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The Role of the Medicaid Expansion in the Use of Preventive Health Care Services in California Men

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Abstract

Men's use of preventive care services may be constrained due to a number of factors including lack of health care insurance. California used the Medicaid expansion provisions of the Affordable Care Act (ACA) to enroll low-income men between the ages of 18 and 64 years in publicly funded health insurance. Most studies on the effect of the ACA on health care services have focused on racial/ethnic differences rather than gender. Data from the California Health Interview Survey for the 2015–2016 survey period were used to model the use of preventive health care services in the year prior to interview. Population weights were used in the analysis which was done using PROC SURVEY LOGISTIC in SAS software, version 9.4. The sample consisted of men between the ages of 18 and 64 years (N = 6,180). Of these 66% (n = 4,088) reporting receiving any preventive care services in the year prior to interview. The largest proportions of respondents fell into the youngest group aged 18–25 (17%) followed by the oldest group aged 60–64 (16.9%); 43% reported they were married, 57% had incomes at greater than 300% of the federal poverty level. There was no effect of race or ethnicity on receiving preventive care services. Having a chronic condition such as hypertension or diabetes was associated with a greater odds of receiving preventive care. Expanding Medicaid to include low-income men below the age of 65 is associated with increased use of preventive health care, especially among those with chronic conditions.

Keywords

preventive medicine, health care issues, health screening, general health and wellness, health care utilization

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Preventive medical care in the form of primary care physician visits can identify individuals at risk for chronic health conditions that may result in increased morbidity and mortality. Women are more likely to use most types of health care services, including preventive, primary, and emergency care, compared to men (Green & Pope, 1999; Vegda et al., 2009). Understanding factors associated with the use of health care services among men who are younger than 65 is important for identifying those at risk for, or diagnosing those who may have already developed, a chronic condition before they become Medicare eligible, as men experience disproportionate morbidity and mortality due to this lack of care (Giorgianni et al., 2013). Men currently suffer more chronic conditions and have higher mortality associated with the main causes of death than women, and on average, 6 years less of life than women (Courtenay, 2000a). Preventive care services include cardiovascular screening for hypertension and heart failure, hyperlipidemia, diabetes, a variety of screenings for cancer (e.g., prostate and colon), as well as adult vaccinations such as influenza, shingles, and hepatitis A and B.

The Patient Protection and Affordable Care Act (PPACA) eliminated patient cost-sharing for a set of preventive health services (Mehta et al., 2015), including

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reproductive health and sexually transmitted disease services, adult immunizations, cancer screenings (e.g., colonoscopies, mammograms), and mental health screenings. Prior to the PPACA, patients could schedule primary care visits, but the costs were potentially prohibitive, with an average visit costing $160 during the 2012 to 2013 period (Saloner et al., 2015). However, elimination of the cost-sharing for colonoscopies for both men and women has had little impact on overall screening rates, suggesting that more than the elimination of cost-sharing may need to occur for individuals to increase their use of these preventive services (Mehta et al., 2015). Using data from the Behavioral Risk Factor Surveillance System (BRFSS), researchers reported that use of colon cancer screening mechanisms (blood stool tests, endoscopic screenings) showed differential uptake after PPACA implementation (Hamman & Kapinos, 2015). It is likely that the preventive care mandates helped alleviate health disparities in colon cancer screening due to the increased screening of low-income individuals, as increases in minority screenings were offset by increases among Whites; there was no change in racial/ethnic disparities in screening for colon cancer (Hamman & Kapinos, 2015).

The Patient Protection and Affordable Care Act (PPACA) was signed into law in March of 2010, but many of its provisions were set up to be phased in over time and did not take immediate effect. One provision of the Medicaid expansion associated with the PPACA did not go into effect until 2014. Under this provision, states that chose to expand their Medicaid programs beyond the usual eligibility requirements (women, children, and disabled adults) could expand eligibility to any adult with an annual income of up to 130% of the federal poverty level (FPL). Research conducted after the 2014 PPACA implementation indicates that, depending on the area of the country, these newly eligible adults were comprised of high percentages of minorities and men (Courtemanche et al., 2016; Frean et al., 2017) and in states that did not expand their Medicaid programs, those most likely to remain without health insurance coverage were minority men living in rural areas (Garfield et al., 2016). This ability to enroll low-income adults into Medicaid provided opportunities to assist adult, minority men, who were otherwise ineligible for coverage for healthcare among groups such as those newly released from prison/jail, those living in rural areas, and those with undiagnosed mental illness (DiPietro & Klingenmaier, 2013; Somers et al., 2014).

California was one of the states that expanded Medi-Cal eligibility to include low-income men without children or disability and early enrollment figures reported that, in California, new enrollees did not differ by racial/ethnic group or geographical area (Jing & Trivedi, 2017). However, more fine-grained analyses are only now being published because the effects of the Medicaid expansion are only now beginning to show up in publicly available datasets (Becker et al., 2019).

Previously published research on health services utilization among men may be determined by both insurance and noninsurance related characteristics (Edwards et al., 2007; Reynolds et al., 2016; Storholm et al., 2010). A qualitative study using semistructured interviews of men and women aged 18–64 identified both barriers and enablers of obtaining preventive care. Cost, time, and cumbersome medical office processes were among the main barriers identified by participants, highlighting the need to make changes to patient procedures to introduce more collaborative and patient-friendly systems for preventive care appointments (Green et al., 2014). A study of Hispanic/Latino men revealed that, while men welcomed information about preventive health care and chronic conditions, the lack of a culture of prevention did not make it a high priority for these respondents (Luquis, 2019).

Evan et al. (2011) proposed a theoretical framework for understanding men, health, and perceptions of illness in an effort to show how gender operates within the larger context of social determinants of health. Studies have demonstrated that men often prefer to face injury or illness, and put off seeking healthcare, rather than appear weak (Courtenay, 2000b; Mahalik & Backus Dagirmanjian, 2018). This theoretical perspective can inform our understanding of men's use of preventive health care services.

Preventive care among cancer survivors is important for survivorship and identifying cancer reoccurrence. A study in California among men in a large health maintenance organization reported that survivors of prostate cancer were as likely as other men to receive preventive care up to 5 years postdiagnosis compared to men who had never been diagnosed with prostate cancer (Wallner et al., 2008). Overall, men with prostate cancer were significantly less likely to receive preventive care services, but within the 5-year window postdiagnosis, they were more likely to receive preventive services such as colonoscopy, hemoglobin A1c testing, and flu vaccinations (Wallner et al., 2008). Other research on male cancer survivors has reported that many do not understand care coordination in the context of cancer treatment and co-occurring disorders (Holmes et al., 2019). Other studies have also reported that the level of men's use of preventive health care equals women's only after they have received a diagnosis of cancer (Burnside et al., 2018).

An analysis of state-level programs for preventive and reproductive health care for men and boys reported few programs or resources targeted to this group; a majority of the information for men and boys was identified on websites targeting women's health-care issues (Fadich et al., 2018). A study of overweight and obese men and women reported that, overall, overweight/obese men used more

primary care than normal-weight men, but had poorer health-care experiences overall compared to normal-weight men (Persky et al., 2014). In one study using self-report survey data, Medicaid expansion was associated with significantly increased access to primary care, fewer skipped medications due to cost, reduced out-of-pocket spending, reduced likelihood of emergency department visits, and increased outpatient visits. Screening for diabetes and regular care for chronic conditions all increased significantly after expansion (Sommers et al., 2016). However, the majority of respondents were women and the study did not differentially breakdown findings by gender.

The purpose of this study is to look specifically at adult men aged 18 to 65 years to determine the effect that Medicaid expansion in California had on use of preventive care services. While other studies exploring the impact of expanded Medicaid have focused on racial/ethnic differences in utilization and access to care, this study focuses on the impact on men in the context of gender as a social determinant of health (Evans et al., 2011).

Methods

This research study involved the analysis of 2015–2016 California Health Interview Survey (CHIS) data to investigate the subsample of men between the ages of 18 and 64 interviewed during that year. CHIS data are collected every other year using a Random Digit Dialing (RDD) telephone interview approach of a randomly selected group of California counties. The CHIS uses a cluster-sampling approach; once the random draw of counties has been completed, individuals are randomly identified using telephones numbers, which include both land-based and mobile-cell numbers (for selected large counties, such as Los Angeles). Because of the sampling method, any analysis must include the use of complex population-based weights provided with the data. For more information on the methods used by the CHIS, see published methodology reports (California Health Interview Survey, 2017).

Differences within this subgroup of men (aged 18–64) were explored comparing the men who report they used preventive health services in the past year, and chronic conditions, all of which are captured by the CHIS. CHIS data are freely available from the UCLA Policy Center after agreement to their data use agreement and CHIS data are used to monitor many aspects of the health of Californians (Brown et al., 2005; Goldberg & Meyer, 2013; Kobau et al., 2007; Ramirez et al., 2005).

This research tested one hypothesis:

H_0: There are no differences between men in California who are Medi-Cal insured compared to non-Medi-Cal insured on whether they received preventive health care for their own health in the past 12 months, and the presence of chronic diseases such as asthma, heart disease and hypertension, and diabetes.

H_1: There is a difference between Med-Cal covered men and minority men without Med-Cal coverage on whether they received preventive health care for their own health in the past 12 months and the presence of chronic diseases.

PROC SURVEYLOGISTIC was used to develop one model using the variable "Have you had a preventive care visit in the past year?" which is a binary outcome coded as YES = 1 and NO = 0.

Independent variables used in the model included race/ethnicity, current type of health insurance, and any chronic disease (constructed from the responses to the questions "Has a doctor ever told you that you have asthma?" "Has a doctor ever told you that you have diabetes?" "Has a doctor ever told you that you have high blood pressure?", and "Has a doctor ever told you that you have heart disease?"). If the respondent answered "yes" to any of these questions, then their response to the any chronic disease variable was recorded as a "yes" answer.

Logistic regression is the appropriate analytic technique for dichotomous outcomes (Allison, 2012; Hosmer et al., 2013). The PROC SURVEYLOGISTIC procedure fits logistic regression models for discrete/dichotomous survey data by the method of maximum likelihood. For statistical inferences, PROC SURVEYLOGISTIC incorporates complex survey sample designs, including designs with stratification, clustering, complex weighting, and unequal weighting.

We also tested for interactions using the SLICEBY option in PROC SURVEYLOGISTIC as this is the appropriate approach when using complex survey data (Agnelli, 2014). Interaction effects were explored between use of preventive care services and reporting any chronic disease, being overweight, having Medi-Cal (Medicaid) as the only source of health insurance, and being a resident of a rural (compared to urban county) to determine how these impact use of preventive care services among men.

Results

Descriptive characteristics of the subsample of men used in the analysis can be seen in Table 1. The sample consisted of men only between the ages of 18 and 64 years (N = 6,180). Of these 66% (n = 4,088) reporting receiving any preventive care services in the year prior to interview. The largest proportions of respondents fell into the youngest group aged 18–25 (1,054/6,180; 17%) followed by the oldest group aged 60–64 (1,048/6,180; 16.9%); 43% (2,691/6,180) reported they were married, 57% (3,557/6,180) had incomes at greater than 300% of the federal poverty level, and 76% (4,758/6,180) were born

Table 1. Selected Demographic Characteristics of Men Aged 18–64 by Use of Preventive Care Services in the Past Year[a].

	Preventive care						
	Yes (N = 4,088)		No (N = 2,092)		Total (N = 6,180)		
	%	(SE)	%	(SE)	%	(SE)	p
Age							<.0001
18–25	10.37	(0.38)	6.68	(0.32)	17.05	(0.48)	
26–29	4.41	(0.26)	3.31	(0.23)	7.73	(0.34)	
30–34	4.43	(0.26)	3.98	(0.25)	8.41	(0.35)	
35–39	4.85	(0.27)	3.57	(0.24)	8.43	(0.35)	
40–44	4.77	(0.27)	2.63	(0.20)	7.41	(0.33)	
45–49	6.06	(0.30)	2.88	(0.21)	8.95	(0.36)	
50–54	7.99	(0.34)	3.47	(0.23)	11.47	(0.40)	
55–59	10.01	(0.38)	3.56	(0.24)	13.58	(0.44)	
60–64	13.22	(0.43)	3.74	(0.24)	16.96	(0.48)	
Marital status							<.0001
Married	30.74	0.59	12.80	0.43	43.54	0.63	
Other	12.85	0.43	7.39	0.33	20.24	0.51	
Never married	22.56	0.53	13.66	0.44	36.21	0.61	
Federal poverty level							<.0001
0–99% FPL	8.80	0.36	5.15	0.28	13.95	0.44	
100–199%	9.92	0.38	5.95	0.30	15.87	0.47	
200–299%	7.77	0.34	4.85	0.27	12.62	0.42	
300% +	39.66	0.62	17.90	0.49	57.56	0.63	
Citizenship							<.0001
US born citizen	51.60	0.64	25.39	0.55	76.99	0.54	
Naturalized citizen	8.56	0.36	3.82	0.24	12.38	0.42	
Noncitizen	5.99	0.30	4.64	0.27	10.63	0.39	
Race/ethnicity							<.0001
Hispanic	11.44	0.41	6.73	0.32	18.17	0.49	
Other	7.54	0.34	4.29	0.26	11.83	0.41	
White	7.18	0.62	18.46	0.49	55.65	0.63	
Asian	5.55	0.29	2.99	0.22	8.54	0.36	
Black	3.64	0.24	1.02	0.13	4.66	0.27	
American Indian	0.79	0.11	0.36	0.08	1.15	0.14	
Health insurance status							<.0001
Uninsured	4.71	0.27	6.26	0.31	10.97	0.40	
Medicare+Employer-based	0.60	0.10	0.11	0.04	0.71	0.10	
Medicare + other/Medicare only	3.37	0.23	0.55	0.09	3.92	0.25	
Medicaid+Employer-based	1.81	0.17	1.21	0.14	3.03	0.22	
Medicaid only	10.89	0.40	5.78	0.30	16.67	0.47	
Employer-based	37.23	0.62	16.05	0.47	53.29	0.64	
Private purchase	5.83	0.30	3.37	0.23	9.19	0.37	
Other public	1.72	0.17	0.52	0.09	2.23	0.19	
Employment status							<.0001
Full-time (21+ hr/week)	44.45	0.63	24.85	0.55	69.30	0.59	
Part-time (0–20 hr/week)	4.74	0.27	2.88	0.21	7.62	0.34	
Other employed	0.15	0.05	0.08	0.03	0.23	0.06	
Unemployed looking for work	2.51	0.20	1.60	0.16	4.11	0.25	
Unemployed not looking for work	14.30	0.45	4.43	0.26	18.74	0.50	
Urban/rural designation RHP[b]							<.0001
Urban	57.36	0.63	28.5113	0.57	85.87	0.44	
Rural	8.79	0.36	5.3398	0.29	14.13	0.44	
Metro/non-Metro Designation OMB[c]							<.0001
Metropolitan	61.72	0.62	31.05	0.59	92.77	0.33	
Non-Metro	4.43	0.26	2.80	0.21	7.23	0.33	

[a]Complex weights used to adjust for survey complexity; all chi-square tests are significant at $p < .0001$.
[b]RHP denotes Rural Healthy People definition of urban and rural areas.
[c]OMB denotes U.S. Office of Management and Budget definition of urban and rural areas.

Table 2. Selected Health Factors Associated with Use of Preventive Care Services in the Past Year[a].

	Preventive care						
	Yes (N = 4,088)		No (N = 2,092)		Total (N = 6,180)		
	%	(SE)	%	(SE)	%	(SE)	p
Chronic disease	32.14	0.59	10.48	0.39	42.62	0.63	<.0001
Diabetes	7.85	0.34	2.52	0.20	10.37	0.39	<.0001
Diabetes care plan	7.36	0.33	0.73	0.11	8.09	0.35	<.0001
Taking insulin	2.64	0.20	0.18	0.05	2.82	0.21	<.0001
Asthma	10.42	0.39	5.16	0.28	15.58	0.46	.23
Asthma care plan	1.46	0.15	0.28	0.07	1.73	0.17	<.0001
Hypertension	22.04	0.53	5.36	0.29	27.39	0.57	<.0001
Medication for hypertension	15.65	0.46	1.63	0.16	17.28	0.48	<.0001
Heart disease care plan	3.43	0.23	0.55	0.09	3.98	0.25	<.0001
Hospital overnight	6.39	0.31	1.28	0.14	7.67	0.34	<.0001
ER past year	15.68	0.46	5.00	0.28	20.68	0.52	<.0001
Delayed prescription	7.38	0.33	2.28	0.19	9.66	0.38	<.0001
Delayed other medical	8.38	0.35	5.02	0.28	13.40	0.43	<.0001
Thinking about quitting tobacco	6.26	0.31	3.93	0.25	10.19	0.39	<.0001
Referred to smoking cessation	5.26	0.28	1.81	0.17	7.07	0.33	<.0001
Ever used electronic cigarettes	13.16	0.43	8.32	0.35	21.47	0.52	<.0001
Walked at least 10 min	44.06	0.63	20.29	0.51	64.38	0.61	<.0001
Any dental insurance	48.17	0.64	20.45	0.51	68.62	0.59	<.0001
Overweight	46.41	0.63	20.81	0.52	67.22	0.60	<.0001

[a]Complex weights used to adjust for survey complexity; all chi-square tests are significant at $p < .0001$ except Asthma which is NS.

in the United States. Nearly 56% (3,439/6,180) were White, 18% (1,123/6,180) were Hispanic/Latino, 11% (731/6,180) reported their race as Other, and 8.5% (528/6,180) reported they were Asian; Blacks accounted for less than 5% (288/6,180) of the sample. With respect to the source and type of health insurance, 53% (3,293/6,180) reported having employer-based coverage only, followed by 16% (1,030/6,180) who reported that Medicaid (Medi-Cal) only provided their health insurance coverage. Almost 11% (678/6,180) reported that they were uninsured. The majority (4,222/6,180; 68%) reported that they were employed full-time and almost 23% (1,434/6,180) reported being unemployed and not looking for work.

Table 2 shows the associations between any use of preventive health services and several health-related variables. Approximately 32% (4,088/6,180) of those who responded that they had received preventive care services and 10% (2,092/6,180) of those who reported that they had not received preventive-health-care services reported any chronic disease (e.g., asthma, diabetes, heart disease, and hypertension). The most commonly reported health services associated with chronic disease were medication for hypertension (1,068/6,180; 17%), followed by having a physician-developed diabetes-care plan (500/6,180; 8%), a heart-disease management plan (246/6,180; 4%), taking insulin (174/6,180; 2.6%), and an asthma-care plan (107/6,180; 1.7%). Of those respondents reporting use of preventive services, 46% (2,868/6,180) reported being overweight compared to almost 21% (1,286/6,180) of those who reported receiving no preventive health services.

With respect to other nonpreventive care services, 15.6% (969/6,180) of those reporting use of any preventive care also reported use of the emergency department in the past year and approximately 6% 395/6,180) of those receiving preventive care also had an overnight hospital stay in the past year.

Table 3 shows the results of the multivariable logistic regression model predicting use of preventive health care services. Having Medicaid (Medi-Cal) compared to the uninsured reference group revealed a greater odds of having used preventive health services in the past year, as did having employer-based health insurance compared to the uninsured group. There was no effect of race or ethnicity on whether a respondent was more likely to have received preventive care services, while having a chronic condition such as hypertension or diabetes was associated with a greater odds of receiving preventive care. Men with either asthma or any heart disease other than hypertension were neither more or less likely to have had preventive care in the past year. Having had any emergency

Table 3. Multivariable Logistic Regression Predicting Use of Preventive Health Care Among Men Less Than 65 Years of Age ($N = 6,180$)[a].

Variable	Odd ratio	95% CI	*p*
Type of health insurance			
Uninsured	Reference	—	
Employer-based (no Medicare or Medicaid)	2.74	1.92, 3.84	<.0001
Medicaid only (no employer based)	2.41	1.58, 3.68	<.0001
Medicaid plus employer based	1.70	0.97, 2.97	.06
Medicare plus employer based	9.96	1.30, 76.24	.03
Medicare plus other (no employer based)	8.86	2.48, 31.63	.001
Other public type of insurance	3.97	1.56, 10.10	.004
Private purchase	2.37	1.42, 3.96	.001
Race/ethnicity			
Other	Reference	—	
Hispanic	1.01	0.68, 1.49	.96
White	1.03	0.67, 1.57	.62
Asian	1.03	0.63, 1.66	.91
African American	1.45	0.82, 2.60	.20
American Indian	0.69	0.15, 3.13	.89
Asthma	0.87	0.60, 1.26	.46
Heart disease	1.62	0.73, 3.62	.23
Diabetes	3.01	1.45, 6.24	.003
Hypertension	1.88	1.37, 2.57	.0001
Emergency room use, past year	0.62	0.45, 0.84	.003
In hospital at least one night, past year	0.63	0.24, 1.63	.34
Delayed or did not get prescription filled, past year	0.59	0.38, 0.92	.02
Walked at least 10 min for leisure, past week	0.61	0.44, 0.84	.002

[a]Complex weights used to adjust for survey complexity.

room visits in the past year or having spent time overnight in the hospital as an in-patient were inversely related to having receiving preventive care. With respect to health behaviors, only having walked at least 10 min for leisure was significantly associated with use of preventive care, and the relationship was a negative one, meaning that men who reported walking for leisure were less likely to use preventive care services.

Discussion

This study looked at use of preventive health care services among men in California less than 65 years of age. The primary hypothesis was supported in that having publicly funded health insurance through Medicaid (Medi-Cal) was positively and significantly associated with having a preventive care visit in the past year for men who are not yet old enough for Medicare compared to being uninsured. Expansion of Medicaid services beyond those groups traditionally served (e.g., women and children) has been reported to have a positive impact on adult health. Men are traditionally over-represented among those with chronic diseases and underrepresented in intervention programs to reduce them (Gavarkovs et al., 2016). Studies comparing Medicaid-expansion states and those states that did not expand Medicaid have reported substantial improvements in preventive care screening and access.

For prostate cancer screening, while there were overall declines in screening across the United States, between 2011 and 2013 there was a significant narrowing of the gap in prostate-specific antigen screening between higher and low-income men in Medicaid early-expansion states. This may reflect improved access to preventive services among men with financial barriers to care (Sammon et al., 2018). For men diagnosed with metastatic prostate cancer, racial disparities persisted for those with private insurance, but not for those with Medicaid. As the authors note, it is not clear whether the equality in outcomes for Medicaid is due to White and African American patients doing "equally poorly" or "equally well" (Mahal et al., 2018).

The impact of expanded public health insurance programs is limited. Even with expansion of Medicaid funding to 95% of the adult population in Rhode Island, among patients seeking sexually transmitted infections testing and treatment, concerns about out-of-pocket expenses were still a barrier, especially for those who were unemployed (Montgomery et al., 2017). Individuals

who had recently become insured in this study were more likely to be non-White minorities and of Hispanic/Latino(a) ethnicity and 26% of them obtained coverage under the Affordable Care Act.

A recent report from the UCLA Center for Health Policy Research reported that, even with the high levels of Medicaid participation found in California, Latinos are still more likely than others to be uninsured; the main contributor to this is immigration status, which varies widely between Central Americans and other Latino groups, such as Puerto Ricans, who are U.S. citizens (Becker et al., 2019). Becker, Babey, and Charles reported that 22% of Latino men were uninsured compared to 16% of Latino women. Findings from the current study suggest that there was no one racial/ethnic group of men more or less likely to receive preventive care may be due to the masking of differences in insurance and citizenship status within the Latino group of men.

Our study identified two chronic conditions that were significantly associated with use of preventive care services: diabetes and hypertension. This is consistent with a previous study that reported that, compared to states that did not expand Medicaid coverage, those that did diagnosed and treated substantially more adults with diabetes under the age of 65 (Kaufman et al., 2015). Screening and treatment of diabetes remain a source of secondary prevention due to the associations between diabetes and mortality from cancer and cardiovascular events (Campbell et al., 2012). Because hypertension is more prevalent in low-income groups, expansion of Medicaid has also increased the number of individuals under the age of 65 screened and treated for this chronic condition (Zhang et al., 2019). It has also been demonstrated that controlling hypertension in younger and middle-aged adult samples can reduce mortality associated with cardiovascular events (Yano et al., 2015). With respect to asthma, a chronic condition for which we reported no significant association with use of prevention services, it is possible that men with asthma have it under control; while 10% of those reporting they received preventive care also reported a diagnosis of asthma, only 1.5% also reported having an asthma care plan in place. Information on heart disease was elicited separately from hypertension and was also not significantly associated with use of preventive services. Just over 3% of the respondents who indicated they received preventive care services also reported a care plan for heart disease. This would suggest a low prevalence of heart disease other than hypertension in this sample men under age 65. In a longitudinal study of risk for a first cardiovascular event, it was reported that racial/ethnic disparities existed in middle age between Black and White men, but those disparities disappeared as the cohort aged (Feinstein et al., 2012). The CHIS interview does not elicit information on serum cholesterol given it is a telephone interview, which is another indicator of potential cardiovascular risk, but not one captured in the data used for this study.

Factors negatively associated with use of preventive care services included prior year use of the emergency room, having spent at least one night in the hospital in the past year, and having delayed or failed to fill a prescription in the past year. These findings potentially reflect lack of health care access due to being under-insured, which occurs when individuals have health insurance but delay due care due to high deductibles and/or co-pay, which in turn resulted in the need for either emergency department or in-patient health services. These findings are also broadly consistent with theoretical frameworks which demonstrate that men would rather maintain stoicism in the face of injury or illness if they perceive it would threaten their masculine identity (Courtenay, 2000b; Evans et al., 2011). While the California Health Interview Survey does not elicit information specific to masculine identity or attitudes toward use of health services, this study finds that even among men with health insurance, there is a lack of use of preventive health care services. That the use of preventive health care services is associated with chronic conditions suggests that diagnosis of a chronic disease can be an important entry to preventive health care use and greater awareness of self-care issues for these men.

Unfilled or delayed prescription drugs are most likely the result of individuals being unable to afford the out-of-pocket costs or co-pays associated with pharmacy costs, even when they have health insurance. While employer-sponsored health insurance is the primary source of coverage for the majority of Americans, most workers have annual deductibles of $1,000 or more (Claxton et al., 2015). Within these high-deductible and consumer-directed health plans, while they reduced overall health-care costs, individuals in these plans were significantly less likely to use preventive care services (Beeuwkes et al., 2011).

There are some limitations to the current study. As noted above, there was no information available on serum cholesterol levels, as the CHIS is a telephone interview and serum cholesterol is not generally self-reported in health interviews. This makes it difficult to draw conclusions concerning cardiovascular risk for heart disease beyond the variables available, such as preventive care and medication for hypertension. Another limitation is that this study used data from the 2015–2016 CHIS. The associations explored in this study could be done using more recent CHIS data once it becomes available to determine whether findings reported here replicate in more recent data.

In conclusion, this study looked at adult men's use of preventive health services in California. Expanded access

to health coverage through the Medicaid expansion and the state health exchanges, in addition to more traditional employer-based health insurance, has provided adult men with more options for accessing preventive health care. In these California men, having diabetes or hypertension is associated with use of preventive health care services. Expansion of health care coverage for adult men appears to facilitate care for chronic conditions, which in turn, should promote healthier lives for these men.

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