



UNDERSTANDING COMMUNICATION AND LANGUAGE NEEDS OF MEDICARE BENEFICIARIES

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Introduction

Key Terms:

Limited English Proficient

Describes persons who may or may not have English as their primary language and who may feel more comfortable speaking or reading a document to someone in a language other than English.

Communication Assistance

Refers to services necessary for effective communication with individuals with vision or hearing disabilities. They may include auxiliary aids such as transcription services, written materials, assistive listening devices and systems, text telephones for deaf persons (TTYs), or large print or Braille materials.

Language Assistance or Services

Refers to services used to facilitate communication with individuals who do not speak English, who have limited English proficiency, or those who are deaf or hard of hearing. These services can include qualified in-person interpreters, qualified bilingual staff, sign language interpreters, or remote interpreting systems such as telephone or video interpreting.

Definitions adapted from Centers for Medicare & Medicaid Services¹, The Joint Commission², and the HHS Office of Minority Health³.

Communication and language barriers are associated with decreased quality of care and poor clinical outcomes, longer hospital stays, and higher rates of hospital readmissions. Persons with limited English proficiency and those who are deaf or hard of hearing may need an interpreter to communicate effectively, and persons who are blind or who have low vision may need materials or signage presented in alternative formats during their receipt of health care. Evidence suggests that access to communication and language assistance for patients and consumers is important to the delivery of high-quality care for all populations.⁴

In the 2001 report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, the Institute of Medicine (IOM) proposed a strategy to improve the U.S. health care system. The report specifically calls out six aims for improvement – to ensure that health care be *safe, effective, patient-centered, timely, efficient, and equitable* – noting that a health care system that “achieves major gains in these six areas would be far better at meeting patient needs.”⁵ Understanding and addressing the specific communication and language assistance needs of

Medicare beneficiaries with limited English proficiency and those who are blind or have low vision and/or are deaf or hard of hearing is relevant to accomplishing these six aims.

¹ Centers for Medicare & Medicaid Services (2014). Strategic Language Access Plan (LAP) to Improve Access to CMS Federally Conducted Activities by Persons with Limited English Proficiency (LEP) Retrieved from: <https://www.cms.gov/About-CMS/Agency-Information/OEOCRInfo/Downloads/StrategicLanguageAccessPlan.pdf>

² The Joint Commission (2010) Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care: A Roadmap for Hospitals. Retrieved from: <http://www.jointcommission.org/assets/1/6/ARoadmapforHospitalsfinalversion727.pdf>

³ The HHS Office of Minority Health Think Cultural Health. (2013). National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care: A Blueprint for Advancing and Sustaining Policy and Practice. Retrieved from: <https://www.thinkculturalhealth.hhs.gov/assets/pdfs/EnhancedCLASStandardsBlueprint.pdf>

⁴ de Jaimes, F.N., F. Batts, C. Noguera et al. 2013. “Implementation of Language Assessments for Staff Interpreters at Community Health Centers.” *Journal of Health Care for the Poor and Underserved* 24:1002–9.

⁵ Institute of Medicine. (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Issue Brief. Retrieved from: <http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2001/Crossing-the-Quality-Chasm/Quality%20Chasm%202001%20%20report%20brief.pdf>

This report, developed by [the Centers for Medicare & Medicaid Services Office of Minority Health \(CMS OMH\)](#), presents data that can be used by providers, provider organizations, and health care stakeholders such as [Quality Innovation Networks-Quality Improvement Organizations \(QIN-QIOs\)](#) and [Hospital Improvement Innovation Networks](#) to better understand communication and language assistance needs of Medicare beneficiaries throughout the United States. Understanding beneficiary needs at the most local level possible can help ensure the delivery of high quality care. The data presented here can be supplemented by other available data sources to help providers meet patient and consumer needs.

BACKGROUND

For providers to ensure equitable care for *all* of their patients and consumers, they must first understand the language and communication assistance needs of their limited English proficient and visual and hearing impaired individuals. Under the [CMS Equity Plan for Improving Quality in Medicare](#), CMS Office of Minority Health (OMH) has been working to gain a comprehensive understanding of who the beneficiaries with communication and language assistance needs are, identify what their needs include, and how those needs are currently being met. The distribution of people with limited English proficiency, and hearing and vision impairment is different in older adults than in younger age groups, making it important to understand the specific communication and language needs of this group. Relying only on national estimates of people with limited English proficiency, and hearing and vision impairment would misrepresent the language and communication challenges faced by the Medicare population. Further, as noted above, communication and language barriers are associated with decreased quality of care and poor clinical outcomes. Understanding and working to address communication and language needs of Medicare beneficiaries is a critical part of ensuring high quality care for this group. This work is related to an overall CMS commitment to quality and health equity, as well as to regulations and initiatives discussed in Appendix A.

To help further the understanding of who Medicare beneficiaries with language and communication needs are, CMS OMH undertook an analysis of the 2014 American Community Survey (ACS) Public Use Microdata Sample (PUMS) data to explore details about Medicare beneficiaries with limited English proficiency, as well as beneficiaries with visual and hearing disabilities who may also require communication assistance services. The ACS collects data on self-reported English proficiency and hearing and vision impairment, and allows for both nationally and regionally representative estimation of limited English proficiency and vision/hearing disability in the U.S. by major geographical regions, demographic details, and insurance status. This analysis sought to provide details about (e.g., number, geographic, demographic factors) and estimates of the extent of need for communication/language assistance services among Medicare beneficiaries throughout the U.S.

Methods

To better understand key characteristics of the Medicare beneficiaries that need and want communication and language assistance services, data were analyzed from the 2014 ACS PUMS.⁶ The ACS is an ongoing survey conducted by the U.S. Census Bureau, which collects information from the American public on a host of characteristics, not limited to demographics, income, employment, language proficiency, disability, and housing. The survey is sent to as many as 3.5 million households each year. The ACS PUMS files are a set of freely-accessible untabulated records that allow for in-depth and customizable analyses of American Community Survey data. ACS PUMS provides a national and regionally representative sample, and includes measures related to English proficiency, hearing and vision disability status, insurance status, health care setting, demographic characteristics, and geography. The ACS PUMS data provides a proxy for understanding the extent of need for communication and language assistance services, and understanding who these beneficiaries are will provide necessary context for exploring the extent and nature of their needs.

Key Term:

Public Use Microdata Areas or PUMA

Refers to geographic areas used by the U.S. Census for providing statistical and demographic information. Each PUMA contains at least 100,000 people. They are contained entirely within U.S. states and territories (i.e., a PUMA cannot cross state lines). In the 2014 ACS survey, there are 2,351 PUMAs within the 50 states and the District of Columbia.

Medicare beneficiaries were identified based on self-reported insurance status. Individuals who responded that they had Medicare or both Medicare and Medicaid were included as part of our analysis. The prevalence of limited English proficiency and visual and hearing impairment among Medicare beneficiaries was assessed nationally, by state, by Public Use Microdata Area (PUMA), and by key demographics (i.e., sex, race, ethnicity, educational attainment, disability, and urbanicity). Additionally, the most common non-English languages spoken among Medicare beneficiaries with limited English proficiency were investigated. An assessment of the demographic breakdown of the limited English proficient and visual and hearing impaired sub-populations was also conducted and comparisons were made to English proficient and non-impaired beneficiary populations.

⁶ More information on the ACS PUMS is available at <http://www.census.gov/programs-surveys/acs/technical-documentation/pums.html>

Defining Limited English Proficiency

The American Community Survey determines limited English proficiency through two self-report questions. Respondents are asked, “Does this person speak a language other than English at home?” If the answer was “yes”, they are asked, “How well does this person speak English?”. Respondents who report speaking English less than “very well” are considered to be limited English Proficient.

14 a. Does this person speak a language other than English at home?

Yes

No → SKIP to question 15a

b. What is this language?

For example: Korean, Italian, Spanish, Vietnamese

c. How well does this person speak English?

Very well

Well

Not well

Not at all

As noted above, the ACS provides a proxy for understanding the extent of need for communication and language assistance services in health care among the Medicare beneficiary population by providing a nationally-representative portrait of the extent of limited English proficiency, as well as visual and hearing impairment. In the 2014 ACS, limited English proficiency was assessed through two questions (see sidebar). Respondents were asked, “Does this person speak a language other than English at home?” If the answer was “yes”, they were asked, “How well does this person speak English?” answer options could range from “Not at all” to “Very well.” In the ACS, respondents are classified as limited English proficient if they report that they speak English less than “very well”. However, analysis has shown that those who respond “less than well” (i.e., not well or not at all) represent a distinct population that would be in greater need of language assistance than someone who reports speaking English “well.”⁷ The ACS does not include questions about whether or how well a person reads English.

While it is accepted practice to consider any individual who responds, “less than very well”, to be limited English proficient we wanted to further explore distinctions between these two populations. The distinction between “less than very well” and “less than well” has significant implications on the size of the limited English proficient population. Using 2011 Census data, the size of the limited English proficient population speaking English “less than very well” was estimated at 25.3 million while the size of the limited English proficient population speaking English “less than well” was estimated at 13.6 million.⁸ In the results section of this analysis, we compare individuals who report speaking English less than “very well” with individuals who report speaking less than “well”, specifically to highlight that need for communication and language assistance services could be either overestimated or underestimated if using the measure for limited English proficiency as a proxy for need. It is important to note that proficiency does not indicate preference when it comes to requesting or receiving language assistance services. For example, individuals who report that

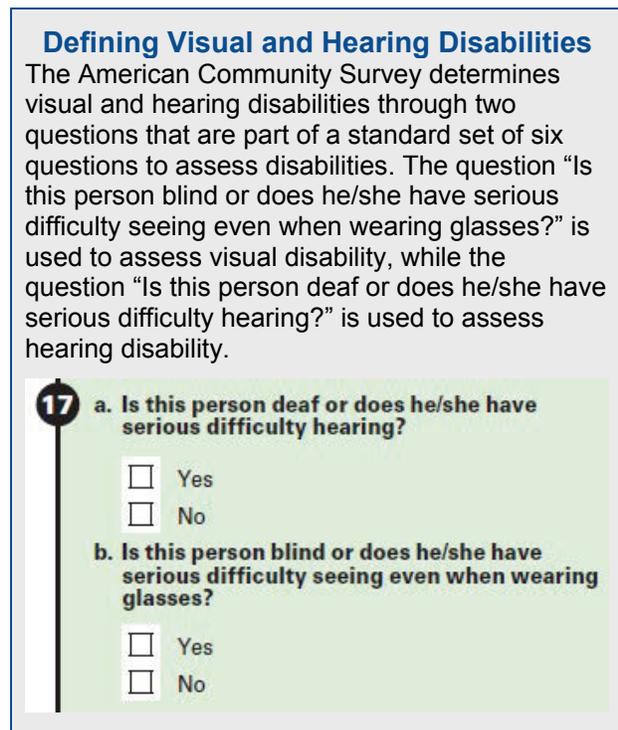
⁷ IOM, 2009. Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement

⁸ Ryan, C. U.S. Census, 2013. Language Use in the United States: 2011. American Community Survey Reports. Available at <https://www.census.gov/prod/2013pubs/acs-22.pdf>

they speak English “well” are traditionally captured as limited English proficient, even though it is possible they may not need or want communication or language assistance services. It is also possible that people who speak English very well may want language assistance services, as they may not feel comfortable talking about their health in English. Furthermore, people may lose English proficiency when under stress (e.g., ill or frightened). Finally, proficiency and preferences may vary when it comes to spoken and written information. Individuals who speak a language other than English at home can be consulted regarding the language in which they would prefer to receive services, and it may also be important to assess proficiency and language preferences before providing written translated materials.

Visual and hearing disabilities were assessed with the following questions: “Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?” and “Is this person deaf or does he/she have serious difficulty hearing?” Visual and hearing disability questions in

Defining Visual and Hearing Disabilities
The American Community Survey determines visual and hearing disabilities through two questions that are part of a standard set of six questions to assess disabilities. The question “Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?” is used to assess visual disability, while the question “Is this person deaf or does he/she have serious difficulty hearing?” is used to assess hearing disability.

A screenshot of a survey question, numbered 17, with a light green background. The question is split into two parts, a and b. Part a asks if the person has serious difficulty hearing, with 'Yes' and 'No' options. Part b asks if the person has serious difficulty seeing even when wearing glasses, also with 'Yes' and 'No' options. The question number '17' is in a black circle on the left side of the question text.

17 a. Is this person deaf or does he/she have serious difficulty hearing?

Yes
 No

b. Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?

Yes
 No

the ACS do not include a ranked scale to assess extent of disability. Communication needs may vary among those who are deaf or hard of hearing and/or who are blind or have low vision. For example, as described by the National Association of the Deaf, “there are variations in how a person becomes deaf or hard of hearing, level of hearing, age of onset, educational background, communication methods, and cultural identity.”⁹ Further, within the Deaf community, deaf (lowercase “d”) is typically used in reference to the medical condition of not hearing, while Deaf (uppercase “D”) is typically used in reference to people who associate with many aspects of Deaf culture. Despite these classifications, communication needs may still vary significantly, for example, between a deaf person who communicates with

American Sign Language and a deaf person who does not know American Sign Language but who communicates by reading lips.¹⁰

⁹ National Association of the Deaf. (n.d.) “Community and Culture – Frequently Asked Questions.” Available at: <https://www.nad.org/resources/american-sign-language/community-and-culture-frequently-asked-questions/>

¹⁰ Berke J. (2016) “Deaf Culture – Big D Small D.” verywell. Available at: <https://www.verywell.com/deaf-culture-big-d-small-d-1046233>

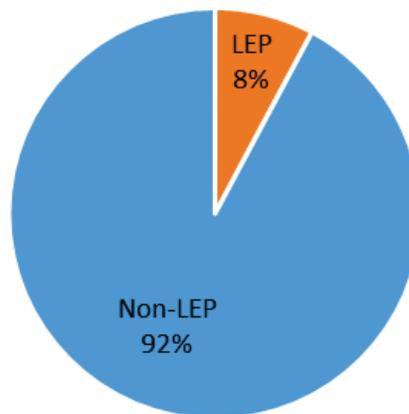
Results

This section discusses trends and characteristics among beneficiaries with limited English proficiency, those who are blind or have low vision, and those who are deaf or hard of hearing. When considering these trends, it is important to keep in mind that, as noted above, the ACS data serves only as a proxy for understanding the scope of need for language and communication assistance services among Medicare beneficiaries in health care settings. Although it does not include questions specific to health care settings, it provides a nationally and regionally representative sample of the size of the limited English proficiency, blind and low vision, and deaf and hard of hearing Medicare population. Further, we consider this data as a proxy because it does not ask specifically whether a person prefers to communicate in a language other than English, only whether they speak a language other than English and how well they speak English.

Nationwide

Limited English proficiency. According to the 2014 ACS, there are more than 52 million Medicare beneficiaries in the United States. Among these Medicare beneficiaries, 8% are of Hispanic or Latino ethnicity, 3.5% are Asian, less than 1% are Native Hawaiian and other Pacific Islanders or American Indian/Alaska Natives, 84% live in urban areas, and 19% have less than a high-school diploma. Approximately 4 million or 8% of these 52 million beneficiaries are individuals with limited English proficiency (7.7%, n=4,087,882, Figure 1).

Figure 1: Percentage of Medicare Beneficiaries with and without limited English proficiency

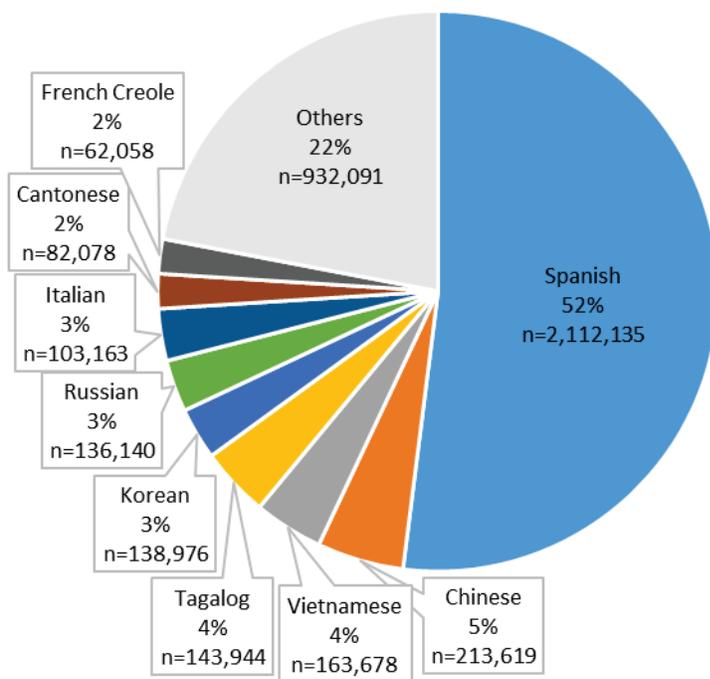


Across the United States, the prevalence of individuals with limited English proficiency varies greatly across geographic and demographic characteristics. Beneficiaries living in urban areas are nearly 4 times as likely as those in rural areas to be limited English proficient (8% vs. 2%). Limited English proficiency is especially higher among those of Hispanic ethnicity, with nearly half

of all Hispanic beneficiaries (49%) having limited English proficiency, compared to 4% of non-Hispanics. Limited English proficiency is also higher among beneficiaries of certain races. Specifically, 57% of Asian beneficiaries, 27% of Native Hawaiian and other Pacific Islander beneficiaries, and 11% of American Indian/Alaska Native beneficiaries have limited English proficiency, compared to 5% of white beneficiaries and 3% of black beneficiaries. Beneficiaries with lower educational attainment are also more likely to have limited English proficiency. Approximately one in five beneficiaries (22%) with less than a high school diploma speak English less than well (compared to 4% of those with a high school diploma or higher). Prevalence of limited English proficiency is similar among beneficiaries with and without a disability (8% and 7%, respectively). Additional demographic information can be found in Appendix B.

With regards to the specific languages spoken by Medicare beneficiaries with limited English proficiency, Spanish is overwhelmingly the most common in the United States and across most states, with over half (52%, n=2,112,135) identifying this as the language they speak at home (see Figure 2). No other language is spoken by more than 5% of the Medicare population with limited English proficiency.

Figure 2:
Non-English languages most commonly spoken
by Medicare beneficiaries with limited English proficiency throughout the United States
 (N=4,087,882)



Blind or low vision. Just under 8% of the Medicare beneficiaries are blind or have low vision (7.7%, n=4,077,447). Unlike patterns among individuals with limited English proficiency, prevalence of persons who are blind or have low vision does not differ notably in rural compared to urban settings (8.7% vs. 7.6%). Vision impairment, however, is generally more prevalent among racial minorities, especially among American Indian and Alaska Native beneficiaries (15%) who have over twice the prevalence of white and Asian beneficiaries (7% for both). The prevalence of blindness or low vision decreases with educational attainment, with beneficiaries with less than a high school diploma having a prevalence nearly twice that of those with a high school education or higher (13% vs. 7%).

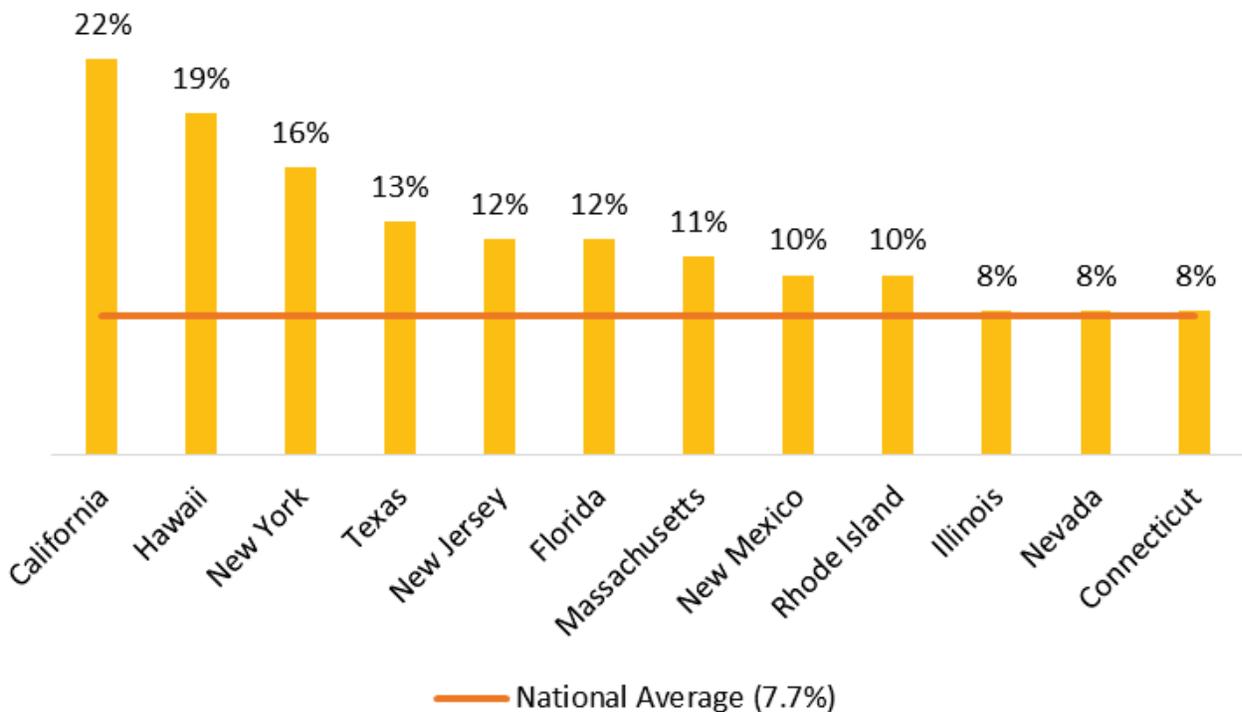
Deaf or hard of hearing. Hearing impairment is even more common among Medicare beneficiaries than limited English proficiency or vision impairment, with nearly 15% of Medicare beneficiaries considered deaf or hard of hearing (14.7%, n=7,733,886). Nationally, there are no notable differences between the hearing impaired and non-impaired beneficiary populations with regards to urbanicity (14.3% urban vs. 17% rural) or ethnicity (13.5% Hispanic vs. 14.8% non-Hispanic). With regards to race, the prevalence is highest among beneficiaries who are American Indian or Alaska Native (20%), white (16%), or Native Hawaiian or other Pacific Islander (15%), and lowest among those who are Asian (11%) or black (9%). Hearing impairment is also more common among males than females (18% vs. 12%). Furthermore, prevalence of hearing impairment is higher among beneficiaries with less than a high school education compared to those with a high school degree or higher (19% vs. 14%).

State-level

Looking at the percentage of the overall Medicare beneficiary population by state, we see that California has the most Medicare beneficiaries (10% of all Medicare beneficiaries), followed by Florida (8%), Texas (7%), New York (6%), Pennsylvania (5%), Ohio (4%), Illinois (4%), Michigan (3%), and North Carolina (3%).

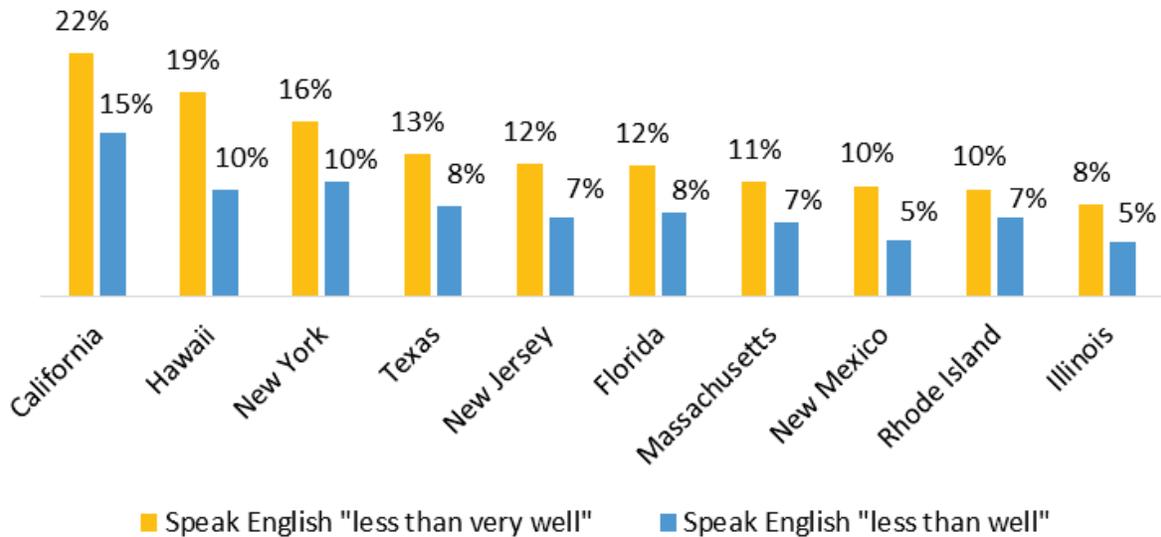
Limited English proficiency. The percentage of Medicare beneficiaries with limited English proficiency ranges widely across states—from 0.25% in West Virginia to over 22% in California. Figure 3 shows the states with the highest percentage of Medicare beneficiaries who are limited English proficient, as well as the national average.

Figure 3:
States with highest prevalence of Medicare beneficiaries who are limited English proficient



The vast majority of all beneficiaries in the U.S. with limited English proficiency reside in just a few of the states with the most Medicare beneficiaries. Specifically, two-thirds reside in California (30%), New York (13%), Florida (12%), and Texas (11%). Regarding limited English proficient beneficiaries who report speaking English “not well” or “not at all”, we found similar patterns across states. That is, states with the highest prevalence of limited English proficiency as defined by the ACS also have the highest prevalence of individuals who report speaking English less than well, with California, again, ranking first at 15% (see Figure 4). Taking into account the extent of *high-need* limited English proficiency is necessary to a more robust understanding of the overall scope of language assistance needed, allowing planners further insight into the areas with the most severe need.

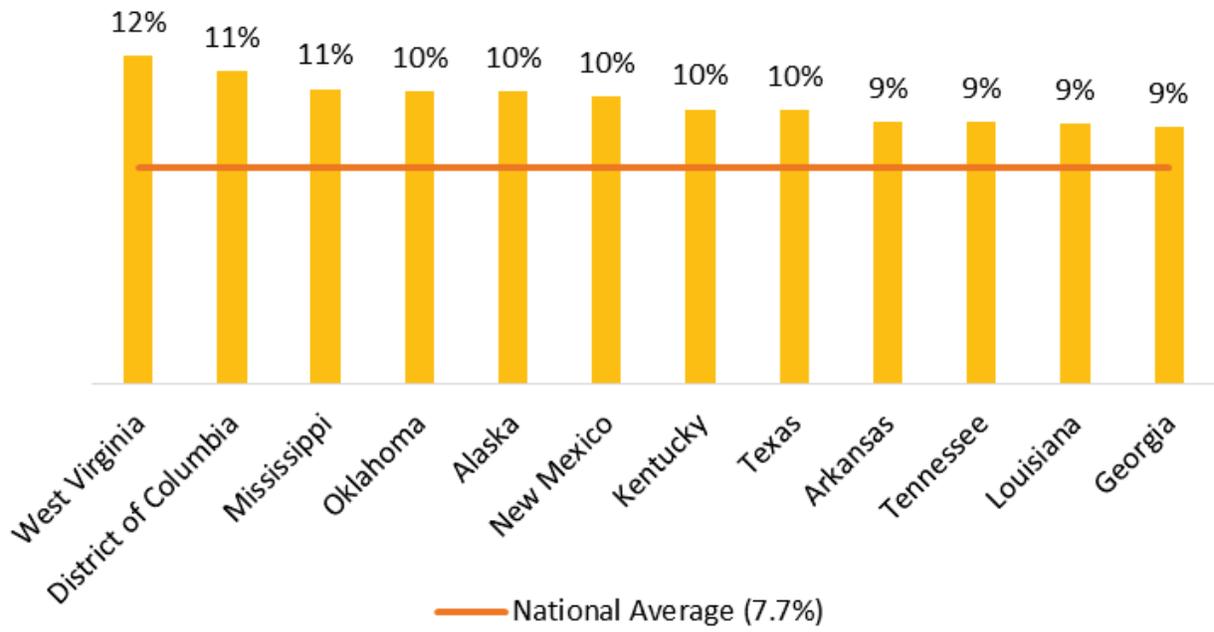
Figure 4:
Prevalence of Medicare beneficiaries who speak English “less than very well” vs. Medicare beneficiaries who speak English “less than well”



There is great variation across states with regards to the most common languages other than Spanish, and these differences largely reflect variations in immigrant and Native American populations. For instance, in California, the most common languages after Spanish are Tagalog, Chinese, and Vietnamese; and in New York they are Chinese, Russian, and Italian. In New Mexico, however, common non-Spanish languages include Navajo, Zuni, and Keres.

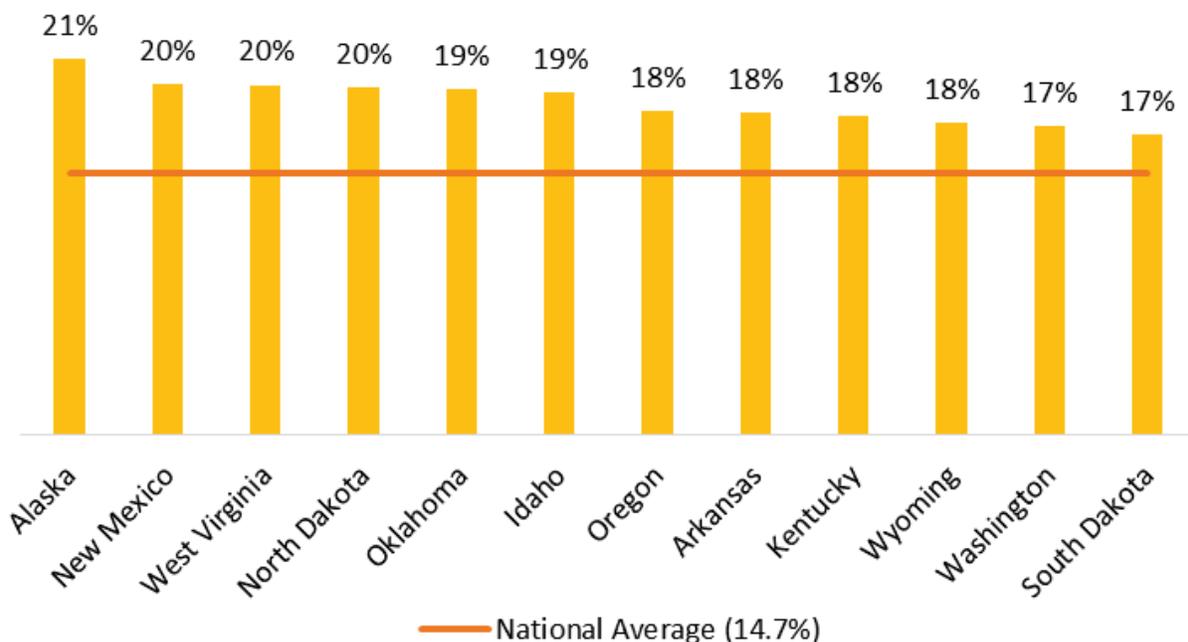
Blind or low vision. Visual impairment prevalence also varies across states. With respect to individuals who are blind or have low vision, prevalence ranges from 5% in New Hampshire to 12% in West Virginia. (See Figure 5 for states with highest percentage of Medicare beneficiaries who are blind or have low vision.) There is less variation in prevalence of visual impairment among beneficiaries than there is in prevalence of limited English proficiency among beneficiaries.

Figure 5:
States with highest prevalence of Medicare beneficiaries
who are blind or have low vision



Deaf or hard of hearing. Prevalence of hearing impairment among Medicare beneficiaries range from 21% in Alaska to 9% in the District of Columbia. Figure 6 presents those states with the highest percentage of Medicare beneficiaries who are deaf or hard of hearing.

Figure 6:
States with highest prevalence of Medicare beneficiaries who are deaf or hard of hearing



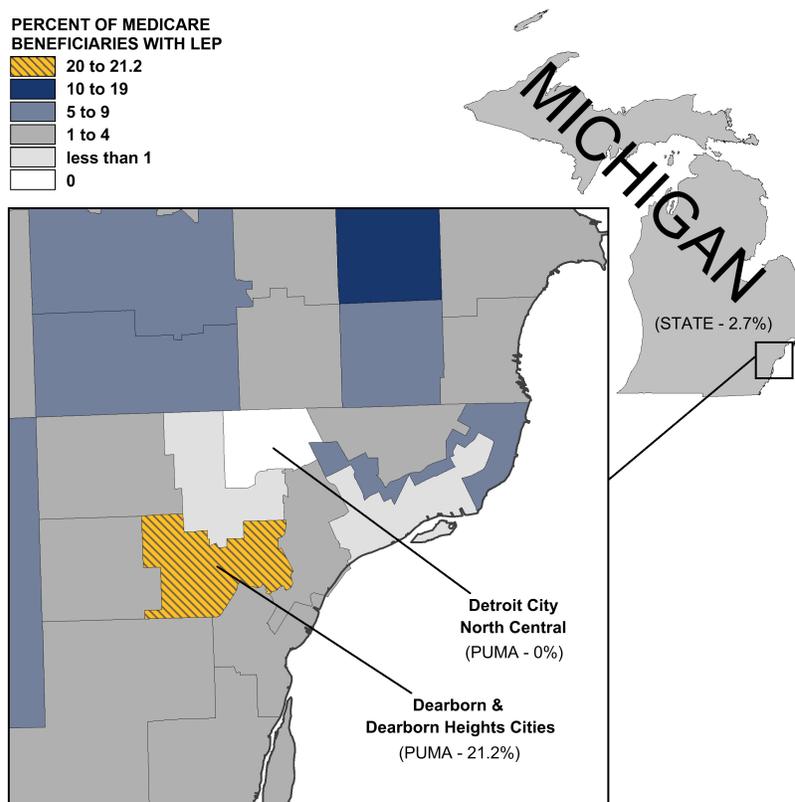
PUMA-Level

Examining patterns in limited English proficiency and visual and hearing impairment at the PUMA-level details the geographic concentration of beneficiary populations within a given state. Exploration of PUMA-level data reveals areas of high concentration or need that are not obvious when examining the data at the state level alone. In these areas, providers may need to provide interpreters and/or translated materials in different languages, or be more likely to need to provide Braille signage or materials in alternate formats, keeping in mind that proficiency does not necessarily indicate preference, and also that spoken and written preferences may not always match.

Limited English proficiency. Data show that some states contain PUMAs where over 50% of Medicare beneficiaries have limited English proficiency, significantly higher than the national average of 7.7%. These PUMAs are almost all urban, and all are in states with high percentages of limited English proficient Medicare beneficiaries, including California, Florida, Texas, New York, New Jersey, and Illinois.ⁱ However, even in states with generally lower percentages of limited English proficient Medicare beneficiaries, prevalence can vary across PUMAs. Looking at PUMA-

level limited English proficiency data can provide critical details on which areas of the state may have the highest need for communication and language assistance services. Similarly, most commonly spoken languages may vary across different PUMAs.

Figure 7:
Example: Limited English proficiency among Medicare beneficiaries in Michigan



For example, Michigan has a prevalence of less than 3% limited English proficiency among Medicare beneficiaries and ranks 25th out of 50 states and the District of Columbia. Looking only at the data at the state level, one might assume that there is a fairly low need for communication and language assistance services in Michigan. However, as illustrated in Figure 7, examining PUMA-level data reveals a large percentage (just over 21% and well above the national average of 7.7%) of beneficiaries with limited English proficiency concentrated in the cities of Dearborn and Dearborn Heights, as well as several PUMAs with no (0%) beneficiaries with limited English proficiency, including one in North Central Detroit. Given these results, beneficiaries in Dearborn and Dearborn Heights would be more likely to need communication and language assistance services than beneficiaries in adjacent cities. As providers in these areas work to ensure high-quality equitable care for all their patients and consumers, geographically-specific data can provide the necessary nuance to guide the provision of care at the local community level, and can be used by decision makers when considering how to distribute sometimes scarce resources.

The common languages in a given *region, city, or town* may vary greatly from those spoken in the state or in the U.S. as a whole. Exploring data sources at the most local level possible will provide critical information on what languages their patients and consumers are most likely to speak and can help them ensure equitable care for all patients and consumers, regardless of what language they speak. For example, when comparing the non-English languages most commonly spoken by individuals with limited English proficiency in Michigan (see Figure 8) with the non-English languages most commonly spoken by individuals with limited English proficiency in Dearborn, Michigan (see Figure 9), we find quite a number of differences. Although the most commonly spoken non-English language is Arabic at both the state and local level, Romanian is the second most commonly spoken language in Dearborn, though it is not even within the top 15 commonly spoken non-English languages for the state. Hindi and Hungarian are similarly spoken in Dearborn but not commonly spoken throughout the state of Michigan. If providers in Dearborn only post taglines in the top 15 non-English languages spoken in the state of Michigan, they could very well neglect the needs of their Romanian, Hindi, and Hungarian speaking beneficiaries and expend resources on languages that are rarely spoken in their community. Further, providers and health care organizations could miss an important opportunity to improve the coordination and delivery of care, and population health outcomes within their local community. As a result, awareness of differences like these are important for providers and organizations to ensure compliance with laws and equitable care for future and beneficiaries.

Figure 8:
Non-English languages most commonly spoken by Medicare beneficiaries with limited English proficiency in Michigan
 (N=48,944)

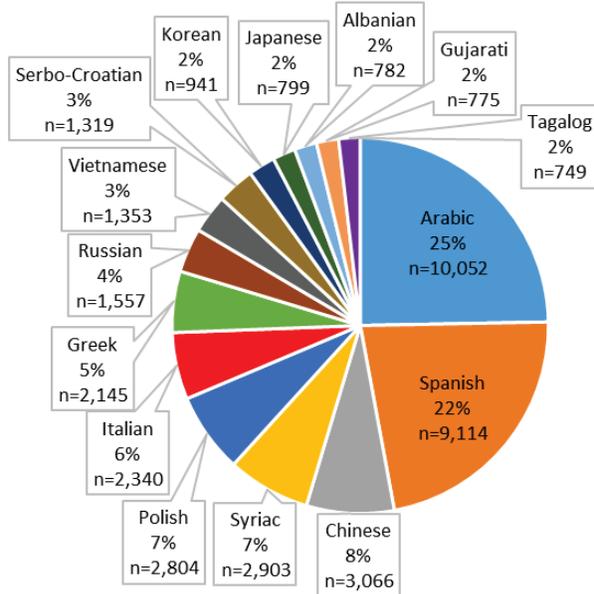
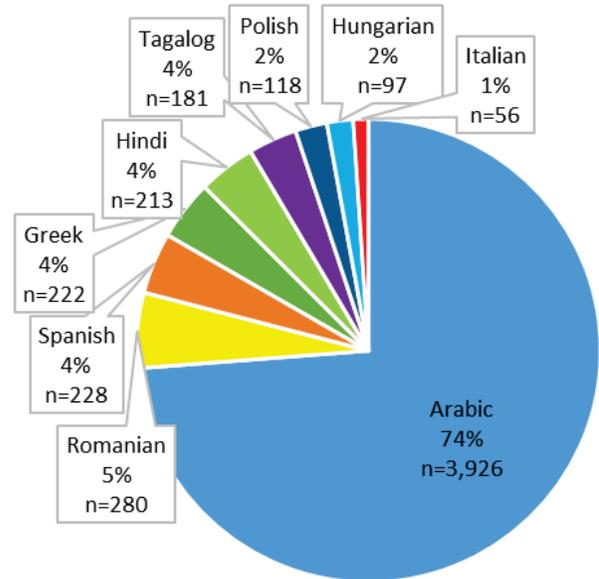


Figure 9:
Non-English languages most commonly spoken by Medicare beneficiaries with limited English proficiency in Dearborn, Michigan
 (N=5,321)



Blind or low vision. Many PUMAs across states have visual impairment prevalence among beneficiaries exceeding 20%, significantly higher than the national average of 7.7%. Some of the states containing these PUMAs are not among those with the highest visual impairment prevalence (e.g., California and New York). For example, as a state, California has a blind and low vision prevalence among beneficiaries of approximately 7%, just below the national average, and ranks 31 out of 50 states and the District of Columbia. However, when looking at the PUMA-level data, we find, for example, that Northeast Merced County has visual impairment rates of beneficiaries of more than 26%. Other areas with the highest concentrations of beneficiaries who are blind or have low vision include parts of Texas, Georgia, New York, New Jersey, and the District of Columbia.ⁱⁱ

Deaf or hard of hearing. As with vision and hearing impairment, focusing primarily on state prevalence obscures variations in prevalence within state boundaries. For instance, in New Mexico, which has one of the highest state prevalence of deaf and hard of hearing beneficiaries (20%), one PUMA in Northwest New Mexico in the Navajo Nation has a notably higher percentage at 28%. This is also significantly higher than the national average of 14.7% Medicare beneficiaries who are deaf or hard of hearing. Also similar to blind or low vision prevalence, many PUMAs with the highest hearing impairment prevalence are not within states with particularly high state-wide rates. For example in Florida nearly 14% of Medicare beneficiaries are deaf or hard of hearing,

ranking it 41 out of 50 states and the District of Columbia and placing it close to the national average. However, when looking at PUMA-level data, we see that some parts of Southern Miami-Dade County have rates of over 30% Medicare beneficiaries who are deaf or hard of hearing, indicating an area where providers may be more likely to encounter patients and consumers who need communication assistance services.ⁱⁱⁱ

Conclusion

Understanding and addressing communication and language assistance needs are essential to successful delivery of high quality health care because communication and language barriers are associated with decreased quality of care and poor clinical outcomes. This report provides national, state, and local estimates of Medicare beneficiaries with limited English proficiency and visual and hearing impairments throughout the United States based on analysis of ACS PUMS data. These estimates can be a useful starting place for providers and health care organizations in understanding the potential communication and language assistance needs of their Medicare beneficiaries.

Estimates such as those discussed throughout this report may be useful for providers and health care organizations as they work to understand the communication and language needs of the community in which they practice. They can also be helpful as providers and health care organizations work to identify those languages most commonly spoken in their communities and develop language access plans where their approach is laid out to ensuring meaningful access and providing communication and language access services for those patients and consumers who are eligible to be served or likely to be encountered.

Even as estimates of need are used by providers and health care organizations for planning purposes, it will be important to consider how those needs may vary by geography. For example, as this report shows, state level needs are not always the same as local level needs. Organizations, such as hospitals and health plans, may need to examine language and communication data at the most local level possible (whether PUMA or otherwise) to ensure they are best positioned to meet the needs of patients and consumers they are most likely to encounter and to enhance their overall efforts to deliver high quality care.

Analysis of available data (including the ACS PUMS as discussed here, clinic and organizational level data, public health reports, and other sources) can certainly inform providers about the needs of their limited English proficient, blind, and deaf patients and consumers, helping to ensure compliance with important regulations. Ultimately, however, data trends and estimates are only one component to ensuring providers are able to best communicate with their patients and consumers. Providers can collect patient-level data about preferred language for communication,

including patient preferences for receiving written and spoken health information. As discussed in the Methods section of this report, English proficiency does not connote preference when it comes to requesting or receiving language assistance services. Further, written and spoken language proficiency may differ. Consequently, in general, individuals who speak a language other than English at home the in which may prefer to receive services in a different language, and consulting patients and consumers can help ensure that patient/consumer level communication and language needs are appropriately met.

Appendix A

Ensuring Quality and Health Equity

This report supports the overarching efforts of CMS and supportive entities such as QIN-QIOs to achieve health equity and improve the quality of health care for all Medicare beneficiaries. It also aligns with a number of Federal level initiatives which require communication and language assistance services be provided as necessary to ensure equitable care for individuals with limited English proficiency and individuals with disabilities (see Figure A1).

Figure A1: Related Federal initiatives

CMS Equity Plan for Medicare: In this report, CMS OMH set forth a plan to meet agency priorities around quality improvement and elimination of disparities as identified in the CMS Quality Strategy. The Equity Plan focuses on the elimination of disparities through the pursuit of work under six high-impact priority areas. Priority Area 5 focuses on increasing understanding and raising awareness of barriers to the provision of communication and language access services for individuals with limited English proficiency and persons with disabilities.

CMS Quality Strategy: The CMS Quality Strategy details agency priorities for quality improvement and identifies the elimination of disparities as one of four foundational principles.

HHS Language Access Plan: Establishes a strategy for ensuring meaningful access for individuals with limited English proficiency to HHS administered programs.

Title VI of the Civil Rights Act of 1964: Prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

Section 1557 of the Patient Protection and Affordable Care Act (ACA): Section 1557 focuses on nondiscrimination in health programs and activities, and extends the protections under Title VI of the Civil Rights Act and other laws to prohibit discrimination based on race, color, national origin, sex, age, or disability in certain health programs and activities.

Executive Order 13166: Signed in 2000, Executive Order 13166, “Improving Access to Services for Persons with Limited English Proficiency” requires that people who are limited English proficient have meaningful access to “federally conducted and federally funded programs and activities.”

Many of these initiatives build upon one another to further emphasize the importance of equitable care for all persons. Most recently, in May 2016, [HHS issued the Final Rule](#) implementing *Section 1557 of the Patient Protection and Affordable Care Act (Section 1557)*, which extends the protections under *Title VI of the Civil Rights Act* and other civil rights laws and focuses on nondiscrimination in health programs and activities. *Section 1557* is designed to prohibit discrimination based on a variety of factors, including two directly related to the work discussed in this report: national origin and disability.

With respect to [national origin, Section 1557 requires](#) that, “covered entities must take reasonable steps to provide meaningful access to each individual with limited English proficiency eligible to be served or likely to be encountered in their health programs and activities... [In addition,]

covered entities are encouraged to develop and implement a language access plan to ensure they are prepared to take reasonable steps to provide meaningful access to each individual that may require assistance.”¹¹ Further, each covered entity is required to inform individuals of their civil rights under *Section 1557* and inform individuals with LEP about the availability of language assistance services. Specifically, covered entities are required to post notices of nondiscrimination in English and taglines alerting individuals with limited English proficiency of the availability of language assistance services in “the top 15 languages spoken by individuals with limited English proficiency” in that state.¹² It also means that those entities provide those language assistance services if needed.

With respect to [disability, the rule extends similar protections](#), requires covered entities to “take appropriate steps to ensure that communications with individuals with disabilities are as effective as communication with others.”¹³ That means that *Section 1557* requires covered entities to provide communication services such as sign language interpreters or alternative format signage or forms to individuals who are blind or have low vision or who are deaf or hard of hearing where necessary for effective communication.

¹¹ HHS OCR. “Section 1557: Ensuring Meaningful Access for Individuals with Limited English Proficiency.” (no date). Available at: <https://www.hhs.gov/civil-rights/for-individuals/section-1557/fs-limited-English-proficiency/index.html>

¹² Ibid.

¹³ HHS OCR. “Section 1557: Ensuring Effective Communication with and Accessibility for Individuals with Disabilities.” (no date). Available at: <https://www.hhs.gov/civil-rights/for-individuals/section-1557/fs-disability/index.html>

Appendix B

Demographic Findings

The tables below show the percentage of Medicare beneficiaries with limited English proficiency, visual impairments, and hearing impairments by key demographics.

	Percentage with Limited English proficiency (95% CI)	Percentage with Visual Impairment (95% CI)	Percentage with Hearing Impairment (95% CI)
Sex			
Female	8.20 (8.07 to 8.32)	8.17 (8.05 to 8.29)	11.92 (11.78 to 12.05)
Male	7.29 (7.16 to 7.41)	7.24 (7.11 to 7.37)	18.18 (18.00 to 18.35)
Age			
Less than 65 years	6.56 (6.34 to 6.80)	10.59 (10.32 to 10.86)	8.82 (8.57 to 9.08)
65 years and older	8.01 (7.91 to 8.11)	7.23 (7.14 to 7.32)	15.78 (15.66 to 15.91)
Race			
White	5.21 (5.12 to 5.29)	7.29 (7.20 to 7.38)	15.53 (15.41 to 15.65)
Black or African American	2.77 (2.59 to 2.95)	10.57 (10.24 to 10.89)	9.27 (8.97 to 9.58)
American Indian/Alaska Native	11.02 (9.93 to 12.1)	14.61 (13.19 to 16.02)	19.92 (18.40 to 21.44)
Asian	57.01 (56.17 to 57.86)	6.53 (6.07 to 6.98)	11.27 (10.72 to 11.83)
Native Hawaiian and other Pacific Islander	26.7 (20.21 to 33.18)	8.70 (5.41 to 12.00)	14.91 (10.93 to 18.89)
Other	55.32 (53.97 to 56.68)	10.84 (10.00 to 11.66)	12.77 (11.87 to 13.66)
Two or more Races	12.37 (11.38 to 13.37)	10.81 (9.89 to 11.73)	15.21 (14.16 to 16.26)
Ethnicity			
Hispanic or Latino	49.29 (48.69 to 49.90)	10.45 (10.07 to 10.83)	13.53 (13.12 to 13.95)
Not Hispanic or Latino	4.21 (4.14 to 4.28)	7.52 (7.43 to 7.61)	14.81 (14.69 to 14.92)
Urbanicity			
Urban	8.87 (8.76 to 8.97)	7.58 (7.48 to 7.67)	14.25 (14.13 to 14.37)
Rural	2.33 (2.21 to 2.45)	8.65 (8.43 to 8.87)	17.03 (16.76 to 17.31)
Education			
Less than High School	22.17 (21.85 to 22.49)	12.69 (12.44 to 12.94)	18.86 (18.57 to 19.14)
High School Diploma	5.03 (4.90 to 5.16)	7.98 (7.83 to 8.13)	15.26 (15.06 to 15.45)
Some College	3.19 (3.06 to 3.32)	6.73 (6.54 to 6.91)	13.80 (13.56 to 14.04)
Associates Degree	4.80 (4.50 to 5.09)	6.04 (5.71 to 6.36)	12.28 (11.79 to 12.70)
Bachelor Degree	5.34 (5.13 to 5.55)	4.84 (4.64 to 5.03)	12.07 (11.79 to 12.35)
Graduate Degree	3.34 (3.16 to 3.52)	4.20 (3.99 to 4.41)	11.46 (11.16 to 11.76)

Appendix C

MOST COMMONLY SPOKEN LANGUAGES AMONG MEDICARE BENEFICIARIES WITH LIMITED ENGLISH PROFICIENCY, BY STATE

The tables below show the languages most commonly spoken by limited English proficient Medicare beneficiaries. States are listed in descending order of the prevalence of limited English proficient beneficiaries, which is noted in parentheses.

1. California (22.17%)	Percentage	Number
Spanish	47.67	577,415
Tagalog	6.98	84,493
Chinese	6.75	81,789
Vietnamese	6.16	74,587
Korean	4.94	59,882
Cantonese	3.91	47,324
Persian	2.44	29,584
Armenian	2.41	29,139
Russian	2.36	28,568
Japanese	1.75	21,189
Total	85.37	1,033,970

2. Hawaii (18.60%)	Percentage	Number
Ilocano	24.72	11,012
Japanese	21.44	9,551
Tagalog	14.99	6,676
Korean	9.20	4,096
Chinese	8.89	3,961
Trukese	6.60	2,938
Cantonese	3.84	1,710
Vietnamese	2.78	1,239
Hawaiian	2.34	1,042
Samoan	1.57	698
Total	96.37	42,923

3. New York (16.02%)	Percentage	Number
Spanish	43.37	22,5450
Chinese	10.95	56,929
Russian	9.53	49,537
Italian	7.13	37,088
French Creole	3.27	17,022
Cantonese	2.34	12,168
Korean	2.12	10,996
Greek	1.63	8,488
Polish	1.50	7,787
Tagalog	1.29	6,731
Total	83.13	432,196

4. Texas (12.96%)	Percentage	Number
Spanish	84.16	383,629
Vietnamese	4.01	18,285
Chinese	1.40	6,392
Korean	1.15	5,263
Tagalog	0.81	3,711
Gujarati	0.73	3,325
Persian	0.52	2,361
Cantonese	0.51	2,331
Urdu	0.45	2,068
Malayalam	0.45	2,042
Total	94.19	429,407

5. New Jersey (12.13%)	Percentage	Number
Spanish	48.65	84,167
Italian	7.47	12,927
Korean	5.22	9,036
Chinese	4.38	7,578
Polish	3.63	6,273
Portuguese	3.06	5,302
Gujarati	2.84	4,910
Russian	2.82	4,871
Tagalog	2.68	4,641
German	1.77	3,061
Total	82.52	142,766

6. Florida (11.90%)	Percentage	Number
Spanish	77.38	382,167
French Creole	5.79	28,575
French	1.82	8,997
Vietnamese	1.62	8,006
Italian	1.41	6,961
Tagalog	1.20	5,906
German	1.11	5,480
Portuguese	1.05	5,207
Arabic	0.88	4,368
Greek	0.86	4,234
Total	93.12	459,901

7. Massachusetts (10.49%)	Percentage	Number
Spanish	29.81	35,218
Portuguese	16.80	19,849
Italian	6.50	7,675
Chinese	6.29	7,434
French Creole	5.28	6,232
Russian	4.36	5,147
Cantonese	3.84	4,538
Vietnamese	3.47	4,100
French	3.24	3,832
Greek	2.57	3,040
Total	82.16	97,065

8. New Mexico (10.14%)	Percentage	Number
Spanish	79.79	29,879
Navajo	8.36	3,131
Zuni	2.78	1,041
Keres	1.50	561
Chinese	1.38	517
Korean	1.20	449
Tagalog	1.15	432
German	0.67	252
Japanese	0.66	247
Greek	0.66	246
Total	98.15	36,755

9. Rhode Island (9.82%)	Percentage	Number
Spanish	43.38	8,235
Portuguese	24.54	4,659
Italian	5.50	1,044
French	5.46	1,036
Arabic	4.20	797
Russian	2.70	513
French Creole	2.30	437
Mon-Khmer, Camb	1.92	365
Chinese	1.76	335
Armenian	1.47	280
Total	93.23	17,701

10. Illinois (8.36%)	Percentage	Number
Spanish	41.55	68,555
Polish	11.68	19,268
Chinese	4.08	6,729
Russian	4.01	6,616
Korean	3.52	5,814
Greek	3.47	5,718
Tagalog	3.07	5,071
Italian	2.92	4,826
Arabic	2.80	4,616
Gujarati	2.20	3,630
Total	79.30	130,843

11. Nevada (8.33%)	Percentage	Number
Spanish	54.45	20,011
Tagalog	12.00	4,410
Chinese	5.75	2,115
Korean	4.29	1,577
Vietnamese	2.18	802
German	2.18	800
Thai	1.79	658
Persian	1.72	632
Japanese	1.47	540
Laotian	1.27	465
Total	87.10	32,010

12. Connecticut (8.30%)	Percentage	Number
Spanish	42.21	21,272
Italian	14.31	7,211
Polish	6.31	3,179
Portuguese	6.06	3,052
French	4.86	2,450
Greek	3.68	1,855
Russian	2.90	1,462
Chinese	1.91	960
Gujarati	1.77	890
Albanian	1.73	874
Total	85.74	43,205

13. Arizona (7.48%)	Percentage	Number
Spanish	67.76	59,657
Navajo	9.03	7,949
Vietnamese	3.34	2,943
German	1.83	1,615
Chinese	1.74	1,533
Tagalog	1.48	1,301
Russian	1.10	967
French	1.03	905
Korean	0.96	846
Arabic	0.90	789
Total	89.17	78,505

14. Washington (6.15%)	Percentage	Number
Spanish	25.78	17,758
Vietnamese	12.04	8,292
Korean	9.05	6,232
Tagalog	7.25	4,992
Chinese	6.75	4,653
Russian	6.35	4,372
Japanese	5.69	3,917
Cantonese	3.83	2,638
Panjabi	2.31	1,591
Ukrainian	2.19	1,509
Total	81.24	55,954

15. Alaska (5.02%)	Percentage	Number
Korean	28.04	1,081
Aleut-Eskimo la	27.11	1,045
Tagalog	14.11	544
Spanish	13.54	522
Chinese	6.90	266
Marathi	6.04	233
Other Specified	4.25	164
Total	99.99	3,855

16. Colorado (4.98%)	Percentage	Number
Spanish	58.21	21,648
Korean	5.99	2,227
Russian	5.35	1,990
Vietnamese	4.22	1,570
Chinese	3.16	1,174
German	2.69	999
Italian	2.45	910
Tagalog	1.81	673
Cantonese	1.65	614
French	1.54	574
Total	87.07	32,379

17. Maryland (4.96%)	Percentage	Number
Spanish	28.36	12,630
Chinese	11.04	4,917
Korean	7.47	3,326
Russian	5.81	2,589
Vietnamese	5.14	2,291
Persian	4.55	2,028
Tagalog	3.11	1,387
Urdu	2.72	1,210
French	2.59	1,155
Cantonese	2.42	1,077
Total	73.21	32,610

18. Utah (3.88%)	Percentage	Number
Spanish	44.84	5,772
German	6.80	875
Vietnamese	6.30	811
Chinese	5.09	655
Navajo	4.65	599
Other Specified	2.98	383
Nepali	2.91	374
Arabic	2.73	351
Japanese	2.45	315
French	2.22	286
Total	80.97	10,421

19. Virginia (3.88%)	Percentage	Number
Spanish	23.81	11,811
Korean	14.04	6,962
Vietnamese	14.03	6,960
Persian	6.23	3,091
Tagalog	6.12	3,035
Chinese	5.80	2,878
Greek	2.19	1,087
Arabic	2.14	1,062
French	1.88	934
Urdu	1.78	883
Total	78.02	38,703

20. Oregon (3.48%)	Percentage	Number
Spanish	32.57	8,067
Russian	14.10	3,493
Chinese	6.63	1,642
Vietnamese	5.55	1,374
Korean	4.90	1,215
Romanian	4.34	1,076
Tagalog	3.90	967
German	2.68	663
Japanese	2.64	653
Ukrainian	2.49	618
Total	79.80	19,768

21. Pennsylvania (3.43%)	Percentage	Number
Spanish	36.95	30,464
Italian	7.58	6,245
Russian	6.99	5,759
Chinese	4.69	3,867
German	3.71	3,060
Vietnamese	3.36	2,774
Korean	3.36	2,770
Arabic	2.93	2,412
Polish	2.79	2,296
Persian	2.11	1,738
Total	74.47	61,385

22. Louisiana (3.01%)	Percentage	Number
French	34.21	7,828
Spanish	22.09	5,056
Vietnamese	15.98	3,658
French Creole	6.21	1,421
Cajun	5.03	1,152
Arabic	2.97	680
Chinese	2.35	538
Urdu	1.46	335
German	1.40	321
Kru, Ibo, Yorub	1.25	287
Total	92.95	21,276

23. District of Columbia (2.96%)	Percentage	Number
Spanish	54.89	1,297
Amharic	9.31	220
Cantonese	7.96	188
Vietnamese	7.11	168
French	4.78	113
Italian	3.98	94
Czech	2.92	69
Arabic	2.75	65
Russian	2.50	59
Chinese	2.41	57
Total	98.61	2,330

24. Minnesota (2.76%)	Percentage	Number
Hmong	15.18	3,616
Russian	12.73	3,032
Spanish	10.59	2,522
Vietnamese	9.35	2,226
Cushite	8.52	2,029
Polish	3.98	949
Finnish	3.78	901
Mon-Khmer, Camb	3.56	847
German	3.27	780
Chinese	3.07	732
Total	74.03	17,634

25. Michigan (2.68%)	Percentage	Number
Arabic	20.54	10,052
Spanish	18.62	9,114
Chinese	6.26	3,066
Syriac	5.93	2,903
Polish	5.73	2,804
Italian	4.78	2,340
Greek	4.38	2,145
Russian	3.18	1,557
Vietnamese	2.76	1,353
Serbo-Croatian	2.69	1,319
Total	74.87	36,653

26. Delaware (2.57%)	Percentage	Number
Spanish	40.74	1,787
Italian	16.28	714
Persian	9.62	422
Chinese	9.17	402
Tagalog	5.52	242
Arabic	3.31	145
Korean	3.12	137
Gujarati	2.96	130
French Creole	2.64	116
Swedish	1.94	85
Total	95.30	4,180

27. Georgia (2.49%)	Percentage	Number
Spanish	33.54	12,410
Vietnamese	11.81	4,368
Korean	10.20	3,773
Gujarati	4.83	1,788
Chinese	4.30	1,590
Hindi	3.98	1,472
Romanian	2.88	1,064
French	2.79	1,033
Persian	2.08	769
French Creole	2.06	762
Total	78.47	29,029

28. Kansas (2.38%)	Percentage	Number
Spanish	43.78	4,929
Chinese	9.65	1,087
Vietnamese	8.50	957
German	6.71	755
Korean	5.33	600
Russian	3.69	416
Laotian	3.01	339
Arabic	2.75	310
French	2.67	301
Hindi	2.39	269
Total	88.48	9,963

29. New Hampshire (2.31%)	Percentage	Number
French	31.69	1,719
Spanish	22.12	1,200
Greek	10.82	587
Dutch	4.83	262
Russian	3.74	203
Bisayan	3.72	202
Italian	3.65	198
Portuguese	3.23	175
Swedish	2.82	153
Korean	2.67	145
Total	89.29	4,844

30. Nebraska (2.06%)	Percentage	Number
Spanish	61.05	3,784
Vietnamese	11.31	701
German	8.86	549
Latvian	2.65	164
Nepali	2.45	152
Other Asian lan	2.36	146
Czech	2.18	135
Croatian	2.08	129
Persian	1.84	114
Italian	1.53	95
Total	96.31	5,969

31. Oklahoma (1.99%)	Percentage	Number
Spanish	49.41	6,531
Vietnamese	12.28	1,623
Laotian	5.67	749
Chinese	4.36	576
German	3.16	417
Polish	3.12	412
Hmong	3.10	410
Korean	3.04	402
French	3.03	400
Kannada	2.49	329
Total	89.66	11,849

32. Maine (1.78%)	Percentage	Number
French	77.21	3,887
Cushite	4.47	225
Russian	4.29	216
Greek	4.09	206
Polish	3.50	176
Spanish	3.00	151
Chinese	1.55	78
Korean	1.19	60
Japanese	0.70	35
Total	100.00	5,034

33. Wisconsin (1.74%)	Percentage	Number
Spanish	38.16	6,616
German	14.57	2,526
Hmong	9.77	1,694
Polish	4.55	789
Russian	4.48	777
Korean	3.86	670
Serbian	3.55	615
Italian	3.24	562
Gujarati	3.01	521
Persian	2.30	399
Total	87.49	15,169

34. Ohio (1.73%)	Percentage	Number
Spanish	21.01	7,485
German	9.55	3,402
Russian	7.96	2,834
Italian	7.67	2,732
Chinese	4.82	1,717
Polish	3.77	1,344
Cushite	2.83	1,009
Arabic	2.81	1,002
Korean	2.75	981
Romanian	2.75	979
Total	65.92	23,485

35. North Carolina (1.62%)	Percentage	Number
Spanish	46.12	12,881
Arabic	4.43	1,237
Tagalog	3.51	980
Chinese	3.17	886
French	3.04	848
Japanese	2.91	814
Russian	2.62	731
Greek	2.51	702
Hindi	2.29	640
Vietnamese	2.07	578
Total	72.67	20,297

36. North Dakota (1.53%)	Percentage	Number
German	50.11	888
Russian	14.39	255
Spanish	11.34	201
Korean	11.29	200
Mandarin	5.81	103
Czech	4.01	71
Norwegian	1.13	20
Other Specified	1.02	18
Other Algonquia	0.90	16
Total	100.00	1772

37. Indiana (1.51%)	Percentage	Number
Spanish	40.11	6,706
German	9.58	1,601
Italian	5.49	918
Chinese	4.19	701
Greek	3.58	599
Serbian	3.28	548
Macedonian	3.11	520
Vietnamese	3.04	508
Tagalog	2.88	481
Bengali	2.00	334
Total	77.26	12,916

38. Idaho (1.44%)	Percentage	Number
Spanish	68.75	2,623
Chinese	12.90	492
German	7.89	301
Tagalog	3.93	150
African	2.94	112
Japanese	1.78	68
French	0.87	33
Portuguese	0.58	22
Other languages	0.37	14
Total	100.01	3,815

39. Arkansas (1.30%)	Percentage	Number
Spanish	34.25	2,528
Vietnamese	20.05	1,480
Other Pacific I	13.83	1,021
Laotian	10.11	746
German	4.51	333
Arabic	3.02	223
French	2.60	192
Korean	2.29	169
Serbian	2.10	155
Gujarati	2.05	151
Total	94.81	6,998

40. Tennessee (1.17%)	Percentage	Number
Spanish	32.42	4,487
Korean	9.47	1,311
German	8.09	1,120
Laotian	7.72	1,069
Vietnamese	6.18	855
Cushite	5.19	718
Tagalog	4.95	685
Hindi	4.08	565
French	2.95	408
Chinese	2.28	315
Total	83.33	11,533

41. South Carolina (1.14%)	Percentage	Number
Spanish	36.46	3,775
Russian	14.00	1,450
German	7.11	736
Vietnamese	6.92	716
Gujarati	4.83	500
Tagalog	4.58	474
Cantonese	4.50	466
Korean	3.77	390
Polish	2.32	240
Hindi	2.25	233
Total	87.74	8,980

42. Wyoming (1.09%)	Percentage	Number
Cushite	37.41	361
Spanish	35.54	343
French	10.05	97
Italian	7.36	71
Japanese	5.49	53
Navajo	4.15	40
Total	100.00	965

43. Iowa (1.01%)	Percentage	Number
Spanish	44.38	2,485
German	13.82	774
Vietnamese	7.80	437
Telugu	5.38	301
French Creole	4.52	253
Tagalog	3.96	222
Nepali	3.75	210
Japanese	3.75	210
Czech	2.39	134
Chinese	1.79	100
Total	91.54	5,126

44. Missouri (1.00%)	Percentage	Number
Spanish	28.93	3,212
Vietnamese	10.69	1,187
Chinese	8.42	935
Arabic	6.45	716
Japanese	4.68	519
Korean	4.04	448
German	4.03	447
Tagalog	3.81	423
Polish	3.41	379
Albanian	3.28	364
Total	77.74	8,630

45. South Dakota (0.97%)	Percentage	Number
Spanish	34.41	480
Serbo-Croatian	22.37	312
Nepali	21.15	295
German	14.12	197
Dakota	5.38	75
Danish	2.58	36
Total	100.01	1395

46. Vermont (0.83%)	Percentage	Number
French	66.38	691
Chinese	28.34	295
Polish	5.28	55
Total	100.00	1041

47. Kentucky (0.63%)	Percentage	Number
Spanish	23.40	1,221
Vietnamese	21.92	1,144
German	13.80	720
Japanese	5.58	291
Korean	5.50	287
French	3.83	200
Russian	3.76	196
Croatian	3.31	173
Tagalog	3.31	173
Serbian	3.08	161
Total	87.49	4,566

48. Mississippi (0.61%)	Percentage	Number
Spanish	41.64	1,365
Korean	14.80	485
Panjabi	11.53	378
Vietnamese	8.48	278
Laotian	6.31	207
French	6.04	198
Greek	3.51	115
German	3.17	104
Arabic	2.10	69
Cantonese	1.25	41
Total	98.83	3,240

49. Alabama (0.54%)	Percentage	Number
Spanish	49.34	2,419
German	11.05	542
Vietnamese	9.79	480
Tagalog	4.49	220
Korean	4.30	211
Hindi	2.98	146
Mon-Khmer, Camb	2.45	120
Italian	2.39	117
Telugu	2.26	111
Chinese	2.22	109
Total	91.27	4,475

50. Montana (0.33%)	Percentage	Number
Finnish	28.73	183
Formosan	28.73	183
Hungarian	19.31	123
Tagalog	9.73	62
Korean	5.02	32
German	4.55	29
Other Specified	3.92	25
Total	99.99	637

51. West Virginia (0.25%)	Percentage	Number
Persian	23.86	246
Chinese	19.69	203
German	11.45	118
Gujarati	11.35	117
Thai	9.12	94
Arabic	6.69	69
Formosan	6.50	67
Korean	4.75	49
Russian	3.98	41
Spanish	1.45	15
Total	98.84	1019

Endnotes

ⁱ Specific PUMAs with prevalence of limited English proficiency exceeding 50% of the Medicare population include: parts of Los Angeles, Orange, Santa Clara, and Imperial Counties in California, most parts of Miami-Dade county in Florida, parts of: South Texas Development Council; El Paso City and County; Hidalgo and Cameron Counties in Texas, Brooklyn Community Districts 7, 11, 12, 13; Queens Community Districts 2, 3, 4, 7; Bronx Community Districts 1, 2, 4, 5, 7; and Manhattan Community Districts 3, 12 in New York, Northeast Hudson County in New Jersey, and parts of Southwest Chicago in Illinois.

ⁱⁱ Specific PUMAs with highest concentrations of visually impaired beneficiaries include: Texas (parts of: El Paso, Webb, and Hidalgo Counties; and East Central and North Central Houston), California (Northeast Merced County), Georgia (East and Central Southern Georgia Regional Commission), New York (Brooklyn Community District 13, Queens Community District 14, Williamsbridge & Woodlawn), New Jersey (Southeast Essex County), and Washington DC (Eastern Washington DC).

ⁱⁱⁱ Specific PUMAs with concentrations of hearing impaired beneficiaries over 25% include: Alaska (Subsistence Alaska), Oklahoma (Cherokee, Sequoyah and Adair Counties; and Southeast Oklahoma County), New Mexico (North Central and Northwest New Mexico), Florida (parts of Southern Miami-Dade County), Kentucky (Kentucky Area Development District and South Bluegrass Area Development District), Texas (parts of: Liberty, Chambers, Lubbock and Hidalgo counties; South Texas Development Council, Rio Grande Council & Permian Basin; Central El Paso City; Coastal Bend Council & Willacy County), West Virginia (Raleigh, Mercer, Fayette, Logan, Mingo, Wyoming, and McDowell Counties), Wisconsin (Green Bay City), California (parts of Stanislaus and Merced Counties), Idaho (Bonner, Latah, Shoshone, Boundary, Benewah Counties; parts of Kootenai County), North Dakota (Fargo City), New York (Central Monroe County), Mississippi (Neshoba, Scott, Leake, Jasper, Smith, and Kemper Counties), New Hampshire (Manchester City), and Nebraska (North Central and Northwest Nebraska).