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Health Care Spending And Use Among Hispanic Adults With And Without Limited English Proficiency, 1999–2018

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ABSTRACT **One in seven people in the US speak Spanish at home, and twenty-five million people in the US have limited English proficiency. Using nationally representative data from the Medical Expenditure Panel Survey, we compare health care spending for and health care use by Hispanics adults with limited English proficiency with spending for and use by English-proficient Hispanic and non-Hispanic adults. During 2014–18 mean annual per capita expenditures were $1,463 (35 percent) lower for Hispanic adults with limited English proficiency than for Hispanic adults who were English proficient, after adjustment for respondents' characteristics. Hispanic adults with limited English proficiency also made fewer outpatient and emergency department visits, had fewer inpatient days, and received fewer prescription medications than Hispanic adults who were English proficient. Health care spending gaps between Hispanic adults with limited English proficiency and non-Hispanic adults with English proficiency widened between 1999 and 2018. These language-based gaps in spending and use raise concern that language barriers may be obstructing access to care, resulting in underuse of medical services by adults with limited English proficiency.**

More than forty-one million people in the US (13.5 percent of the population) speak Spanish at home, and twenty-five million people (8.2 percent) have limited English proficiency.[1] Linguistic heterogeneity is likely to increase as the US becomes more racially and ethnically diverse.

People with limited English proficiency experience problems accessing high-quality health services. Compared with those who were English proficient, adults with limited English proficiency receive worse-quality inpatient care[2–5] and outpatient preventive services,[6–8] are less satisfied with care,[9] report worse access to several types of care, and forgo more needed care.[6,10–13] For example, people with limited English proficiency have 34 percent lower odds of having any outpatient or emergency department (ED) visit,[12] and only 53 percent of nonelderly adults with limited English proficiency have a usual source of care, compared with 74 percent of other nonelderly adults.[13]

Policy changes during the past several decades have addressed access to care for people with limited English proficiency, although the net impact of such policies is unclear. The Civil Rights Act of 1964 outlawed discrimination on the basis of national origin, which courts subsequently interpreted as requiring medical providers to ensure language access for non-English-speaking people.[14,15] President Bill Clinton's Executive Order 13166, signed in 2000, mandated that interpreters be available

in federally funded health facilities.[16] Also in 2000 the Department of Health and Human Services (HHS) established the National Culturally and Linguistically Appropriate Services Standards to provide a framework to guide health systems on implementing language access policies; these standards were updated in 2003 and 2013 by the Office of Minority Health.[17–19] In 2010 Section 1557 of the Affordable Care Act (ACA) strengthened regulations by enhancing the definition of meaningful access to language services and setting standards for qualified interpreters,[20] and it required hospitals and insurers to have a language access plan incorporating a language needs assessment and documented guidance on steps taken to meet those needs.[21] However, these measures were weakened in June 2020 by an HHS revision of Section 1557—a change that remains under court challenge.[22,23]

Two previous studies have examined health care spending and prescription drug costs among Latinos, but neither examined health care spending differences by English proficiency status,[24,25] and no recent studies have compared the health care utilization patterns of people with and without limited English proficiency or assessed long-term trends in utilization differences. We analyzed nationally representative survey data on health care use and spending (by and on behalf of respondents) for Hispanic adults with limited English proficiency, Hispanic adults who were English proficient, and non-Hispanic adults who were English proficient, and we assessed whether language-based differences in utilization have changed since 1999.

Study Data And Methods

DATA SOURCE AND POPULATION We analyzed data on adult respondents (older than age seventeen) to the Agency for Healthcare Research and Quality's Medical Expenditure Panel Survey (MEPS), 1998–2018. MEPS collects information on health care use and spending for a nationally representative sample of the noninstitutionalized US civilian population. To optimize sample size, we pooled data from the period 2014–18 for all analyses except time trends, which assessed differences between 1999–2000 and 2017–18.

MEPS data are based on respondents' self-reports, which MEPS staff verify with providers and pharmacies. MEPS captures health care use and spending (by patients as well as third-party payers) for outpatient and ED visits, inpatient days, and prescription medications, as well as overall spending for all types of care (including an imputed value of free care delivered by public providers).

We compared Hispanic adults with limited English proficiency with both Hispanic adults and non-Hispanic adults who were English proficient. Respondents were considered to have limited English proficiency if all or part of their MEPS interview was conducted in Spanish. We excluded 1,137 respondents (0.9 percent of adults in our MEPS sample) whose surveys were conducted in a language other than English or Spanish, as well as 333 respondents who responded in whole or in part in Spanish but did not affirm Hispanic ethnicity.

We assessed utilization in two ways: mean annual health care expenditures per capita, both overall and for each category of health service, and mean annual number (counts) of per capita outpatient visits, ED visits, inpatient days, and medication prescriptions filled.

Our regression models control for age (continuous), sex (male and female), family income (as a continuous percentage of the federal poverty level), self-reported health status (poor or fair and good or better), education (less than high school, high school, some college, and more than college), and census region (Northeast, Midwest, South, and West).

ANALYSIS We tabulated mean annual health care expenditures per capita; mean expenditures per capita for each type of service (outpatient visits, ED visits, hospitalizations, and prescriptions); and mean per capita counts of outpatient visits, ED visits, hospitalizations, and prescriptions for Hispanic adults with limited English proficiency, Hispanic adults who were English proficient, and non-Hispanic adults who were English proficient. Using multivariable linear regression, we then compared utilization for these three groups after adjusting for age, sex, health status, income, education, and census region. Expenditure figures were adjusted to 2018 dollars using the overall or individual components of the personal health care price indices from the Centers for Medicare and Medicaid Services Office of the Actuary, as recommended by MEPS staff.[26]

Our multivariable analyses used linear regression for ease of interpretability.[27] However, because linear regression for highly skewed health expenditure data may generate artifactually narrow confidence intervals, we present more stringent 98% confidence intervals for all multivariable comparisons in the online appendix,[28] rather than the customary 95% confidence intervals.[29] p values for these results should be interpreted with this in mind as well.

We also assessed time trends in differences in spending by and for adults with limited English proficiency versus adults who were English proficient from 1999 through 2018. We first plotted per capita health care expenditures for each

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group, adjusted only for inflation. We then quantified the change in differences between adults with and without limited English proficiency between the beginning and end of the period, using linear regression models with an interaction term between limited English proficiency and year. The coefficient of this term provides a quantitative assessment of differential changes in expenditures between the group with limited English proficiency and each English-proficient comparator group. To increase the sample size and the precision of estimates, these models combined two years of data from the beginning (1999–2000) and two years from the end (2017–18) of the period. These models were adjusted for the same variables as our other multivariable analyses, except that family income was specified categorically (as a percentage of the federal poverty level: <100 percent, 100 percent to <125 percent, 125 percent to <200 percent, 200 percent to <400 percent, and 400 percent or more) because the continuous income measure was not available in 1999–2000.

We performed several sensitivity analyses to assess the robustness and implications of our findings. First we repeated our main regression models for use and spending with additional control for health insurance (private, public, and uninsured). Second, we assessed whether our results (for use and spending) were robust to an alternative definition of *limited English proficiency*: self-reported English language proficiency. Third, to help assess whether any observed spending differences could be attributed to differences in the underlying need for health services, we compared expenditures for respondents with and without limited English proficiency, stratified by the number of self-reported chronic medical conditions—subgroups likely to have relatively similar needs for care. Fourth, to offer insight into whether differences in utilization were driven by overuse, underuse, or both, we conducted additional analyses comparing rates of age-appropriate preventive screenings (that is, care for which appropriateness is known) among people with and without limited English proficiency. Last, we reanalyzed all expenditure outcomes using two-part models that some experts recommend for analyses of MEPS expenditures because such data have highly skewed distributions, with many respondents having zero expenditures.[24,30]

All analyses were performed using Stata/MP, version 16.1, weights provided by MEPS that allow extrapolation to the US civilian noninstitutionalized population, as well as procedures that account for the complex sample design of MEPS.

The Institutional Review Board of Cambridge Health Alliance does not consider analyses of publicly available data to be human subjects research.

The gaps in care that we observed could be a result of several factors rooted in language-based inequities.

LIMITATIONS Several caveats apply to our results. First, our findings could be affected by unmeasured confounders such as state of residence, as the availability of language services and health care spending may vary geographically. Although state identifiers are not available in the public use MEPS files, we did control for region. Second, MEPS assigns a zero expenditure value to private providers' donated care. Hence, differential use of private versus public care by groups with and without limited English proficiency could bias estimates of differences in expenditure. Third, our definition of *limited English proficiency* (taking the survey in Spanish) was different from that used in some other studies. However, a sensitivity analysis using an alternative definition—respondents' self-reports of "speaking English less than very well"—yielded results similar to those of our main analysis. In addition, our results might not be generalizable to people with limited English proficiency who speak languages other than Spanish. Finally, the demographic composition of the population with limited English proficiency has shifted over time.[31] Although we controlled for multiple observed demographic characteristics, we had no data on some factors that might be associated with health care spending (for example, skill level of employment).

Study Results

Our study population (pooled 2014–18) included 17,776 Hispanic adults with limited English proficiency, 14,936 Hispanic adults who were English proficient, and 87,834 non-Hispanic adults who were English proficient. From 1999 to 2018 the (weighted) number of Hispanic adults in the US who had limited English proficiency more than doubled, from 8.3 million to 17.8 million (exhibit 1).

EXHIBIT 1

Characteristics of US adults with English proficiency (EP) and limited EP (LEP), by Hispanic ethnicity, 2014–18

	Hispanic LEP (*n* = 17,776)	Hispanic EP (*n* = 14,936)	Non-Hispanic EP (*n* = 87,834)
Population (millions)	17.8[a]	21.5[a]	205.3[a]
Age, mean (years)	43.1	40.3	48.6
Income as percent of federal poverty level (%)			
<100%	21.6	11.9	10.2
100% to <125%	8.0	4.6	3.6
125% to <200%	23.4	15.0	11.3
200% to <400%	33.3	32.8	27.8
≥400%	13.8	35.8	47.2
Sex (%)			
Male	50.2	49.4	48.0
Female	49.8	50.6	52.0
Marital status (%)			
Married	48.3	45.9	53.1
Not married	51.7	54.1	46.9
Education level (%)			
Less than high school	46.6	18.0	9.3
High school	41.6	55.3	50.7
College	7.2	14.8	21.1
More than college	4.6	12.0	18.9
Employment (%)			
Employed	67.1	75.1	66.7
Not employed	32.9	24.9	33.3
Census region (%)			
Northeast	12.8	14.4	18.5
Midwest	6.0	11.5	23.4
South	43.0	33.5	37.7
West	38.3	40.6	20.3
Self-rated health (%)			
Good or better	82.3	88.3	87.6
Fair or poor	17.7	11.7	12.4
Chronic conditions[b] (%)			
0	62.3	57.3	41.9
1	19.6	23.0	24.7
2 or more	18.1	19.7	33.5
Insurance (%)			
Private	36.1	64.4	73.4
Public	29.7	21.7	20.3
Uninsured	34.3	13.9	6.3
Born in the US (%)			
Yes	22.0	68.9	90.0
No	78.0	31.1	10.0
Years lived in the US[c] (%)			
0–4	4.8	4.0	8.5
5–9	9.9	6.9	12.7
10 or more	85.4	89.1	78.8

SOURCE Authors' analysis of data from the Medical Expenditure Panel Survey, 2014–18. **NOTES** Expanded exhibit 1 with 95% confidence intervals is in appendix exhibit A6 (see note 28 in text). Data on marital status were missing for 37 people, on education for 1,392 people, on employment for 287 people, on birthplace for 365 people, on years lived in the US for 400 people, on health status for 123 people, and on chronic conditions for 1,735 people. LEP was categorized by language of interview and excludes 333 non-Hispanic adults with LEP and 1,137 adults who took the survey in "other" languages. [a]Average annual estimate of the population over the five years of data. [b]Any heart disease diagnosis, any cancer diagnosis, stroke, chronic obstructive pulmonary disease, asthma, diabetes, high blood pressure, and arthritis. [c]Based on foreign-born respondents only.

Hispanic adults with limited English proficiency were older; less educated; and more likely to be married, uninsured, foreign born, and from Central or South America compared with Hispanic adults who were English proficient. Among foreign-born Hispanic adults, most had lived in the US for more than ten years (85.4 percent with limited English proficiency versus

89.1 percent who were English proficient). Employment rates were lower among Hispanic adults with limited English proficiency (67.1 percent) compared with Hispanic adults who were English proficient (75.1 percent) but were similar to those of non-Hispanic adults who were English proficient (66.7 percent).

In unadjusted analyses, mean annual health care expenditures per capita for Hispanic adults with limited English proficiency were $1,094 (98% CI: 611, 1,577) lower than for Hispanic adults who were English proficient and $3,523 (98% CI: 3,106, 3,941) lower than for non-Hispanic adults who were English proficient (data not shown). In adjusted analyses, expenditures per capita for Hispanic adults with limited English proficiency were $1,463 lower (98% CI: 1,030, 1,897), or 35 percent lower, than for Hispanic adults who were English proficient and $2,802 lower (98% CI: 2,356, 3,247), or 42 percent lower, than for non-Hispanic adults who were English proficient (exhibit 2).

Adults with limited English proficiency had lower expenditures than the comparison groups for every type of health service in both adjusted and unadjusted analyses. For example, adjusted expenditures for outpatient care for adults with limited English proficiency were $456 lower (98% CI: 254, 658) than for Hispanic adults who were English proficient and $708 lower (98% CI: 531, 886) than for non-Hispanic adults who were English proficient. The number of visits and prescriptions per capita followed a similar pattern: Hispanic adults with limited English proficiency had markedly lower visit rates than either comparison group, as well as fewer inpatient days and filled prescriptions. Sensitivity analysis that additionally controlled for insurance yielded similar results (appendix exhibit A1).[28] Sensitivity analysis stratifying differences in expenditures by number of chronic conditions also showed—among those with chronic conditions—markedly lower spending among adults with limited English proficiency (appendix exhibit A2).[28]

The adjusted gap in annual health care expenditures per capita between adults with limited English proficiency and non-Hispanic adults who were English proficient widened by $1,596 (98% CI: 837, 2,356) between 1999–2000 and 2017–18 (exhibits 3 and 4). The gap between Hispanic adults with and without limited English proficiency changed little over time.

The sensitivity analysis using alternative definitions of *limited English proficiency* yielded results similar to those of our main models (appendix exhibit A3).[28] In addition, the analyses of age-appropriate screening demonstrated substantial rates of missed screening for all respondents, but much worse rates for people with limited English proficiency (appendix exhibit A4).[28] Last, sensitivity analysis using two-part modeling yielded somewhat larger differences between adults with and without limited English proficiency than our linear regression models, indicating that our estimates using linear modeling may be conservative (appendix exhibit A5).[28]

EXHIBIT 2

Annual health care expenditures and utilization per capita among adults with and without limited English proficiency (LEP), by Hispanic ethnicity, 2014–18

	Unadjusted mean			Adjusted mean difference[a]	
	Hispanic LEP	Hispanic EP	Non-Hispanic EP	Hispanic LEP versus Hispanic EP	Hispanic LEP versus non-Hispanic EP
EXPENDITURES					
Total	$3,144	$4,238	$6,667	−$1,463****	−$2,802****
Outpatient	910	1,464	2,246	−456****	−708****
Emergency department	155	212	251	−54***	−111****
Inpatient	841	1,059	1,637	−377***	−800****
Prescription medications	661	949	1,633	−460****	−842****
UTILIZATION					
Outpatient visits	3.45	5.19	7.77	−1.81****	−2.76****
Emergency department visits	0.15	0.19	0.22	−0.07****	−0.13****
Inpatient days	0.31	0.31	0.51	−0.11***	−0.31****
Prescription medications	7.38	8.26	13.57	−3.04****	−6.47****

SOURCE Authors' analysis of data from the Medical Expenditure Panel Survey, 2014–18. **NOTES** Outpatient visits are the sum of outpatient department visits and office-based visits. All expenditure data are adjusted for inflation using personal health care price indices, overall and for appropriate components (see note 26 in text). Regression estimates with 98% confidence intervals are in appendix exhibit A7 (see note 28 in text). EP is English proficiency. [a]Differences in per capita spending or numbers of visits, inpatient days, or prescriptions. Models are adjusted for age (continuous), sex, self-reported health status, income (continuous), education, and region. ***$p < 0.01$ ****$p < 0.001$

Discussion

Limited English proficiency is associated with less health care use, whether measured by spending, episodes of care, or prescriptions, even after multiple demographic and health characteristics are accounted for. The gap in use of care (as measured by spending) between Hispanic adults with limited English proficiency and those who were English proficient persisted between 1999 and 2018, whereas the gap between Hispanic adults with limited English proficiency and non-Hispanic adults who were English proficient has widened.

Our results are consistent with an analysis based on 2004 data, which found that limited English proficiency was associated with fewer ambulatory visits, ED visits, and prescriptions (although not inpatient days),[32] as well as with a study that documented lower prescription medication use among Hispanic subgroups with limited English proficiency compared with people who were English proficient.[25] These previous analyses did not analyze differences in spending for care or include data from the post-ACA era.

The language-based differences in utilization we found could indicate overtreatment (that is, with low- or no-value care) of adults who were English proficient, underuse by adults with limited English proficiency, or both. Although overtreatment is common and expensive, the difference in the amount of care that we observed among adults with and without limited English proficiency is substantially larger than previous estimates of the magnitude of overtreatment.[33–35] Moreover, among Medicare enrollees, Hispanics receive at least some types of low-value care at higher rates than non-Hispanic Whites.[36] In ad-

EXHIBIT 3

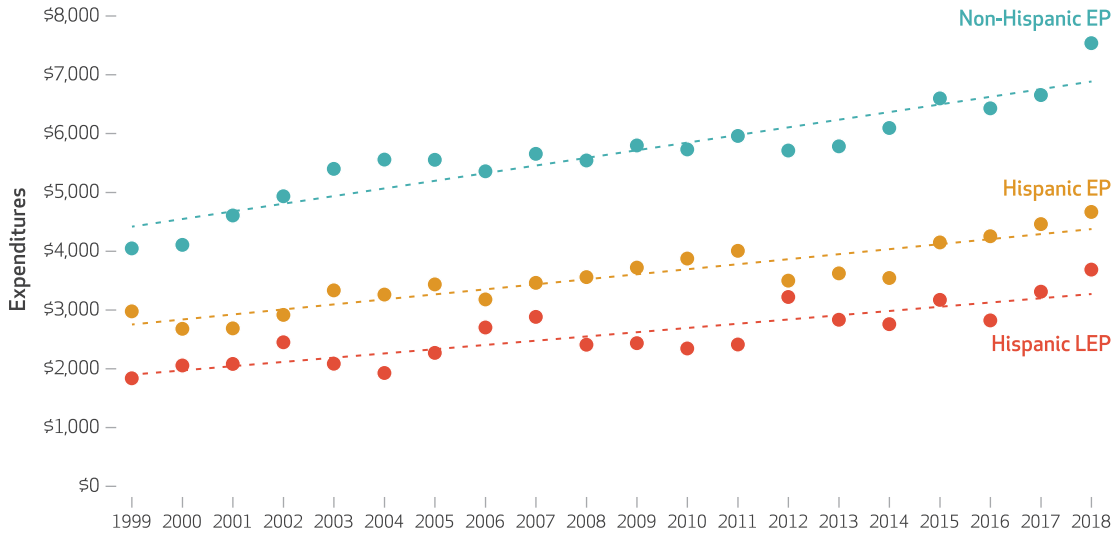
Trends in annual health care spending per capita for adults with and without limited English proficiency (LEP), by Hispanic ethnicity, selected years 1999–2018

	Unadjusted mean ($)		Mean difference[a] ($)	
	1999–2000 (n = 34,777)	2017–18 (n = 46,340)	Unadjusted	Adjusted[b]
Hispanic LEP	1,974	3,499	Reference	Reference
Hispanic EP	2,861	4,572	−187	−650
Non-Hispanic EP	4,130	7,107	−1,451****	−1,596****

SOURCE Authors' analysis of data from the Medical Expenditure Panel Survey, 1999–2000 and 2017–18. **NOTES** All expenditure data are adjusted for inflation using the overall personal health care price indices (see note 26 in text). Data on health status were missing for 52 people and on education for 844 people. LEP was categorized by language of interview and excludes 109 non-Hispanic adults with LEP and 409 adults who took the survey in "other" languages. Regression estimates with 98% confidence intervals are in appendix exhibit A8 (see note 28 in text). "Reference" indicates that Hispanic LEP is the referent group for calculations of the differential change in expenditures from 1999–2000 to 2017–18 for Hispanic LEP compared with Hispanic EP and non-Hispanic EP. [a]Change during an 18-year period in difference in health expenditures between LEP and EP groups. [b]Models are adjusted for age (continuous), sex, self-reported health status, income (categorical), education, and region. Of note, poverty level was not available as a continuous variable until 2007; therefore, poverty was used as a categorical variable for this analysis and defined as a percentage of the federal poverty level (<100%, 100% to <125%, 125% to <200%, 200% to <400%, and ≥400%). ****$p < 0.001$

EXHIBIT 4

Mean per capita health care expenditures for adults with limited English proficiency (LEP), Hispanic adults with English proficiency (EP), and non-Hispanic adults with EP, 1999–2018



SOURCE Authors' analysis of data from the Medical Expenditure Panel Survey, 1999–2018. **NOTES** All expenditure data are adjusted for inflation using the overall personal health care price indices (see note 26 in text). LEP was categorized by language of interview and excludes 1,148 non-Hispanic adults with LEP and 3,011 adults who took the survey in "other" languages. President Bill Clinton's Executive Order 13166 was signed in 2000. The National Culturally and Linguistically Appropriate Services Standards were updated in 2003 and 2013. Section 1557 of the Affordable Care Act has been in effect since 2010.

dition, our findings of low use of recommended preventive screening by people with limited English proficiency compared with all others indicates that underuse accounts for at least some of the differences (see appendix exhibit A4).[28]

Decreased utilization could also arise if patients with limited English proficiency have fewer health care needs than patients who were English proficient, consistent with the so-called healthy immigrant effect.[37] Adults with limited English proficiency in our sample had worse self-rated health than the groups who were English proficient, which we adjusted for in all of our models. Adults with limited English proficiency also had fewer physician-diagnosed chronic medical conditions. In our sensitivity analysis examining respondents with diagnosed chronic condition, gaps between those with and without limited English proficiency persisted (see appendix A2).[28] Although the presence of chronic conditions is an imperfect measure of the need for care, these differences provide additional support for the hypothesis that utilization differences do not merely reflect differences in need. Moreover, prior studies suggest that people with limited English proficiency have difficulty accessing services and frequently go without needed care.[6,10–13]

The gaps in care that we observed could be a result of several factors rooted in language-based inequities. Non-English speakers may be less likely to seek care for health concerns, anticipating that their needs might not be met. Patients with limited English proficiency, for example, may have had prior negative experiences with the health care system, including being made to feel unwelcome or discriminated against.[38] Even when care is sought, the lack of language-concordant[39,40] clinical and administrative staff in many health care organizations[41] may make navigating the health care system more difficult, impeding access to outpatient physician visits.[42] Inadequate communication with clinicians, who frequently fail to provide language-concordant care,[43] could obstruct identification of medical conditions, leading to less treatment and follow-up. Last, language-based disparities in telehealth[44] use may limit the access of people with limited English proficiency to needed care, particularly during the COVID-19 pandemic.

The gap in health care spending between Hispanic people with limited English proficiency and non-Hispanic people with English proficiency has widened since 1999. Although our results do not conclusively demonstrate that this gap represents a disparity in the use of needed care, as opposed to differences in underlying need for care, they signal that possibility. They also suggest that legislative and regulatory changes aimed at bolstering the health rights of people with limited English proficiency, such as the Civil Rights Act of 1964, President Clinton's 2000 executive order, the HHS National Culturally and Linguistically Appropriate Services Standards, and the ACA's Section 1557 provisions, have fallen short and that more robust policies may be needed. Moreover, HHS's June 2020 revision of the Section 1557 regulations reversed some language access protections.[22] The revised regulations, whose implementation was temporarily blocked by a court in August 2020, weakened standards for compliance with language access, eliminated the requirement that organizations have a written language access plan, and narrowed the range of organizations subject to the regulations.[23] These rollbacks, issued during a pandemic that has disproportionately affected the Hispanic community, may have compounded language access difficulties.[45]

Addressing language-based access barriers will likely require changes in reimbursement models to ensure that medical interpreters are recognized and compensated as part of the health care team. At this time only fifteen states' Medicaid programs or Children's Health Insurance Programs reimburse providers for language services, and neither Medicare nor private insurers routinely pay for such services.[46–48] Ensuring adequate funding for interpreter services is essential if health system leaders are to prioritize language access and integrate it seamlessly into everyday workflows. In addition, policy makers should consider establishing and enforcing national benchmarks for the certification and training of qualified medical interpreters and qualified bilingual medical providers.[49]

The culture of medicine and nursing should also change to recognize clinicians' language skills as an important facilitator of high-quality, efficient care. When interpreters are needed, they should be incorporated as full members of the medical team and perhaps trained to expand their scope of practice to function as patient navigators.[50] In parallel, medical schools and allied health professional training programs could promote language programs and the provision of medical language and terminology instruction for those who want to become bilingual clinicians and prioritize the recruitment of multilingual applicants.[51,52] Last, as care shifts to telemedicine and web portals, providers should commit to ensuring that appropriate language interpreter services are available for patients with limited English proficiency.[43,53] ■

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NOTES

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