findings

Since the last round of this study in 2011-2012, the Fresno region's largely agricultural economy has experienced some growth, though it continues to be one of the poorest areas in California. Given the region's high poverty rate, many previously uninsured people were able to enroll in Medi-Cal when the state expanded eligibility for the program under the Affordable Care Act (ACA). The gain in the share of patients with insurance coverage has helped bring financial stability to the region's health care sector but also has compounded existing provider capacity constraints and access challenges.

Key developments include:

- **Major growth in Medi-Cal enrollment and reductions in uninsurance as a result of ACA coverage expansions.** Fresno has experienced extremely high Medi-Cal growth and very large reductions in the proportion of uninsured residents since the January 2014 ACA coverage expansions. In fact, while Fresno previously had an uninsured rate above the state average, the uninsured rate has plummeted so much that it is now below the state average.

- **Growing capacity constraints.** The growth in insurance coverage exceeded expectations of providers and Medi-Cal managed care plans alike. Despite efforts by Medi-Cal managed care plans and safety-net providers to prepare for anticipated increases in demand by boosting capacity, patients have experienced challenges accessing care. Hospitals have grappled with large increases in volumes at emergency departments, and safety-net providers struggled to address increased demand for primary and specialty care.

- **Continued growth of Rural Health Clinics (RHCs).** Some hospitals have continued to add RHCs and other outpatient facilities to help meet growing needs of low-income patients. The expansion of RHCs has exacerbated competitive tensions with some Federally Qualified Health Centers (FQHCs). While both are federally designated, FQHCs and RHCs have different structures and face different requirements.

- **Expanded coverage and government subsidies shore up hospital and clinic finances.** With the gains in Medi-Cal coverage and resulting revenues for providers, the major hospitals and community health centers have generally experienced improvements in financial status. Hospitals are also benefiting, at least temporarily, from additional Medi-Cal payments through the state's hospital fee program. FQHCs continue to receive a boost from enhanced Medi-Cal payments and federal funding to support care for the remaining uninsured.

- **Physicians begin to consolidate and align more closely with hospitals.** In past rounds of this study, Fresno had few of the market forces that pushed physicians in other California markets to consolidate into large medical groups and to align with hospitals, including very little managed care. As a result, physicians have historically

been largely independent. A noteworthy development this round is that physicians in Fresno County have started to consolidate into larger medical groups. At the same time, physicians across the region have started to align more closely with hospitals, primarily by joining medical foundations. These changes are primarily driven by physicians' apprehension about the changing landscape of provider payment arrangements and a sense that belonging to larger organizations and having closer alignments with hospitals will provide more financial security and better contracting opportunities.

- **Providers begin taking on more risk in a market that historically has been almost exclusively fee-for-service.** Unlike other California markets where large physician organizations have long assumed financial risk for physician services under the delegated capitation model, managed care arrangements never gained any significant traction in Fresno. Over the last few years, the market has seen some growth in risk contracting, as IPAs have begun to take on new risk contracts with Medicare and commercial payers. A few provider organizations have begun to participate in accountable care organizations (ACOs), with other providers reportedly planning to follow suit. Medi-Cal health plans and safety-net providers also are exploring taking on more financial risk. All of these developments are very new, and it is still too early to tell whether they will lead to major changes in care delivery or improved efficiencies.

Table 1. Demographic and Health System Characteristics: Fresno vs. California

	Fresno	California
POPULATION STATISTICS, 2014		
Total population	1,746,671	38,802,500
Population growth, 10-year	13.4%	9.1%
Population growth, 5-year	5.7%	5.0%
AGE OF POPULATION, 2014		
Under 5 years old	8.9%	6.6%
Under 18 years old	29.6%	24.1%
18 to 64 years old	59.1%	63.1%
65 years and older	11.3%	12.9%
RACE/ETHNICITY, 2014		
Asian non-Latino	7.0%	13.3%
Black non-Latino	5.1%	5.5%
Latino	55.2%	38.9%
White non-Latino	30.3%	38.8%
Other race non-Latino	2.5%	3.5%
Foreign-born	25.7%	28.5%
EDUCATION, 2014		
High school diploma or higher, adults 25 and older	74.6%	83.4%
College degree or higher, adults 25 and older	23.9%	37.9%
HEALTH STATUS, 2014		
Fair/poor health	22.5%	17.1%
Diabetes	10.1%	8.9%
Asthma	15.9%	14.0%
Heart disease, adults	7.0%	6.1%
ECONOMIC INDICATORS, 2014		
Below 100% federal poverty level	28.3%	18.4%
Below 200% federal poverty level	56.2%	40.7%
Household income above $100,000	13.6%	22.9%
Unemployment rate	12.0%	7.5%
HEALTH INSURANCE, ALL AGES, 2014		
Private insurance	41.7%	51.2%
Medicare	8.6%	10.4%
Medi-Cal and other public programs	40.7%	26.5%
Uninsured	8.9%	11.9%
PHYSICIANS PER 100,000 POPULATION, 2011		
Physicians	128	194
Primary care physicians	47	64
Specialists	81	130
HOSPITALS, 2014		
Community, acute care hospital beds per 100,000 population†	144.6	181.8
Operating margin, acute care hospitals*	1.3%	3.8%
Occupancy rate for licensed acute care beds†	59.7%	53.0%
Average length of stay, in days†	4.4	4.4
Paid full-time equivalents per 1,000 adjusted patient days*	15.1	16.6
Total operating expense per adjusted patient day*	$2,213	$3,417

*Kaiser excluded.
†Kaiser included.

Sources: US Census Bureau, 2014; California Health Interview Survey, 2014; "Monthly Labor Force Data for California Counties and Metropolitan Statistical Areas, 2014" (data not seasonally adjusted), State of California Employment Development Department; "California Physicians: Supply or Scarcity?" California Health Care Foundation, March 2014; Annual Financial Data, California Office of Statewide Health Planning and Development, 2014.

Market Background

The Fresno region (see map on page 16), comprises five counties in the San Joaquin Valley of central California: Fresno, Madera, Kings, Tulare, and Mariposa. The region is home to 1.8 million residents, who are largely concentrated in the urban core of the City of Fresno. Traditionally a fast-growing region, population growth has slowed since the early 2000s, though it remains slightly above the growth rate for California as a whole (see Table 1).

The region's largely agricultural economy is marked by high rates of unemployment and very high rates of poverty. Tulare and Fresno were the first and third largest agricultural counties in the US, and taking the five counties together they had $19.9 billion in agricultural production.[1] The region's chronically high unemployment rate is in large part reflective of this agricultural economy, which has recently been affected by the statewide drought, in addition to a longer-term trend toward mechanization and seasonal swings in the demand for labor.

While unemployment in the Fresno region decreased from 17% of the population in 2011 to 12% by 2014, it remains much higher than the state average of 7.5%. Related to high unemployment, Fresno is by the far the poorest community of the study sites, with more than half (56%) of its residents living below 200% of the federal poverty level (FPL), compared to 41% statewide. The region is also an outlier along other demographic indicators, as it has a much higher proportion of Latino residents, and lower proportions of White, Black, Asian, and foreign-born residents relative to the California average. In addition, Fresno-area residents continue to be less educated and have higher rates of chronic disease than state averages.

Over the last few years, Fresno has seen a sharp decline in the proportion of its uninsured residents. In fact, the region's uninsured rate, which was historically above the California average (12%), has dropped below the state's average and is now around 9%. The biggest driver of Fresno's drop in uninsurance rate was the Medi-Cal expansion, which had a substantially larger impact in Fresno than in many other California communities. With a high proportion of residents poor enough to meet the Medi-Cal income eligibility requirements under the expansion (up to 138% FPL), the percentage of Fresno residents enrolled in Medi-Cal now stands at 41%, much higher than the state average (27%), and a full 10 percentage points higher than the study site with the next highest percentage (Riverside/San Bernardino, with 31%).

Also, while Fresno has consistently had low rates of private coverage relative to the state average (42% vs. 51% statewide), the region's rate of private coverage held steady over the last few years, while the state as a whole saw a slight decrease. This occurred despite relatively few Fresno residents enrolling in Covered California (only 3% vs. 5% statewide).[2]

Stable Hospital Sector

The Fresno hospital market remains geographically segmented, largely along county lines, although people in the region's remote areas often travel across county lines for specialty care. Across counties, the market shares of the major systems have remained mostly consistent since the last round of the study.

Located in Fresno County are three of the largest hospital systems in the region, along with a few smaller hospitals in the county's rural outskirts. Community Medical Centers (CMC) remains the dominant system, not only for Fresno County, but for the entire region. The system has three acute care hospitals, all of which are located in the urban center of the county, and which together accounted for 40% of the market's acute discharges in 2014, up from 34% in 2011.[3] CMC's flagship hospital, Community Regional Medical Center (CRMC) in downtown Fresno, is the major referral center for more specialized needs for the whole region. The system's other hospitals include a specialty heart hospital and a smaller community hospital located in the more affluent northern part of the county.

Saint Agnes Medical Center, the only California hospital operated by the Michigan-based Trinity Health System and the second-largest hospital provider in Fresno County, has one

facility on the north side of Fresno. Saint Agnes comprised 16% of the market's discharges in 2014. Kaiser Permanente is the third-largest hospital provider in the county, with fewer inpatient beds and a much lower market share — about 5% of discharges.[4]

Outside of Fresno, each of the outlying counties is primarily served by a single hospital or system. The district-owned Kaweah Delta Medical Center (Kaweah) is the anchor for Tulare County and the bordering regions of Kings and Fresno Counties. Kaweah's market share is comparable to that of Saint Agnes in Fresno, with 15% of acute discharges. Kings County is primarily served by the Adventist Health Central Valley Network (Adventist), operated by the West Coast-based Adventist Health system. The system includes four acute care hospitals that together comprised 11% of acute discharges in 2014. Madera County is served by a community hospital and Valley Children's Hospital, the pediatric referral center for the entire region. Mariposa County is served by a small district hospital.

Many Hospitals Play Safety-Net Role, but Safety Net Remains Weak

Due to the very high prevalence of Medi-Cal and other low-income patients in the region, most of the hospitals in Fresno play a safety-net role, but the resources and services extended to low-income people's health care needs have been low relative to many other California communities. This is partly due to the rural nature of the region in that it is difficult to offer an adequate footprint of services that enables timely access to all people, especially those in the most remote areas.

Within the region, there are no large county safety-net hospitals dedicated to serving low-income people, or University of California hospitals, which typically care for a large share of low-income patients in other communities. Instead, many of the hospitals in the region serve a large share of Medi-Cal and uninsured patients, along with more affluent patients within their geographic areas.

As Fresno County's major safety-net hospital and the region's referral center for more specialized care, CRMC continues to be the largest hospital provider of safety-net care for the Fresno region. As a whole, the CMC system provided almost half (48%) of discharges for the low-income (Medi-Cal and uninsured) population in the market in 2014.[5] Other hospitals serving a high share of low-income patients include Kaweah, Adventist, and several smaller district hospitals. Kaweah is the primary safety-net hospital in Tulare County for both routine and some advanced care needs, while Adventist plays a key role in the safety net for Kings County and beyond, particularly for outpatient services because of its large and growing network of RHCs. The community and district hospitals serve as safety-net providers in Madera and Mariposa Counties.

In contrast to CRMC and the major systems serving the neighboring counties, Saint Agnes and Kaiser — which are both located in the more affluent north side of Fresno — serve a relatively small share of low-income patients. For example, in 2014, St. Agnes' low-income population accounted for 15% of its revenue, a much lower share than the majority of hospitals in the region. As in many other California markets, Kaiser also serves a very limited number of Medi-Cal patients, and commercial enrollees make up the majority of the system's patient base.[6]

Within the region, there has been limited government focus on and funding for safety-net services, little collaboration among local government and safety-net providers, and inadequate provider capacity to serve low-income people. There have been some improvements over the last few years, including Medi-Cal health plans growing their provider networks, rural hospitals adding RHCs, FQHCs adding sites of care, and new collaborations among local government officials and safety-net providers to better serve this population. Nonetheless, access to primary, specialty, and behavioral health care remains insufficient and may have become more difficult in some areas over the past several years.

Medi-Cal Expansion and Hospital Fee Program Drive Improved Financial Outlook for Major Hospitals

In the last round of this study, the longstanding weak payer mix and delicate financial position of many hospitals in the region had deteriorated further in the wake of the economic recession. That trend has shifted in a more positive direction over the last few years, with the major hospitals reportedly having a better financial outlook and positive operating margins in 2015. According to respondents, the key drivers of this change have been the Medi-Cal expansion and corresponding reductions in uncompensated care, along with financial boosts from the state hospital fee program, through which revenues from hospitals with stronger payer mixes are redistributed to hospitals serving a larger share of Medi-Cal patients.[7]

While respondents almost universally reported improvements in hospital finances across the region, the latest available public data do not entirely reflect this. For example, from 2011 to 2014, operating margins varied considerably across the major hospitals and also fluctuated a great deal at individual hospitals from year to year.[8] CMC, Saint Agnes, and Kaweah all experienced years with positive margins and other years of losses, with CMC experiencing the most dramatic shifts. In 2014, the most recent year for which data are publicly available, CMC had an operating margin of 3.6%, while Saint Agnes's was –2.3%, and Kaweah's was just below breaking even. In contrast, Adventist had consistently strong, though declining, margins during this period. The system's overall financial strength could be due to its geographic monopoly in Kings County and its significant expansion of RHCs, which are typically profitable because of their enhanced payment rates (see "RHCs and FQHCs" sidebar).

In contrast to the major hospitals' recent financial improvements, small rural hospitals continue to struggle. In the last few years, small community hospitals are facing what they describe as the increasing difficulty of remaining independent. For example, because they are located in areas with lower population density, they have less patient volume to cover their fixed operating costs.

In the face of these pressures, Corcoran District Hospital in Kings County closed its doors in October 2013 after several years of financial strain. Madera Community Hospital has been losing patients to other hospitals and the expansion of an FQHC in its service area, reportedly related to real and perceived quality issues. Its margin fell dramatically, from 8.3% in 2011 to –9.1% in 2014. Although the hospital fee and more disproportionate share hospital (DSH)

RHCs and FQHCs

A growing number of both Federally Qualified Health Centers (FQHCs) and Rural Health Clinics (RHCs) serve the Fresno safety net. While both are federally designated, these organizations have different structures and face different requirements.

FQHC status provides a health center with federal grants, enhanced Medi-Cal payment rates to cover a range of medical and social services (based on historical allowable costs and updates for medical inflation), and student loan forgiveness for providers, among other benefits. FQHCs with "look-alike" status receive most of the same support, except federal grants. FQHCs focus on primary care and supportive services (e.g., language interpretation, transportation), must serve all patients who present for care, and can charge only minimal copayments for low-income uninsured patients (on a sliding scale based on income). The FQHCs in Fresno are typically independent, private organizations.

RHCs also receive enhanced Medi-Cal payments, but they face fewer governance and reporting requirements and regulations on the types of services they provide, relative to FQHCs. Another key difference is that RHCs do not receive federal grants to support care for the uninsured and are not required to treat uninsured patients for free or at discounted rates, although some RHCs reportedly do extend discounts to uninsured patients. Most of the RHCs in the Fresno market are hospital-owned.

funds are helping in the short term, the hospital may face more challenges in the longer term. Tulare Regional Medical Center also struggled over the last several years. The hospital's financial status reportedly has improved since 2014, when it entered into a management services contract with a hospital turnaround firm.

Amid Coverage Expansions, Hospitals Focus on Increasing Outpatient Capacity

From about 2005 to 2012, the major hospitals in the Fresno market undertook substantial inpatient and emergency department (ED) expansion projects. Over this timeframe, hospitals collectively added hundreds of beds to the market, both to ease capacity constraints and to compete for the market's small number of commercially insured patients. Since this period of significant growth, the pace of inpatient expansions has slowed dramatically, and some critical gaps in inpatient capacity remain. In particular, respondents universally emphasized the market's dire need for more inpatient psychiatric beds, but the major hospitals do not have plans to add any, reportedly because of low return on investment.

With the completion of the inpatient capacity expansions and construction projects in the last round of the study, some of the market's hospitals have addressed California's 2030 seismic compliance requirements. Kaiser's facilities meet all of the requirements for 2030. In contrast, other major hospitals will need to replace or retrofit some or all of their buildings. For example, some of CMC's and Adventist's buildings are fully compliant with 2030 requirements, but both systems will need to retrofit or replace other buildings. Kaweah will need to replace its main acute care facility, and Saint Agnes has a substantial number of beds that are not in compliance. Given that these hospitals reportedly lack the funding to cover the major costs associated with seismic upgrades, and that major funding strategies are still in development, they may need a reprieve from the state. Smaller rural hospitals, whose facilities are generally not in compliance and who lack capital resources, also may need a reprieve to avoid closure.

Hospitals reported substantial growth in ED visits over the past few years, which has strained their capacity. Respondents generally attributed the growth to the drastic expansion of Medi-Cal coverage and the related increase in demand for services, along with insufficient availability of primary, specialty, and mental health services in the community. For example, much of the growth in ED visits stems from patients with less intensive needs, who could be treated in alternative, lower-cost settings, such as community clinics or urgent care centers, if these settings were convenient and accessible.

To varying degrees, hospitals are investing in RHCs and other outpatient facilities to ease capacity constraints for EDs; improve access, particularly in rural areas; and draw patients from broader geographic areas. Adventist is the most active. The system continues to expand its RHCs and other outpatient clinics throughout the market, both by building new facilities in some locations, and acquiring and converting private physician practices in others (see "RHCs and FQHCs" sidebar on page 5). Kaweah also has expanded its RHCs and urgent care centers and recently opened two ambulatory clinics that provide a wide range of services, including physical, occupational, and speech therapy. Similarly, Saint Agnes is planning to open two urgent care facilities over the next year and is currently building a 50,000-square-foot outpatient facility in northwest Fresno, which will offer urgent care, internal medicine, and full imaging and lab services. Taking a different approach, CMC is developing affiliations with existing FQHCs and RHCs rather than acquiring or opening new facilities.

Chronic Physician Shortages Increase

Despite recent recruiting efforts, the Fresno market continues to experience a severe shortage of physicians, with a supply of 128 physicians per 100,000 residents, drastically lower than the state average of 194. The shortage is more extreme in the rural regions of the market, as Fresno (city and county) is somewhat better able to recruit — though it too faces considerable challenges. Over the last few years, the shortage has reportedly grown more acute due to the large Medi-Cal

coverage expansion and because the market's relatively older physician population continues to age and retire.

As in the last two rounds of the study, recruiting new physicians to the market is reportedly challenging because of the region's generally poor payer mix, call-coverage obligations, and quality-of-life factors (including poorer air quality and less desirable weather relative to coastal regions of the state). Another contributing factor is that Fresno has historically lacked large medical groups offering salaried employment arrangements, which especially appeal to younger doctors — though, as discussed below, this is starting to change. The key exception is The Permanente Medical Group (TPMG), which is reportedly somewhat better able to recruit because of its employment model and relatively generous compensation package.

The physician shortage contributes to bifurcation of the physician market, with most private practice physicians almost exclusively serving Medicare and commercially insured patients, and other physicians primarily serving Medi-Cal and uninsured patients in RHCs or FQHCs, or in small private practices in outlying rural areas. Despite the very large percentage of Medi-Cal enrollees in the market, most private practices do not have excess capacity, so they have no need to — and generally do not choose to — serve Medi-Cal patients. Most private practice physicians are also reportedly unwilling to accept payment rates offered by Covered California products, which are lower than rates from other commercial contracts. Some respondents reported that health plans had to raise their Covered California payment rates for physician services in order to attract a sufficient number of physicians to their provider networks.

Several hospitals are expanding residency and fellowship programs in an effort to bring more physicians to the market. CMC has partnered with University of California, San Francisco (UCSF) since the 1970s but, in the last 10 years, has increased the size of its primary care and emergency medicine residencies and added fellowships in pulmonology, cardiology, trauma, critical care, and other specialties. CMC currently has approximately 300 residents in 25 specialties. As part of its pediatric residency program with UCSF, CMC is also planning to expand the range of pediatric services it will provide at the downtown CRMC campus. This development follows Valley Children's decision to break away from its partnership with UCSF Fresno and establish its own pediatric residency and fellowship program in partnership with Kaiser and Stanford University School of Medicine.[9]

Kaiser also partners with UCSF Fresno for residency programs in emergency and geriatric medicine and offers an elective for UCSF Fresno psychiatric residents. Kaweah has established a residency program with UC Irvine (in Orange County) in family medicine, psychiatry, emergency medicine, general surgery, and transitional year (which provides broad experience across clinical areas).

Physicians Consolidate, Align with Hospitals

Physicians in the market have historically practiced medicine with much more independence relative to physicians in other California communities. Fresno-area physicians continue to generally practice in independent solo or very small group practices. Key exceptions include Kaiser's physician arm, TPMG, with about 300 physicians, and a few other large medical groups ranging in size from 50 to 200 physicians.

Physicians in the market are also independent in the sense that they historically have had limited alignments with hospitals, with no medical foundations in the market until very recently and limited physician membership in Independent Practice Associations (IPAs). Two IPAs continue to support limited professional risk contracting under commercial and Medicare Advantage HMOs. Santé Community Physicians, the larger of the two, operates in Fresno, Madera, and Kings Counties. The IPA is aligned with CMC, and physician members primarily admit patients to CMC. The smaller Key Medical Group operates in Tulare and Kings Counties.

A number of factors drive the independent nature of physicians in this market. In general, physicians have not faced pressures to consolidate into large medical groups or to align

with hospitals because the market has relatively little managed care penetration, from either Kaiser or other HMOs. The presence of Kaiser's health plan, a large closed-model HMO, is relatively small in Fresno, especially in comparison to its dominant position in many other California markets. With the very modest managed care presence in the market, aspects of the delivery system that tend to develop alongside managed care — including physician organizations operating under the delegated-capitation model and close alignments between hospitals and physicians — have not gained traction in Fresno. The key underlying factors driving all of these trends is that much of the region is both rural and poor. The low population density in rural areas of the market makes the operation of HMOs much less feasible and efficient, particularly Kaiser's integrated delivery system model. In addition, the poverty of the area and the low number of commercial enrollees make it less attractive for commercial health plans, including Kaiser.

In the last few years, several market forces have contributed to both the consolidation of physicians into larger medical groups and tighter alignment of physicians with hospitals through the development of medical foundations.[10] Key drivers of physicians' recent change of heart include apprehension about the changing landscape of provider payment arrangements toward those that reward value over volume, and a sense that being in larger organizations and more closely aligned with hospitals will provide stability and better contracting opportunities, including the ability to take on financial risk. Also, many physicians in the Fresno market lag behind in terms of electronic health record (EHR) adoption, and some view joining a larger medical group with an established EHR system as preferable to taking on the administrative and financial burden of establishing an EHR system individually.

Physician Consolidation in Fresno County

Over the last few years, the size of medical groups in Fresno County has grown due to consolidation of existing small practices and to some degree, the recruitment of new physicians. The largest market's largest medical group, The Permanente Medical Group, has grown over the last three years, from around 225 physicians to just under 300. The next largest medical groups — which belong to Santé Community Physicians, the market's largest IPA — are the newly formed Santé Health Foundation, which is estimated to have more than 200 physicians, and the Central California Faculty Medical Group (CCFMG), a multispecialty medical group affiliated with the UCSF training program located at CMC, that now includes 200 physicians, up from about 100 in the last round of the study.

In contrast to Fresno County, physician consolidation has not occurred in the market's outlying counties. The major physician organization outside of Fresno County is the Key Medical Group, an IPA with approximately 400 to 450 physicians located primarily in Tulare County, which admit patients primarily to Kaweah. While the size of the IPA has grown from about 300 physicians in the last round of this study, physician members reportedly continue to operate in small practices. The lack of consolidation in the outlying counties is partly due to the fact that they are rural areas, where the drivers behind and opportunities for consolidation are not present. For example, in many parts of these counties, there is generally not a high enough concentration of patients to support the development of medium and large physician practices. Also, the natural physician-hospital alignment — due to the presence of only one major hospital or system within geographic submarkets — allows many physicians to fare well in small practices.

Medical Foundations Take Root

For several years, hospitals in the Fresno market have attempted to create medical foundations. The foundation model allows hospitals to align with physicians as closely as possible through an employment-like model while complying with California's corporate practice of medicine law, which prohibits hospitals from directly employing physicians. Through foundations, hospitals generally provide clinical and

administrative support so that physicians' compensation is higher than it would be in private practice. Physicians that belong to foundations give up some clinical autonomy in exchange for this higher compensation.

In recent years, physicians have reportedly become more receptive to the foundation model because of new financial pressures and the increasing administrative burdens associated with being independent. However, the development of foundations has been slow and somewhat different than what is typical in other parts of California, reflecting some remaining physician reluctance. For example, in Fresno County, Santé Health Foundation has a very unusual structure in that it is not directly sponsored by the hospital partner, CMC. Rather, leadership at Santé (IPA) formed the foundation in 2010 in order to maintain control and independence while creating a vehicle to receive funding from CMC to support physician recruitment.

Saint Agnes's approach also reflects physician reluctance to align closely with hospitals. For example, the hospital established two physician organizations in 2013: Saint Agnes Medical Group, an IPA, which allows physicians an option for a looser alignment, and Saint Agnes Medical Providers (SAMP), a "friendly PC" model — in this case, reportedly an interim step toward creating a foundation — with approximately 30 physicians.[11] Saint Agnes's goal is reportedly to transform SAMP and some of the physicians in the IPA into a medical foundation in 2016. In Tulare County, Kaweah's efforts to develop a foundation were rejected by physicians last round, but Kaweah is now working to form a foundation with Visalia Medical Clinic (VMC), the only multispecialty group in the county. Finally, in Kings County, Adventist Health started a medical foundation with about 30 physicians, plus additional physicians working in RHCs. Since these alignments are still developing or very new, it is too early to assess whether they are leading to clinical integration or other major changes in care delivery.

Providers Dip Their Toes into Risk-Contracting Arrangements

As noted above, in past rounds of this study, a key defining characteristic of the Fresno market has been its very limited managed care activity relative to that of California as a whole. While Fresno is still nowhere near other California markets in penetration of managed care and other related payment arrangements, more providers have reportedly begun to participate in managed care contracts. In particular, a few Fresno-area physician organizations have taken on new risk-based contracts with Medicare Advantage and commercial health plans. The Key Medical Group, which was already taking risk through commercial contracts, started accepting Medicare Advantage risk in 2013. Saint Agnes Medical Group also recently started accepting risk with both commercial and Medicare Advantage HMO products. In addition, Santé — an early adopter of risk contracting in the market — continues to accept professional risk in its commercial and Medicare Advantage contracts.

Providers in Fresno County are also participating in the market's first accountable care organization (ACO) and bundled payment initiatives. Santé is one year into a three-year commercial ACO contract with Anthem Blue Cross for 40,000 covered lives, while Saint Agnes reportedly will be participating in a systemwide commercial ACO through the Trinity system in 2016, and is currently participating in the Center for Medicare and Medicaid Innovation (CMMI) Bundled Payments for Care Improvements Initiative.[12] Other hospitals report interest in participating in ACOs but note that they need to first focus on preliminary steps to prepare, including developing the requisite IT infrastructure and analytic capabilities.

The trend of more providers assuming financial risk is occurring in Medi-Cal managed care as well. CalViva and Anthem reportedly are increasingly contracting with their network physicians through an IPA structure, with many of them paid capitation for professional services. In a significant movement toward hospitals assuming risk for

Medi-Cal patients, in December 2015 Adventist Health and Community Medical Centers announced a collaboration to form a new Medi-Cal health plan and provider network to share risk for a subset of Medi-Cal patients in Kings, Fresno, Madera, and Tulare Counties. The two systems bring complementary services to this arrangement, as Adventist has an extensive outpatient (primary and specialty) rural health care presence, while CMC brings its highly specialized inpatient services. Pending approval from the state, the new Adventist Health Plan will subcontract with the established plans in the region to administer benefits. It will start with approximately 13,000 Medi-Cal enrollees in Kings County in early 2016 and plans to ultimately include up to 200,000 Medi-Cal enrollees across the four-county area.[13]

Given providers' limited experience with risk contracting, and that the market lacks some of the features required for it to be successful — such as more sophisticated approaches to coordinating care across settings and a unified or at least interoperable EHR infrastructure — it remains an open question whether new payment arrangements will gain momentum. Another challenge may be encouraging physicians who are used to operating in a largely fee-for-service environment to buy into and adopt new models of care delivery based on managing patients' total cost of care. Still, the development of tighter hospital-physician alignment through medical foundations may support the growth of risk contracting, and at the same time, growing interest in risk contracting may encourage medical foundation growth.

Medi-Cal Enrollment Growth Drives Down Uninsurance Rate

Medi-Cal has historically had a large presence in the Fresno region and, with the increase in Medi-Cal enrollment under the ACA, its presence is even greater, particularly in comparison to the other markets included in this study. Fresno's Medi-Cal enrollment grew by about a third between December 2013 and October 2015, from 620,000 to 860,000 people. Key to outreach and enrollment efforts has been Fresno Healthy Community Access Partners (FHCAP), the main safety-net advocacy organization in the community.

Medi-Cal enrollment was further boosted as Fresno County began using the Permanent Residence Under Color of Law (PRUCOL) screening, which allows individuals who are not legal immigrants under federal law, but fall within one of several immigration classes, to claim public benefits. The state of California has made this option available for several years, but the other study sites did not report using PRUCOL in such a widespread way and with the same impact on Medi-Cal enrollment as in Fresno County.

Fresno County did not have an early leg up on Medi-Cal enrollment as did most other counties in the state through the Low-Income Health Program (LIHP), a county option under California's "Bridge to Reform" Medicaid waiver to transition low-income people to a Medicaid-like program in preparation for the Medi-Cal expansion. In the last round of this study, the county and safety-net stakeholders (convened by FHCAP) could not agree on a reasonable way to implement the LIHP due to concerns about insufficient funding, while other counties in the region did implement the program. Respondents indicated that, without LIHP, uninsured people were slower to gain Medi-Cal coverage than in neighboring counties, and Medi-Cal health plans and safety-net providers lacked adequate time to transition individuals to coverage, link them to primary care medical homes, and help them navigate the health care system.

The majority of the Fresno region continues to operate under Medi-Cal managed care's Two-Plan Model, in which a county-owned public plan (called a "local initiative") competes against a private health plan. CalViva, which began operations in 2011, is the public plan for Fresno, Kings, and Madera Counties. Anthem is the second, smaller plan in the three-county area. Between December 2013 and January 2016, CalViva's managed care enrollment grew 56%, and Anthem's grew 49% in these three counties. CalViva holds about 70% market share. Although both plans perform below the state average for Medi-Cal plans on a composite

score of quality and satisfaction, CalViva performs better than Anthem.[14] This, along with other factors in which the state preferentially assigns enrollees (if they do not select one themselves) to county-owned health plans, are likely driving enrollment into CalViva.[15]

Tulare County also operates under the Two-Plan Model but, lacking a local initiative, Anthem and Health Net largely split the Medi-Cal market. New to managed care, Mariposa County recently entered the state's new regional model for rural counties, where Anthem splits enrollment with Centene. Additionally, Anthem participates in the Covered California marketplace for residents of all five counties, reportedly in part to help manage individuals who move between subsidized coverage and Medi-Cal due to income fluctuations — a common phenomenon in the agricultural workforce.

The state's transition of the Seniors and Persons with Disabilities (SPD) Medi-Cal population to managed care several years before the 2014 Medi-Cal expansion helped Medi-Cal health plans establish more expertise and infrastructure necessary to address an adult population that also characterizes the Medi-Cal expansion population. These needs, which involve chronic, complex, and multiple health issues, differ from the needs of the traditional Medi-Cal managed care population that consisted of primarily mothers and children.

Still, Medi-Cal health plans have been ramping up provider networks to accommodate additional demand for care from the large Medi-Cal expansion under the ACA, particularly adding behavioral health providers to address new requirements on Medi-Cal plans for these services. As noted, the health plans are largely reliant on FQHCs and RHCs, so provider growth at those clinics has helped health plan network expansion. Also, payments to Medi-Cal plans for the expansion population reportedly are higher relative to costs than they were for the SPD population, which reportedly has helped establish more financial incentives to gain provider participation. However, the plans continue to face challenges adding community-based physicians — especially specialists — given the general physician supply shortages and private practice physicians' lack of interest in serving Medi-Cal patients.

Medi-Cal health plans experienced relatively high use of services among new enrollees, related both to pent-up demand (seeking services for conditions that previously went untreated) and a disproportionate increase in enrollees with complex medical, behavioral, and social needs. While pent-up demand should plateau over time as enrollees' conditions are either resolved or better managed, Medi-Cal plans also are implementing strategies to respond to the social needs with which they have less experience, especially to help control rising ED use (discussed earlier). For example, Anthem's case managers gather daily reports on ED use from area hospitals and work closely with the IPA medical directors to understand individuals' reasons for using the ED, and to identify and address any contributing social issues. CalViva's main new initiative is to provide temporary housing to homeless patients being discharged from the hospital so they have a safe and supportive environment in which to recover, which also could reduce hospital readmissions and reduce overall costs of care.

Initiatives for the Remaining Uninsured

Like other California counties, Fresno County traditionally provided health care to low-income uninsured individuals through its Medically Indigent Services Program (MISP).[16] Compared to similar programs in other California counties, Fresno's MISP was more limited in some ways and more expansive in others. The program started with relatively low income eligibility (to those earning below 63% FPL), but following a lawsuit several years ago, the county increased the maximum income to 224% FPL. Fresno also allowed undocumented immigrants to enroll. However, the scope of the program was limited: It supported individuals for only short periods during acute medical episodes, rather than providing ongoing preventive care and care management.

Fresno contracted exclusively with CMC to provide outpatient and inpatient services to program enrollees. However,

CMC's reported costs of serving the MISP population vastly exceeded the approximately $22 million the county paid them annually (via state realignment funds to the local health department).[17]

Fresno County ended its medically indigent program at the end of 2014 for two main reasons. First, the majority of individuals in the program (about 16,000 of the 20,000 enrollees) gained Medi-Cal coverage. Second, the county's realignment funds from the state that supported the entire public health department were halved, to approximately $30 million annually. With fewer resources, the health department is focusing more on public health activities and data analysis and less on direct service provision.

However, following significant community concern about access to care for people who remain uninsured, the Fresno County health department, under new leadership, collaborated with safety-net providers and other community leaders to establish two initiatives for the uninsured. First, the county dedicated some of its remaining realignment funds to a modified medically indigent program for people earning 138% to 224% FPL if they meet hardship criteria (i.e., if they need medical services but did not enroll in Covered California during open enrollment, or cannot afford Covered California). Undocumented immigrants are not eligible for this program.

Second, the county set up a structure to reimburse CMC for providing specialty care (inpatient, outpatient, and emergency services) to uninsured individuals with incomes under 138% FPL, including the undocumented. The initiative is funded through $5.5 million in unused funds from the state that had been originally allocated for another purpose. Some respondents were doubtful that these funds would be sufficient relative to the need and wondered whether additional funds will be made available if necessary. FQHCs use their existing resources to serve as the primary care medical homes for these individuals.[18]

To limit demand, the county does not advertise these initiatives because they are an extension of services provided by the FQHCs and are not a county entitlement program. As of February 2016, the modified medically indigent program helped all applicants enroll in Medi-Cal or Covered California coverage instead, and no applicants have met the hardship criteria. The new specialty care initiative has served about 80 people at an estimated cost of $300,000. The county and the FQHCs are working together to provide more education to undocumented individuals about the medical services available to them.

The other counties in the region have either ended their medically indigent programs or significantly downsized them, also reflecting growth in coverage and reduced realignment funds.

Community Clinics Expand in Attempt to Address Growing Demand

In anticipation of the Medi-Cal expansion and increased demand for health care services, Federally Qualified Health Centers (FQHCs) and Rural Health Clinics (RHCs) expanded their facilities and significantly increased outpatient service capacity in the market over the past several years. However, demand has outpaced new overall community clinic capacity, as capacity was insufficient even before the Medi-Cal expansion, and new Medi-Cal enrollment exceeded expectations.

About a dozen FQHC organizations continue to serve the market in rather distinct but somewhat overlapping service areas, largely along county lines. Aided by additional federal funds available through the ACA, the total number of FQHC sites of care grew from approximately 40 to over 60 between 2011 and 2014, with each of the larger FQHCs in the market opening one or two additional facilities, and several opening additional sites in 2015.

The largest FQHCs, by service area, are:

- Fresno County: Serving the Fresno core area, with a total of 10 sites, Clinica Sierra Vista is the largest FQHC in the county and the market. Valley Health Team operates in

western, rural Fresno County with 5 main sites, with three additional sites opening in 2016.

- United Health Centers has 11 sites across three counties: the rural areas of southwest Fresno County, and Tulare and Kings Counties.
- Tulare County is also served by Family HealthCare Network (11 sites), Tulare Community Health Clinic (4 sites), and the county's three FQHC Look-Alikes.
- Kings County is also served by Avenal Community Health Clinic, with 6 sites.
- Madera County has one FQHC, Camarena Health, which has grown significantly over the past 3 years, adding 2 sites for a total of 5 sites.

Additionally, a new strategy among FQHCs in the region is to expand through school-based satellite clinics, which requires little capital and removes transportation barriers for patients. The market is also served by about a dozen comprehensive primary care community clinics that do not have federal status; they expanded very modestly during this period.

Like hospitals, FQHCs are benefiting from the improved payer mix as a result of increased Medi-Cal enrollment. FQHCs report that many of their uninsured patients are now covered by Medi-Cal and that they are seeing new Medi-Cal patients as well. The region's FQHCs provided approximately 20% more visits in 2014 (approximately 1.3 million) than in 2011.[19]

As noted, hospitals' RHCs, which were relatively new to the market in the last round of this study, have grown rapidly over the last few years. Adventist, serving rural areas in Kings, Tulare, and south Fresno Counties, has almost doubled its RHC sites over the last few years; it currently has 40 sites (providing over 500,000 annual visits) and plans to add half a dozen more over the next few years. Kaweah, serving Tulare County, now has five sites, up from three. These clinics also are faring well financially under the Medi-Cal expansion.

Growing Tension Between RHCs and FQHCs

While the FQHC and RHC expansions have added much-needed capacity, the growth in RHCs has fueled growing competitive tensions with FQHCs serving the same general areas, which stem from the differences in their structures and requirements (see "RHCs and FQHCs" sidebar on page 5). RHCs' Medi-Cal payments reportedly are higher than FQHCs' because the cost structure of their hospital owners, which is considered in establishing the payment rates, is higher than the FQHC cost structure that is based on primary care and support services.

This payment difference reportedly aids RHCs in paying physicians higher rates to attract them, leaving FQHCs with less ability to recruit and retain already scarce primary care providers (PCPs) to support their expansions and continued growth. FQHCs are relying more on mid-level providers, but the lack of PCPs still has contributed to increased patient wait times for appointments at some FQHCs. One FQHC director expected the number of visits they can provide to actually decrease soon because the health center is unable to retain an adequate number of physicians.

At the same time, however, with higher payment rates and fewer federal restrictions on adding services than FQHCs, many RHCs also have added specialists. This has reportedly improved access to specialty services — which are typically more difficult for low-income patients to obtain than primary care — not only for RHCs' patients, but for FQHCs' patients as well.

Some respondents report that, without the mandate to serve patients regardless of their ability to pay, RHCs disproportionately focus on treating Medi-Cal patients. As one market observer noted, "[RHCs] are helping with access, but they select the patient population they want to serve." To the extent this is the case and RHCs continue to grow and take in more Medi-Cal patients, FQHCs could be left with a growing proportion of uninsured patients and related financial strain.

Impacts on Access to Care

The relatively limited attention extended to — and resources available to — the safety net in this community compared to other California communities means that many low-income people's needs remain overlooked and unaddressed. While many low-income people in the Fresno community have gained Medi-Cal coverage since 2014, the associated increase in demand for services has further strained the region's already tight capacity of safety-net providers. While these providers are treating many of the same patients as before — the previously uninsured who now have Medi-Cal coverage — many of these patients are now seeking more services, and providers are seeing new patients as well. In the words of one respondent, "The previously uninsured are accessing care more freely and frequently than before."

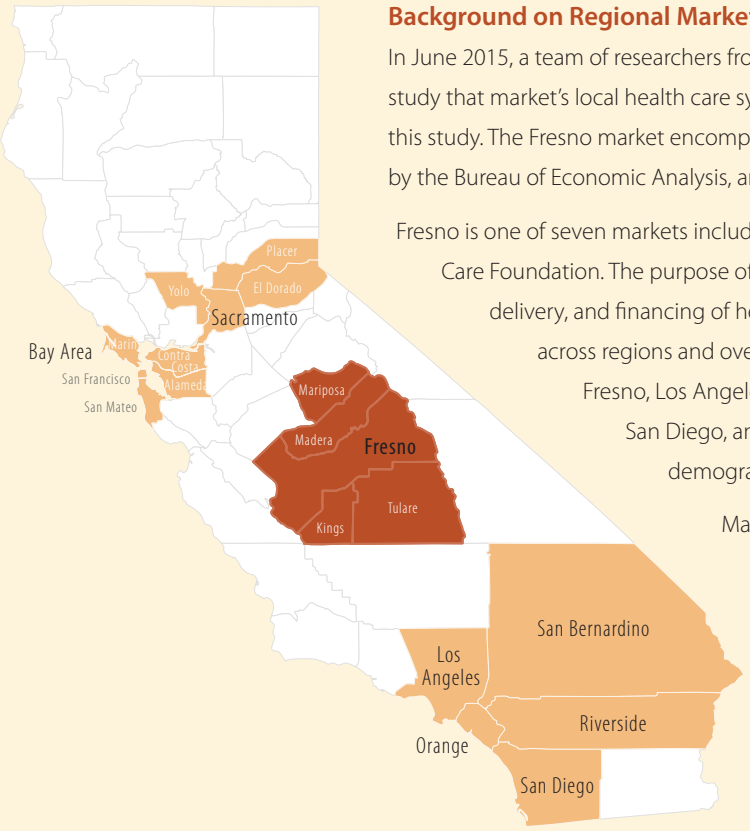
With this growth in demand outpacing provider capacity, many patients are unlikely to be able to obtain timely access to primary, specialty, and behavioral health care in appropriate outpatient settings. The concerted efforts to add primary care through FQHCs and RHCs have incrementally helped improve primary care capacity, and to a lesser extent specialty and behavioral health care, but it remains to be seen how much more this capacity will grow, especially if these facilities cannot recruit needed providers. Also, the ultimate reach and impact of nascent strategies to better coordinate care — namely, through the new collaboration between Adventist and CMC — are unknown. Further, with many resources and efforts focused on the Medi-Cal population, access to care for those who remain uninsured could further decline.

Issues to Track

- What longer-term impact will the Medi-Cal expansion have on access to care for low-income people? How much will community clinic expansions help bridge the gap between the number of people needing services and available provider capacity to treat them?
- How will access to care for the remaining uninsured change? Will RHCs and FQHCs adequately serve this population as they expand? To what extent will the replacement of the medically indigent program in Fresno County with new initiatives impact access to care for uninsured individuals?
- To what extent will current recruiting efforts affect the physician shortage? How will physician shortages impact the various efforts in the market to expand outpatient services and access to care for the many new Medi-Cal enrollees and others?
- Will physician consolidation continue in Fresno County and spread to outlying areas?
- Will new hospital-physician alignments through the development of medical foundations continue to grow? If so, will they foster clinical integration and create meaningful changes in care delivery?
- Will providers be able to develop and demonstrate the ability to manage risk successfully?

ENDNOTES

1. See respective counties' Agricultural Crop and Livestock Reports for 2014.
2. Authors' calculation based on 2014 population estimates from the US Census Bureau.
3. California Office of Statewide Planning and Development (OSHPD), Healthcare Information Division, 2014. Data reflect each hospital system's fiscal year. Number of licensed acute beds and market percentages of licensed acute beds and patient discharges for all hospitals/hospitals systems reflect 2014 OSHPD data. Percentages are based on total discharges in the market.
4. Estimates of discharges generally understate Kaiser's market position because Kaiser generally focuses on reducing admissions and providing care in less intensive settings.
5. OSHPD 2014 data.
6. Kaiser also covers Medi-Cal enrollees in both counties through subcontracts with the local initiatives. Kaiser's Medi-Cal population consists largely of people who either had Kaiser coverage themselves, or who have an immediate family member who has had Kaiser coverage, within the past 12 months.
7. Passed by the California legislature in 2009, the Hospital Quality Assurance Fee Program (commonly known as the hospital fee program) generates additional funding for hospitals serving relatively large numbers of Medi-Cal patients. Hospitals pay a fee based on their overall volume of inpatient days to which federal matching dollars are added; these funds are then redistributed to hospitals based on their Medi-Cal inpatient days and outpatient visits. With payments beginning in 2010, the program has been renewed three times and currently is set to expire at the end of 2016. However, California voters could approve a ballot initiative in November 2016 that would eliminate the program's end date and require voter approval of further changes to the program.
8. OSHPD 2014 data.
9. Barbara Anderson, "Community Medical Centers to Partner with UCSF Benioff Children's Hospitals," *The Fresno Bee*, September 16, 2015, **www.fresnobee.com**.
10. Because California's corporate practice of medicine law prohibits hospitals from directly employing physicians, some hospitals sponsor medical foundations as a way to align with physicians. Under a medical foundation model, physicians either contract with the foundation through an affiliated IPA or belong to a medical group that contracts exclusively with the foundation through a professional services arrangement. University of California hospitals, county hospitals, and some nonprofit organizations such as community clinics are among the entities allowed to employ physicians directly, through exceptions to the corporate practice of medicine prohibition.
11. Through a "friendly PC" model, physicians form a professional corporation (PC), that provides staff for a hospital (or other facility). The PC receives a fee from the hospital to provide management services, such as administering billing and collection for services and paying physicians.
12. Through the Bundled Payments for Care Improvement (BPCI) Initiative, the Center for Medicare and Medicaid Innovations is testing different bundled payment models. The models link payments for all services provided to patients for specific episodes of care with the goal of encouraging providers to deliver higher quality and more efficient care. For more information see "Bundled Payments for Care Improvement (BPCI) Initiative: General Information," Centers for Medicare & Medicaid Services, August 20, 2015, **innovation.cms.gov**.
13. Cassandra Sandoval, "Adventist Health Collaborates with Community Medical Centers to Form New Health Plan," *Hanford Sentinel,* December 23, 2015, **www.hanfordsentinel.com**. Kathy Robertson, "Adventist Health to Launch Medi-Cal HMO Next Year," *Sacramento Business Journal,* December 18, 2015, **www.bizjournals.com**. See respective counties' Agricultural Crop and Livestock Reports for 2014.
14. "Medi-Cal Managed Care Performance Dashboard," California Department of Health Care Services, December 15, 2015, **www.dhcs.ca.gov** (PDF).
15. In part, CalViva's disproportionate growth stems from auto-assignment rules used to assign new beneficiaries who do not choose a plan. The auto-assignment algorithms include assigning new beneficiaries into plans with (1) higher quality scores, (2) higher discharges at disproportionate share hospital (DSH) program hospitals, and (3) PCPs within the county public hospital system.
16. Under California Welfare and Institutions Code Section 17000, all California counties are responsible for providing health care services to their neediest residents, although counties have considerable discretion in setting eligibility criteria (e.g., income and immigration status) and the level of services they provide.
17. In an arrangement known as 1991 realignment, California counties receive funds from state vehicle license fees and sales tax revenues to support county health, mental health, and social services programs. With the expectation that many uninsured residents would gain Medi-Cal or other coverage under the ACA and the need for county medically indigent programs would decline, Assembly Bill 85 transfers either 60% or a formula-based percentage of each county's health fund to social services. Fresno is one of the counties to use the formula, and had to return 44% of its funds to the state.
18. For both initiatives, behavioral health continues to be provided separately, through the separate county behavioral health department.
19. OSHPD community clinic data, 2011 and 2014.



Background on Regional Markets Study: Fresno

In June 2015, a team of researchers from Mathematica Policy Research visited the Fresno region to study that market's local health care system and capture changes since 2011/2012, the last round of this study. The Fresno market encompasses the Fresno-Madera, California, Economic Area, as defined by the Bureau of Economic Analysis, and includes Fresno, Tulare, Kings, Madera, and Mariposa Counties.

Fresno is one of seven markets included in the Regional Market Study funded by the California Health Care Foundation. The purpose of the study is to gain important insights into the organization, delivery, and financing of health care in California and to understand important differences across regions and over time. The seven markets included in the project — Fresno, Los Angeles, Orange County,* Riverside/San Bernardino, Sacramento, San Diego, and the San Francisco Bay Area — reflect a range of economic, demographic, health care delivery, and financing conditions in California.

Mathematica researchers interviewed over 200 respondents for this study, with 30 specific to the Fresno market. Respondents included executives from hospitals, physician organizations, community clinics, Medi-Cal health plans, and other local health care leaders. Interviews with commercial health plan executives and other respondents at the state level also informed this report.

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*Orange County was added to this study in 2015; the research team had familiarity with this market through the prior Community Tracking Study conducted by the Center for Studying Health System Change (HSC), which merged with Mathematica in January 2014.

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By Kathryn A. Phillips, David Schleifer, and Carolin Hagelskamp

Most Americans Do Not Believe That There Is An Association Between Health Care Prices And Quality Of Care

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ABSTRACT Many organizations are developing health care price information tools for consumers. However, consumers may avoid low-price care if they perceive price to be associated with quality. We conducted a nationally representative survey to examine whether consumers perceive that price and quality are associated and whether the way in which questions are framed affects consumers' responses. Most Americans (58–71 percent, depending on question framing) did not think that price and quality are associated, but a substantial minority did perceive an association (21–24 percent) or were unsure whether there was one (8–16 percent). Responses to questions framed in terms of high price and high quality differed from responses to questions framed in terms of low price and low quality. People who had compared prices were more likely than those who had not compared prices to perceive that price and quality were associated. We explore implications of these findings, including how behavioral economics can inform approaches to helping consumers use price and quality information.

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Governments, insurers, and other companies are pursuing a variety of approaches to make health care prices and quality more transparent, so that consumers can use price and quality information to choose high-value providers and services.[1–5] However, observers often assume that consumers believe that health care price and quality are associated, which they suggest could create unintended consequences for price transparency initiatives. For example, Anna Sinaiko and Meredith Rosenthal write that consumers may use price as a proxy for quality and will therefore assume that high-price providers also are of high quality.[6] Similarly, others note that providing price information may prompt consumers to choose higher-price providers instead of less expensive ones.[7]

We examined whether consumers indeed perceive the price of health care to be associated with its quality, as well as demographic and other possible predictors of their perceptions. Understanding how consumers perceive the relationship between price and quality is important because using price as a proxy for quality could drive up spending without a commensurate increase in value. We also examined whether consumers' reported perceptions changed depending on whether questions were framed in terms of high price/high quality or low price/low quality. Specifically, we tested the hypotheses that consumers perceive that price and quality are associated and that question framing changes their reported perceptions. This study is based on an examination of questions that were part of a larger nationally representative survey of how Americans seek and use health care price information (a summary of the survey results has been reported elsewhere).[8]

Many studies have documented wide variations in prices across and within regions, with

limited evidence that higher prices are associated with higher quality or better health outcomes.[9] A systematic review found inconsistent evidence regarding both the direction and the magnitude of the association between health care price and quality,[10] and several studies found that when insured people were given price information, they chose relatively low-price care.[11–14]

In this study we did not examine whether price and quality are actually associated, nor do we assert that people who believe that price and quality are associated are necessarily misguided. However, understanding what consumers perceive and the factors associated with those perceptions is critical for designing effective initiatives to increase the use of price and quality information.

Outside of health care, people's views on the relationship between price and quality depend on factors such as the type of good in question, consumers' expectations, and the information available.[15–17] Exhibit 1 details four key studies (including the larger nationally representative

EXHIBIT 1

Studies examining consumers' perceptions of price and quality in health care

Study	Objective	Method	Date	Population sampled	Sample size	Relevant results
Associated Press–NORC Center for Public Affairs Research, 2014 (Note 18 in text)	Understand perceptions of health care provider quality and of relationship between quality and cost	Survey with split sample for price and quality questions	2014	Telephone survey weighted to be generalizable to the US population	1,002	Americans are divided over whether they think high-quality health care has a high cost or not Americans' perceptions of the connection between cost and quality vary depending on how the question is framed
Schleifer et al., 2015 (Note 8 in text)	Examine use and perceptions of health care price information	Survey with split sample for price and quality questions	2014	Telephone and online survey weighted to be generalizable to US population	2,010	Most Americans do not think that higher-price care is necessarily of higher quality
Hibbard et al., 2012 (Note 19 in text)	Examine how different presentations of information affect likelihood that consumers will make high-value choices (lower cost and better quality)	Experiment using online survey	2011	Convenience sample of insured adults employed by two firms; disproportionately male, white, highly educated	1,421	A substantial minority of respondents shied away from low-cost providers; consumers who paid a large share of their health care costs were likely to equate high cost with high quality Consumers were more likely to make high-value choices when cost data were presented alongside easy-to-interpret quality information and when high-value options were highlighted
Carman et al., 2010 (Note 20 in text)	Determine how the concept of making health care decisions based on evidence of effectiveness could be translated into language that consumers would understand and embrace	Focus groups, cognitive interviews, online survey	2007	Online convenience sample of employed, insured respondents ages 22–69 who were key health care decision makers for their household	1,558	A substantial portion of participants expressed the view that "you get what you pay for," and one-third agreed with the statement that "medical treatments that work the best usually cost more"

SOURCE Authors' analysis of data from the items cited.

survey on which this study is based) about perceptions of the association between price and quality in health care. The study conducted by the Associated Press–NORC Center for Public Affairs Research, using a nationally representative sample, found that most Americans believed that there was no association between price and quality or did not know if there was such an association.[18] Judith Hibbard and colleagues, using a convenience sample of insured adults, found that many respondents perceived low-price providers to be of low quality but that providing well-designed price and quality information could help consumers choose high-value care.[19] Kristin Carman and colleagues, also using a convenience sample of insured adults, found that 33 percent of survey respondents agreed that the most effective treatments are usually more expensive than less effective treatments. However, 27 percent of respondents disagreed with that statement, and 40 percent of respondents (the largest proportion) were unsure.[20]

The Associated Press–NORC survey asked respondents whether higher-quality health care usually comes at a higher cost and whether lower-quality care comes at a lower cost. The study found that reframing the question yielded different results. More people stated that high price was associated with high quality than stated that low price was associated with low quality ($p < 0.05$).[18]

Standard economic theory would assume that responses to a question about high price and high quality would be identical to responses to a question about low price and low quality, because people would respond "rationally" to the information available to them.[21,22] However, behavioral economics suggests that people's responses to information depend on how the information is framed. For example, Peter Ubel notes that people may think more favorably of a surgical procedure with a 90 percent survival rate than of one with a 10 percent mortality rate.[23] Although those rates are identical, framing the outcome in terms of mortality rate triggers people's aversion to loss.

Study Data And Methods

Our findings are based on a nationally representative survey of 2,010 adults (ages eighteen and older) that was fielded in 2014 and funded by the Robert Wood Johnson Foundation.[8] Survey questions were developed based on a literature review and three focus groups conducted in 2014 (details are available in the online Appendix).[24]

The survey was conducted through a combination of random-digit-dialed telephone surveys (including landline and mobile phones) and a nonprobability online panel. Interviews were conducted in English or Spanish. Phone and online survey data were combined using propensity score matching so that the final sample was nationally representative. The final sample was also made nationally representative by weighting to correct for variance in the likelihood of selection for a given case and balancing the sample to known population parameters to correct for systematic under- or overrepresentation of meaningful social categories.

The survey included two pairs of questions about the association between price and quality. One pair of questions referred to medical care in general, and the other referred to doctors, whose prices and quality can vary. One question in each pair asked about high price and high quality, and the other asked about low price and low quality. Survey respondents were asked one question from each pair.

We used a randomized split-sample design for each of the two pairs of questions, so that the sample was independently randomly divided in half twice, as follows: first, to be asked questions either about medical care or about doctors; and second, to be asked questions framed in terms of either high price and high quality or of low price and low quality. Postsurvey analyses indicated that the randomization processes produced valid sample distributions.

We used frequencies and chi-square analyses to examine question response patterns and to test for differences in responses across framing conditions. We used the same types of statistics to examine differences in people's responses to each of the price and quality questions based on subgroups defined by differences in consumer knowledge about price variation in health care, salience of price information in people's decisions about health care, and respondents' sociodemographic characteristics and insurance status. Since the examination of subgroup differences was exploratory, we limited it to unadjusted bivariate analyses.

Study Results

MOST CONSUMERS DO NOT ASSOCIATE PRICE WITH QUALITY Across all questions, a majority of consumers (58–71 percent) stated that they did not believe that price and quality are associated, which refuted our first hypothesis (Exhibit 2). However, a substantial minority of respondents either believed there was an association between price and quality (21–24 percent) or said they did not know if there was such an association (8–16 percent).

QUESTION FRAMING AFFECTS RESPONSES The framing of questions (in terms of either high

EXHIBIT 2

Survey responses to questions on the association between price and quality

Survey question	Response		
	No	Yes	Don't know
Would you say higher prices are typically a sign of better quality medical care or not?	71%	21%	8%
Would you say lower prices are typically a sign of lower quality medical care or not?	63	22	14
If one doctor charged more than another doctor for the same service, would you think that the more expensive doctor is providing higher quality care or would you not think that?	67	23	9
If one doctor charged less than another doctor for the same service, would you think that the less expensive doctor is providing lower quality care or would you not think that?	58	24	16

SOURCE Authors' analysis of data from Schleifer D, et al. How much will it cost? (Note 8 in text). **NOTES** There were 1,008 respondents to the first and fourth questions and 1,002 to the second and third questions. "Don't know" was a response that participants could volunteer. Percentages may not sum to 100 because of rounding and the fewer than 1 percent of respondents who refused to answer the question and are not represented in the table.

price/high quality or low price/low quality) significantly shifted the distribution of responses across both pairs of questions, which supported our second hypothesis. Respondents who were asked about high price and high quality were consistently more likely to say that price and quality were not related, compared to respondents who were asked about low price and low quality. In addition, respondents who were asked about low price and low quality were consistently more likely to say that they did not know when asked about the relationship between price and quality, compared to their counterparts answering the high price and high quality questions ($p < 0.001$).

PREDICTORS OF BELIEFS THAT PRICE AND QUALITY ARE ASSOCIATED Respondents who reported that they had compared prices before getting care were more likely to think that higher prices are related to higher quality medical care, compared to people who had not tried to find price information before getting care (37 percent versus 12 percent) (Exhibit 3). People who had compared prices were also more likely than those who had not sought price information to think that lower prices are related to lower-quality care

EXHIBIT 3

Significant predictors of beliefs about the association between price and quality

Variables	High price associated with high quality in medical care?[a]			Low price associated with low quality in medical care?[b]			High price associated with high-quality doctors?[b]			Low price associated with low-quality doctors?[a]		
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know
All respondents	21%	71%	8%	22%	63%	14%	23%	67%	9%	24%	58%	16%
RACE/ETHNICITY												
Black	**32**	**57**	11****	**34**	**58**	8****	**35**	**58**	7****	**29**	**61**	**10****
White	**14**	**79**	8	**18**	**67**	14	**14**	**76**	10	**21**	**62**	**17**
Hispanic	**36**	**56**	8	**33**	**52**	15	**44**	**49**	7	**31**	**45**	**24**
AGE (YEARS)												
Under 30	**32**	**57**	**11****	**30**	**58**	12***	**38**	**50**	**13****	**39**	**53**	8****
30 to 64	**19**	**75**	**6**	**22**	**64**	14	**22**	**70**	**8**	**21**	**60**	**19**
65 and older	**12**	**78**	**11**	**15**	**69**	16	**11**	**80**	**9**	**20**	**63**	**18**
MAKES HEALTH CARE DECISIONS FOR ADULT FAMILY MEMBER?												
Yes	**30**	**65**	5****	**34**	61	5****	**33**	**61**	6****	**36**	**51**	13****
No	**16**	**75**	**9**	**18**	67	**15**	**18**	**73**	9	**20**	**64**	16
PRICE INFORMATION SEEKING BEFORE GETTING CARE												
Has not sought price information	**12**	**75**	**13****	**17**	65	**18****	**16**	**71**	**12****	**22**	**58**	**20****
Has checked prices	**21**	**74**	**5**	**21**	66	**13**	**22**	**71**	**7**	**19**	**67**	**14**
Has compared prices	**37**	**60**	**4**	**39**	58	**2**	**39**	**55**	**6**	**40**	**52**	**8**

SOURCE Authors' analysis of data from Schleifer D, et al. How much will it cost? (Note 8 in text). Percentages were weighted to be representative of the US adult population. Percentages may not sum to 100 because of rounding and the fewer than 1 percent of respondents who refused to answer the question and are not represented in the table. "Don't know" was a response that participants could volunteer. Bolded percentages indicate significant ($p < 0.05$) between-group differences within a variable in cases where the overall chi-square test was significant ($p < 0.05$). [a]1,008 respondents. [b]1,002 respondents. ***$p < 0.01$ ****$p < 0.001$

Price and quality transparency initiatives and policies need to consider the potential impact of framing.

(39 percent versus 17 percent). The results were similar for the association of price and quality of doctors.

We also found a similar pattern across questions according to whether or not people make health care decisions for an adult family member: People who made such decisions—and thus for whom price information may be more salient—were more likely to believe that quality and price are associated than were people who did not make such decisions.

Race or ethnicity and age were also associated with perceiving that price and quality are related. Blacks and Hispanics and younger people were somewhat more likely than whites and older people, respectively, to believe that there was such an association. We did not find any significant differences or a clear pattern of differences across the questions when we compared respondents according to their income, education, employment status, or insurance status (see Appendix Exhibits 1–4).[24]

Discussion

Using a nationally representative sample, we found that most Americans do not perceive the price and quality of health care to be associated. However, a substantial minority of Americans believe that there is an association or do not know if there is one. Importantly, we found that the framing of questions consistently affected people's responses. People were more likely to state that price and quality are not associated, and less likely to say that they did not know if there was an association, in response to questions about high price and high quality than in response to questions about low price and low quality.

The Associated Press–NORC survey also found that question framing affected responses and that a majority of consumers believed there was no association between price and quality or did not know if there was such an association.[18] However, 48 percent of respondents in that survey stated that high quality and high price are associated—a share substantially higher than the 21 percent of our respondents who perceived an association between higher price and higher quality. The variance may be a result of differences in question wording and response categories.

IMPLICATIONS FOR TRANSPARENCY INITIATIVES AND POLICIES Our results have several implications for price and quality transparency initiatives and related policies. First, the finding that most people do not believe that price and quality are associated means that providing price information will not necessarily prompt consumers to choose higher-price providers instead of lower-price ones. We also found that a substantial minority of people do associate price with quality, even though empirical evidence about this association is not consistent. Both findings underscore the need to report quality information alongside price information, so that consumers have some basis on which to differentiate between services and providers.

Possible explanations for why people do not perceive an association between price and quality emerge from the focus groups that two of the authors conducted in preparation for fielding this survey (details are available in the online Appendix).[24] Focus-group participants often described prices as both too high and irrational, noting that prices varied within their regions for unknown reasons. They often expressed the view that providers and insurers set prices that do not reflect either the quality or the cost of goods and services. For example, participants attributed high prices to spending on features such as high-technology devices and new buildings. They were skeptical about whether such features actually produce better care, and they put a higher value on having physicians who listen and shorter wait times than on such devices and buildings.

A second implication is that price and quality transparency initiatives and policies need to consider the potential impact of framing. Transparency initiatives are arguably based on the standard economic theory that people will use information in ways that optimize the ratio between what they spend and what they gain. But as noted above, behavioral economics takes a more complex view of consumers' preferences and choices. In particular, behavioral economics research has found that people are more sensitive to losses than to gains and thus will be more concerned about avoiding losses than they are about realizing equivalent gains. For example, people are more unhappy about losing $100 than

they are elated at winning $100.[25] People are particularly susceptible to framing effects in the presence of uncertainty.[26] Consistent with this research, we found that the framing of information matters, which suggests that price and quality transparency initiatives need to consider how price and quality information are communicated.

Third, these initiatives also need to consider how perceptions of the relationship between price and quality may vary among subgroups of consumers, and specifically whether comparing and using price information increases the likelihood that someone will perceive an association between price and quality. Such an effect could pose a challenge to the success of the initiatives.

We found that people who reported having compared prices were more likely to perceive that price and quality are associated than were people who had not tried to find price information before getting care. We do not know whether there is any causal relationship or, if there is one, what its direction may be. If comparing prices causes people to perceive that price and quality are associated, then developers of transparency initiatives must grapple with the question of whether that perception is justified, and how to address the perception if it is justified or counter it if it is not.

Our subgroup findings are exploratory and based on bivariate associations. Therefore, the effects of subgroup characteristics on perceptions could be conflated in our study.

FUTURE RESEARCH One important area for future research is the variation in subgroups. For example, studies should investigate whether people with different diagnoses hold different views on the association between price and quality and how those views may differ across different medical goods and services, such as primary care, acute care, imaging tests, and pharmaceuticals. Further studies could also test the effects of different framings using a within-subjects survey design, in which all respondents answer all questions about price and quality.

IMPROVING PRICE TRANSPARENCY TOOLS AND POLICIES More generally, our results suggest that theories and findings from behavioral economics could be applied more widely to the tools and policies intended to help health care consumers make purchasing decisions. One of the authors and Anna Labno found considerable variability in how such tools define, label, and present price and quality information to consumers.[27] Findings from behavioral economics about how consumers think about the concepts of *price* and *cost* could inform the appropriate and consistent use of these terms in consumer decision tools.[28] In addition, insights about loss aversion could be considered in the framing of price and quality information,[29] the power of "status quo" bias should be carefully considered when using default choices,[30] the risk of cognitive overload should be considered in determining the number of choices that consumers see,[31] and tools should include information about quality in addition to price.[19]

People who reported having compared prices were more likely to perceive that price and quality are associated.

Conclusion

Most Americans do not believe that price and quality of health care are associated. Price and quality information should be presented in ways that consider the complexity of people's responses to different framings of information. Price and quality transparency initiatives should also consider how to address variations in perceptions across demographic and other subgroups of consumers. ■

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Study Of Physician And Patient Communication Identifies Missed Opportunities To Help Reduce Patients' Out-Of-Pocket Spending

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ABSTRACT **Some experts contend that requiring patients to pay out of pocket for a portion of their care will bring consumer discipline to health care markets. But are physicians prepared to help patients factor out-of-pocket expenses into medical decisions? In this qualitative study of audiorecorded clinical encounters, we identified physician behaviors that stand in the way of helping patients navigate out-of-pocket spending. Some behaviors reflected a failure to fully engage with patients' financial concerns, from never acknowledging such concerns to dismissing them too quickly. Other behaviors reflected a failure to resolve uncertainty about out-of-pocket expenses or reliance on temporary solutions without making long-term plans to reduce spending. Many of these failures resulted from systemic barriers to health care spending conversations, such as a lack of price transparency. For consumer health care markets to work as intended, physicians need to be prepared to help patients navigate out-of-pocket expenses when financial concerns arise during clinical encounters.**

In recent years an increasing number of Americans have chosen health insurance plans with high out-of-pocket expenses, in the form of deductibles, copayments, or coinsurance rates.[1] According to economic theory, such plans should make consumers more sensitive to the price of health care services.[2] Indeed, copayments have been shown to reduce health care use.[3] However, high out-of-pocket spending can also create financial burdens for patients. In 2014 one in three Americans reported having difficulty paying health care bills.[4] Many patients did not adhere to prescribed health care interventions because of difficulty paying for them.[5–7] In addition, some patients reported that the financial burden of paying for medical care caused them to miss mortgage payments[8] or led them to personal bankruptcy.[9,10]

On the one hand, patients with high out-of-pocket spending have an opportunity to behave as informed consumers in the health care Marketplace. On the other hand, their status as consumers exposes them to potential financial burden. Ideally, patients will recognize this trade-off between the medical benefits and the financial costs of receiving health care services, incurring out-of-pocket expenses only when the benefits of receiving the services outweigh the costs.

So how close do patients come to reaching this ideal? In the RAND Health Insurance Experiment, families were randomly selected to receive either first-dollar insurance coverage—no out-of-pocket spending—or a range of out-of-pocket expenses, from minimal copayments to steeper ones.[11] The RAND study showed that it is often difficult for patients to know when they need specific health care interventions; therefore, their behavior in the face of high out-of-pocket spending is not always ideal. The study showed

that copayments reduce health care use, causing people to scrutinize the need for health care services. However, patients' scrutiny of health care services was relatively uncritical, with copayments causing patients to forgo necessary services as well as unnecessary ones.[12]

To help patients factor their spending into health care choices, physician experts and patient advocacy groups have recommended routine physician-patient communication about out-of-pocket expenses.[13,14] Theoretically, such communication would allow patients to weigh medical and financial trade-offs and facilitate informed choices about health care services.[15] In effect, the cost of care would be discussed as another side effect to be factored into the pros and cons of available treatment alternatives, with physicians and patients engaging in shared decision making to choose the best alternatives given patients' preferences.[13]

To date, however, there is very little research assessing how often, or how well, doctors and patients discuss health care costs during clinical encounters. Estimates of cost discussion frequency vary widely in the published literature, from as low as 14 percent of patients ever discussing their health care spending with physicians[16,17] to as high as 44 percent of patients discussing their health care expenses in a single year.[18] The heterogeneity in estimates may be in part as a result of differences in study design, with higher estimates reported from studies of actual dialogue with physicians than from self-reports from patient surveys.[19] In fact, our research analyzing actual clinical encounters discovered that patients and physicians discussed health care spending during 22 percent of breast cancer clinic appointments, 33 percent of rheumatoid arthritis appointments, and 38 percent of depression appointments.[20] As for how effectively such conversations help patients navigate out-of-pocket spending, our prior research showed that when the topic of health care spending arose during clinical encounters, patients and physicians discussed strategies to reduce such expenses 44 percent of the time.[20] Discussing health care spending can be an important step toward helping patients decide whether lower-cost services are in their best interest.

Unfortunately, in our study of clinical interactions, we discovered that physician-patient spending conversations did not always enable patients to successfully navigate out-of-pocket expenses. In this article we present a qualitative content analysis of health care spending discussions from outpatient clinic visits for patients with breast cancer, rheumatoid arthritis, or depression who saw specialists who treat these conditions. We present a series of physician behaviors that interfered with patients' efforts to either lower their out-of-pocket expenses or understand the pros and cons of less costly health care alternatives.

Study Data And Methods

SAMPLE DESCRIPTION We analyzed physician-patient interactions drawn from the Verilogue Point-of-Practice™ database of audiorecorded clinical interactions. Verilogue recruits physicians randomly from available lists of active, board-certified physicians and pays them to record patient visits for the purpose of marketing or health services research. All protected health information is removed during the transcription process. The Duke University Institutional Review Board determined this study to be a secondary analysis of deidentified data and declared it exempt from review.

We obtained the most recent 1,000 interactions for management of each of these conditions: breast cancer, depression, and rheumatoid arthritis. We chose these three health conditions because they often involve expensive health care interventions that could lead to high out-of-pocket expenses. From this sample of 3,000 transcripts, we excluded visits that were conducted by primary care physicians, nurse practitioners, or nurses ($n = 800$) because these clinicians are often not the ones that prescribed the expensive interventions relevant to the diseases in question. We also excluded visits that occurred outside of the United States ($n = 350$); involved patients younger than age eighteen ($n = 41$); were primarily concerned with management of axial spondyloarthropathy instead of rheumatoid arthritis ($n = 42$); or contained only physicians' dictation ($n = 12$). The final sample consisted of 1,755 visits: 677 breast oncology interactions, 656 rheumatoid arthritis interactions, and 422 psychiatry interactions. These interactions occurred between May 2010 and February 2014 in outpatient, private practice offices across the United States.

ANALYTIC APPROACH In this analysis we present thematic categories capturing physician behaviors we observed that led to missed opportunities to reduce patients' out-of-pocket expenses. In our earlier work we identified and quantified the strategies patients and physicians discussed to reduce patients' out-of-pocket spending.[20] In conducting that work, our team of coders flagged interactions in which they believed communication between doctors and patients broke down in ways that thwarted any effort to use such strategies. The coding team reviewed these flagged interactions and developed a scheme characterizing which physician behaviors led to these

missed opportunities. To develop this scheme, we assembled a multidisciplinary team made up of two researchers experienced in analyzing physician-patient interactions, a medical student who had finished a year of clinical rotations, and an experienced physician with expertise in shared decision making.

Members of the coding team independently reviewed transcripts and identified potential examples of missed opportunities. The team then met to discuss these examples and debate whether they qualified as missed opportunities and by what reason they qualified as such. These reasons eventually became the coding categories. Our primary coding goal was to gather examples illustrating the range of behaviors that could lead to missed opportunities. We continued collecting and deliberating upon case examples until we reached a point of thematic saturation,[21] whereby subsequent missed opportunities were a result of behaviors we had already categorized. All coding disagreements were resolved by group consensus. Given our inability to combine the transcript data with survey or interview data to find out whether patients left the clinic appointment with unresolved financial concerns, we did not quantify the frequency of the behaviors. Another barrier to quantifying frequency were co-occurrences of physician behaviors, which resulted in categories that were not always easily distinguishable, as we explain below. Therefore, what we present in this article are exemplars of various behavioral phenomena drawn from these interactions.

LIMITATIONS Our study had several limitations. First, it involved only three health conditions. If we had studied other health conditions, we might have uncovered other physician behaviors that impede resolution of patients' financial concerns. Second, we did not have longitudinal data for these physician-patient relationships, which limited our ability to fully comprehend the specific behaviors we observed in any of these single interactions. Third, our study is qualitative, and we did not address how often each of these behaviors occurred. In part, we avoided quantification of these behaviors out of recognition that we could not confidently conclude that any given instance of a behavior reflected a true failure. In addition, the categories of behaviors we describe reside on a continuum and would be difficult to sharply delineate from each other. Instead of meeting rigorous criteria as unique categories, the categories we studied lay out the range of behaviors that interfered with patients' ability to function as informed health care consumers. Nevertheless, in a separate article we determined that the majority of times when physicians and patients discussed health care expenses during clinical directions, they did not discuss any strategies for how to reduce out-of-pocket spending.[20]

Study Results

Our qualitative content analysis revealed two broad categories of physician behaviors that led to missed opportunities to reduce out-of-pocket expenses. The first set of behaviors involved the physician's failure to address the patient's financial concerns, in which the physician did not make an explicit effort to either acknowledge or deal with the seriousness of the patient's concerns (Exhibit 1). The second category involved instances where physicians did make explicit efforts to deal with patients' financial concerns but failed to resolve such concerns satisfactorily (Exhibit 2). Below, we provide examples of each type of behavior.

MISSED OPPORTUNITIES TO ADDRESS PATIENTS' FINANCIAL CONCERNS

▶ **FAILURE TO RECOGNIZE POTENTIAL FINANCIAL CONCERN:** For patients to productively discuss out-of-pocket spending with their physicians, they need physicians to recognize that they have financial concerns. However, patients do not always state their financial concerns explicitly ("Doctor, I can't afford these medicines; are there any less expensive alternatives?"). Instead, they sometimes express their concerns implicitly ("Wow, that medicine is expensive"). As a result, physicians have to pick up implicit cues to hold productive conversations about such concerns.

Even when patients' expressions of financial concern were explicit, physicians sometimes failed to recognize such concerns because of clinical distractions. Human attention is limited, and people are less likely to pick up on cues they are not already expecting to see.[22] Behaviors such as entering data into electronic medical records or examining patients can divert physicians' attention, making them less likely to pick up on unexpected topics such as patients' financial distress. For example, in one interaction, a woman with breast cancer complained of weight loss, explaining that she was taking a nutritional supplement but had to "stretch it out because it's a little bit expensive." The physician responded with a series of "uh-huhs" while typing on the computer and then shifted to examining the patient, without returning to the unaffordability of the supplements. In another interaction, a physician discussed prescribing an expensive rheumatoid arthritis medication, even going so far as to inquire about the patient's lack of insurance. He then examined the patient and did not return to the topic of how the patient would pay for the

EXHIBIT 1

Examples of physicians' failure to address patients' financial concerns

Example	Sample conversation
Failure to recognize potential financial concerns	PT: Is why we stopped stuff, because of the surgery. But I know there's a new thing out for the, um, ulcer, besides the Nexium, because that's so expensive. Expensive would be— DR: Um-hum. Let me see. We did use the methotrexate.
Distracted from patients' financial concerns by frustration with system	DR: What else do we need? The Restoril? Folic acid? PT: Not the folic, and the Restoril…they won't approve that one, either. I don't know why. DR: Those insurance companies, they don't want to pay. PT: I know. DR: For anything. PT: I also need the Tylenol 3. DR: [Writes prescription for Tylenol 3 but never returns to discuss inability to pay for Restoril.]
Dismissal of patients' financial concerns	DR: We'll see if the insurance company is going to pay for your BRCA [test]. PT: How much does it cost if I have to pay for it? DR: Oh, we don't want to talk about that.
Hasty acceptance of patients' dismissal of financial concerns	DR: The Tykerb, we have not given you for a long time, and these are pills, if I remember correctly, you have tolerated rather well. PT: I think so. I think I did. DR: Okay, and your insurance had no problem paying for it? CG: Well, we paid yeah, they paid, DR: They paid? CG: Yeah, that was a lot of copay. But that's okay. That's not a problem. DR: Okay.

SOURCE Authors' analysis of audiorecorded clinical interactions drawn from the Verilogue™ Point-of-Practice database. **NOTES** BRCA is a genetic test for breast and ovarian cancer risk. CG is caregiver.

medication.

▶ **DISTRACTED FROM PATIENTS' FINANCIAL CONCERNS BY FRUSTRATION WITH SYSTEM:** When physicians discuss health care expenses with patients, they sometimes spend considerable time complaining about the systemic factors contributing to high out-of-pocket spending. Occasionally, voicing those frustrations seems to distract them from exploring how to reduce patients' expenses. For example, after a breast cancer patient complained about the expense of her bone strengthening drug, her oncologist agreed that the price was "crazy," and then went on to elaborate: "What usually happens is the hospital or clinic will charge 300 times what they think they can get and the insurance company pays one-twentieth of the original. So it's just a game." "That's crazy," the patient replied. The doctor continued: "It'd be like going to your car mechanic and them saying, 'It's going to be $17,000 to get this fixed,' and you say, 'Well how about $149?'" The patient laughed at this analogy, and they continued discussing the "insanity" of the US health care system, with the oncologist adding that "a lot of those CEOs, the United Healthcare [CEO] made $124 million last year"—without ever returning to the patient's difficulty paying for her medication.

▶ **DISMISSAL OF PATIENTS' FINANCIAL CONCERNS:** Even when physicians pick up on and acknowledge patients' financial concerns, they sometimes dismiss such concerns before exploring whether it is possible to reduce patients' financial burden. For example, in one interaction, a patient explained that "[I] cannot take my pills, because there is now a copay." She mentioned that she had "zero income," to which the physician replied, "That's what happens, yeah," without addressing her inability to pay for her medications.

▶ **HASTY ACCEPTANCE OF PATIENTS' DISMISSAL OF FINANCIAL CONCERNS:** Sometimes, patients express financial concerns to physicians, and then they, the patients, dismiss those same concerns. When physicians readily accept such dismissals, they miss out on opportunities to find out whether such concerns are legitimate. For example, in one interaction, a patient with rheumatoid arthritis was not responding to current therapy, so the rheumatologist stated that: "We can put you on another biologic if you can afford it." The patient responded: "I guess I can, because I have to." The rheumatologist did not follow up to determine if there was any way to estimate and perhaps even reduce the patient's out-of-pocket expenses.

LIMITED RESOLUTION OF PATIENTS' FINANCIAL CONCERNS In the examples presented above, the physicians never thoroughly engaged in discussion of how to potentially reduce patient out-of-pocket expenses, either because they failed to recognize patients' financial concerns or be-

EXHIBIT 2

Examples of limited resolution of patients' financial concerns

Example	Sample conversation
Assuming "coverage" means full coverage	DR: Why do the genetic testing? To see if there is anything else [to worry about]. PT: I don't know. It's super expensive. DR: The genetic testing? PT: Yeah. DR: No. Insurance should take care of it.
Assuming generic medications are affordable	PT: I told you I didn't buy the patch because I'm between halftime. I had to go borrow money to get my medicine and stuff. DR: Do you got— PT: Them pills is high, and them patches is, too. DR: But it's a generic patch, though. PT: I know, but it's still high. DR: It still costs money? PT: Yes, $40 something, that's generic price. DR: Oh, yeah. PT: High. DR: Oh, okay. So then— PT: Yeah, I have to pay $45 for the insulin, now, then I told them, good God. DR: Yeah, yeah. Unfortunately, we cannot use steroids so that's why that's out. So are you taking the Plaquenil twice a day also?
Assuming copayment assistance programs and coupons resolve financial concerns	DR: We talked about some injection like— PT: Enbrel. DR: So, what's happening on that? PT: I think it's going to be too much for me to afford. DR: What do you mean? What kind of insurance do you have? PT: I have Blue Cross. DR: Blue Cross Blue Shield? PT: Um-hum. DR: Because the insurance company will give you some, uh, the drug company give coupons like for the copay. PT: And then do you have the coupons for that or…? DR: Yeah. I think if you call the drug company, they will tell you exactly where to contact.
Temporizing financial burden without discussing long-term solutions	DR: [Asks nurse] What's going on with her Xeloda? NR: She never got it. DR: [Asks patient] Well, did you get a sample? Did the insurance pay for it? PT: No. When I was last here, the bottle you gave me was, that was it. DR: [To nurse] Do you have any samples of Xeloda? [Gives patient new sample.]
Failure to consider less expensive alternatives	PT: [Discussing OxyContin for metastatic bone pain] I have to spend $200 on pain medication, that's how much these pills cost me. DR: For three a day? PT: Yep. $198 for 120 of them. So I'd rather go back to the 80s [a higher dose, to reduce cost]. DR: All right. [Never discusses lower-cost narcotics.]

SOURCE Authors' analysis of audio-recorded clinical interactions drawn from Verilogue™ Point-of-Practice database.

cause they became distracted by other matters. In the examples below, the physicians did attempt to discuss expense-lowering strategies but potentially failed to make sure these strategies would succeed.

▶ **ASSUMING 'COVERAGE' MEANS FULL COVERAGE:** Many insurance plans do not fully cover services but leave patients with copayments or coinsurance.[23] When physicians mistakenly assume that "coverage" means full coverage, they might unwittingly expose patients to burdensome out-of-pocket spending. For example, in many interactions, when patients inquired about whether specific services were "covered by insurance," physicians responded "yes," without acknowledging (or perhaps recognizing) that patients could still face significant out-of-pocket expenses. In one interaction, a rheumatologist explained that the treatment he was prescribing was "a very expensive medication, but usually insurance covers pretty good." He never addressed the possibility that the patient would be responsible for a significant portion of the cost or that paying even a relatively small portion of the cost might be a burden.

▶ **ASSUMING GENERIC MEDICATIONS ARE AFFORDABLE:** In recent years, consolidation among manufacturers has led to significant in-

creases in the price of some generic medications.[24] Even absent such price increases, the cost of generic medications can burden those patients who are stressed to their financial limit. But physicians do not always recognize that "inexpensive" generics can be unaffordable for their patients. For example, one rheumatoid arthritis patient complained that methotrexate was too expensive. The physician responded with surprise, "considering it's a generic medicine." This response raises the possibility that the physician did not inquire in earlier visits about whether the patient could afford the methotrexate because he assumed that, as a generic, it would be affordable.

▶ **ASSUMING COPAYMENT ASSISTANCE PROGRAMS AND COUPONS RESOLVE FINANCIAL CONCERNS:** Sometimes pharmaceutical companies create programs to help patients pay for expensive medications. These programs do not always eliminate all out-of-pocket expenses. And not all patients who seek such assistance receive it. Nevertheless, physicians sometimes direct patients to such programs under the assumption that they will resolve patients' financial concerns. In a number of interactions, physicians encouraged patients to "call the drug company" to find out about such assistance but with no plan for what to do if it was not forthcoming.

▶ **TEMPORIZING FINANCIAL BURDEN WITHOUT DISCUSSING LONG-TERM SOLUTIONS:** Sometimes physicians make earnest efforts to address patients' financial concerns but focus on temporary solutions without discussing steps necessary to yield long-term financial relief. Physicians offer free samples of medications to treat patients' problems even when such samples only delay the day when patients will face significant expenses. In some cases, in fact, the free samples are expensive drugs, and use of the free samples might distract physicians from trying less expensive alternatives first. Other times, physicians turn to short-lived drug discount cards or coupons. For example, in one interaction, a psychiatrist recommended a patient begin taking Latuda, used for treating depression in people with bipolar disorders. When the patient expressed concern about the expense, the psychiatrist asked the nurse whether they had free samples. When the answer came back no, the psychiatrist told the patient, "I think there's a fourteen-day discount card." The patient was still concerned, asking, "Do you think insurance will cover it?" to which the psychiatrist responded: "I hope so. If nothing else, they'll cover at least fourteen days for free." There was no discussion about whether the patient would know, within fourteen days, whether the drug was effective or whether it was wise to start the drug now without knowing whether the patient would be able to afford it after the fourteen-day discount expired.

▶ **FAILURE TO CONSIDER LESS EXPENSIVE ALTERNATIVES:** One way to reduce patients' out-of-pocket spending is to try less expensive alternatives when they are as good or nearly as good as the current, high-price option. Physicians sometimes fail to consider such alternatives. For example, in one interaction, a patient told his rheumatologist that "the nerve medication you tried to give me, they said the card would not cover it." The rheumatologist responded by saying, "OK, I am sorry about that. There is nothing we can do when they decide not to cover it. Let's get you out of here, young man," and the visit ended. The physician did not explore whether less costly nerve medications were available.

Discussion

Many health care policies are ultimately played out "at the bedside," by influencing the way doctors and patients make medical decisions. In the case of policies promoting health care consumerism, many patients are faced with important decisions about whether the benefits of health care interventions justify their financial cost. In this qualitative, observational study of outpatient interactions, we identified a range of physician behaviors that stand in the way of helping patients make informed decisions about ways to potentially lower their out-of-pocket spending. Some behaviors reflect physicians' failures to fully engage with patients' financial concerns, from never acknowledging such concerns, to dismissing them too quickly, to getting sidetracked discussing frustration with a system that creates such high out-of-pocket spending. Other behaviors reflect physicians' efforts to engage patients about their financial concerns but efforts that potentially fall short, because physicians fail to resolve uncertainty about out-of-pocket expenses or turn to temporary solutions without making long-term plans to reduce patients' spending.

In reporting these behaviors, we are not implying that physicians should be blamed for the high out-of-pocket expenses their patients incur. Importantly, we recognize that all of the examples we present here reflect only a single interaction and that full understanding of the interaction would require familiarity with previous clinic visits. In a given interaction, a physician may have appeared to be ignoring a patient's financial concerns, but on a previous interaction that physician may have explored such concerns in depth. Similarly, a physician may have turned to a temporary solution in the visit we analyzed but may have had an unstated plan to address long-

term concerns on a follow-up visit. In other words, the examples we present here cannot be "proven" to be missed opportunities for physicians to help patients reduce out-of-pocket spending. Instead, they stand as snapshots of the kinds of behaviors that potentially lead to such missed opportunities, lacking other efforts to reduce patient expenses.

In addition, we recognize that physician-patient communication is a two-way street and that some of the failures described here resulted in part from patients having difficulty clearly and explicitly expressing their financial concerns.[16] Patients have difficulty partly because health care consumerism is a relatively recent phenomenon in the United States for most people, meaning that patients have not had substantial experience that would help them become savvier about the health care marketplace.[25] Nevertheless, it is still incumbent on physicians to do their best to overcome patients' difficulties communicating about their expenses.[26] As an analogy, patients often have difficulty describing clinical symptoms to their physicians. Instead of taking patients' initial descriptors at face value, physicians are trained to ask follow-up questions that illuminate patients' symptoms. In the same manner, if physicians want to help patients make financially informed medical decisions, they need to learn how to recognize when patients have concerns about the cost of their care.

Some readers may wonder not just how clinical interactions go astray, leading to missed opportunities to reduce patient out-of-pocket spending, but how often they go astray in such a manner. Unfortunately, our data did not allow us to make such estimates. We had access only to transcripts of clinical encounters and, therefore, were not able to survey or interview patients and providers to uncover whether there were missed opportunities to reduce out-of-pocket spending. In our previous article we did estimate how often physicians and patients discussed health care expenses and discovered that they failed to hold such discussions in almost two-thirds of clinical interactions.[20] Some readers might wonder whether each of these encounters represents a missed opportunity to reduce patients' out-of-pocket expenses. But we do not think that our data support that conclusion, especially given that most of the patients in our study were seeing these physicians for follow-up appointments, which raises the possibility that financial concerns were addressed in previous appointments. Our goal in this article, therefore, was not to quantify missed opportunities but to characterize them.

We acknowledge that many of the potential failures we have identified here, if they truly do reflect physician failure, also reflect more general failure of the US health care system. Physicians in the United States have difficulty factoring financial concerns into health care decisions in part because out-of-pocket spending is often difficult to determine and health care prices are often opaque.[27] Consequently, physicians under time constraints cannot be expected to fully resolve patients' financial concerns in the space of any single outpatient appointment.

When patients are burdened by the expense of interventions, physicians should consider whether there are less expensive alternatives.

Nevertheless, many physicians want to help relieve patients of their financial burdens, to increase the likelihood that they will receive prescribed interventions and improve their overall quality of life. To achieve this goal, physicians need to recognize when their own behaviors interfere with these efforts. For example, when patients are burdened by the expense of prescribed interventions, physicians should consider whether there are less expensive alternatives. When the best solutions are short in duration, it behooves physicians to make plans to find longer-term solutions. And when patients raise and then dismiss financial concerns, physicians should take a moment to assess whether such dismissals are warranted.

In fact, anytime patients express concern about particular health care expenses, physicians should be cognizant of the possibility that patients are expressing symptoms of more general financial distress. When a patient complains about the expense of a sleeping pill, a physician should consider not only whether there is a less expensive way to address the cost of treating the patient's sleep disorder but also whether other unnecessarily expensive interventions are burdening the patient.

Conclusion

Ideally, when people face high out-of-pocket spending for health care services, they will act like savvy consumers, exploring the pros and cons of their alternatives with full knowledge of the financial consequences of those alternatives. This confidence is undermined whenever clinical interactions lead patients to miss opportunities to explore less costly alternatives or to identify means by which they can receive their current interventions at lower prices. Ultimately, when policies promote or allow people to experience high out-of-pocket health care expenses, those policies play out in the context of clinical interactions. Understanding the nature of those interactions is critical in understanding the impact of those policies. ■

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NOTES

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April 2016 | Issue Brief

Paying for Health Coverage: The Challenge of Affording Health Insurance Among Marketplace Enrollees

Jennifer Tolbert and Katherine Young

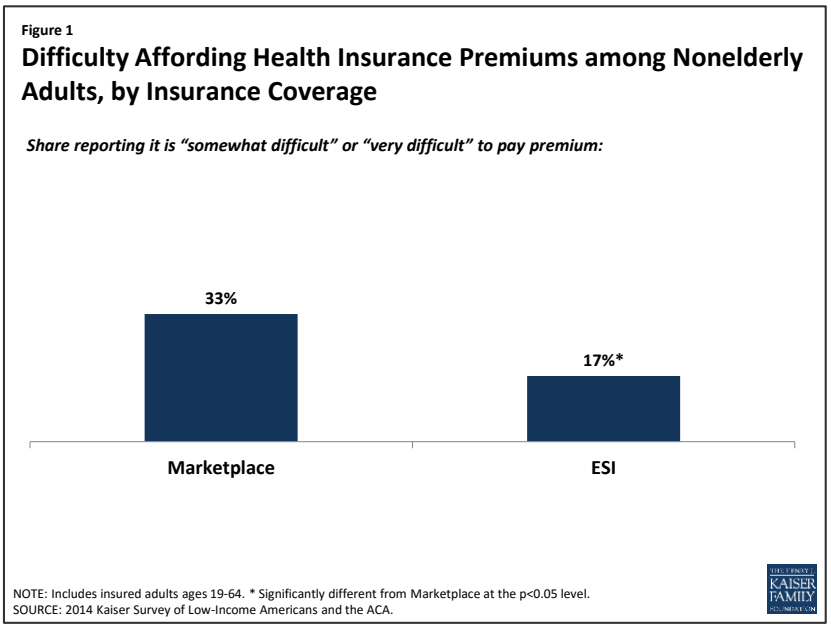
Introduction

As millions of people newly gain health insurance coverage as a result of the Affordable Care Act (ACA), affordability of coverage remains a persistent problem for some. Despite the availability of subsidies to lower the cost of coverage in the Marketplaces, many people have trouble affording their premiums and the out-of-pocket costs when they access care. Recent research indicates that a quarter of all adults with private insurance had unaffordable coverage when premiums, deductibles, and total out-of-pocket costs were taken into account.[1] While many people have newly gained coverage, through the Marketplaces, the ongoing financial challenges associated with paying premiums may put that new coverage at risk for some.

Now in the third year of Marketplace coverage, little is still known about how many people are facing affordability challenges and why. This brief seeks to understand who is facing challenges affording their health coverage and the factors that may be contributing to those challenges. Based on the 2014 Kaiser Survey of Low-Income Americans and the ACA[2], which provides insights into the experience of consumers during the first year of ACA implementation, this brief describes the characteristics of those reporting difficulty paying premiums, comparing this group to those who report little to no difficulty paying their premiums. The brief also examines financial security, utilization of health services, and problems with health plans among these two groups. While data from 2014 may not reflect the experiences of current enrollees, they are useful for exploring the differences between these two groups of Marketplace enrollees at that point in time.

Figure 1

Difficulty Affording Health Insurance Premiums among Nonelderly Adults, by Insurance Coverage



NOTE: Includes insured adults ages 19-64. * Significantly different from Marketplace at the p<0.05 level.
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

According to survey data, one-third of those with Marketplace coverage reported difficulty paying their premium (Figure 1). This finding is consistent with other surveys of Marketplace enrollees in which a third report dissatisfaction with their premium and 36% report dissatisfaction with their deductible.[3] In comparison, the survey finds that only 17% of those with coverage through their employer reported a similar difficulty.

Throughout this brief, we use difficulty paying premiums as a measure of affordability issues for consumers enrolled in Marketplace plans. We refer to the group reporting difficulty paying their premium as Paying Premium Difficult and the group reporting little to no difficulty paying their premium as Paying Premium Not Difficult. One limitation of this categorization is that it captures one aspect of overall health costs—the premium— and does not account for other out-of-pocket costs associated with accessing care. We explore the effect of these out-of-pocket costs in the analysis and report those findings in this brief.

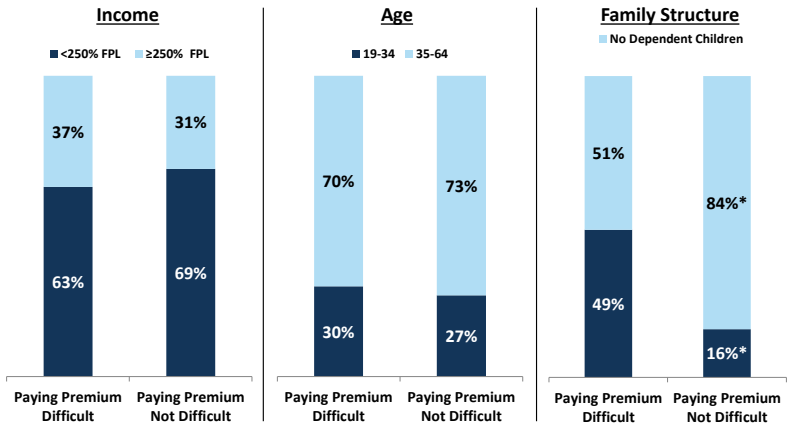
Characteristics of those having trouble affording coverage

In many ways, those reporting difficulty affording Marketplace coverage looked much like those who reported no trouble affording coverage. They shared similar characteristics in terms of income, age, and health status, but were more likely to have dependent children.

Six in ten adults who said they had difficulty affording their premium had incomes below 250% of the poverty level and three in ten were under age 35. For those enrolled in a qualified health plan (QHP) in the Marketplace, having income below 250% of the poverty level ($50,225 for a family of three in 2015) qualifies individuals and families for both tax credits to lower the cost of premiums and cost sharing reductions to reduce out-of-pocket costs in the form of lower deductibles, copayments, and coinsurance. Among those who reported their income, 63% of adults with difficulty affording their premiums had incomes below 250% FPL, which was similar to the share (69%) among those with no trouble affording premiums (Figure 2). The age distribution of the two groups was also similar, with three in ten of both groups under age 35. These findings are consistent with Marketplace enrollment data indicating about 27% of those who signed up for Marketplace coverage in 2014 were adults under age 35.[4] In addition, the two groups were similar with respect to health status measures. About three-quarters of adults with difficulty affording their premiums reported having excellent to good overall health, similar to the share of those with affordable premiums (73% vs. 79%). Additionally, about four in ten of both groups reported having an ongoing medical condition (45% vs. 41%). (Data on health status not shown.)

Figure 2

Income, Age, and Family Status of Nonelderly Adults with Marketplace Coverage, by Affordability of Premium



NOTE: Includes adults ages 19-64. * Significantly different from Paying Premium Difficult at the p<0.05 level.
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

Nearly half of adults reporting trouble affording their coverage had dependent children. Among those reporting difficulty paying premiums, 49% had dependent children in their homes, compared to only 16% of those with affordable Marketplace coverage (Figure 2). For those eligible for subsidies in the Marketplace, the premium contribution is based on a percentage of income rather than a percentage of the premium. Consequently, families in the Marketplace who choose the benchmark plan or a lower cost plan will not have to pay more than their childless counterparts simply because they need a family policy. However, adults with

children may face additional costs for housing, food, or education that may strain family budgets, particularly for lower income families, leading to difficult trade-offs between paying health insurance premiums or paying for household necessities.

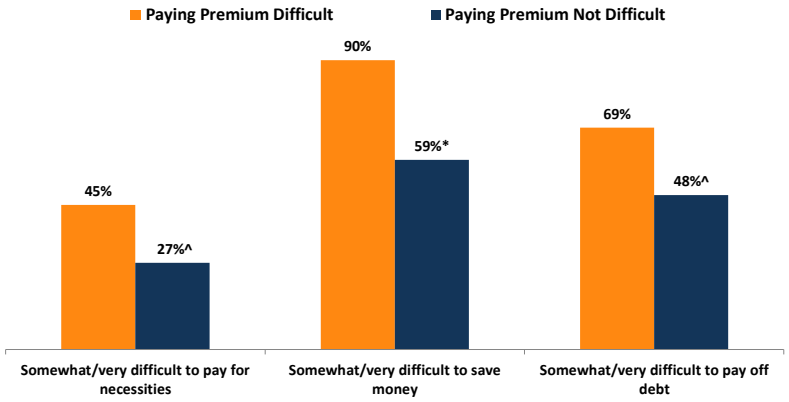
Financial insecurity of those having trouble affording coverage

When it comes to overall financial security, adults with difficulty paying their premiums faced greater financial problems overall and also expressed greater worry over medical costs. For these individuals, having health insurance did not seem to be providing the same level of financial protection as for those who perceived their health coverage to be affordable.

Adults having trouble paying their premiums were more financially insecure than those not having trouble. Adults who reported difficulty paying their health insurance premium were more likely to report facing financial challenges in other aspects of their lives. Nine in ten said that it is somewhat or very difficult to save money and nearly seven in ten reported difficulty paying off debt. These rates were higher than for adults with no difficulty affording their premiums (Figure 3). When it comes to paying for necessities, adults who perceived their coverage to be unaffordable also fared somewhat worse than those who perceived their coverage to be affordable. Nearly half (45%) reported difficulty paying for necessities compared to just over a quarter of those with affordable coverage. This finding suggests that for some, paying for health insurance is one further strain on an already tight budget.

Figure 3

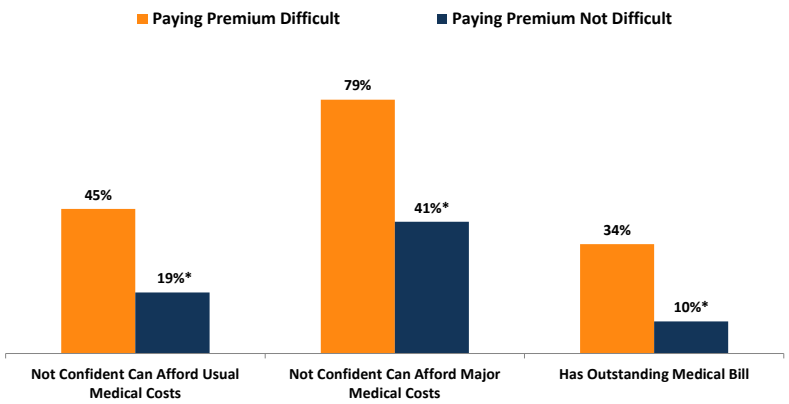
Financial Insecurity Among Nonelderly Adults with Marketplace Coverage, by Affordability of Coverage



NOTE: Includes adults ages 19-64. * Significantly different from Paying Premium Difficult at the p<0.05 level. ^ Significantly different from Paying Premium Difficult at the p<0.10 level.
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

Figure 4

Financial Insecurity over Medical Costs Among Nonelderly Adults with Marketplace Coverage, by Affordability of Coverage



NOTE: Includes adults ages 19-64. * Significantly different from Paying Premium Difficult at the p<0.05 level.
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

For adults reporting difficulty paying their premiums, having coverage eased somewhat, but not fully, financial insecurity over medical costs. Compared to those with affordable coverage, adults having trouble affording their coverage expressed less confidence in their ability to pay for both usual and major medical costs. Over four in ten were not confident they could afford usual medical costs and nearly eight in ten were not confident they could afford major medical costs, compared to just two in ten and four in ten,

respectively, of those with affordable coverage (Figure 4). In addition, they were three times more likely to report having outstanding medical debt compared to those with affordable coverage (34% vs. 10%). Medical debt can place significant stress on family budgets and is a major contributor to personal bankruptcies.[5]

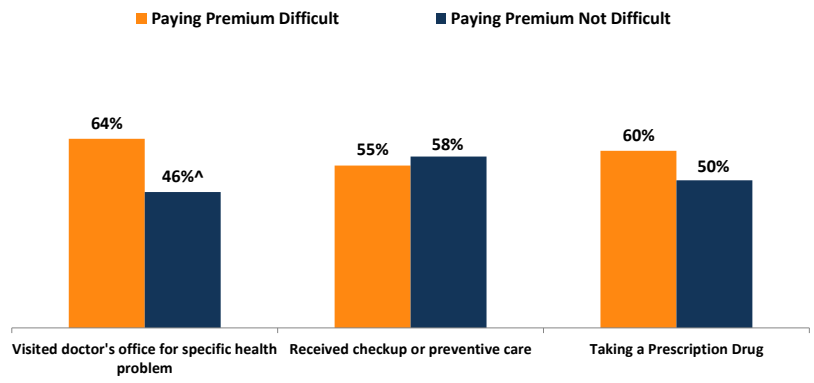
Use of health services among those having trouble affording coverage

Increasingly, private insurance plans, particularly those sold through the Marketplaces, come with deductibles that must be met before insurance coverage begins to cover any costs.[6] For consumers with these higher deductible health plans, using health services can sometimes require large out-of-pocket payments, which, in turn, can lead to difficulties paying for care. Adults who reported difficulty paying for their coverage were more likely to use services and also more likely to have unmet health care needs than those who reported no difficulty paying for their coverage.

Adults having trouble affording coverage were more likely to have used medical services than those not having trouble, but equally likely to have received preventive care and to have taken a prescription drug. Nearly two-thirds of those with difficulty paying their premium reported visiting a doctor for a specific condition; over half had received preventive services or check-ups; and six in ten reported taking a prescription drug (Figure 5). While the rates of use of preventive services and prescription drugs were similar to the rates among those with no difficulty paying their premiums, the use of medical services was higher. For those with private insurance, use of services can come with a high price tag if some or all of the costs of the services must be paid for out of pocket before a deductible is met. It could be that for those reporting difficulty affording coverage, accessing health care services was another factor putting pressure on limited family finances, contributing to the perception that their health coverage overall was unaffordable.

Figure 5

Use of Health Services Among Nonelderly Adults with Marketplace Coverage, by Affordability of Premium

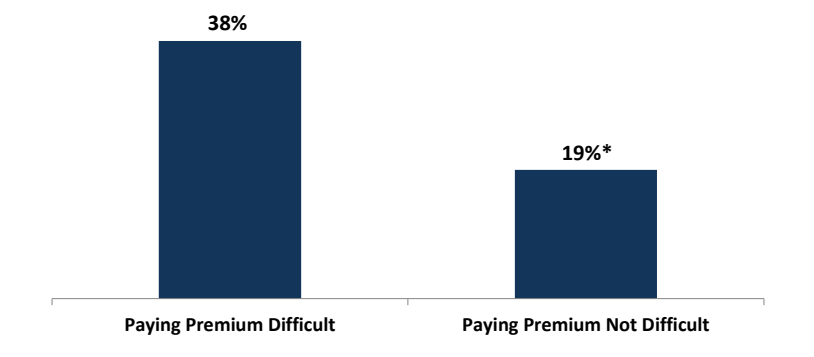


NOTES: Includes adults ages 19-64. Prescription drugs exclude birth control. ^ Significantly different from Paying Premium Difficult at the p<0.10 level
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

Figure 6

Unmet Need for Care Among Nonelderly Adults with Marketplace Coverage, by Affordability of Premium

Share reporting postponing care for any reason:



NOTE: Includes adults ages 19-64. * Significantly different from Paying Premium Difficult at the p<0.05 level.
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

Adults having trouble affording coverage were also more likely to postpone care than those not having trouble. Nearly four in ten adults with difficulty paying their premiums reported they postponed care,

a rate that was higher than for those with no difficulty paying premiums (Figure 6). Although the data do not specify the reason why care was postponed, cost is often a factor.[7] Particularly, given this group's financial concerns, especially related to affording medical costs, it seems likely that financial pressures may have led some to postpone getting care.

Understanding health insurance coverage among those having trouble affording coverage

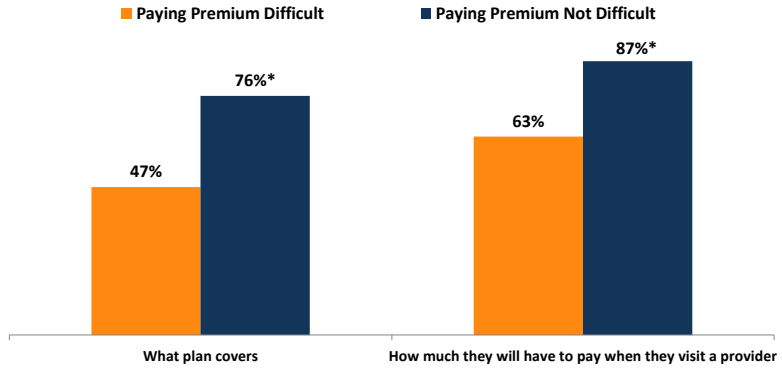
As people have gained coverage through the Marketplaces, there is growing evidence that they do not fully understand the scope of their coverage and the cost sharing requirements.[8] Many argue this lack of health literacy is contributing to problems consumers face with their health plans and with the costs associated with their coverage. This argument appears to hold true for adults with trouble affording their coverage who exhibited lower levels of health literacy and reported greater problems with their health plans.

Adults having difficulty paying for their coverage were more likely to report not understanding aspects of their health coverage. Less than half of adults experiencing difficulty paying their premiums reported understanding "very well" or "somewhat well" what their health plan covered compared to three-quarters of those with no difficulty paying their premiums (Figure 7). While a larger share reported understanding how much they would have to pay when they visit a doctor (63%), this rate was still lower than among adults with no trouble affording coverage (87%). These lower rates might be expected if the adults reporting affordability difficulties with unaffordable were among those newly insured as a result of implementation of the ACA. However, this group was not more likely than those with no trouble affording coverage to have been uninsured prior to obtaining insurance through the Marketplace. These findings suggest that the complexity of many health insurance plans may lead to confusion among consumers and that ongoing education may be needed to ensure people understand their coverage and how it works.

Figure 7

Understanding of Health Insurance Among Nonelderly Adults with Marketplace Coverage, by Affordability of Premium

Share reporting they understand "very well" or "somewhat well":

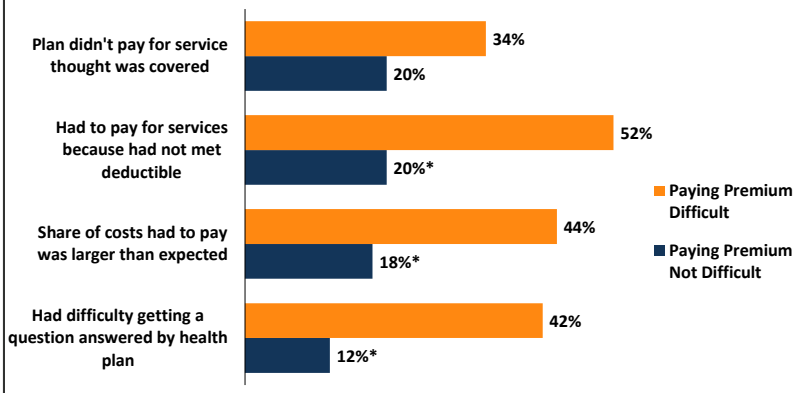


NOTES: Includes adults ages 19-64. * Significantly different from Paying Premium Difficult at the p<0.05 level
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

Figure 8

Problems with Health Plans Among Nonelderly Adults with Marketplace Coverage, by Affordability of Premium

Share reporting "major or minor problem":



NOTES: Includes adults ages 19-64. * Significantly different from Paying Premium Difficult at the p<0.05 level.
SOURCE: 2014 Kaiser Survey of Low-Income Americans and the ACA.

Perhaps related to their lower levels of health literacy, adults with trouble affording coverage were more likely to report problems with their coverage. One third of adults in this group indicated their plan did not pay for a service they thought was covered. In addition, over half reported having to pay for services because they hadn't met their deductible and four in ten said the share of costs they had to pay were more than expected (Figure 8). In contrast, only two in ten adults with no trouble affording coverage reported these same problems. Facing already tight budgets, having to pay more than expected out of pocket was likely adding to the financial burden for these consumers. Further, not only did they report greater problems with covered services and costs, adults with trouble affording coverage also said they had difficulty getting questions answered by their plan at a higher rate than those with no trouble (42% vs. 12%). For these consumers, the dissatisfaction associated with not getting questions answered may have added to the overall frustration with their health plans and with coverage. As a result, they may have felt as though they were not getting value from their health plan.

Conclusion

While the implementation of new coverage options under the Affordable Care Act has led to unprecedented gains in health insurance coverage in the past two years, the reliance on private insurance with premiums and cost sharing means that affordability of coverage continues to be a problem for some consumers. Marketplace enrollees who reported difficulty affording their premium in 2014 were similar to other Marketplace enrollees in many respects, but they faced greater financial insecurity generally and also as a result of their use of health care services. High deductible plans that require people to pay out of pocket when they visit a doctor, have an X-ray or lab test, or need a prescription drug seemed to be a particular problem for these individuals. Exacerbating this problem was the lack of understanding of what was covered by their health plan and what cost sharing rules applied, which could lead to unexpected costs.

Developing strategies to address and improve the affordability of coverage for those enrolled in plans in the Marketplaces are necessary to maintaining the coverage gains achieved to date. Although the policy levers to lower costs for those in the Marketplaces beyond the premium tax credits and cost sharing reductions already available are limited, improving consumers' health literacy around health insurance concepts and the balance between the monthly premium and the annual deductible may help to alleviate some of the problems that are contributing to the financial challenges consumers are facing. In addition, informing lower income consumers about the availability of cost sharing reduction plans that have lower deductibles and copayments can reduce the out-of-pocket burden many of these consumers face. Marketplace assisters play an essential role in educating consumers and helping them select the plans that best meet their needs, but broader efforts to improve health literacy appear to be needed.

Endnotes

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GALLUP®

APRIL 7, 2016

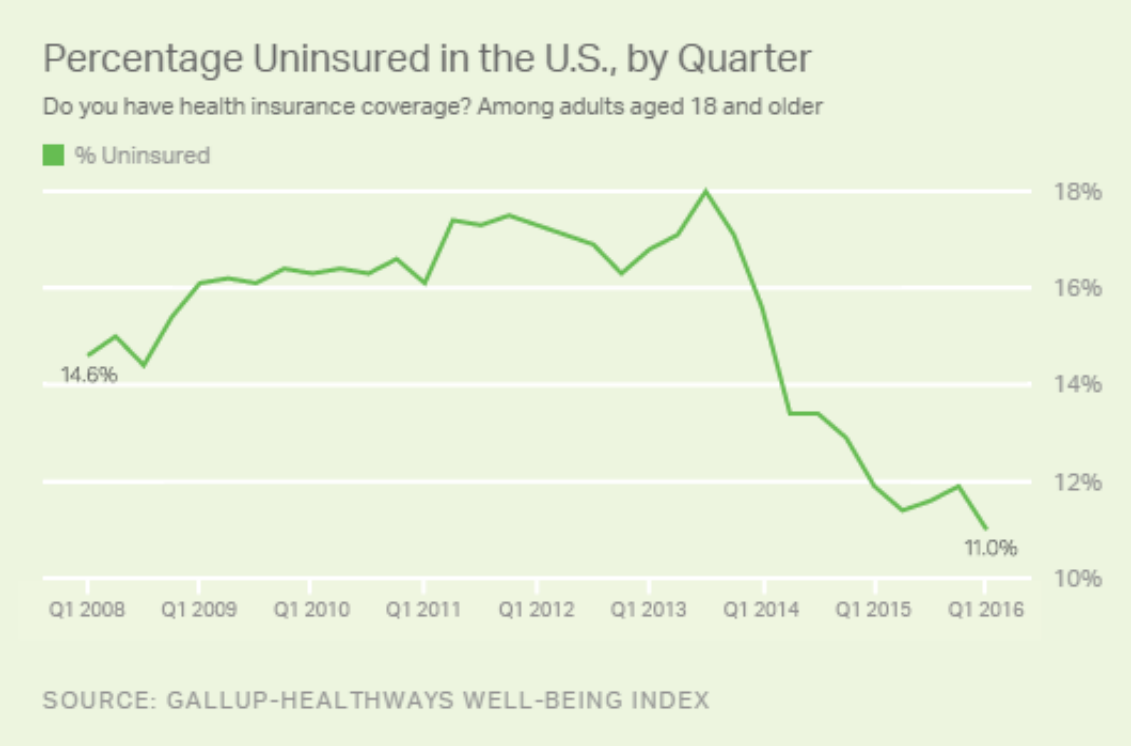
U.S. Uninsured Rate at 11.0%, Lowest in Eight-Year Trend

by Stephanie Marken

Story Highlights

- *Uninsured rate down 6.1 points since individual mandate took effect*
- *Uninsured rate down most among Hispanics and blacks*

WASHINGTON, D.C. -- In the first quarter of 2016, the uninsured rate among all U.S. adults was 11.0%, down from 11.9% in the fourth quarter of 2015. This marks a record low since Gallup and Healthways began tracking the uninsured rate in 2008. The uninsured rate has declined 6.1 percentage points since the fourth quarter of 2013, which was right before the individual mandate provision of the Affordable Care Act took effect in early 2014 that required Americans to carry health insurance.



Results for the first quarter are based on nearly 45,000 interviews with U.S. adults aged 18 and older, from Jan. 2 to March 31, 2016, conducted as part of the Gallup-Healthways Well-Being Index. Gallup and Healthways ask 500 U.S. adults each day whether they have health insurance, which, on an aggregated basis, allows for precise and ongoing measurement of the percentage of U.S. adults with and without health insurance and the net change in the uninsured rate over time.

The uninsured rate for the first quarter accounts for interviews conducted both before and after the Jan. 31 deadline to purchase a 2016 health plan from government insurance exchanges. The percentage without health insurance in the second quarter of 2016 may decline slightly, as it will be the first quarterly measurement this year to reflect interviews that were all conducted after the exchanges closed.

Uninsured Rate Declines Most Sharply Among Hispanics and Blacks

Across key subgroups, blacks and Hispanics have experienced the largest declines in their uninsured rates since the fourth quarter of 2013. The rate among Hispanics was 28.3% in the first quarter of 2016, still significantly higher than for all U.S. adults, but down 10.4 points from the fourth quarter of 2013. Similarly, the uninsured rate has declined 9.5 points among blacks over this same period to its current 11.4%. These larger declines for blacks and Hispanics partly reflect higher uninsured rates among those demographic groups relative to whites before the implementation of the new healthcare law.

Percentage of Uninsured U.S. Adults, by Subgroup

Do you have health insurance coverage?

National adults

Q4 2013: 17.1%

Q1 2016: 11.0%

Net change: 6.1(pct. pts.)

18 to 25

Q4 2013: 23.5%

Q1 2016: 14.8%

Net change: 8.7(pct. pts.)

26 to 34

Q4 2013: 28.2%

Q1 2016: 18.5%

Net change: 9.7(pct. pts.)

35 to 64

Q4 2013: 18.0%

Q1 2016: 10.7%

Net change: 7.3(pct. pts.)

65+

Q4 2013: 2.0%

Q1 2016: 1.6%

Net change: 0.4(pct. pts.)

Whites

Q4 2013: 11.9%

Q1 2016: 6.4%

Net change: 5.5(pct. pts.)

Blacks

Q4 2013: 20.9%

Q1 2016: 11.4%

Net change: 9.5(pct. pts.)

Hispanics

Q4 2013: 38.7%

Q1 2016: 28.3%

Net change: 10.4(pct. pts.)

Less than $36,000

Q4 2013: 30.7%

Q1 2016: 20.0%

Net change: 10.7(pct. pts.)

$36,000 to $89,999

Q4 2013: 11.7%

Q1 2016: 8.2%

Net change: 3.5(pct. pts.)

$90,000+

Q4 2013: 5.8%

Q1 2016: 2.9%

Net change: 2.9(pct. pts.)

GALLUP-HEALTHWAYS WELL-BEING INDEX

The uninsured rate has declined significantly for all age groups below age 65 since late 2013. Seniors, most of whom were already covered by Medicare before the recent changes in health insurance took place, continue to almost universally report being insured.

More Americans Have Self-Paid and Medicaid Insurance Plans

Gallup and Healthways focus on adults aged 18 to 64 because nearly all Americans 65 and older have Medicare. Compared with the fourth quarter of 2013, the largest increase in insurance type has occurred among those paying for a plan themselves. In the first quarter of 2016, 21.8% of U.S. adults aged 18 to 64 had a plan fully paid for by themselves or a family member, up 4.2 percentage points from the fourth quarter of 2013. The percentage of U.S. adults with Medicaid has also increased to 9.4% in the first quarter of 2016, up 2.5 points from the fourth quarter of 2013.

Type of Health Insurance Coverage in the U.S., Among Adults Aged 18 to 64

Is your health insurance coverage through a current or former employer, a union, Medicare, Medicaid, military or veteran's coverage or a plan fully paid for by you or a family member? Primary and secondary insurance combined

Current or former employer

Q4 2013: 44.2%

Q1 2016: 43.4%

Net change: -0.8(pct. pts.)

Plan fully paid for by self or family member

Q4 2013: 17.6%

Q1 2016: 21.8%

Net change: 4.2(pct. pts.)

Medicaid

Q4 2013: 6.9%

Q1 2016: 9.4%

Net change: 2.5(pct. pts.)

Medicare

Q4 2013: 6.1%

Q1 2016: 7.6%

Net change: 1.5(pct. pts.)

Military/Veteran's

Q4 2013: 4.6%

Q1 2016: 5.2%

Net change: 0.6(pct. pts.)

A union

Q4 2013: 2.5%

Q1 2016: 2.6%

Net change: 0.1(pct. pts.)

(Something else)

Q4 2013: 3.5%

Q1 2016: 4.4%

Net change: 0.9(pct. pts.)

No insurance

Q4 2013: 20.8%

Q1 2016: 12.9%

Net change: -7.9(pct. pts.)

GALLUP-HEALTHWAYS WELL-BEING INDEX

Implications

The uninsured rate has dropped considerably since the fourth quarter of 2013 when the key provision of the new healthcare law requiring U.S. adults to obtain health insurance took effect. After declining significantly in earlier quarters, the rate of uninsured U.S. adults leveled off in 2015. Most healthcare policy watchers had anticipated this, as those who remain uninsured are among the most difficult to insure. The drop in the first quarter of 2016 suggests that the rate may continue to decline in future years, although less markedly and maybe only in the first quarter of each year as U.S. adults continue to make use of the exchanges to obtain health insurance.

The open enrollment period concluded on Jan. 31, 2016, meaning slight changes are expected in the second quarter of 2016 when the totality of interviews are conducted after the exchanges have closed, but further significant changes to the uninsured rate are unlikely until the first quarter of 2017.

Survey Methods

Results are based on telephone interviews conducted Jan. 2-March 31, 2016, as part of the Gallup-Healthways Well-Being Index survey, with a random sample of 44,557 adults, aged 18 and older, living in all 50 U.S. states and the District of Columbia. For results based on the total sample of national adults, the margin of sampling error is ±1 percentage point at the 95% confidence level. Each quarter dating to the first quarter of 2014 has approximately 44,000 respondents. Each quarter from 2008 through 2013 has approximately 88,000 respondents.

Each sample of national adults includes a minimum quota of 60% cellphone respondents and 40% landline respondents, with additional minimum quotas by time zone within region. Landline and cellular telephone numbers are selected using random-digit-dial methods.

Learn more about how the Gallup-Healthways Well-Being Index works.

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Answering the Thousand-Dollar Debt Question: An Update on State Legislative Activity to Address Surprise Balance Billing

Christina Cousart

As the newly insured use their coverage, increased scrutiny is being drawn toward the experiences of consumers who are receiving care. One issue of growing concern is the accumulation of medical debt, even among the insured. According to a recent study from the Kaiser Family Foundation, more than a quarter of adults in the United States report that, within the past year, they or someone in their household have had challenges paying medical debt. This includes 20 percent of individuals under the age of 65 who are insured. Also striking, 51 percent of insured individuals reported owing sums of over $5,000, a sum for many households (see Figure 1).[1]

The issue is especially complicated as recent in the health care industry - triggered by growth and shifts in coverage - are occurring in tandem with experimentation by providers and insurers to reduce costs. As the industry stabilizes, it is yet to be seen what methods of controlling costs may prove most effective at lowering those costs and improving affordability for consumers.

One contributing factor under scrutiny is the occurrence of balance or "surprise" billing which happens when patients receive a higher than expected bill from providers, even after factoring for the amount paid by a consumer's insurer to the provider. States are also taking action to explore the impact of surprise billing, managing the interests of carriers, providers, and consumers to address the issue. This brief examines the emergence of surprise billing and relevant state and federal activity, including state legislation that has been proposed during this legislative session.

Figure 1

People Report Problems Paying Medical Bills of Varying Dollar Amounts

AMONG THOSE WHO HAD PROBLEMS PAYING HOUSEHOLD MEDICAL BILLS IN THE PAST 12 MONTHS: What was the TOTAL amount owed for the medical bills you've had problems paying?

NOTE: Don't know/Refused responses not shown.
SOURCE: Kaiser Family Foundation/New York Times Medical Bills Survey (conducted August 28-September 28, 2015)

The Rise of Surprise Billing

Insurers are experimenting with narrowing provider networks, which allows them to negotiate lower rates with selected providers in order to increase the affordability of plans. This is especially true for plans sold through the health insurance marketplaces. While federal and state laws provide some protections over the minimum scope of a plan's network, 49 percent of marketplace plans are described as narrow (22 percent) or ultra-narrow (17 percent), meaning that they limit their contracting to 40 to 70 percent or 0 to 30 percent of local hospitals, respectively.[2] While narrowed networks require consumers to bear greater responsibility for seeking appropriate in-network services, the cost achieved through competitive provider negotiations and contracts have proved to be a popular option among purchasers. In 2015, only 17 percent of narrow network purchasers switched to a broad network plan.[3] Yet, even as consumers take appropriate steps to receive in-network care, they are receiving surprise balance bills.

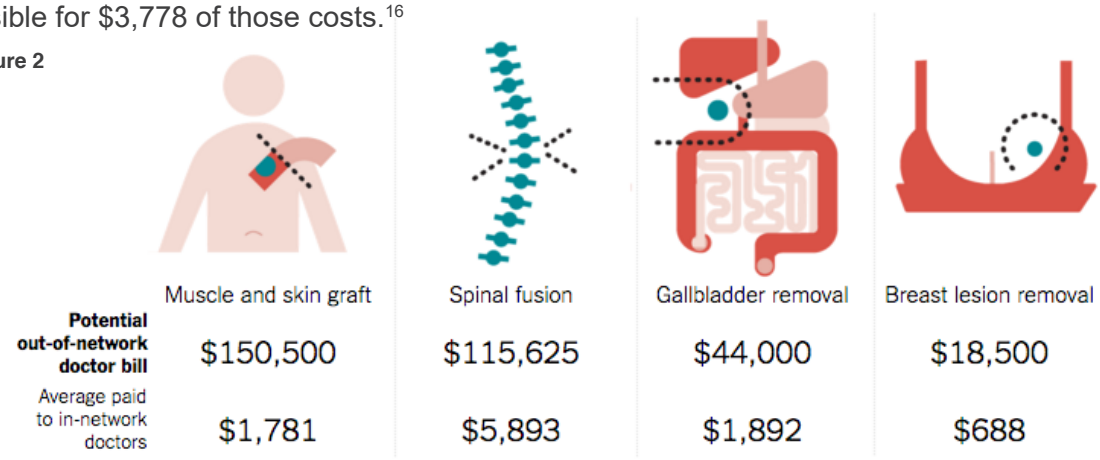
Surprise balance billing is a growing trend in the U.S, with a 2015 Consumers Union poll that nearly one-third of privately insured Americans have received a surprise medical bill within the past two years.[4] In 2014, the New York Department of Financial Services named it as a top complaint from consumers.[5, 6]

Thirty-two percent of insured non-elderly adults who reported challenges paying medical bills named care received by out-of-network providers as a factor contributing to costs,[7] with many factors affecting the likelihood of receiving out-of-network services. In many cases, patients are unaware or reported being inadequately informed that they were receiving care from an out-of-network provider. According to Kaiser, 69 percent of those who were billed for out-of-network services did not realize that their provider was not in-network.[8] Similarly, a Consumer Union survey found that one of four respondents received bills from unexpected physicians they did not expect to receive bills from.[9] This preponderance of out-of-network services is affected by provider "outsourcing;" when hospitals or other large providers contract with independent or outside providers to render services within their facilities.

In these cases, while the hospital may be in a health plan's provider network, the actual practitioner providing services may not. This leaves consumers vulnerable to out-of-network fees by rendering physicians, which can be as much as 20 to 40 times the rate of services negotiated between insurers and an in-network provider.[10] Susceptibility increases in instances when multiple practitioners or procedures are involved in the treatment of an illness, such as anesthesiologists and radiologists, sometimes without notice to the patient.[11] Costs are also further by "provider-based billing" in which healthcare organizations bill for use of facilities and equipment separate from the charges incurred by the rendering providers.[12]

Consumers are more likely to experience provider outsourcing in hospital emergency room (ER) settings, especially as 65 percent of hospitals contract out emergency medical services.[13] A report by Heath Services Research found that 68 percent of patient contact with an out-of-network provider took place in an emergency setting.[14] Similarly, a study focused on Texas' three largest insurers, found that 21 to 45 percent of the insurer's in-network hospitals had no in-network ER physicians. The report further cited that between 41 and 68 percent of emergency medical bills received by patients were from out-of-network physicians.[15] This is especially concerning given that consumers often have little choice in providers when admitted in an emergency situation, as well as the especially high average costs of care for emergency services. A 2012 study issued by the New York Department of Financial Services found that the average bill for out-of-network emergency services was over $7,006, with consumers directly responsible for $3,778 of those costs.[16]

Figure 2



Sources: America's Health Insurance Plans; Healthcare Bluebook

Illustrations by Jennifer Daniel/The New York Times

Elisabeth Rosenthal. "After Surgery, Surprise $117,000 Medical Bill From Doctor He Didn't Know." *The New York Times*. September 20, 2014 http://www.nytimes.com/2014/09/21/us/drive-by-doctoring-surprise-medical-bills.html

Federal Activity Around Surprise Billing

Federal administrative and legislative have taken incremental steps to address balanced billing (see Box 1). Most nt of these are limitations on this practice imposed under Medicare by the Omnibus Budget Reconciliation Act of 1989. The Kaiser Family Foundation estimates a $2.5 billion reduction in balanced billing as a result of these provisions between 1983 and 2011.[17]

President Obama addressed the issue of balance billing in his **Fiscal Year 2017 budget**. The budget outlines a provision to "eliminate surprise out-of-network healthcare charges for privately insured patients" by requiring hospitals "to take reasonable steps to match individual patients with providers that are considered in-network for their plan" and physicians who regularly provide services at the hospital to "accept an appropriate in-network rate as payment-in-full."[18] Additionally, 25 Democratic members of the House have co-sponsored, the **End Surprise Billing Act**, introduced in October 2015. While unlikely to gain traction, the bill proposes to require providers to notify patients about receipt of out-of-network services and estimated charges. The bill also restricts balance billing in the case of receipt of emergency services.[19] Most recently, the **HHS Notice of Benefit and Payment Parameters for 2017** requires that, beginning in 2018, plans participating as health plans (QHPs) count the cost of essential health (EHBs) received from out-of-network ancillary providers to a consumer's annual limitation for cost-sharing unless advanced notice is given. Importantly for states, the limited rule allows the Centers for Medicare and Medicaid Services (CMS) to "monitor ongoing efforts…and amend [their] policy to accommodate progress on the issue."[20] This gives states added to innovate around this issue in

Box 1. Federal Legislation Addressing Balanced Billing

- The Bipartisan Budget Act of 2015: Signed in November 2015, the Act eliminates Medicare incentives for hospitals or other providers to contract with supplementary providers "off-campus". The Act restricts new off-campus outpatient facilities from receiving reimbursements at, the often enhanced, outpatient prospective payment system (OPPS) rates, instead tying them to other Medicare payment schemes such as the physician fee schedule.

- The Patient Protection and Affordable Care Act (ACA): The ACA requires non-grandfathered health plans to cover emergency services received at out-of-network facilities at least at the same rate of cost-sharing requirements stipulated for in-network emergency services. The ACA also compels the health insurance marketplaces to collect and make public information on cost-sharing and payments for out-of-network services, though these provisions have yet to be enforced.

- The Omnibus Budget Reconciliation Act of 1989: Governing physician fee schedules for Medicare, the Act limits non-participating Medicare providers to only billing up to 115 percent of Medicare's fee-schedules. Furthermore, balance billing is prohibited in Medicare Advantage with the exception of private fee-for service plans.

State Actions to Address Surprise Billing

States have taken several actions to offer at least some protections from surprise billing. A July 2015 report from the Robert Wood Johnson Foundation (RWJF) describes four approaches states have taken to protect consumers from balanced billing: 1) enhanced disclosure and transparency requirements; 2) prohibitions on balance billing by providers; 3) requirements for insurers to hold consumers harmless from surprise charges; and 4) regulations that ensure fair payment for billed services (see the report for a case study of laws implemented in California, Colorado, Florida, Maryland, New Mexico, New York, and Texas).[21]

Forty-nine states have enacted some consumer protections against balance billing for managed care enrollees. Of these, 27 states apply protections against out-of-network providers in PPO plans and 13 apply them for HMO plans. Usually protections relate to care delivered in emergency settings.[22, 23] Other state legislation is aimed at enabling independent legal resolution between providers and providers without involving the consumer, as in Illinois,[24] and laws the empower consumers to dispute billing issues, like in Texas.[25] New York's law, enacted in April 2015, includes some of the most comprehensive protections to date. The law protects consumers from owing more than their in-network copayment, coinsurance, or deductible when receiving emergency care even from out-of-network providers. It also enables consumers to sign an "assignment of ts form" that allows providers to pursue payment directly from insurers in the case of a dispute.[26]

During this legislative season, several states are considering actions to address surprise billing. Proposals range from improving the processes by which patients are about the receipt of out-of-network services to setting cost limits on charges assessed for out-of-network care. below is a summary of current bills active in state legislatures.

Chart A. 2016 Pending State Legislation to Address Surprise Balance Billing

State/ Bills	Improve patient out-of-network disclosures and cost estimates	Establish a process to resolve billing disputes	Cap or limit charges for emergency services delivered out-of-network	Cap or limit charges for non-emergency services delivered out-of-network	Incentivize out-of-network care received at a lower cost than in-network services	Standards for delivery and	Assess the impact and potential parameters for balanced billing:	Status
AL SB 116	X				X			Senate 3/10/16
CT SB 289	Clarifies CT's prior out-of-network protections to • Indicate that hospital out-of-network notification requirements can be satisfied through posing information on websites. • Clarify that notification requirements do not apply in situations of unscheduled services or those scheduled three days prior to occurrence. • Limits amounts that can be collected from uninsured patients below 250 percent FPL							Senate 4/6/16
FL SB 1442	X	X	X			X		Senate 3/3/16
FL H1175	X							Presented to Governor 3/30/16

State/ Bills	Improve patient out-of-network disclosures and cost estimates	Establish a process to resolve billing disputes	Cap or limit charges for emergency services delivered out-of-network	Cap or limit charges for non-emergency services delivered out-of-network	Incentivize out-of-network care received at a lower cost than in-network services	Standards for delivery and	Assess the impact and potential parameters for balanced billing:	Status
GA SB 382	X	X	X			X	X	Introduced
GA SR 974							X	Passed by Senate 3/22/16
GA SR 566							X	Senate 2/17/16
HI SB 2668	X		X	X				Passed by House 4/4/16
HI HB 1952	X	X		X				Introduced
LA SB 316				X				Senate 3/14/16
LA HB 412			X					House 3/14/16
MA HB 3931				X				Introduced
MD SB 334						X		Senate 2/10/16
	Places burden on carrier to pay claims (at the provider's customary rates) if a consumer received care from an out-of-network provider as a result of failure to comply with network reporting standards							
MN HF 2725				X				Introduced
NH HB 1516				X				House 3/9/16
NH SB 495							X	Passed by Senate 3/24/16
NJ A 1664			X					Introduced
NJ A 1952; S1285	X	X	X			X		Introduced
NJ A 2935	X							Introduced
NJ A 1653								Introduced
NJ S 285		X	X					Introduced
NJ S 289	X							Introduced
NJ S 786			X					Introduced
NY AO 4151				X				Introduced

State/ Bills	Improve patient out-of-network disclosures and cost estimates	Establish a process to resolve billing disputes	Cap or limit charges for emergency services delivered out-of-network	Cap or limit charges for non-emergency services delivered out-of-network	Incentivize out-of-network care received at a lower cost than in-network services	Standards for delivery and	Assess the impact and potential parameters for balanced billing:	Status
NY SO 1846	Requires every HMO to offer out-of-network coverage as an optional rider to any contract. They must also offer at least one contract option inclusive of out-of-network coverage.							Senate 1/6/16
NY AB 3526	X							Introduced
OK SB 1363			X					Introduced
OK HB 3065					X			House 2/2/16
PA SB 1158		X	X					Senate 3/22/16
RI HB 7474						X		Held for further study 3/23/16
TN SB 2232; HB 2005	X							Senate 2/24/16
TX HB 3133		X						House 4/8/16
WA HB 2447							X	House 3/10/16
WV HB 4593	X	X						House 2/17/16
	Defines certain conditions under which insurers are required to assure that a consumer can obtain a covered benefit at an in-network level from a non-participating provider							

- **Improving patient disclosures, cost estimates, and network transparency:** Most state activity to address balanced billing revolved around methods to increase consumer understanding and awareness of situations, which may result in a surprise bill. Nine states are considering legislation to enhance requirements for patient regarding the delivery of out-of-network services. These bills vary by entity responsible for creation and distribution of notices (e.g., carriers, hospitals, all health care providers, all health care facilities); the method by which notices should be delivered (e.g., via web or written); and the appropriate time for delivery of notices (e.g., prior to the delivery of services, prior to an appointment, within a time window triggered by a request). Bills in **Alabama, Florida, Hawaii, Oklahoma, and West Virginia** require providers to deliver "good faith" estimates of charges to consumers or, at minimum, inform consumers of their ability to request such an estimate. A bill in **New Jersey** explicitly requests that consumers consent before receiving services from an out-of-network provider in non-emergency situations.

  In addition to improved notices and cost estimates, six states **(Florida, Georgia, Hawaii Maryland, New Jersey, and Rhode Island)** are considering legislation that would require insurers to include information about hospital and/or privileges as part of information included in provider directories. Moreover, the bills include time restraints to ensure that directories stay

current. **New Jersey** proposes to require updates within 20 days of a change in a provider's network status, and **Georgia** requires updates annually. A bill in **Hawaii** would require insurers to share clear descriptions of how out-of-network costs are calculated and to post information via website to enable consumers to estimate potential out-of-network costs.

- **Capping or limiting charges for services delivered out-of-network:** Eleven states seek to limit or restrict costs of services performed by out-of-network providers. **Florida, Georgia, Hawaii, New Jersey, Oklahoma, and Pennsylvania** propose limitations in circumstances of care delivered in an emergency setting or on an emergency basis, usually limiting consumer liability to cost-sharing that would have been incurred if the care had been delivered in-network. **Oklahoma** and **New Jersey** place responsibility on providers to limit billing to consumers to rates, while **Florida** and **Georgia** hold carriers accountable to ensure that consumers are not charged higher than in-network rates. **New Jersey** proposes to cap payments to providers for out-of-network services at 150 percent of Medicare payment rates.

  Hawaii, Louisiana, Massachusetts, Minnesota, New Hampshire and **New York** extend protections to non-emergency circumstances. **New Hampshire's** bill protects against provider outsourcing by mandating "outsourced" providers accept in-network payments when they see individuals who are in-network at the hospital. **Hawaii** and **Massachusetts** propose caps or limits to how much out-of-network providers can charge for delivered services. **New York** protects against out-of-network billing in cases where providers direct specimens to out-of-network clinical labs. **Minnesota** limits coverage restrictions and cost-sharing requirements on unauthorized provider services to those of participating providers. **Louisiana** has proposed two bills that establish rates at which insurers would be required to pay claims –one is focused on all "non-contracted facility-based" physicians, the other on emergency medical services.

- **Establishing a process to resolve billing disputes: Proposed legislation from Florida, Georgia, Hawaii, New Jersey, Pennsylvania,** and **West Virginia** seeks to establish a process to assist in resolution of billing disputes. In case of billing, often there is confusion about the rights and liabilities of consumers, insurers, and providers to resolve the issue. All proposed bills outline a process for providers and insurers to negotiate directly in the case of balance billing disputes. A proposed bill in **Texas** current law to remove a $1,000 minimum threshold for consumers to seek mediation in out-of-network billing cases.

- **Assessing the impact and potential parameters for balanced billing:** Prior to enacting other legislation four states have proposed vehicles to study the effect of balanced billing in their respective states. **Georgia** currently has three bills that would establish slightly different workgroups (e.g., based in the Senate or of the Governor) to study the issue; similarly a bill in **Washington** proposes that the Insurance commissioner establish a workgroup to study the elimination of balance billing. **New Hampshire's** bill would contract with a consultant to study retiree health plans including "populations impacted by in-network versus out-of-network care." Tying their approach to data, **New Jersey's** legislation would enable the state to use data from a proposed all-payers claims database to establish reasonable payment rates for "medically necessary out-of-network services."

- **Incentivizing consumers for out-of-network care received at a lower cost than in-network services:** In rare circumstances out-of-network services may actually be delivered at lower cost than in-network, saving both insurers and consumers. In the case of such circumstances, **Alabama** and **Oklahoma** have proposed incentives for consumers that receive lower cost-care in the form of direct payments from saved costs or reductions to the consumer's cost-sharing responsibilities, respectively.

Conclusion

Medical billing and debt is a complex issue, and as illustrated above, states are taking many steps to address one root cause, surprise billing. As legislation continues to evolve and be enacted, it will be important to monitor trends and how bills ultimately will impact not only consumer debt, but also cost and complications for health care providers and insurers. At issue are trade offs: insurers limit provider reimbursement and networks to bring down premium costs. But that requires a highly informed consumer to understand the implication of those limits on choice and out of pocket exposure. As states examine the complicated issues in these trade-offs it will be important to keep an eye on emerging state policy approaches to determine how they inform and protect consumers and if they impact price.

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Peterson-Kaiser Health System Tracker
Measuri g T e Pe forma ce Of T e U.S. Healt System

04.12.2016 | Insight Brief

Payments for cost sharing increasing rapidly over time

Gary Claxton, Larry Levitt, Michelle Long
Kaiser Family Foundation

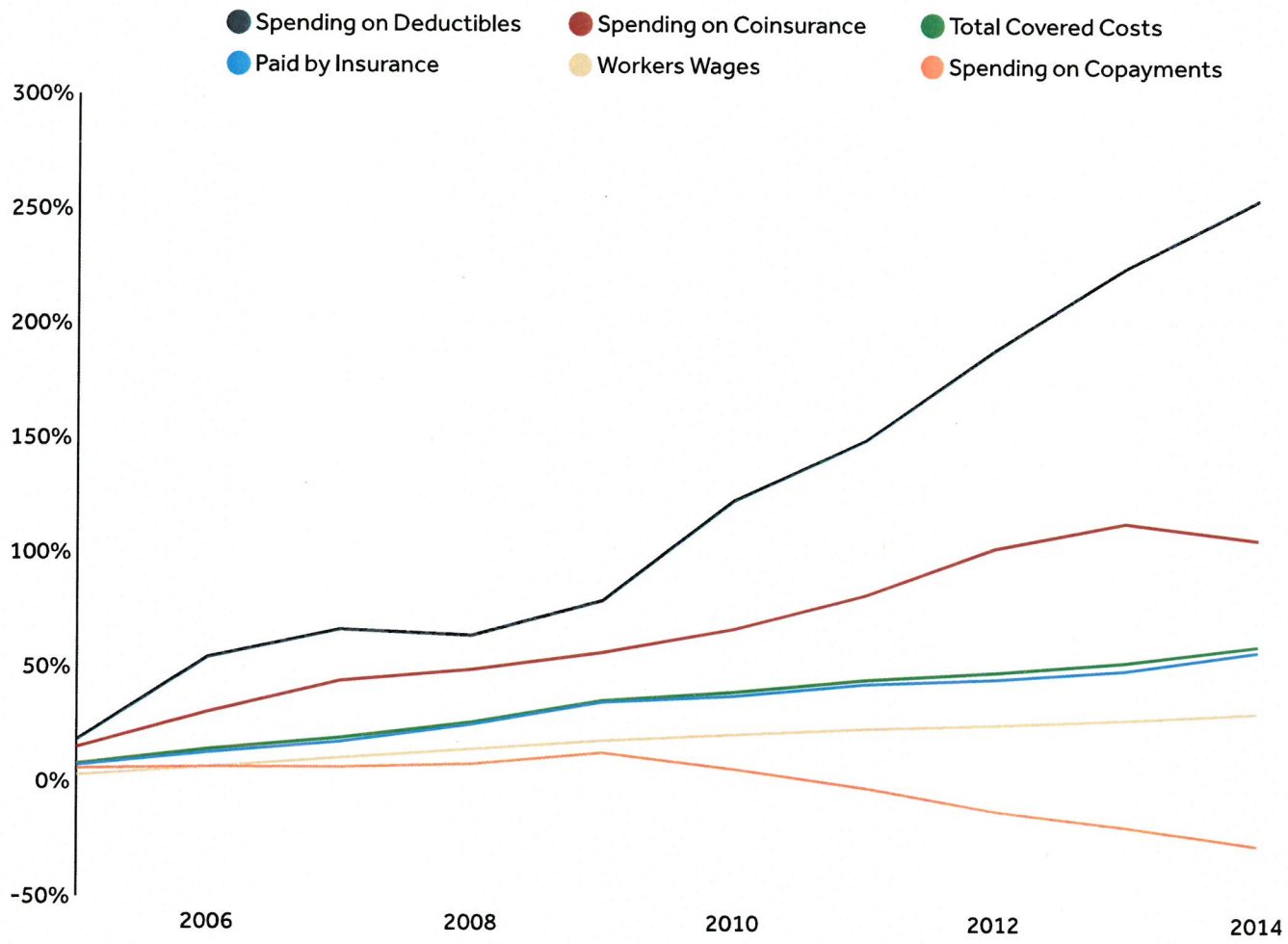
Rising cost-sharing for people with health insurance has drawn a good deal of public attention in recent years. For example, the average deductible for people with employer-provided health coverage rose from $303 to $1,077 between 2006 and 2015.

While we can get a sense of employees' potential exposure to out-of-pocket costs by looking at trends in deductibles, many employees will never reach their deductibles and other employees may have costs that far exceed their deductibles. In addition to deductible payments, some employees also have copayments (set dollar amounts for a given service) or coinsurance payments (a percentage of the allowed amount for the service). To look at what workers and their families actually spend out-of-pocket for services covered by their employer-sponsored plan, we analyzed a sample of health benefit claims from the Truven MarketScan Commercial Claims and Encounters Database to calculate the average amounts paid toward deductibles, copayments and coinsurance.

We find that, between 2004 and 2014, average payments for deductibles and coinsurance rose considerably faster than the overall cost for covered benefits, while the average payments for copayments fell. As can be seen in the chart below, over this time period, patient cost-sharing rose substantially faster than payments for care by health plans as insurance coverage became a little less generous.

Average deductible spe di g ises w ile average copayme t spe ding falls, 2004-2014

Cumulative increases in health costs, amounts paid by insurance, amounts paid for cost sharing and workers wages, 2004-2014



Source: Kaiser Family Foundation analysis of Truven Health Analytics MarketScan Commercial Claims and Encounters Database, 2004-2014; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey, 2004-2014 (April to April).

Peterson-Kaiser Health System Tracker

The MarketScan claims database contains information about health benefit claims and encounters for several million individuals each year provided by large employers. The advantage of using claims information to look at out-of-pocket spending is that we can look beyond the plan provisions and focus on actual payment liabilities incurred by enrollees. A limitation of these data is that they reflect cost sharing incurred under the benefit plan and do not include balance-billing payments that beneficiaries may make to health care providers for out-of-network services or out-of-pocket payments for non-covered services. We use a sample of between 785,000 and 15.3 million enrollees per year to analyze the change from 2004 to 2014 in average health costs for covered benefits overall, the average amount paid by health benefit plans, and the average amounts attributable to deductibles, copayments, and coinsurance. The analysis of costs for each year was limited to enrollees with more than 6 months of coverage during that year.

From 2004 to 2014, the average payments by enrollees towards deductibles rose 256% from $99 to $353, and the average payments towards coinsurance rose 107%, from $117 to $242, while average payments for copays fell by 26%, from $206 to $152. Overall, patient cost-

sharing rose by 77%, from an average of $422 in 2004 to $747 in 2014. During that period, average payments by health plans rose 58%, from $2,748 to $4,354. This reflects a modest decline in the average generosity of insurance – large employer plans covered 86.7% of covered medical expenses on average in 2004, decreasing to 85.3% in 2014. Worker's wages, meanwhile, rose by 32% from 2004 to 2014.

Total benefits costs, cost-sharing amounts, and amounts paid by insurance for all enrollees and enrollees whose tc spending is in the highest 15%, 2004-2014

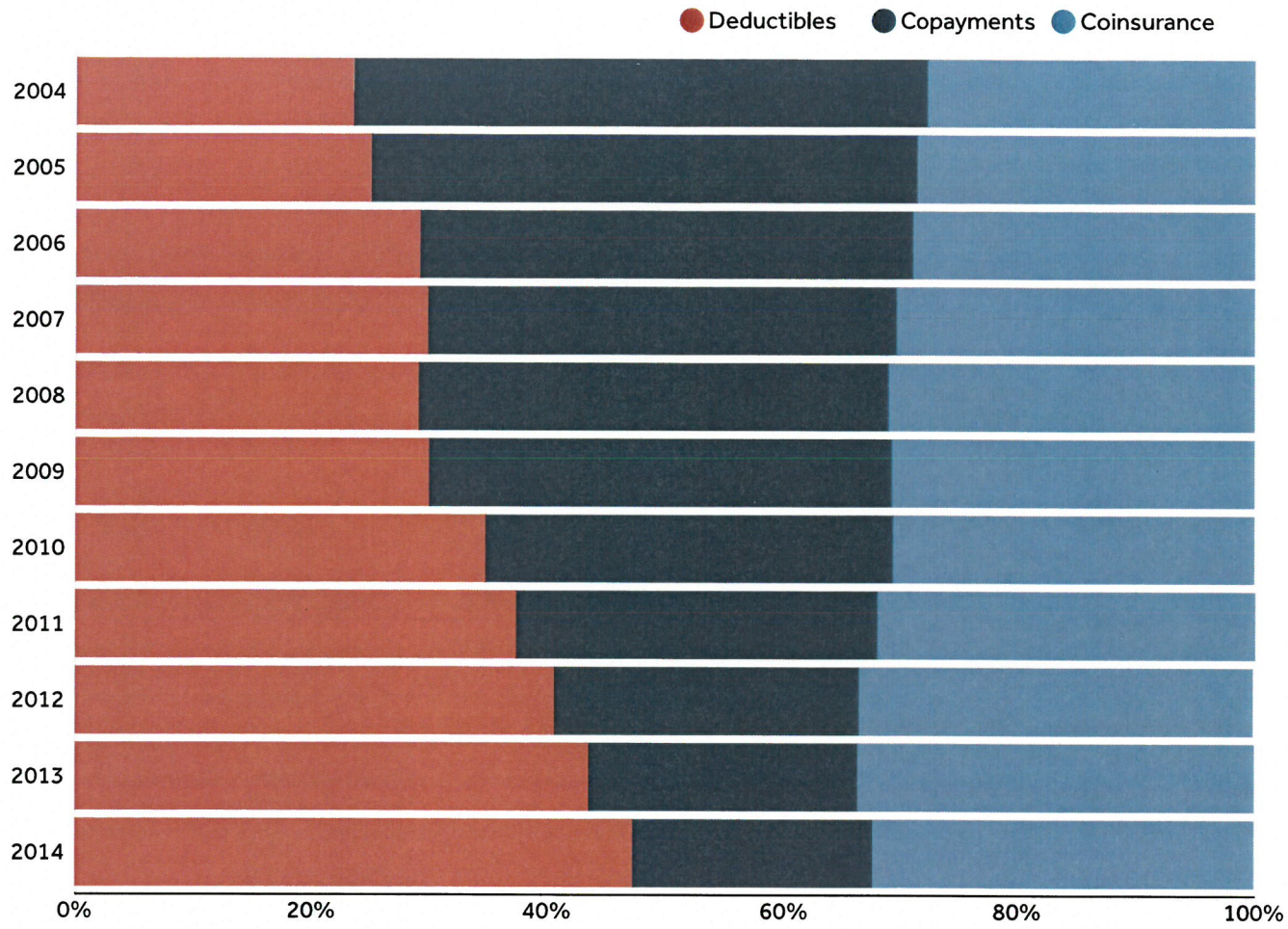
	Total benefit costs		Paid by insurers		Deductibles		Copayments		Coinsurance		Total c sharir	
	All	Top 15%*	All	Top 15%*	All	Top 15%*	All	Top 15%*	All	Top 15%*	All	T 1
2004	$3,169	$15,466	$2,748	$13,998	$99	$244	$206	$635	$117	$590	$422	$
2005	3,414	16,649	2,945	15,035	117	280	218	663	134	670	469	1
2006	3,629	17,751	3,104	15,948	153	369	219	674	152	761	525	1
2007	3,792	18,521	3,238	16,612	165	393	220	679	169	837	554	1
2008	4,011	19,730	3,451	17,777	163	392	223	692	175	869	561	1
2009	4,321	21,236	3,725	19,191	178	419	234	711	183	915	595	2
2010	4,440	22,147	3,804	19,932	222	535	219	684	195	996	637	2
2011	4,615	23,203	3,951	20,878	248	600	203	641	213	1,084	664	2
2012	4,723	23,902	4,016	21,389	287	720	183	582	237	1,212	707	2
2013	4,867	24,930	4,125	22,236	323	834	169	558	250	1,302	742	2
2014	5,101	26,429	4,354	23,750	353	928	152	502	242	1,249	747	2

Source: Kaiser Family Foundation analysis of Truven Health Analytics MarketScan Commercial Claims and Encounters Database, 2004 – 2014*Includes enrollees with total spending (including claims paid by the insurer and out-of-pocket costs) in the top 15% in each year. In 2014, enrollees in the top 15% had total costs that exceeded $6,717.

Individuals in the top 15 percent of health spenders (who together account for 74.8% of total health benefit costs for the sample), had substantially higher out-of-pocket costs, averaging $2,679 in 2014, including $1,249 in coinsurance payments, $928 in deductible spending, and $502 in copays. The growth in cost-sharing for this group was similar to the sample overall. As of 2014, 5.5% of all enrollees had deductible payments that exceeded $1,500 and 7.8% had overall cost-sharing payments that exceeded $2,500.

Deductibles accou t fo less t an a quarter of cost-s a i g payments in 2004, but almost alf in 2014

Distribution of cost-sharing payments by type, 2004-2014



Source: Kaiser Family Foundation analysis of Truven Health Analytics MarketScan Commercial Claims and Encounters Database, 2004-2014.

Peterson-Kaiser Health System Tracker

The relatively high growth in payments toward deductibles is evident in the changes over time in the distribution of cost sharing payments: deductibles accounted for 24% of cost sharing payments in 2004, rising to 47% in 2014. Conversely, copayments accounted for nearly half of cost sharing payments in 2004, falling to 20% in 2014. The increase in coinsurance over the period may reflect the strong growth over the period in plans that qualify a person to establish a health savings account; these plans are more likely to have coinsurance than copayments for physician services. Patients are more sensitive to the actual price of health care with deductibles and coinsurance than they are with copays, which are flat dollar amounts. The other difference between a copay and a deductible is that copays may add up over time, while a deductible may need to be met at once, causing affordability challenges.

While average payments towards deductibles are still relatively low in the context of total household budgets, they have increased quite rapidly. Deductibles are the most visible element of an insurance plan to patients, which may help explain why consumers are showing concern about their out-of-pocket costs for care. Although health insurance coverage continues to pay a large share of the cost of covered benefits, patients in large employer plans are paying a greater share of their medical expenses out-of-pocket. And, while health care spending has

been growing at fairly modest rates in recent years, the growth in out-of-pocket costs comes at a time when wages have been largely stagnant.

Methods

We analyzed a sample of claims obtained from the Truven Health Analytics MarketScan Commercial Claims and Encounters Database. The database has claims information provided by large employers and health plans. We used a subset of claims from the years 2004 through 2014. The analysis for each is limited to claims for enrollees with more than six months of enrollment in that year. We excluded claims paid on a capitated basis. With these limitations, the number of enrollees in the sample varied from about 785,000 in 2004 to over 15.3 million in 2014.

INSIGHTS

A new way of measuring health costs sheds light on recent health spending trends
(http://www.healthsystemtracker.org/insight/a-new-way-of-measuring-health-costs-sheds-light-on-recent-health-spending-trends/)

Measuring the quality of healthcare in the U.S.
(http://www.healthsystemtracker.org/insight/measuring-the-quality-of-healthcare-in-the-u-s/)

Assessing the Performance of the U.S. Health System
(http://www.healthsystemtracker.org/insight/assessing-the-cost-and-performance-of-the-u-s-health-system/)

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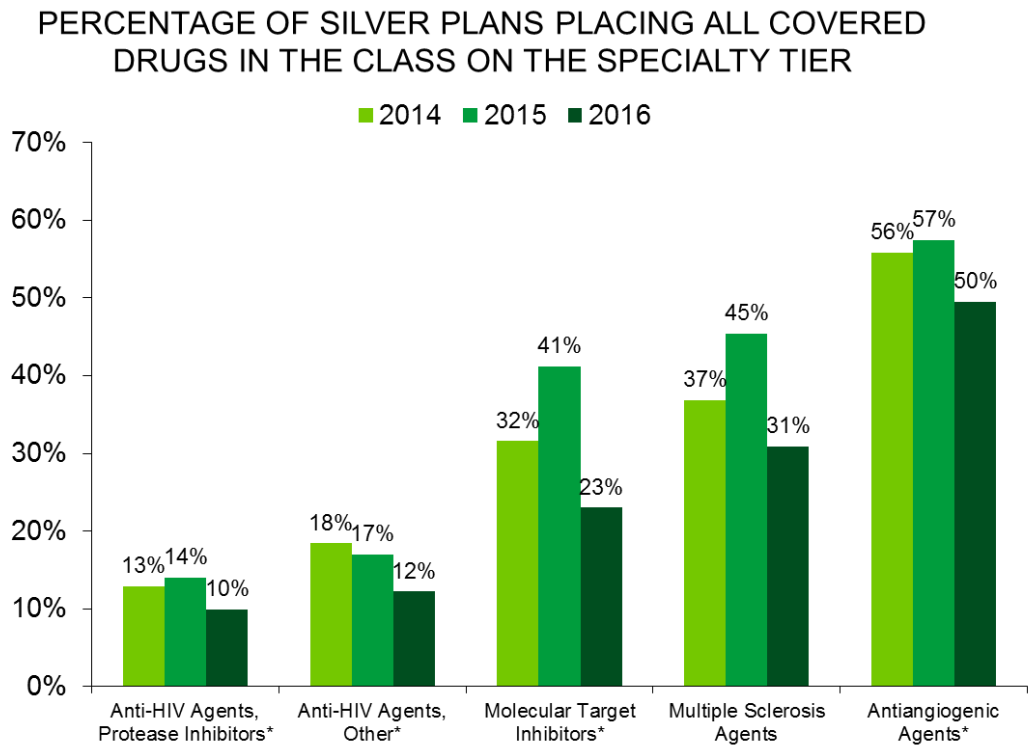
April 19, 2016

2016 Exchange Plans Improve Access to Medicines Used to Treat Complex Diseases

An analysis from Avalere shows that more health insurance plans offered through the Affordable Care Act exchanges are making some drugs used to treat complex diseases—such as HIV, cancer, and multiple sclerosis (MS)—more accessible to patients in 2016 than in the previous years. Specifically, plans were less likely to place all drugs in a class on the highest cost-sharing tier.

Insurers assign drugs to a tiered structure—known as a formulary—based on out-of-pocket costs to the patients. Highest-priced medicines, which are often relied on by the most chronically ill patients, are often placed on a high formulary tier, indicating high cost-sharing for patients.

The Avalere study looks at silver-level exchange plans across 20 classes of medications. Of those, we found five classes, including drugs to treat HIV, cancer, and MS, for which some plans place all drugs in the class on the highest tier. However, the analysis finds that fewer exchange plans are doing so in 2016 than in the prior two years.



*There are no generic drugs available in the class. All products are single-source.
Classes not appearing in this chart had rates below one percent in 2016.
Source: Avalere Health PlanScape®, a proprietary analysis of exchange plan features, April 2016. This analysis is based on data collected by Managed Markets Insight & Technology, LLC.

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As in prior years, the class of medications most frequently subject to universal placement on the specialty tier is in the antiangiogenics class—used to treat cancer--with half of all silver plans placing all covered drugs in this class on the specialty tier in 2016. Nearly one-third of silver plans place all covered MS drugs on the specialty tier as well, though this rate is a drop of 14 percentage points from 2015. Additionally, the sharpest decline year-over-year (18 percentage points) is for molecular target inhibitors. For these three classes, 2016 shows a reversal of the sharp increase in this type of tiering structure that occurred between 2014 and 2015.

“The trend toward better formularies is good news for consumers,” said Caroline Pearson, senior vice president at Avalere. “Plans that place some drugs used to treat a particular condition on a lower tier may improve access to treatments and mean patients pay less out-of-pocket for their care.”

Since the launch of exchanges in 2014, patient groups and policymakers have considered whether some formulary designs might impact patients’ ability to access medications under the law. At the same time, plans continue to strive to offer innovative benefit designs that deliver low monthly premiums to consumers. CMS has issued guidance discouraging plans from placing all drugs used to treat a condition on the highest tier, without regard to the cost of the medication. However, the federal government has not yet created a tool for regulators to use to evaluate benefit designs in this regard. California also passed legislation preventing plans from placing all drugs for a condition on the highest formulary tier beginning in 2017.

“Insurance departments across the country need tools to ensure CMS’s guidance is implemented,” said Kelly Brantley, director at Avalere. “A tool that evaluates formulary tier placement could help ensure patient access.”

Avalere conducted additional analysis on the tier placement and cost sharing associated with 22 classes of medications. The full report is available here.

Methodology

Analysis using Avalere Health PlanScape®, a proprietary analysis of exchange plan features, updated April 2016. This analysis is based on data collected by Managed Markets Insight & Technology, LLC. The sample includes silver plans across all states. Coverage is weighted according to unique plan-state combinations. Avalere analyzed brand and generic drug coverage in a total of 20 classes, including a mix of specialty and primary care drugs.

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By David Newman, Stephen T. Parente, Eric Barrette, and Kevin Kennedy

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NO. 5 (2016): –

DATAWATCH

Prices For Common Medical Services Vary Substantially Among The Commercially Insured

Using a national multipayer commercial claims database containing allowed amounts, we examined variations in the prices for 242 common medical services in forty-one states and the District of Columbia. Ratios of average state prices to national prices ranged from a low of 0.79 in Florida to a high of 2.64 in Alaska. Two- to threefold variations in prices were identified within some states and Metropolitan Statistical Areas.

It is well known that health care expenditures vary because of differences in prices as well as utilization.[1,2] Some price variation is the result of differences in costs of doing business, such as labor, rent, and supplies. Variation is also a function of providers' and insurers' ability to negotiate prices.[3,4] The *Dartmouth Atlas of Health Care* has highlighted geographical variations in the Medicare population, both in aggregate and by procedure.[1] However, analyses of variation in the commercially insured population have been limited to aggregate measures because of a lack of data on prices.[5]

This article contributes to the literature on geographical variation by examining variation in prices for common medical services.[6] Using a national multipayer commercial claims database, we examined prices across states, compared overall price levels by state, and explored price variation within states.

Prices for medical services varied more than threefold in certain instances (Exhibit 1). Our study included prices for up to 242 services in

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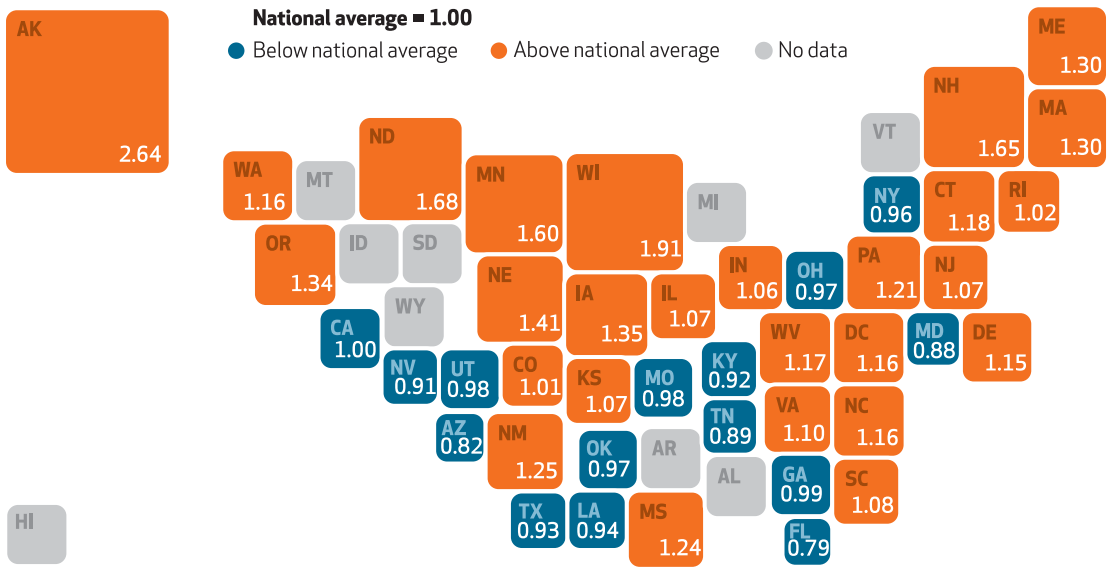
Kevin Kennedy is a research assistant at the Health Care Cost Institute.

EXHIBIT 1

Ratio of state average prices to national average price for 162 common medical services, 2015 prices



SOURCE Authors' analysis of claims data from the Health Care Cost Institute and from Guroo.com (see Note 8 in text). **NOTE** Ratios are rounded to two decimal places.

each of forty-one states and the District of Columbia. Prices for 162 of these services were reportable in all forty-one states and the District of Columbia. We found that the ratios of average state prices to the average national price for these 162 services varied from a low of 0.79 in Florida to a high of 2.64 in Alaska. Ratios at the twenty-fifth and seventy-fifth percentiles—Oklahoma (0.97) and New Mexico (1.25)—differed by 0.28.

Study Data And Methods

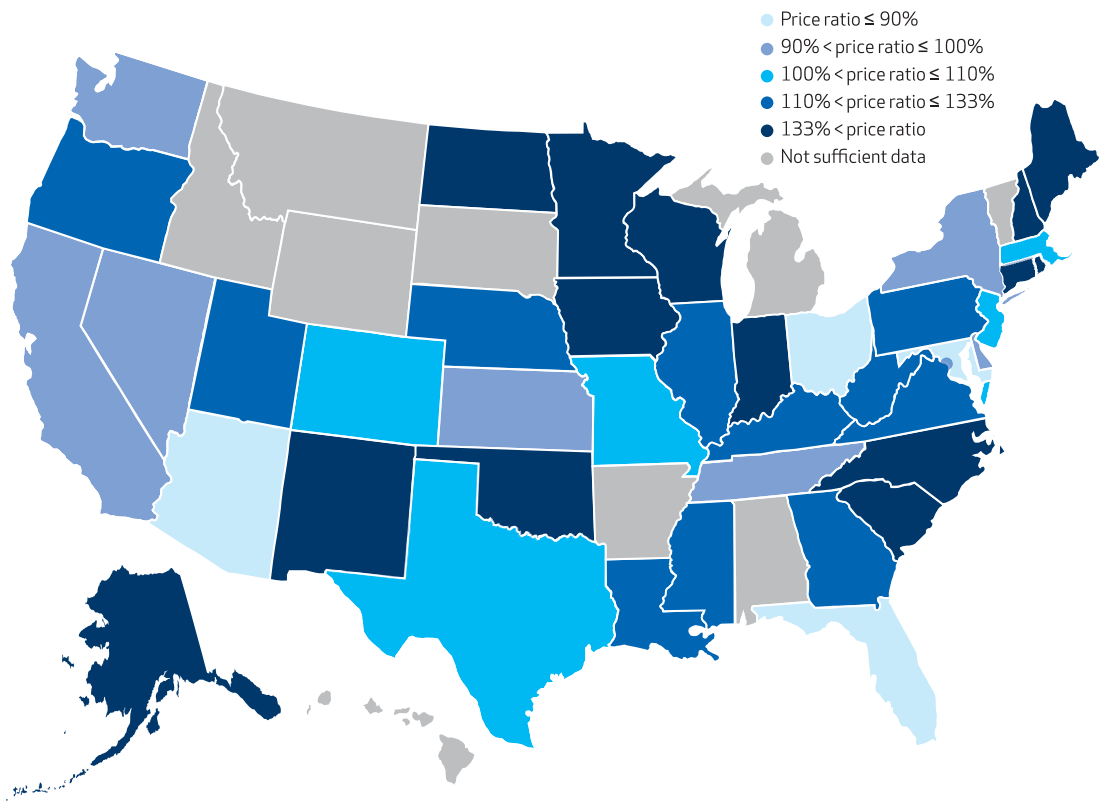
DATA We used data from the Health Care Cost Institute (HCCI), a commercial claims database that includes nearly three billion final, fully adjudicated, paid claim lines.[7] (Claim line data are the line-item elements in a medical claim. The claim lines identify all of the tests, procedures, and other items billed for during a patient's encounter with a medical service provider.) These data are used to calculate the average prices for services reported on the website of HCCI's price transparency initiative.[8] The data include patients' and providers' ZIP codes; diagnostic and procedure codes; and allowed amounts, which are the actual amounts paid by an insurer plus any copayments, deductibles, or coinsurance paid by the insured person. The data used for this article are for the period January 1, 2012–December 31, 2013. Prices were actuarially trended forward to reflect prices as of September 1, 2015, by applying actuarial trend factors—similar to inflation rates—to service categories (such as inpatient, outpatient, and professional—that is, provided by a physician, nurse practitioner, physician assistant, or other health care professional).

METHODS Average prices were computed for 242 services, some of which are standardized collections of common groupings of diagnostic and procedure codes.[9] Some services have a single code (for example, *Current Procedural Terminology* [CPT] code 76811 is for pregnancy ultrasound). Other services encompass an episode of care, such as knee replacement, which includes a specialist's evaluation, surgery, physical therapy, and follow-up evaluation.[6]

HCCI data were insufficient for reporting in eight states, and one state signaled its desire not to have its prices be compared with national prices.[10] Within states, sufficient data were not

EXHIBIT 2

Ratios of state average prices to national average price for cataract removal with lens replacement, 2015 prices



SOURCE Authors' analysis of claims data from the Health Care Cost Institute and of data from Guroo.com (see Note 8 in text).

always available to determine prices for all 242 services. Although average prices for services were calculated at the national, state, and Metropolitan Statistical Area (MSA) levels, a minimum number of claims and providers was required to ensure the reliability of the estimates and to protect confidential company information. "Masking rules," which require a minimum number of providers, claims, and data contributor coverage, made it impossible for us to report all prices for every state or MSA. Summary statistics of selected services are described below to demonstrate the magnitude of price variation that exists.

Study Results

PRICE VARIATION ACROSS STATES To illustrate the extent of price variation across states, we compared the ratio of average state prices to the average national price for cataract removal surgery with lens replacement (Exhibit 2). Cataract surgery was selected because it is a widely performed service but is often elective, which makes the price of particular interest to consumers. We found that, for example, in the center of the United States the price ratio increased from 99 percent in Kansas to 104 percent in Missouri, 129 percent in Illinois, and 141 percent in Indiana, but then it dropped to 85 percent in Ohio (see the online Appendix).[11]

Examining price variation by service provides an understanding of the impact of the variation on patients and insurers. We selected three services—pregnancy ultrasound, knee replacement, and, again, cataract removal—for this examination because they exemplify the range of services and the extent of price variation that exist for common medical services. A list of average prices by state for these three services can be found in Appendix Exhibit A1.[11]

Based on the interquartile range ratio, knee replacement prices appear to have the least variation: 1.32, compared to 1.54 for pregnancy ultrasound and 1.47 for cataract removal (Exhibit 3). However, the national average price for knee replacement is more than a hundred times higher than the national average price for pregnancy ultrasound and ten times higher than the price for cataract removal (see the Appendix).[11] Thus, even though knee replacement has less variation in price than the other two services do, its variation can have a substantial impact on total expenditures and on patient cost sharing.

OVERALL PRICE LEVELS ACROSS STATES We also examined the overall price level for the 242 services across states. For each service we calculated the ratio of each state's average price to the national average price and graphed the ratios by percentiles, because the total number of reportable service prices differed in each state. Four states exemplify the range of variations across states (Exhibit 4). For example, 95 percent of the prices for the 241 services in Florida were at or below the national averages. In contrast, about 75 percent of the prices for Ohio's 240 services were at or below the national averages. Thirty percent of the prices for Connecticut's 232 services were at least 20 percent higher than the national averages. And more than 45 percent of the prices for Minnesota's 221 services were at least 50 percent higher than the national averages.

PRICES ACROSS METROPOLITAN STATISTICAL AREAS WITHIN STATES Price variation within states was examined though MSA-level prices.[12] We investigated average prices for knee replacement in the twelve states that had reported

EXHIBIT 3

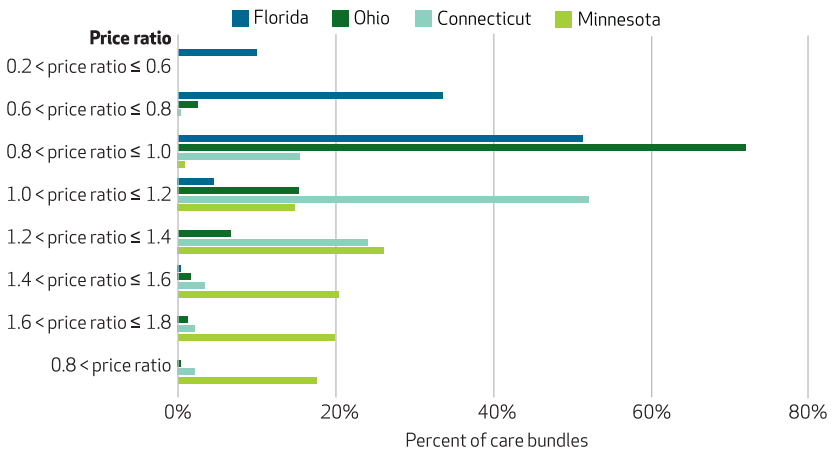
State-level average prices for three common medical services, 2015 prices

	Knee replacement	Pregnancy ultrasound	Cataract removal (with lens replacement)
25th percentile	$29,441	$242	$3,249
Median (50th percentile)	33,648	310	3,746
75th percentile	38,883	373	4,787
Interquartile range ratio	1.32	1.54	1.47

SOURCE Authors' analysis of claims data from the Health Care Cost Institute and from Guroo.com (see Note 8 in text). **NOTE** The interquartile range ratio is the 75th percentile divided by the 25th percentile.

EXHIBIT 4

Ratio of four state average prices to national average prices for medical services, 2015 prices



SOURCE Authors' analysis of claims data from the Health Care Cost Institute and of data from Guroo.com (see Note 8 in text). **NOTE** There were 241 services in Florida, 240 in Ohio, 232 in Connecticut, and 221 in Minnesota.

EXHIBIT 5

Variation in knee replacement prices across MSAs in twelve states, 2015 prices

	Highest average price (A)		Lowest average price (B)		Difference between
State	MSA	Price	MSA	Price	A and B
AZ	Phoenix	$28,264	Tucson	$21,976	$ 6,288
CA	Sacramento	57,504	Riverside	30,261	27,243
CT	New Haven	37,417	Hartford	33,594	3,823
FL	Palm Bay	44,237	Miami	27,115	17,122
MO	Kansas City	26,601	St. Louis	23,114	3,487
NY	New York	36,584	Syracuse	24,131	12,453
OH	Cincinnati	34,573	Toledo	24,491	10,082
PA	Philadelphia	33,338	Allentown	27,188	6,150
SC	Columbia	46,591	Greenville	43,635	2,956
TN	Nashville	34,895	Knoxville	26,291	8,604
TX	Dallas	45,275	Lubbock	28,456	16,819
VA	Virginia Beach	39,298	Richmond	39,292	6

SOURCE Authors' analysis of claims data from the Health Care Cost Institute and of data from Guroo.com (see Note 8 in text). **NOTES** The twelve states shown reported data for at least two Metropolitan Statistical Areas (MSAs). Prices could not be calculated for every MSA in any of the states. MSAs for which data were not reported could have higher or lower prices than the highest or lowest prices shown.

data for two or more MSAs. California had the largest within-state difference in average price ($27,243), and Virginia had the smallest ($6) (Exhibit 5). It is worth noting that although the difference between the two MSAs in South Carolina was only $2,956 (Exhibit 5), both the highest and the lowest average prices in that state's MSAs were 30 percent higher than the national average price.

We also found considerable variation in the average price for pregnancy ultrasound (Exhibit 6). The average price in Cleveland ($522) was almost three times that in Canton ($183), even though these two Ohio MSAs are only 60 miles apart. Conversely, Virginia Beach ($275) and Richmond ($271), both in Virginia and 107 miles apart, had nearly identical average prices.

While price variations across MSAs within a state may be expected, we also found variations within MSAs.[13] The difference between the twenty-fifth- and seventy-fifth-percentile prices of an ultrasound in Philadelphia, Pennsylvania ($460), was nearly twice the difference between prices in Harrisburg and Philadelphia ($234) (data not shown). This suggests that the variation in prices in Philadelphia was greater than the prices paid by the majority of people in Harrisburg.

EXHIBIT 6

Variation in pregnancy ultrasound prices across MSAs in twelve states, 2015 prices

	Highest average price (A)		Lowest average price (B)		Difference between
State	MSA	Price	MSA	Price	A and B
AZ	Tucson	$320	Phoenix	$197	$123
CA	San Francisco	661	Oxnard	184	477
CT	Hartford	360	New Haven	220	140
FL	Jacksonville	457	Orlando	180	277
MO	St. Louis	375	Kansas City	271	104
NY	New York	322	Rochester	217	105
OH	Cleveland	522	Canton	183	339
PA	Philadelphia	466	Harrisburg	232	234
SC	Columbia	353	Greenville	280	73
TN	Nashville	306	Knoxville	223	83
TX	San Angelo	346	McAllen	198	148
VA	Virginia Beach	275	Richmond	271	4

SOURCE Authors' analysis of claims data from the Health Care Cost Institute and of data from Guroo.com (see Note 8 in text). **NOTES** The twelve states shown reported data for at least two Metropolitan Statistical Areas (MSAs). Prices could not be calculated for every MSA in any of the states. MSAs for which data were not reported could have higher or lower prices than the highest or lowest prices shown. However, more prices were calculated for MSAs for pregnancy ultrasound than for knee replacement (Exhibit 5) because pregnancy ultrasound is more commonly performed than knee replacement.

Conclusion

This article has described geographical variation in prices of common health care services within the commercially insured population. Some of the variation may be justified by differences in wages or rent. However, the remaining variation is most likely due to differences in underlying market dynamics, such as varying market power, a lack of transparency, or the availability of alternative treatments.

Although revealing the extent of price variation is an important first step, more systematic and consistent research is necessary to identify the forces that drive prices. From a policy perspective, the goals are minimal unjustified differences in prices and low average prices—especially for services such as pregnancy ultrasound, which should be similar in scope and quality across providers, care settings, and geographical areas. The questions that remain for researchers, policy makers, and health care leaders are as follows: Why do prices for the same service differ markedly across distances of only a few miles, and what amount of that difference is justifiable? ■

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NOTES

1 Prices and utilization determine total expenditures. The majority of *Dartmouth Atlas of Health Care* research is focused on utilization and expenditures in the Medicare population. See, for example, Dartmouth Atlas of Health Care. Atlases and reports [Internet]. Lebanon (NH): Trustees of Dartmouth College; c 2016 [cited 2016 Mar 21]. Available from: http://www.dartmouthatlas.org/publications/reports.aspx

2 For a study of commercial prices for a few hospital inpatient procedures, see Cooper Z, Craig SV, Gaynor M, Van Reenen J. The price ain't right? Hospital prices and health spending on the privately insured [Internet]. Cambridge (MA): National Bureau of Economic Research; 2015 Dec [cited 2016 Mar 15]. (NBER Working Paper No. 21815). Available for download (fee required) from: http://www.nber.org/papers/w21815

3 For an examination of the market power that providers have to negotiate higher prices, see Ginsburg PB. Wide variation in hospital and physician payment rates evidence of provider market power. Res Brief. 2010;(16):1–11.

4 Cutler D, McClellan M, Newhouse JP. How does managed care do it? Rand J Econ. 2000;31(3):526–48.

5 For a recent study of condition–specific total costs, though not of costs by procedure, see Institute of Medicine. Variation in health care spending: target decision making, not geography. Washington (DC): National Academies Press; 2013.

6 The service prices seek to capture a typical patient's total costs (facility, physician, and out of pocket). The services are not the basis for payments, which are based on the actual services provided instead of the typical services provided. Our estimates were based on historical claims and used both in-network and out-of-network claims. See Health Care Cost Institute. Guroo.com, Terms and conditions [Internet]. Washington (DC): HCCI; c 2016 [cited 2016 Apr 11]. Available from: http://www.guroo.com/#!terms-and-conditions

7 The same data set was used to produce HCCI's *National Chartbook of Health Care Prices*, released at the same time as this article's publication. See Health Care Cost Institute. National chartbook of health care prices [Internet]. Washington (DC): HCCI; c 2016. Available from: http://www.healthcostinstitute.org/

8 Health Care Cost Institute. Guroo.com [home page on the Internet]. Washington (DC): HCCI; c 2016 [cited 2016 Mar 15]. Available from: http://www.guroo.com/#!

9 HCCI has prices for 297 services, but 55 of the services were excluded from analysis because they had little or no price variation. Most of these services were laboratory tests, such as a basic metabolic panel test, or vaccinations.

10 HCCI data were insufficient for reporting prices in Alabama, Hawaii, Idaho, Michigan, Montana, South Dakota, Vermont, and Wyoming. This is largely attributable to the presence of a dominant Blue Cross/Blue Shield plan in those states. Prices for Arkansas were not reported because the state has signaled, by enactment of the Arkansas Healthcare Transparency Initiative Act of 2015, that it does not want its state data compared to national data. The act prohibits the incorporation into any national database of Arkansas's all-payer claims database.

11 To access the Appendix, click on the Appendix link in the box to the right of the article online.

12 Local variation has been well documented in populations other than the commercially insured. For example, the *Dartmouth Atlas* has examined variation in hospital referral regions and hospital service areas. See Dartmouth Atlas Project, Perry Undem Research and Communications. The revolving door: a report on U.S. hospital readmissions [Internet]. Princeton (NJ): Robert Wood Johnson Foundation; 2013 Feb [cited 2016 Mar 21]. Available from: http://www.rwjf.org/en/library/research/2013/02/the-revolving-door–a-report-on-u-s–hospital-readmissions.html

13 Previous research has found similar variations across small areas in the spending and utilization of the Medicare population. For example, see Zhang Y, Baik SH, Fendrick AM, Baicker K. Comparing local and regional variation in healthcare spending. N Engl J Med. 2012; 367(18):1724–31.