Health Status, Risk Factors, and Medical Conditions Among Persons Enrolled in Medicaid vs Uninsured Low-Income Adults Potentially Eligible for Medicaid Under the Affordable Care Act

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THE SUPREME COURT RULING ON the Affordable Care Act (ACA), the Patient Protection and Affordable Care Act of 2010 (Pub L No. 111-148)[1] as amended by the Health Care and Education Reconciliation Act of 2010 (Pub L No. 111-152), determined that states have the option to expand Medicaid coverage to most low-income adults, an option that could add millions of new Medicaid enrollees. In states choosing to implement the expansion, with full federal financing from 2014 through 2016, this would expand Medicaid's traditional focus away from low-income pregnant women and children, very–low-income parents, and the severely disabled to new population groups. These include childless adults and parents whose incomes are too high to qualify for Medicaid under current state eligibility criteria. This is likely to affect the type of Medicaid patients seen by physicians in states choosing to expand Medicaid.

State decisions regarding Medicaid expansion will likely consider the anticipated costs and health benefits to their populations. Predictions about the new enrollees range from their likely

Importance Under the Affordable Care Act (ACA), states can extend Medicaid eligibility to nearly all adults with income no more than 138% of the federal poverty level. Uncertainty exists regarding the scope of medical services required for new enrollees.

Objective To document the health care needs and health risks of uninsured adults who could gain Medicaid coverage under the ACA. These data will help physicians, other clinicians, and state Medicaid programs prepare for the possible expansions.

Design, Setting, and Patients Data from the National Health and Nutrition Examination Survey 2007-2010 were used to analyze health conditions among a nationally representative sample of 1042 uninsured adults aged 19 through 64 years with income no more than 138% of the federal poverty level, compared with 471 low-income adults currently enrolled in Medicaid.

Main Outcomes and Measures Prevalence and control of diabetes, hypertension, and hypercholesterolemia based on examinations and laboratory tests, measures of self-reported health status including medical conditions, and risk factors such as measured obesity status.

Results Compared with those already enrolled in Medicaid, uninsured adults were less likely to be obese and sedentary and less likely to report a physical, mental, or emotional limitation. They also were less likely to have several chronic conditions. For example, 30.1% (95% CI, 26.8%-33.4%) of uninsured adults had hypertension, hypercholesterolemia, or diabetes compared with 38.6% (95% CI, 32.0%-45.3%) of those enrolled in Medicaid (P=.02). However, if they had these conditions, uninsured adults were less likely to be aware of them and less likely to have them controlled. For example, 80.1% (95% CI, 75.2%-85.1%) of the uninsured adults with at least 1 of these 3 conditions had at least 1 uncontrolled condition, compared with 63.4% (95% CI, 53.7%-73.1%) of adults enrolled in Medicaid.

Conclusion and Relevance Compared with adults currently enrolled in Medicaid, uninsured low-income adults potentially eligible to enroll in Medicaid under the ACA had a lower prevalence of many chronic conditions. A substantial proportion of currently uninsured adults with chronic conditions did not have good disease control; projections based on sample weighting suggest this may represent 3.5 million persons (95% CI, 2.9 million-4.2 million). These adults may need initial intensive medical care following Medicaid enrollment.

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being mostly nondisabled healthy adults[2,3] to their having high levels of disability and multiple comorbidities.[4,5] These predictions relied either on self-reported data on health status and medical problems or Medicaid claims data for adults who have been covered under prior, more narrowly targeted state Medicaid expansions. To document health conditions in potential new Medicaid patients, health measures from self-reports, physical examinations, and laboratory tests from a nationally representative sample of low-income uninsured adults were examined. The prevalence of diseases found in the low-income uninsured adults was compared with that found in adults currently enrolled in Medicaid.

METHODS

We used data from the National Health and Nutrition Examination Survey (NHANES) 2007-2010 to compare characteristics of low-income adults aged 19 through 64 years who reported being uninsured at the time of the survey with characteristics of those who reported being enrolled in Medicaid. Other analysis suggests that about 78% of these uninsured adults would be newly eligible for Medicaid under the ACA, with the rest already eligible but not participating.[6,7]

We focused on ages 19 through 64 years, because these ages comprise the target group for the Medicaid expansion. We defined *low income* as having reported income no more than 138% of the federal poverty level (FPL), because states can extend Medicaid eligibility to up to 133% of the FPL and 5% of income is disregarded in determining eligibility. (For respondents with missing income information, a binary income variable indicating family income above 138% of the FPL was imputed using a multiple-imputation procedure with 10 replications based on marital status, employment status, age, sex, race, education, citizenship, self-reported health, obesity status, and presence of functional limitations.) Because, as in all surveys, income measurement in NHANES has some degree of error, we performed sensitivity analyses by considering the prevalence of disease and risk factors for those with income no more than 100% of the FPL (in case income was overreported) and no more than 150% of the FPL (in case income was underreported) in addition to no more than 138% of the FPL.

NHANES is a nationally representative cross-sectional survey conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS).[8] The conduct of the survey was approved by the NCHS research ethics review board. The survey consists of interviews in participants' homes, physical examinations conducted in mobile examination centers, and laboratory tests using blood and urine specimens provided by participants during the physical examination. The NHANES sample is selected through a complex multistage probability design.[8] The (unweighted) response rate is 78% to 79% (depending on the year) for the interviews and 75% to 77% for the examinations.

We limited the analysis sample to US citizens not enrolled in Medicare at the time of the survey. We focused on citizens because we could not distinguish between noncitizens who may and may not meet Medicaid legal status requirements, because most noncitizens will not be eligible for Medicaid[9] and because noncitizens are projected to constitute just 6.1% of the uninsured who may become newly eligible for Medicaid under the ACA expansion.[10] Sensitivity analyses were performed to assess the effects of inclusion of noncitizens on our results.

Demographic characteristics, the prevalence of several risk factors, and measures of health status for the uninsured adults were compared with those for respondents currently enrolled in Medicaid. Risk factors included self-reported smoking status, exercise, alcohol use ($\geq$5 drinks at least 5 days in the prior 12 months), illegal drug use (used cocaine, heroin, or methamphetamines at least once in the prior 12 months), and obesity based on measured height and weight ($\geq$30, calculated as weight in kilograms divided by height in meters squared). Measures of health status included self-reported general health (good, very good, or excellent compared with fair or poor) and self-reported functional limitations as well as the presence of several specific health conditions, some self-reported and some based on results from laboratory tests. Functional limitations consist of any activity limitation resulting from a physical, mental, or emotional problem. Depression status was derived by combining responses to 9 mental health questions according to the Patient Health Questionnaire Depression Screener guidelines.[11] Self-reported conditions included history of heart disease (ever had coronary heart disease, congestive heart failure, a myocardial infarction, or angina pectoris), current asthma, history of emphysema, history of cancer, and current depression. The prevalence of hypertension and hypercholesterolemia were assessed based on taking medication for the condition or on laboratory values (hypertension: average systolic blood pressure of at least 140 mm Hg or diastolic pressure of at least 90 mm Hg based on 3 blood pressure readings; hypercholesterolemia: total cholesterol level of at least 240 mg/dL [6.22 mmol/L]).[12,13] The prevalence of diabetes was assessed based on self-report of prior physician diagnosis or by laboratory-assessed hemoglobin A_{1c} level of at least 6.5%.[14]

We included pregnant women in the analysis because they are a key population group currently enrolled in Medicaid. However, since we were not able to distinguish pregnancy-related obesity, diabetes, or hypertension from long-term conditions, we coded pregnant women as not having diabetes or hypertension. This should only minimally affect estimates because of the small number of pregnant women in our data set. We omitted pregnant women from our measures of obesity.

We compared 3 measures of health care access and use: whether an individual had visited a physician or other health care professional in the past year, whether the individual lacked a rou-

tine place for health care (other than an emergency department), and whether his or her routine place for health care was an emergency department. We compared these measures for all individuals and for the subset of individuals with at least 1 of the health conditions we examined.

We further evaluated respondents with diabetes, hypertension, or hypercholesterolemia, because the prevalence of each of these health conditions could be determined or verified using laboratory and medical examination data from NHANES. A condition was considered undiagnosed if an individual was found to have the condition on the NHANES examination but reported receiving no prior diagnosis

of the condition from a health care professional. A condition was considered uncontrolled if an individual tested within the clinical criteria described above for having the condition. The prevalence of undiagnosed and uncontrolled conditions was estimated for those with the condition and for the entire analytic sample.

All analyses used sample weights (interview or examination weights as appropriate), and standard errors accounted for the complex design of the survey using Stata version 12.[15] Wald F tests were used for comparisons. Statistical significance was assessed at $P < .05$ using 2-tailed tests. Estimates with a relative standard error (standard error divided by the estimate)

greater than 30% were noted; estimates were not reported if the relative standard error was greater than 50%.

RESULTS

Our total unweighted sample size was 1513 respondents. Observations with missing values were dropped, resulting in fewer respondents for some analyses. The rate of missing values for most variables was less than 5% of the final sample. Relatively high rates of nonresponse existed for the derived composite variable for depression (12% missing) and for the variables describing alcohol use (18% missing) and illegal drug use (17% missing). Income was imputed for 9% of the final sample. Of respondents who met our inclu-

Table 1. Demographic Characteristics of Lower-Income US Citizens Aged 19 Through 64 Years[a]

Characteristic	No. of Respondents		Weighted % (95% CI)		Percentage Point Difference (95% CI)[b]	P Value[c]
	Uninsured (n = 1042)	Medicaid (n = 471)	Uninsured	Medicaid		
Weighted count (average annual), millions			14.7 (12.5-16.8)	5.9 (4.8-7.1)		<.001
Age, y						
19-34	468	212	50.3 (46.2 to 54.3)	47.7 (42.3 to 53.1)	2.5 (−3.9 to 9.0)	.43
35-54	422	183	40.0 (35.7 to 44.3)	41.3 (36.4 to 46.2)	−1.3 (−7.6 to 4.9)	.67
55-64	152	76	9.8 (7.8 to 11.8)	11.0 (7.5 to 14.5)	−1.2 (−4.9 to 2.5)	.51
Sex						
Women	505	333	50.2 (46.9 to 53.4)	71.8 (66.2 to 77.4)	−21.7 (−27.7 to −15.6)	<.001
Men	537	138	49.8 (46.6 to 53.1)	28.2 (22.6 to 33.8)	21.7 (15.6 to 27.7)	<.001
Birthplace						
Outside United States	134	68	8.5 (5.5 to 11.5)	11.2 (6.4 to 15.9)	−2.6 (−7.7 to 2.4)	.30
United States	908	403	91.5 (88.5 to 94.5)	88.8 (84.1 to 93.6)	2.6 (−2.4 to 7.7)	.30
Marital status[d]						
Unmarried	677	327	70.6 (66.7 to 74.4)	73.5 (64.5 to 82.5)	−2.9 (−10.2 to 4.4)	.42
Married	307	111	29.4 (25.6 to 33.3)	26.5 (17.5 to 35.5)	2.9 (−4.4 to 10.2)	.42
Race/ethnicity						
Non-Hispanic white	492	179	57.9 (48.1 to 67.6)	49.0 (37.3 to 60.7)	8.9 (0.0 to 17.7)	.05
Hispanic	274	102	18.4 (9.8 to 27.1)	13.9 (9.3 to 18.5)	4.5 (−3.1 to 12.1)	.23
Non-Hispanic black	243	163	20.2 (14.9 to 25.5)	31.6 (22.0 to 41.1)	−11.4 (−18.7 to −4.1)	.003
Non-Hispanic other race	33	27	3.5 (1.8 to 5.2)	5.5 (2.7 to 8.3)	−2.0 (−5.3 to 1.3)	.22
Education						
Did not complete high school	405	199	36.0 (30.6 to 41.4)	39.9 (34.8 to 44.9)	−3.9 (−10.5 to 2.8)	.25
High school graduate/GED	320	150	32.0 (28.7 to 35.2)	35.1 (29.7 to 40.4)	−3.1 (−8.8 to 2.6)	.28
Some college	256	107	25.6 (21.8 to 29.4)	22.3 (17.4 to 27.3)	3.3 (−2.9 to 9.5)	.29
College graduate	60	13	6.4 (4.2 to 8.6)	2.8 (0.8 to 4.8)[e]	3.7 (0.9 to 6.4)	.01
Pregnancy status						
Pregnant woman	7	24	0.7 (0.1 to 1.2)[e]	4.8 (2.7 to 6.9)	4.1 (1.9 to 6.4)	.001
Not pregnant	1035	447	99.3 (98.8 to 99.9)	95.2 (93.1 to 97.3)	−4.1 (−6.4 to 1.9)	.001

Abbreviation: GED, General Educational Development certificate.
[a] Source: National Health and Nutrition Examination Survey 2007-2010. The sample consists of respondents aged 19 through 64 years, not enrolled in Medicare, US citizens, family income no more than 138% of the federal poverty level. The sample size can vary across variables depending on the level of nonresponse for each variable.
[b] Estimates are population estimates derived using survey weights, and standard errors reflect the complex design of the survey.
[c] Values reflect Wald F tests for comparing the difference between Medicaid and uninsured proportions for each variable. $P < .05$ considered statistically significant.
[d] Data available for adults aged 20 through 64 years only.
[e] Estimate does not meet the National Center for Health Statistics standard of reliability, ie, the relative standard error (the standard error divided by the estimate) is greater than 30%.

sion criteria, 10% of Medicaid enrollees and 38% of the uninsured adults were not citizens.

There were 1042 uninsured respondents in our sample, corresponding to a weighted estimate of 14.7 million (95% CI, 12.5 million-16.8 million) uninsured adults who could be eligible for Medicaid coverage under the ACA based on 2007-2010 demographic characteristics (TABLE 1). The sample included 471 respondents, corresponding to a weighted estimate of 5.9 million (95% CI, 4.8 million-7.1 million) individuals, enrolled in Medicaid on average during the 2007-2010 period. Compared with those enrolled in Medicaid, the uninsured adults were simi-

Table 2. Health Status and Risk Factors for Lower-Income US Citizens[a]

Characteristic	No. of Respondents		Weighted % (95% CI)		Percentage Point Difference (95% CI)[b]	P Value[c]
	Uninsured (n = 1042)	Medicaid (n = 471)	Uninsured	Medicaid		
Obesity (body mass index)[d]						
<30	657	246	65.6 (61.9 to 69.3)	54.8 (48.9 to 60.8)	10.8 (2.9 to 18.6)	.009
≥30	366	211	34.4 (30.7 to 38.1)	45.2 (39.2 to 51.1)	−10.8 (−18.6 to −2.9)	.009
Exercise						
None	642	327	60.7 (57.0 to 64.4)	68.1 (61.9 to 74.2)	−7.4 (−13.5 to −1.2)	.02
Current	400	144	39.3 (35.6 to 43.0)	31.9 (25.8 to 38.1)	7.4 (1.2 to 13.5)	.02
Cigarette smoking[e]						
None	519	228	51.0 (45.7 to 56.3)	49.2 (41.1 to 57.4)	1.7 (−6.7 to 10.2)	.68
Current	465	211	49.0 (43.7 to 54.3)	50.8 (42.6 to 58.9)	−1.7 (−10.2 to 6.7)	.68
Alcohol use or binge drinking[e]						
≥5 Drinks fewer than 5 d in past 12 mo	512	259	85.8 (82.8 to 88.8)	90.9 (88.1 to 93.8)	−5.1 (−8.9 to −1.3)	.01
≥5 Drinks at least 5 d in the past 12 mo	105	26	14.2 (11.2 to 17.2)	9.1 (6.2 to 11.9)	5.1 (1.3 to 8.9)	.01
Drug use[e]						
Did not use cocaine, heroin, or methamphetamines in the past year	814	344	90.3 (87.4 to 93.2)	93.0 (88.7 to 97.3)	−2.7 (−7.2 to 1.7)	.22
Used ≥1 of the following in the past year: cocaine, heroin, methamphetamines	79	19	9.7 (6.8 to 12.6)	7.0 (2.7 to 11.3)	2.7 (−1.7 to 7.2)	.22
Functional limitations						
None	775	216	74.5 (70.1 to 78.9)	44.8 (38.5 to 51.1)	29.7 (24.2 to 35.3)	<.001
Physical, mental, or emotional	267	255	25.5 (21.1 to 29.9)	55.2 (48.9 to 61.5)	−29.7 (−35.3 to −24.2)	<.001
Self-reported health						
Good/very good/excellent	754	281	74.8 (72.1 to 77.4)	61.1 (54.8 to 67.3)	13.7 (6.5 to 20.9)	.001
Fair/poor	288	190	25.2 (22.6 to 27.9)	38.9 (32.7 to 45.2)	−13.7 (−20.9 to −6.5)	.001
Medical conditions[f]						
Hypertension	232	139	19.6 (16.4 to 22.8)	27.4 (22.0 to 32.7)	−7.7 (−13.7 to −1.7)	.01
Hypercholesterolemia	178	112	16.8 (13.8 to 19.7)	23.2 (18.6 to 27.9)	−6.5 (−11.5 to −1.4)	.01
Diabetes	90	72	6.6 (4.8 to 8.3)	12.7 (8.8 to 16.5)	−6.1 (−9.7 to −2.5)	.002
Heart disease[d]	37	57	3.5 (2.0 to 5.0)	11.8 (8.2 to 15.5)	−8.3 (−11.7 to −4.9)	<.001
Stroke[d]	17	27	1.5 (0.7 to 2.3)	5.5 (3.0 to 7.9)	−3.9 (−6.4 to −1.5)	.003
Emphysema[d]	18	22	1.5 (0.7 to 2.3)	4.8 (2.7 to 6.9)	−3.3 (−5.2 to −1.4)	.001
Asthma[d]	83	89	8.2 (5.2 to 11.1)	19.3 (13.5 to 25.2)	−11.1 (−17.0 to −5.3)	.001
Cancer[d]	38	38	4.5 (2.9 to 6.1)	9.5 (5.7 to 13.2)	−5.0 (−7.7 to −2.3)	.001
Depression[d]	19	19	2.2 (0.8 to 3.6)[g]	5.0 (1.9 to 8.2)[g]	−2.9 (−6.3 to 0.6)	.10
Any of the above	449	271	40.8 (36.1 to 45.5)	56.8 (49.9 to 63.8)	−16.0 (−23.2 to −8.9)	<.001
≥2 of the above	175	152	14.2 (11.4 to 17.0)	29.3 (23.3 to 35.3)	−15.1 (−20.9 to −9.2)	<.001

[a] Source: National Health and Nutrition Examination Survey (NHANES) 2007-2010. The sample consists of respondents aged 19 through 64 years, not enrolled in Medicare, US citizens, family income no more than 138% of the federal poverty level. The sample size can vary across variables depending on the level of nonresponse for each variable.
[b] Estimates are population estimates derived using survey weights, and standard errors reflect the complex design of the survey.
[c] Values reflect Wald F tests for comparing the difference between Medicaid and uninsured proportions for each variable. $P < .05$ considered statistically significant.
[d] Estimate excludes pregnant women. Body mass index calculated as weight in kilograms divided by height in meters squared.
[e] Data available for adults aged 20 through 64 years only.
[f] Diabetes is defined by either individual self-reporting of prior diagnosis by health care professional, or by testing within the clinical criteria for diagnosis during the NHANES medical examination (hemoglobin $A_{1c} \geq 6.5\%$). Hypertension and hypercholesterolemia are defined by either currently taking medication for the condition or by testing within the clinical criteria for diagnosis during the NHANES medical examination (hypertension: average systolic blood pressure ≥140 mm Hg or diastolic blood pressure ≥90 mm Hg based on 3 blood pressure readings; hypercholesterolemia: total cholesterol ≥240 mg/dL [6.22 mmol/L]). Pregnant women are considered not diabetic or hypertensive. The remaining 6 conditions are defined by self-report only and are available for respondents 20 years and older only. Heart disease encompasses self-reported history of heart attack, coronary heart disease, congestive heart failure, and angina pectoris. Depression is defined according to individual responses to questions from the Patient Health Questionnaire Depression Screener.
[g] Estimate does not meet the National Center for Health Statistics standard of reliability, ie, the relative standard error (standard error divided by the estimate) is greater than 30%.

Table 3. Health Care Utilization Among Lower-Income US Citizens Aged 19 Through 64 Years[a]

Health Care	No. of Respondents (Numerator)[b]		Weighted % (95% CI)		Percentage Point Difference (95% CI)[c]	P Value[d]
	Uninsured	Medicaid	Uninsured	Medicaid		
No visits to health care professional in past 12 mo						
All	361	35	34.8 (30.0-39.6)	8.0 (4.7-11.4)	26.7 (21.1-32.4)	<.001
Among those with any medical condition[e]	132	13	29.3 (23.0-35.5)	5.6 (2.0-9.1)	23.7 (15.8-31.6)	<.001
No routine place for health care other than emergency department						
All	491	56	46.1 (41.5-50.6)	11.0 (7.4-14.6)	35.1 (29.2-41.0)	<.001
Among those with any medical condition[e]	168	23	36.7 (32.8-40.7)	7.4 (4.3-10.4)	29.4 (24.2-34.6)	<.001
Routine place for health care is emergency department						
All	118	28	10.9 (7.5-14.2)	5.2 (3.1-7.4)	5.6 (1.9-9.4)	.01
Among those with any medical condition[e]	39	12	8.6 (5.3-11.9)	3.3 (1.1-5.5)[f]	5.3 (1.0-9.6)	.02

[a] Source: National Health and Nutrition Examination Survey 2007-2010. The sample consists of respondents 19 through 64 years, not enrolled in Medicare, US citizens, family income no more than 138% of the federal poverty level. The sample size can vary across variables depending on the level of nonresponse for each variable.
[b] The number of respondents in the denominator of each category is 1042 for all uninsured and 471 for all Medicaid, and 1042 for uninsured with any medical condition and 271 for Medicaid with any medical condition.
[c] Estimates are population estimates derived using survey weights, and standard errors reflect the complex design of the survey.
[d] Values reflect Wald F tests for comparing the difference between Medicaid and uninsured proportions for each variable. $P<.05$ considered statistically significant.
[e] Any of the medical conditions from Table 2 (diabetes, hypertension, hypercholesterolemia, heart disease, stroke, emphysema, asthma, cancer, depression).
[f] Estimate does not meet the National Center for Health Statistics standard of reliability, ie, the relative standard error (the standard error divided by the estimate) is greater than 30%.

lar in terms of age, birthplace, and marital status, but were more likely to be non-Hispanic white, male, and a college graduate and less likely to be non-Hispanic black. They also had lower levels of some risk factors and were in better health (TABLE 2). The uninsured adults were less likely to be obese and sedentary than Medicaid enrollees; however, binge drinking was more common. The uninsured adults reported better overall health and fewer functional limitations than Medicaid enrollees and were less likely to have every specific health condition reported in Table 2, except for depression. They were also much less likely (by 15.1 percentage points [95% CI, 9.2%-20.9%, $P<.001$]) to have multiple health conditions.

More than one-third (34.8% [95% CI, 30.0%-39.6%]) of the uninsured adults had not visited a physician or other health care professional in the past year, compared with only 8.0% (95% CI, 4.7%-11.4%) of those currently enrolled in Medicaid ($P<.001$) (TABLE 3). The uninsured adults were also 35.1 percentage points (95% CI, 29.2%-41.0%; $P<.001$) more likely than Medicaid patients to lack a usual

source of care. Among individuals with at least 1 of the specific health conditions listed in Table 2, the uninsured adults were 23.7 percentage points (95% CI, 15.8%-31.6%; $P<.001$) less likely to have had a health care visit and 29.4 percentage points (95% CI, 24.2%-34.6%; $P<.001$) less likely to have a usual source of care than Medicaid enrollees. The uninsured adults were nearly twice as likely to report that their usual source of care was an emergency department (10.9% [95% CI, 7.5%-14.2%], compared with 5.2% [95% CI, 3.1%-7.4%]) ($P=.01$).

Although the uninsured adults were less likely than those enrolled in Medicaid to have diabetes, hypertension, or hypercholesterolemia (30.1% [95% CI, 26.8%-33.4%], compared with 38.6% [95% CI, 32.0%-45.3%]) ($P=.02$), if they had 1 of these conditions, the conditions were more likely to be undiagnosed or uncontrolled (TABLE 4). Nearly one-third of uninsured adults with hypertension were undiagnosed (30.5% [95% CI, 22.8%-38.2%], compared with 17.6% [95% CI, 10.2%-25.1%]) of Medicaid enrollees ($P=.02$). Sensitivity analyses revealed similar re-

sults when the sample included individuals whose income was no more than 100% of FPL or no more than 150% of FPL, as compared with no more than 138% of FPL (eTable 1 and eTable 2, available at http://www.jama.com).

In approximately two-thirds (67.4% [95% CI, 59.0%-75.8%]) of the uninsured adults with hypertension, the disease was uncontrolled. In contrast, 40.1% (95% CI, 29.8%-50.4%) ($P<.001$) of adults with hypertesion enrolled in Medicaid had uncontrolled hypertension. Among those with hypercholesterolemia, uninsured adults were more likely to have it uncontrolled compared with Medicaid enrollees (78.0% [95% CI, 69.1%-87.0%], compared with 52.5% [95% CI, 40.5%-64.4%], respectively) ($P=.002$). When noncitizens were included in the analysis, uninsured adults with the diseases were still more likely to have them undiagnosed or uncontrolled (eTable 3). An estimated 80.1% (95% CI, 75.2%-85.1%) of the uninsured adults with 1 or more of these 3 conditions had at least 1 uncontrolled condition, compared with 63.4% of those enrolled in Medicaid (95% CI, 53.7%-73.1%)

(P=.002). Among adults with multiple conditions, those uninsured were nearly twice as likely as those enrolled in Medicaid to have at least 2 of these conditions uncontrolled (56.8% [95% CI, 43.4%-70.3%], compared with 26.5% [95% CI, 16.5%-36.4%]), respectively (P=.001).

Uninsured adults were less likely than Medicaid enrollees to have diabetes, hypertension, or hypercholesterolemia, but if they had 1 of these diseases, the disease was more likely uncontrolled or undiagnosed. In aggregate, uninsured adults were equally likely to have at least 1 condition undiagnosed or uncontrolled, compared with those currently enrolled in Medicaid. The prevalence of at least 1 undiagnosed condition was about 1 in 10 for both groups (eg, 9.5% [95% CI, 6.8%-12.2%] for uninsured adults), and the prevalence of at least 1 uncontrolled condition was about 1 in 4 (eg, 24.2% [95% CI, 21.6%-26.9%] for uninsured adults) (Table 4). Because the number of uninsured adults potentially eligible for Medicaid is larger than the number of adults currently enrolled in Medicaid, the number of low-income uninsured US adults with at least 1 condition undiagnosed or uncontrolled exceeds the number of individuals enrolled in Medicaid with at least 1 condition undiagnosed or uncontrolled. The weighted counts corresponding to the prevalence estimates reported at the bottom of Table 4 translate to approximately 1.4 million (95% CI, 0.9-1.9 million) uninsured adults potentially eligible for Medicaid with at least 1 condition undiag-

Table 4. Knowledge and Control of Conditions Among Lower-Income US Citizens Aged 19 Through 64 Years With Diabetes, Hypertension, or Hypercholesterolemia[a]

Condition[b]	No. of Respondents (Numerator)		Weighted % (95% CI)		Percentage Point Difference (95% CI)[c]	P Value[d]
	Uninsured	Medicaid	Uninsured	Medicaid		
Diabetes, hypertension, hypercholesterolemia			n = 1042	n = 471		
At least 1	345	196	30.1 (26.8 to 33.4)	38.6 (32.0 to 45.3)	−8.5 (−15.5 to −1.5)	.02
At least 2	124	95	9.9 (7.6 to 12.1)	17.8 (13.4 to 22.3)	−7.9 (−12.2 to −3.6)	.001
All 3	31	32	2.2 (1.2 to 3.3)	5.6 (2.9 to 8.3)	−3.4 (−6.1 to −0.7)	.02
Hypertension			n = 232	n = 139		
Undiagnosed	65	22	30.5 (22.8 to 38.2)	17.6 (10.2 to 25.1)	12.9 (2.2 to 23.5)	.02
Uncontrolled	153	54	67.4 (59.0 to 75.8)	40.1 (29.8 to 50.4)	27.3 (15.9 to 38.7)	<.001
Hypercholesterolemia			n = 178	n = 112		
Undiagnosed	24	15	13.1 (6.6 to 19.6)	18.0 (5.4 to 30.7)[e]	−4.9 (−21.1 to 11.2)	.54
Uncontrolled	135	52	78.0 (69.1 to 87.0)	52.5 (40.5 to 64.4)	25.6 (10.8 to 40.4)	.002
Diabetes			n = 90	n = 72		
Undiagnosed	28	8	32.3 (18.4 to 46.1)	16.5 (3.3 to 29.7)[e]	15.7 (−3.4 to 34.8)	.10
Uncontrolled	66	46	76.8 (62.6 to 91.1)	71.3 (56.1 to 86.6)	5.5 (−15.5 to 26.5)	.59
Among those with at least 2 of the above			n = 124	n = 95		
Multiple undiagnosed	8	2	5.8 (2.3 to 9.2)	NA[f]	1.1 (−7.3 to 9.4)	.79
Multiple uncontrolled	69	23	56.8 (43.4 to 70.3)	26.5 (16.5 to 36.4)	30.4 (13.7 to 47.0)	.001
Among those with at least 1 of the above			n = 345	n = 196		
At least 1 undiagnosed	109	43	31.4 (24.0 to 38.7)	24.9 (16.2 to 33.6)	6.5 (−7.3 to 20.2)	.34
At least 1 uncontrolled	275	123	80.1 (75.2 to 85.1)	63.4 (53.7 to 73.1)	16.7 (6.8 to 26.5)	.002
Among all with or without the conditions			n = 1042	n = 471		
Has at least 1 undiagnosed condition	109	43	9.5 (6.8 to 12.2)	9.7 (5.8 to 13.5)	−0.2 (−5.7 to 5.3)	.95
Has at least 1 uncontrolled condition	275	123	24.2 (21.6 to 26.9)	24.6 (18.8 to 30.5)	−0.4 (−6.4 to 5.6)	.90

Abbreviation: NA, not available.

[a] Source: National Health and Nutrition Examination Survey (NHANES) 2007-2010. The sample consists of respondents aged 19 through 64 years, not enrolled in Medicare, US citizens, family income no more than 138% of the federal poverty level. The sample size can vary across variables depending on the level of nonresponse for each variable.

[b] Diabetes defined by either individual self-reporting of prior diagnosis by health care professional, or by testing within the clinical criteria for diagnosis during the NHANES medical examination (hemoglobin A_{1c} ≥6.5%). Hypertension and hypercholesterolemia are defined by either currently taking medication for the condition or by testing within the clinical criteria for diagnosis during the NHANES medical examination (hypertension: average systolic blood pression ≥140 mm Hg or diastolic blood pressure ≥90 mm Hg based on 3 blood pressure readings; hypercholesterolemia: total cholesterol ≥240 mg/dL (6.22 mmol/L]). Pregnant women are considered not diabetic or hypertensive. A condition is considered undiagnosed if an individual tested within the clinical criteria for diagnosis during the NHANES examination but reported receiving no prior diagnosis of the condition from a health care professional. A condition is considered uncontrolled if an individual reported testing within the clinical criteria for the condition during the NHANES examination.

[c] Estimates are population estimates derived using survey weights, and standard errors reflect the complex design of the survey.

[d] Values reflect Wald F tests for comparing the difference between Medicaid and uninsured proportions for each variable. P<.05 considered statistically significant.

[e] Estimate does not meet the National Center for Health Statistics standard of reliability, ie, the relative standard error (standard error divided by the estimate) is greater than 30%.

[f] Estimate suppressed because the relative standard error (standard error divided by the estimate) is greater than 50%.

nosed and 3.5 million (95% CI, 2.9-4.2 million) with at least 1 condition uncontrolled (data not shown). (This compares with approximately 0.6 million [95% CI, 0.3 million-0.9 million] and 1.4 million [95% CI, 1.1 million-1.8 million], respectively, among those currently enrolled in Medicaid.)

DISCUSSION

Compared with adults already enrolled in Medicaid, low-income uninsured adults who may be eligible for Medicaid under the ACA were less likely to have chronic conditions such as hypertension, diabetes, and hypercholesterolemia. One-third of uninsured adults had 1 of these 3 conditions and, if they had 1 of these conditions, were less likely than those enrolled in Medicaid to be aware they had it or to have the disease controlled. We found that approximately one-quarter of uninsured adults (or a weighted estimate of approximately 3.5 million) who may be eligible for Medicaid had at least 1 of these 3 conditions uncontrolled. This can have significant health implications for these uninsured individuals, because uncontrolled diabetes, hypertension, and hypercholesterolemia have been associated with significantly increased risk of premature mortality.[16,17] A recent study[18] of the effect of a Medicaid expansion in Oregon found gains in the diagnosis and treatment of diabetes but no significant changes in the diagnosis and treatment of hypertension or hypercholesterolemia during the time frame studied. However, because the study was limited to a single geographic area, these results may not generalize to the rest of the United States.

Given our findings, it is possible that patients newly enrolled in Medicaid under the ACA will differ significantly from current Medicaid enrollees. The new Medicaid enrollees are likely to have fewer health conditions but more undiagnosed or uncontrolled conditions and are more likely to be male, non-Hispanic white, and better educated. They are also likely to have fewer health risks, such as obesity or a sed-entary lifestyle, although they are more likely to engage in binge drinking. One-third of potential new Medicaid enrollees are obese, half currently smoke, one-fourth report a functional limitation, and one-fourth report their health as fair or poor—all factors that could require attention from clinicians. If Medicaid uptake is low, the uninsured adults who do enroll in Medicaid may be disproportionately drawn from those with more health problems than average among those made newly eligible.[7,19,20] Because many of the uninsured adults have not seen a physician in the past year and do not have a place they usually go for routine health care, they are likely to need care on first enrolling in Medicaid.

This analysis has limitations. It is not possible to definitively project the demand for health care among new Medicaid enrollees, because it is possible that their care-seeking behavior and other unmeasured characteristics may differ from those of current Medicaid enrollees. Also, although we have compared the health status and risk factors of uninsured adults who could be eligible for Medicaid with current enrollees for the nation as a whole, the health care needs of adults who will be eligible for Medicaid will depend on which states expand eligibility, what those states' previous eligibility limits were, and the specific health profiles of those areas. In addition, although our sample was nationally representative and of sufficient size that we were able to detect significant differences in the prevalence of many conditions between uninsured adults and those enrolled in Medicaid, our sample size for some conditions, such as diabetes, was small. The NHANES measures of income, depression, alcohol use, and illegal drug use were also self-reported with relatively high rates of missing values, which may introduce error in our identification of low-income individuals and in the reported rates of depression, alcohol use, and illegal drug use. Last, NHANES does not measure the prevalence of mental health conditions other than depression.

Expanding coverage and providing health care to low-income uninsured adults is contingent on states electing to expand Medicaid eligibility under the ACA. In those states that do expand eligibility, the capacity and willingness of physicians and other clinicians to absorb the additional Medicaid population will influence the ACA's impact. The ACA provisions to increase the supply of primary care clinicians and temporarily increase payments to primary care physicians providing services to Medicaid patients may be important, because prior research has identified gaps in the supply of primary care physicians in some areas[21] and an unwillingness of some physicians to serve the Medicaid population.[22] Of relevance to states, the costs of meeting any demand for care for uncontrolled chronic conditions among adults newly eligible for Medicaid may be incurred when federal matching rates are at their highest.

Compared with persons currently enrolled in Medicaid, uninsured low-income adults who may be eligible to enroll in Medicaid under the ACA had a lower prevalence of diabetes, hypertension, or hypercholesterolemia. When these diseases were present, a substantial proportion of uninsured persons did not appear to have good disease control. At the time of Medicaid enrollment, these patients may have had an intensive need for medical care. Inadequate diagnosis and control of chronic health conditions has been found among low-income privately insured adults.[23] This is comparable to our analysis among Medicaid-enrolled adults. Opportunities for increased diagnosis and treatment of chronic disease are substantial, regardless of insurance status.

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