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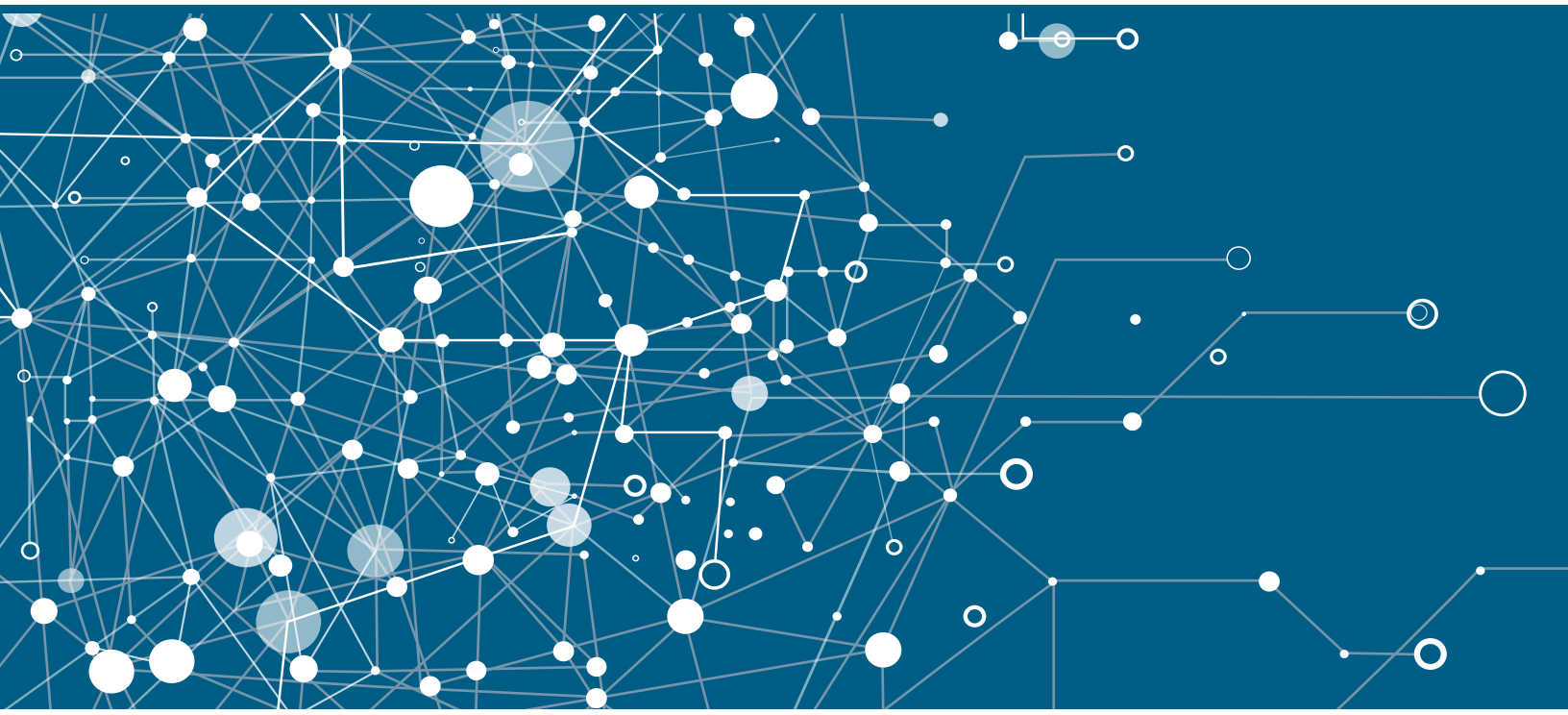

Planning, Development, Design, and Operation of the 2016 National Culturally and Linguistically Appropriate Services Survey for Office-based Physicians

Programs and Collection Procedures

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

Hyattsville, Maryland
January 2025

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Planning, Development, Design, and Operation of the 2016 National Culturally and Linguistically Appropriate Services Survey for Office-based Physicians

by Kelly L. Myrick, Ph.D., C.P.H., National Center for Health Statistics; Marko Salvaggio, Ph.D., Tulane University; Lacreisha Ejike-King, Ph.D., M.S., U.S. Food and Drug Administration; Sheba K. Dunston, Ed.D., M.P.H., National Institutes of Health; Rashida Dorsey-Johnson, Ph.D., M.P.H., Office of Minority Health; Meena Khare, M.S., National Center for Health Statistics; and Denys T. Lau, Ph.D., National Center for Health Statistics

Abstract

Objectives

This report describes the development and operations of the 2016 National Culturally and Linguistically Appropriate Services Survey for Office-based Physicians (National CLAS Physician Survey). The survey was developed to understand awareness, adoption, and implementation of the National CLAS Standards in health and health care among office-based physicians.

Methods

Survey development included a literature review of survey and assessment instruments that evaluated cultural and linguistic appropriateness in health care. Survey questions were pretested during a cognitive interview study of 20 office-based physicians in the District of Columbia metropolitan area. The cognitive interviews were analyzed using a grounded theory approach. The final survey was administered via web, mail, and computer-assisted telephone interview to 2,400 sampled physicians between August 2016 and December 2016. A nonresponse bias assessment was conducted.

Results

The literature review identified five survey and assessment instruments. Collectively, survey content included: cultural competency training, cultural awareness, and adoption of the National CLAS Standards. Cognitive interviews showed respondent difficulty in question interpretation and survey completion of some items. Survey revisions addressed these issues. The final overall weighted survey response rate was 33.8%. Final weights produced a lower standardized bias than base weights.

Conclusions

The National CLAS Physician Survey is the first nationally representative survey to describe the use and implementation of culturally and linguistically appropriate services by office-based physicians. Data can serve as a baseline for future studies and as a benchmark for meeting the key objectives of the National CLAS Standards.

Keywords: National CLAS Standards • cultural competency • healthcare services • National Ambulatory Medical Care Survey (NAMCS)

Introduction and Background

In the United States, people from various cultural backgrounds face persistent and well-documented health disparities (1). Biological and social determinants of health, such as poverty, low socioeconomic status, and lack of access to care, contribute to health disparities and poor health outcomes along racial and ethnic lines (2). The estimated financial burden of health disparities in the United States is $135 billion a year (3). As current and projected demographics shift in the United States toward growing racial, ethnic, and linguistic diversity (4), social justice and business philosophies are focused on how to achieve health equity and how to better serve diverse populations. It has been shown that one of the most modifiable factors in the delivery of health care is the lack of culturally and linguistically appropriate services (CLAS) (5,6).

With the release of the Institute of Medicine's 2002 report, "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care," CLAS gained recognition as an important way to help address the persistent disparities among the nation's diverse communities (1). CLAS refers to services that are a) respectful of, and responsive to, individual cultural health beliefs and practices, preferred

languages, health literacy levels, and communication needs; and b) used by all members of an organization (regardless of size) at every point of contact (7).

National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care

The U.S. Department of Health and Human Services (HHS) Office of Minority Health was created in 1986 as a result of the 1985 landmark report, "Report of the Secretary's Task Force Report on Black & Minority Health" (8). The mission of the Office of Minority Health is to improve the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities (9). The Office of Minority Health developed the National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care, or National CLAS Standards, in 2000 (10) and revised them in 2013 (11). They are intended to advance health equity, improve healthcare quality, and help eliminate healthcare disparities by establishing a blueprint for people and healthcare organizations to implement culturally and linguistically appropriate healthcare services (5). The enhanced standards (Table A) are a comprehensive series of guidelines that inform, guide, and facilitate practices related to CLAS healthcare services. The Principal Standard (Standard 1) represents the overarching goal of the other 14 standards: "provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs." Supporting this central goal are the concepts of Governance, Leadership, and Workforce (Standards 2–4); Communication and Language Assistance (Standards 5–8); and Engagement, Continuous Improvement, and Accountability (Standards 9–15). By providing a structure to implement CLAS, the enhanced National CLAS Standards aim to improve an organization's ability to address healthcare disparities (5).

Table A. Enhanced National CLAS Standards

Standard domain	Standard description
Principal standard	1. Provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs.
Governance, leadership, and workforce	2. Advance and sustain organizational governance and leadership that promotes CLAS and health equity through policy, practices, and allocated resources.
	3. Recruit, promote, and support a culturally and linguistically diverse governance, leadership, and workforce that is responsive to the population in the service area.
	4. Educate and train governance, leadership, and workforce in culturally and linguistically appropriate policies and practices routinely.
Communication and language assistance	5. Offer free language assistance to people who have limited English proficiency or other communication needs to facilitate timely access to all health care and services.
	6. Inform all people of the availability of language assistance services clearly and in their preferred language, verbally and in writing.
	7. Ensure the competence of people providing language assistance, recognizing that the use of untrained people or minors as interpreters should be avoided.
	8. Provide easy-to-understand print and multimedia materials and signage in the languages commonly used by the populations in the service area.
Engagement, continuous improvement, and accountability	9. Establish culturally and linguistically appropriate goals, policies, and management accountability, and incorporate them into the organization's planning and operations.
	10. Conduct ongoing assessments of the organization's CLAS-related activities and integrate CLAS-related measures into measurement and continuous quality improvement activities.
	11. Collect and maintain accurate and reliable demographic data to monitor and evaluate the impact of CLAS on health equity and outcomes and to inform service delivery.
	12. Conduct regular assessments of community health assets and needs and use the results to plan and implement services that respond to the cultural and linguistic diversity of populations in the service area.
	13. Partner with the community to design, implement, and evaluate policies, practices, and services to ensure cultural and linguistic appropriateness.
	14. Create conflict and grievance resolution processes that are culturally and linguistically appropriate to identify, prevent, and resolve conflicts or complaints.
	15. Communicate the organization's progress in implementing and sustaining CLAS to all stakeholders, constituents, and the general public.

NOTE: CLAS is culturally and linguistically appropriate services.

SOURCE: U.S. Department of Health and Human Services, Office of Minority Health.

Practices that have adopted National CLAS Standards have been shown to provide a supportive infrastructure for providers to promote CLAS through knowledge, skills, and behaviors during clinical encounters. Betancourt states that cross-cultural communication during patient–provider interactions can improve healthcare quality through more accurate diagnoses, prevention of unnecessary risks associated with procedures and medications, and participatory medical decision-making (12). Additionally, consideration of patients' values and preferences during clinical encounters can result in more effective care (12,13).

National Ambulatory Medical Care Survey

The National Ambulatory Medical Care Survey (NAMCS) (see: https://www.cdc.gov/nchs/namcs/about/index.html) is a nationally representative survey of nonfederal, office-based physicians who are primarily engaged in patient care and who do not specialize in radiology, pathology, or anesthesiology (14). NAMCS is designed to provide objective, reliable information about the provision and use of ambulatory medical care services in the United States. It is conducted by the National Center for Health Statistics. In 2016, data was collected by computer-assisted personal interview. NAMCS had two components: the patient record form and the physician induction interview. The patient record form collected patient medical record information about a sample of patients during a randomly selected week. The physician induction interview collected information on physician and practice characteristics (available from: https://archive.cdc.gov/#/details?url=https://www.cdc.gov/nchs/data/ahcd/2016_NAMCS_Traditional_Physician_Induction_Interview_Sample_Card.pdf). This included two questions about CLAS in data collection years 2015–2018.

National CLAS Physician Survey

The National Ambulatory Medical Care Survey Supplement for Culturally and Linguistically Appropriate Services for Office-based Physicians, subsequently referred to as the National CLAS Physician Survey, is a supplement of NAMCS. The National CLAS Physician Survey and NAMCS share the same eligibility criteria and sample frame (15). The National CLAS Physician Survey was funded by the Office of Minority Health.

Survey Objectives

Key objectives for the National CLAS Physician Survey were to describe the nature and extent of physician awareness, knowledge, and implementation of the National CLAS Standards and to identify factors that aided or prevented the provision of CLAS. Specifically, the following objectives guided the scope and content of the survey:

- What is the nature and extent of ambulatory care provider awareness and knowledge of the National CLAS Standards?
- What is the nature and extent of ambulatory care provider implementation of CLAS?
- What factors enable or hinder the provision of CLAS in ambulatory care settings?

Survey Planning and Development

Creation of Draft Questionnaire

A review of the scientific literature was conducted to identify relevant studies on the topics of culturally and linguistically appropriate health services, cultural competency training, and awareness and adoption of National CLAS Standards. Different combinations of the following keywords were used as search terms in Google Scholar and PubMed: "culturally and linguistically appropriate services," "cultural competence," "National CLAS Standards," "physician survey," and "health care provider survey." Only peer-reviewed articles published in English were included. No publication date restrictions were imposed.

The literature review identified five relevant survey and assessment instruments published in peer-reviewed scientific journals. The five survey and assessment instruments were the Cultural Competence Self-Assessment Questionnaire (CCSAQ) (16,17), Tool for Assessing Cultural Competence Training (TACCT) (18), Cultural Competence Assessment (CCA) (19), Cultural Competence Health Practitioner Assessment (CCHPA) (20), and Cultural Assessment Survey (CAS) (21,22) (Table B).

None of these survey and assessment instruments comprehensively incorporated the multiple domains of the National CLAS Standards (Table A). CCSAQ contained the most relevant items consistent with the key objectives of the National CLAS Physician Survey; however, CCSAQ and its modified version focus narrowly on race and ethnicity rather than broadly on diverse cultural characteristics, health beliefs, literacy, and language preferences as defined by the National CLAS Standards. TAACT was designed to assess educational curricula rather than providers' experiences and practices in cultural and linguistic competency. CCA was designed to assess components of cultural competence, including cultural awareness, cultural sensitivity, and cultural competence behaviors in hospice workers. CCA lacked questions about cultural competence: workforce training, workforce education, organizational governance, leadership, and National CLAS Standards awareness. CCHPA focused on self-assessment of health professionals regarding their cultural competence, and CAS was designed to evaluate attitudinal differences among medical students. Neither CCHPA nor CAS were designed for survey data collection.

As a result, a new survey needed to be developed. A draft version of the National CLAS Physician Survey was developed based on the content of the five existing instruments, the three key survey objectives, and the 15 domains of the National CLAS Standards (Table A). Through a repetitive (iterative) process, the Office of Minority Health and the National Center for Health Statistics (NCHS) decided on the content of the draft survey, the ordering and phrasing of the items, and the appropriateness of the response categories. This draft version was then refined through cognitive interview testing.

Cognitive Interview Testing

Comprehension of questionnaire items for the National CLAS Physician Survey was assessed using cognitive interview testing, which allowed for understanding burden and potential response errors. The testing was approved by the NCHS Ethics Review Board (23). The methodology used was based on a qualitative

Table B. Key surveys and instruments from literature review to identify relevant studies on topics of culturally and linguistically appropriate health services, cultural competency training, and awareness and adoption of National CLAS Standards

Instrument name	Description	Citation
Cultural Competence Self-Assessment Questionnaire (CCSAQ)	CCSAQ and its modified version were designed specifically for child- and family-serving agencies to determine their strengths and weaknesses in cross-cultural services. Both questionnaires have two parts (one for direct service providers and another for administrative staff) that contain items about bilingual staff, use of interpreters, record of patient demographics, CLAS policies, and provider knowledge of values and beliefs regarding care delivery to a culturally diverse group.	Mason JL. Cultural competence self-assessment questionnaire: A manual for users. Portland State University, Research and Training Center on Family Support and Children's Mental Health. 1995 Godkin MA, Savageau JA. The effect of a global multiculturalism track on cultural competence of preclinical medical students. Fam Med 33(3):178–86. 2001.
Tool for Assessing Cultural Competence Training (TACCT)	TACCT is a self-administered assessment tool designed to examine medical school curriculum on cultural competence training. The survey assesses the training of physicians, covering cross-cultural clinical skills like working with interpreters and respecting different patient's values, cultures, and beliefs.	Association of American Medical Colleges. Tool for assessing cultural competence training. 2016. Available from: https://www.aamc.org/system/files/c/2/54344-tacct_pdf.pdf.
Cultural Competence Assessment (CCA)	CCA was designed to measure cultural competence specifically among healthcare providers and staff in community hospice care settings. Despite its limited scope in hospice settings, many of the items, including cultural awareness and cultural competent behaviors, were aligned with the National CLAS Standards domains.	Schim SM, Doorenbos AZ, Miller J, Benkert R. Development of a cultural competence assessment instrument. J Nurs Meas 11(1):29–40. 2003.
Cultural Competence Health Practitioner Assessment (CCHPA)	CCHPA is a web-based instrument designed for health professionals to self-assess their capacity to deliver care to a culturally diverse population and promote cultural competence to reduce health disparities among racial and ethnic groups. CCHPA had items on provider knowledge of values and beliefs regarding care delivery to a culturally diverse group, an aspect that is similar to items from CCSAQ.	The National Center for Cultural Competence. Report of significant accomplishments for the National Center for Cultural Competence. Georgetown University Center for Child and Human Development. 2011.
Cultural Assessment Survey (CAS)	CAS was designed to evaluate the attitudes of underserved populations among preclinical and clinical medical students. It was initially used to compare the responses of students who participated in an elective that involved working internationally with underserved populations with those who did not participate in the international elective. The item from CAS on how well the participant felt they could incorporate culturally relevant information into a treatment plan was well-aligned with the National CLAS Standards domains.	Godkin M, Savageau J. The effect of medical students' international experiences on attitudes toward serving underserved multicultural populations. Fam Med 35(4):273–8. 2003. Gozu A, Beach MC, Price EG, Gary TL, Robinson K, Palacio A, et al. Self-administered instruments to measure cultural competence of health professionals: A systematic review. Teach Learn Med 19(2):180–90. 2007.

NOTES: CLAS is culturally and linguistically appropriate services. Google Scholar and PubMed were used with the following search terms: culturally and linguistically appropriate services, cultural competence, National CLAS Standards, physician survey, and health care provider survey. Only peer-reviewed articles published in English were included. No publication date restrictions were imposed.

SOURCES: "Cultural Competence Self-assessment Questionnaire: A Manual for Users"; "The Effect of a Global Multiculturalism Track on Cultural Competence of Preclinical Medical Students"; "Tool for Assessing Cultural Competence Training"; "Development of a Cultural Competence Assessment Instrument"; "Report of Significant Accomplishments for the National Center for Cultural Competence"; "The Effect of Medical Students' International Experiences on Attitudes Towards Serving Underserved Multicultural Populations"; "Self-administered Instruments to Measure Cultural Competence of Health Professionals: A Systematic Review."

question-evaluation method designed to identify question-response problems and examine the construct validities of survey questions (24–26). A separate Q-Bank report, from the NCHS Collaborating Center for Questionnaire Design and Evaluation Research, provides details on the cognitive testing of the content of the National CLAS Physician Survey (instructions, sections, questions, and response categories) using a paper mode of data collection (23). A separate assessment tested the usability of the web format of the questionnaire. Both the paper and web formats of the questionnaire had the same content, question phrasing, and response categories.

Results and Recommendations From Cognitive Interview Testing

Cognitive interview testing identified the following three emergent themes about participant difficulties answering the draft National CLAS Physician Survey: 1) understanding the definition of culture and cultural competency training; 2) differentiating formal from informal training and policies; and 3) interpreting the questions universally for all patients or situationally for specific groups of patients (23).

The National CLAS Physician Survey had a series of questions about training in cultural competency; these are related to the first theme. These questions ask whether the respondent has ever received training in cultural competency, whether they participated in training in cultural competency in the past 12 months, the population groups that the training

included, the specific topics covered in the training, and whether the training was related to credentialing. The challenges with these questions were related to the setting in which the training occurred (23). Respondents younger than age 50 typically considered training in cultural competency as part of medical school or residency education (23). However, respondents age 50 and older typically thought of training in cultural competency as continuing medical education. Not providing a definition for the term "training in cultural competency" led to respondent uncertainty about what activities qualified for the series of questions that asked about it. Consequently, a definition was included in the final questionnaire to reduce respondent uncertainty: Training in cultural competency includes educational opportunities that address topics of culture in settings such as employee orientation, continuing medical education, conferences, or webinars.

The National CLAS Physician Survey included several questions about training and policies related to cultural competency and CLAS that did not specify the formality (or informality) of the training or policy, representing the second theme. Differentiating formal and informal training was a challenge for respondents, specifically, uncertainty about whether the questions referred to formal mandated training or informal voluntary training. Also, incomplete understanding of what training in cultural competency was added to question complexity. Providing a definition that described both formal and informal training in cultural competency resolved this confusion. The formal and informal nature of training as it related to the types of translators used also caused difficulty for respondents. This issue was resolved by specifying translator training in the three response options, "staff/contractor trained as a medical interpreter," "bilingual staff," or "patient's relative or friend."

The questions on policies related to training for new hires and the existence and awareness of policies about the provision of CLAS also posed challenges. Respondents had difficulty determining whether survey questions that referenced policy were referring to formal or informal policies. Many respondents defined formal policies as being written, while informal policies were not. Several respondents assumed the questions referred to formal policies and were uncertain whether the questions were to be answered regarding the practice's policies or the policies of the larger organization. As a result, the question about having "at least one policy" related to CLAS was revised to ask about having "at least one formal written policy." For the question about whether factors affected the provision of CLAS, policy (informal or formal) was changed to "formal written policy."

The final emergent theme was related to respondent challenges differentiating universal and situational interpretation of questions. The questions about whether the respondent considered race, ethnicity, or other cultural factors during assessment of patient needs, diagnosis, and treatment or when conducting health education (Appendix I, Questions 19–22) posed challenges as respondents expressed that there was not a single response for all situations. For example, certain conditions have no known racial, ethnic, or cultural differences in diagnosis or treatment. Thus, a physician may diagnose and treat all patients with that condition the same, regardless of racial, ethnic, or cultural differences. However, for conditions that do differ in diagnosis or treatment by racial, ethnic, or cultural groups, a physician may consider race, ethnicity, or cultural factors on a situational basis when diagnosing or treating patients. These situational differences made it difficult to decide the appropriate responses.

Finalization of National CLAS Physician Survey Questionnaire

The key changes made between the original draft and the final questionnaire are shown in Table C. The changes from the original to revised questionnaire and then to the final version were either related to the themes described previously or to improve clarity, reduce burden, or meet reporting standards. The questions for the final version were reordered for various reasons, including improvement of questionnaire flow, sequential placement of eligibility questions early in the questionnaire, and placement of complex questions at the end of the questionnaire.

After these revisions were made, the final version of the questionnaire had 42 items, capturing information on the respondent's demographic and practice characteristics, cultural competency training, provision of CLAS, and awareness of the National CLAS Standards (Appendix I). Each item on the questionnaire corresponds to a specific domain of the enhanced National CLAS Standards and to a key objective of the survey (Appendix II), except for items related to eligibility, weighting, and physician demographics. The final questionnaire was estimated to take about 9.5 minutes to complete.

The questions used to determine eligibility (questions 2, 3, and 4) and weight the data (questions 2 and 5) were placed at the beginning of the questionnaire to ensure that this required information was available for all respondents. This placement also reduced the burden on ineligible respondents. Survey questions 6–36 address the enhanced National CLAS Standards. The goal was to not bias the respondents' subsequent responses to questions by asking about the National CLAS Standards early in the questionnaire. As a result, those questions were placed near the end of the questionnaire, contrary to the survey methodology recommendation to place the most important questions first (27).

Table C. Key modifications to National CLAS Physician Survey questionnaire from original and revised versions to final version: National Culturally and Linguistically Appropriate Services Physician Survey, 2016

Type of modification	Original version	Revised version	Final version
Training in cultural competency theme	After your clinical training, have you participated in training for cultural competency such as continuing education?	After your clinical training, have you participated in training for cultural competency such as continuing education or continuing medical education?	After medical school and residency, have you participated in training for cultural competency such as continuing medical education (CME)?
	Did you receive any training in cultural competency in your clinical training programs, including medical school and residency?	…	Did you receive any training in cultural competency in your clinical training programs, including medical school and residency? Training in cultural competency includes educational opportunities that address topics of culture in settings such as employee orientation, continuing medical education, conferences, or webinars.
Formal and informal theme	Does your practice have at least one policy in place related to the provision of culturally and linguistically appropriate services?	…	Does your practice have at least one written policy related to the provision of culturally and linguistically appropriate services?
	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients? Policy (formal or informal) related to the provision of culturally and linguistically appropriate services	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients? Policy (formal or informal)	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients? Formal written policy
Rephrased for clarification	In what setting do you typically provide care to the most patients?	In what setting do you typically provide care to the most patients? (Check all that apply)	In what setting do you typically provide care to the most patients? (Check all that apply)
	For the remaining questions, please provide answers reflecting your experiences at this location.	…	For the remaining questions, please provide answers reflecting your experiences at the location where you see the most patients that are not in hospital emergency or hospital outpatient departments. If you feel you see the same number of patients at more than one location, please select one.
	This survey asks about ambulatory care, that is, care for patients receiving health services without admission to a hospital or other facility.	…	This survey is affiliated with the National Ambulatory Medical Care Survey (NAMCS). The survey should only be completed by the physician to whom it is addressed. The purpose of this survey is to understand the provision of culturally and linguistically appropriate services among office-based physicians. Culturally and linguistically appropriate services consider cultural health beliefs, practices, and preferred languages associated with various racial, ethnic, linguistic, or religious groups. Your participation in this survey is voluntary and greatly appreciated. Your answers are completely confidential. If you have questions or comments about this survey, please call xxx-xxx-xxxx.
	How many years have you been providing direct care for ambulatory care patients?	…	Including residency, how many years have you been providing direct care for patients in an office-based setting?
	How aware are you of your practice's culturally and linguistically appropriate services-related policy?	…	If you work in a non-solo practice, how aware are you of your practice's written policy related to culturally and linguistically appropriate services?
	Which methods are used to inform your patients of free language-assistance services available in your practice? (Check all that apply)	Which of these free language-assistance services are available to patients in your practice? (Check all that apply)	Which of these free language-assistance services are available to patients in your practice? (Check all that apply)

See footnotes at end of table.

Table C. Key modifications to National CLAS Physician Survey questionnaire from original and revised versions to final version: National Culturally and Linguistically Appropriate Services Physician Survey, 2016—Con.

Type of modification	Original version	Revised version	Final version
Rephrased for clarification	Which methods are used to inform your patients of free language-assistance services available from external sources? (Check all that apply)	Which of these free language-assistance services are available to patients from external sources? (Check all that apply)	Item was deleted
	How often do you use each type of interpreter? Response choices: Trained staff or contractor, Patient's relative or friend	When you use interpreters, how often do you use each type? Response choices: Trained staff, Contractor, Patient's relative or friend	When you use interpreters, how often do you use each type? Response choices: Staff/contractor trained as a medical interpreter, Bilingual staff, Patient's relative or friend
	What information does your practice collect on your patients' culture and language characteristics? (Check all that apply)	What information does your practice record on your patients' culture and language characteristics? (Check all that apply)	What information does your practice record on your patients' culture and language characteristics? (Check all that apply)
	Help-seeking practices? (Help-seeking practices: process of actively seeking help from others, whether it be informally through friends/family or professionally)	Help-seeking practices? (Process of actively seeking help from others, whether it be informally through friends/family or professionally)	Item was deleted
	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients? Response choices: Helped, No effect, Hindered, Not applicable	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients? Response choices: Helped, No effect, Prevented, Not applicable	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients? Response choices: Helped, Helped a little, Did not help, Not applicable
	What outcome(s) do you expect by providing culturally and linguistically appropriate services to your patients? (Check all that apply)	…	Mark your agreement or disagreement with the following statements. {Strongly disagree, Disagree, Agree, Strongly agree} By providing culturally and linguistically appropriate services to my patients I expect:
	Satisfaction with services	…	Improved patient satisfaction with the services provided
	Comprehension of treatment and lifestyle recommendations	…	Improved comprehension of treatment and lifestyle recommendations
	Health status/outcomes	…	Item was deleted
	Adherence to treatment and lifestyle recommendations	…	Better adherence to treatment and lifestyle recommendations
	Improved patient trust	…	Improved patient trust
	Improved quality of patient care (e.g., diagnostics, communication, treatment)	…	Improved quality of patient care (e.g. diagnostics, communication, treatment)
	Decreased likelihood of liability/malpractice claims	…	Decreased likelihood of liability/malpractice claims
	Other(s) (Please specify): _____	…	Item was deleted
	I do not expect any outcomes in providing culturally and linguistically appropriate services to my patients.	…	Item was deleted
	I do not provide culturally and linguistically appropriate services.	…	Item was deleted

See footnotes at end of table.

Table C. Key modifications to National CLAS Physician Survey questionnaire from original and revised versions to final version: National Culturally and Linguistically Appropriate Services Physician Survey, 2016—Con.

Type of modification	Original version	Revised version	Final version
To meet reporting standards	What is your ethnicity?	…	Are you Hispanic, Latino/a, or Spanish Origin? (Check all that apply)
	Not Hispanic or Latino	…	No, not of Hispanic, Latino/a, or Spanish origin
	Hispanic or Latino	…	Yes, Another Hispanic, Latino/a or Spanish origin Yes, Cuban Yes, Mexican, Mexican American, Chicano/a Yes, Puerto Rican
	What is your race? (Check all that apply)	…	What is your race? (Check all that apply)
	American Indian and Alaska Native	…	American Indian or Alaska Native
	Black or African American	…	Black or African American
	Asian	…	Asian Indian Chinese Filipino Japanese Korean Vietnamese Other Asian
	Native Hawaiian or Other Pacific Islander	…	Guamanian or Chamorro Native Hawaiian Samoan Other Pacific Islander
	White	…	White
Definition moved for clarification	Definition of culture was misplaced (after first mention)	Definition placed immediately before the first use of the term	Definition placed immediately before the first use of the term
	Definition of culturally and linguistically appropriate services was misplaced (after first mention)	Definition placed immediately before the first use of the term	Definition placed immediately before the first use of the term
	Universal symbols	Universal symbols (A sign recognized by most people. Example: a square around a plus sign for first aid.)	Universal symbols (A sign recognized by most people. Example: a square around a plus sign for first aid.)
	Infographics	Infographics (A visual image such as a chart or diagram used to represent information or data.)	Infographics (A visual image such as a chart or diagram used to represent information or data.)
Skip pattern changes to correctly capture response	If the respondent answered no to "Are you fluent in a language besides English?" he or she would skip the question "How many languages, other than English, do you feel comfortable enough to provide healthcare services?"	…	Regardless of response to "Are you fluent in a language besides English?" respondent will be asked, "How many languages, other than English, do you feel comfortable enough to provide healthcare services?"

See footnotes at end of table.

Table C. Key modifications to National CLAS Physician Survey questionnaire from original and revised versions to final version: National Culturally and Linguistically Appropriate Services Physician Survey, 2016—Con.

Type of modification	Original version	Revised version	Final version
Skip pattern changes to reduce burden	Respondents who answered, never heard of it to "How familiar are you with the National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care (the National CLAS Standards)?" were asked to answer the question, "Has your practice adopted the National CLAS Standards?"	…	Respondents who answered, never heard of it to "How familiar are you with the National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care (the National CLAS Standards)?" no longer answer the question, "Has your practice adopted the National CLAS Standards?"
	Respondents who did not check that they collect information on patient "race/ethnicity" would be asked to answer the question about the race and ethnic backgrounds of the patient population.	…	Respondents who answer no or don't know to, "Does your practice record your patients' race or ethnicity?" no longer answer questions about patient race and ethnicity.
Skip pattern changes to correctly capture response	What information does your practice record on your patients' culture and language characteristics? (Check all that apply)	…	Does your practice record your patients' race or ethnicity?
	Race/Ethnicity	…	Yes No [SKIP to item 38] I don't know [SKIP to item 38]

… Category not applicable; the question wording was not revised.

NOTE: CLAS is culturally and linguistically appropriate services.

SOURCE: National Center for Health Statistics, National CLAS Physician Survey questionnaire, 2016.

Representation of Enhanced National CLAS Standards in Items of National CLAS Physician Survey

Appendix II shows how the enhanced National CLAS Standards are represented within the content of the National CLAS Physician Survey. Standard 1 of the enhanced National CLAS Standards is the Principal Standard. Some of the questions in the National CLAS Physician Survey, especially the attitudinal ones, fit best with this overarching standard. Specifically, questions 19–22 ask about the consideration of cultural factors when assessing, diagnosing, and treating patients and when conducting health education. In addition, attitudinal questions about both the expected outcomes of providing CLAS (questions 24–29) and the effect of factors that help or hinder the provision of CLAS (questions 30–34) are included.

Standards 2–4 address governance, leadership, and workforce. Standard 2 is addressed in questions 11 and 36: question 11 is about written CLAS policies at the practice and the physician's knowledge of the policy (question 11a). Question 36 asks whether the physician's practice has adopted the National CLAS Standards. Standard 3 is associated with questions 9–11. Standard 4 is captured in questions 6–10. These questions ask about training in cultural competency. One question specifically asks whether training is required for physician new hires (question 9).

Standards 5–8 address communication and language assistance. Each of the standards in this domain are addressed in the National CLAS Physician Survey. Standard 5 is captured in questions 12–14. Question 12 asks about printed materials available for patients with limited English literacy. Question 13 asks about the free language-assistance services that are available at the physician's practice. Question 14 asks whether interpreters are used for patients who have limited English proficiency. Standards 6 and 7 are assessed in questions 14, 16, and 17. Question 14 asks whether interpreters are used and, if so, the types of interpreters used (question 14a). Question 14a asks whether staff and contractors trained as medical interpreters, bilingual staff, or the patient's relative or friend are used. Question 16 asks about the physician's fluency in languages other than English. Question 17 asks the number of languages the physician feels comfortable using to provide healthcare services. The physician fluency questions (questions 16 and 17) were moved from the beginning of the questionnaire to the middle of the questionnaire with the other language questions to improve flow and cohesiveness. The final standard of this domain, Standard 8, is addressed in questions 12, 13, and 15. Questions 12 and 13 ask about items for patients with limited English literacy, which include universal symbols and infographics (question 12) and multimedia materials, such as recorded messages and translated signs (question 13). Question 15 asks about the types of materials available for patients in languages other than English.

Standards 9–15 address engagement, continuous improvement, and accountability. Standards 9–11 are captured in the survey. Standard 9 is captured in questions 11 and 36 on policy implementation. Standard 10 is addressed in questions 18, 23, 37, and 38. Question 18 is about the physician's knowledge of patient health beliefs, customs, and values. The frequency at which the practice is assessed for the cultural and linguistic appropriateness of services is addressed in question 23. Recording of patient characteristics related to culture is asked in questions 37 and 38. Standard 11 is addressed in questions 37 and 38. Standards 12–15 are not represented in the National CLAS Physician Survey.

The remaining survey questions collect demographic information. The demographic questions (37–42) were placed at the end of the questionnaire, which is a common survey methodology practice (27). Question 37a asks for the percentage of the physician's patient population by race and ethnicity. Initially, this question was considered too burdensome to ask physicians who may not know their patient population's racial and ethnic composition. Because of this, it was recommended that a skip pattern be added so that those who indicated that they did not collect information on their patient population's racial and ethnic composition would not be asked the more detailed question about race and ethnicity (question 37a). Physician demographics (sex, race, and ethnicity) are asked in questions 39–41. The race and ethnicity categories were revised to align with HHS implementation guidance on data collection standards for race, ethnicity, sex, primary language, and disability status (28). The final item on the questionnaire was a checkbox asking the respondent to "verify that this questionnaire was completed by the physician to whom it was addressed." This statement and instructions that the questionnaire should be completed only by the physician to whom it was addressed were important factors considered during the development process. Using proxy respondents was inappropriate due to the nature of the questions and the inability of anyone other than the physician to respond accurately to the survey questions.

Survey Operations and Fielding

Definition of Population and Sample

The National CLAS Physician Survey sample included 2,400 physicians. NAMCS and the National CLAS Physician Survey share the same sample frame and eligibility criteria. The basic sampling unit for the National CLAS Physician Survey was the physician. The sampling frame included nonfederally employed physicians classified by the American Medical Association or American Osteopathic Association as "office-based, patient care" and physicians classified as "hospital-employed" by the American Medical Association. Office-based, hospital-employed physicians work in practices that are owned by a hospital or hospital system. The physician universe excluded physicians from the specialties of anesthesiology, pathology, and radiology, and those who were federally employed or older than age 85 at the time of the survey.

Similar to NAMCS, a respondent was determined to be eligible (or in scope) if they provided direct care for patients in an office-based, nonhospital setting (Appendix I, questions 3 and 4) and confirmed via a checkbox that they were

the physician to whom the questionnaire was addressed (Appendix I, after question 42). Nonhospital settings that were in scope for the National CLAS Physician Survey included single or group practices, freestanding clinics or urgent care centers, community health centers, mental health centers, nonfederal government clinics, family planning clinics, health maintenance organizations or other prepaid practices, and faculty practice plans.

A respondent was determined to be ineligible (or out of scope) if they did not provide direct care, was no longer in practice, worked only in ineligible setting(s), was deceased, or if their current contact information could not be located by the end of data collection. A physician was classified as "unknown" eligibility if, after all contact attempts, the physician was located but their eligibility status could not be determined.

Among eligible respondents, those who were defined as having a complete survey were those who provided a valid answer (a nonmissing response) for survey questions 2, 6, 7, 11–15, 18, and 35, and at least one valid answer for questions 30–33 (Appendix I). Among eligible respondents, those who were defined as having a partial survey were those who provided at least one missing response for survey questions 6, 7, 11–15, 18, or 35, but answered questions 1, 2, and 5 and at least one other question. Among eligible respondents, those who were defined as having a refused survey did not answer any questions on the survey except questions 1, 2, and 5.

Data Collection Procedures

The survey used mixed-mode data collection that included a self-administered web questionnaire (n = 48, 12.1%), self-administered mail paper questionnaire (n = 346, 87.1%), and computer-assisted telephone interview (n = 3, 0.8%) (15). The questionnaire included instructions that it should only be completed by the physician to whom it was addressed. The physician had to respond because the questionnaire asked about the physician's training, knowledge, provision of services, and organizational environment. The paper version of the questionnaire used in the mail mode of data collection can be found in Appendix I. An electronic version of this questionnaire is available from the NCHS National Health Care Surveys website: https://archive.cdc.gov/#/details?url=https://www.cdc.gov/nchs/data/ahcd/2016_NAMCS_CLAS_Sample_Card.pdf.

Fielding of the National CLAS Physician Survey occurred from August to December 2016. The first contact with the sample physician was through an introductory letter from the NCHS director. This introductory letter invited physicians to participate in the survey via the web, informed them of the voluntary nature of the survey, and provided log-in instructions for the web version of the questionnaire. Three weeks after the introductory letter, all sampled physicians who had not responded to the web-based questionnaire received the first mailing. This mailing included a modified introductory letter, a paper questionnaire, and a self-addressed return envelope for the paper questionnaire. Then, about 4½ weeks after the introductory letter, all sampled physicians received a postcard that thanked them for their participation or reminded them to participate.

Seven weeks after the introductory letter, the physicians who had not responded to the web-based questionnaire and had not returned the paper questionnaire received a second mailing. This mailing included a modified introductory letter, a paper questionnaire, and a self-addressed return envelope for the paper questionnaire. Eleven weeks after the introductory letter, physicians who had not yet responded received a third mailing. The third mailing included a modified introductory letter, a paper questionnaire, and a self-addressed return envelope. Finally, 14 weeks after the introductory letter, all remaining nonresponding physicians were contacted via telephone in a final attempt to obtain survey data. If the physician agreed to participate, the questionnaire was administered via computer-assisted telephone interview. If the physician declined to participate, the interviewer documented the physician as a refusal.

Physicians were asked several eligibility questions to assure that they met National CLAS Physician Survey eligibility criteria. Table D shows the final disposition of sampled physicians from the 2016 National CLAS Physician Survey (15). Of the 2,400 physicians, 697 did not meet all the criteria and were considered ineligible or out of scope (Table D, final disposition codes 3, 4 and 9) for the survey (15). The most frequent reasons for 358 physicians being ineligible or out of scope were that the physician was no longer in practice, did not see ambulatory patients, was retired, or was not working in an office-based setting (final disposition codes 3 and 9) (15). Another 339 physicians could not be located via a verified address or a verified telephone number so were considered ineligible or out of scope (final disposition code 4) (15). Eligibility status for 1,115 physicians was not determined; this was due to lack of resources (final disposition codes 5 and 7) (15).

Of the 588 in-scope or eligible physicians (Table D, final disposition codes 1, 2, 6, and 8), 397 participated in the survey by completing one or more subject-matter item(s) on the questionnaire (final disposition codes 1 and 6) (15). Of the 397 physicians for whom questionnaires were received, 340 participated fully or adequately (completed questions required to satisfy the definition of a complete survey; final disposition code 1), and 57 participated partially (completed some questions but not enough to be considered complete; final disposition code 6) (15).

The overall unweighted response rate was 31.0% (33.8% weighted), based on the number of full responders. Full responders were eligible respondents who either fully or partially completed the survey based on nonmissing responses to predetermined items. The overall unweighted participation rate was 36.1% (39.3% weighted), based on the

Table D. Sample size and unweighted and weighted percentages for final disposition codes of sampled physicians: National CLAS Physician Survey, 2016

Final disposition	Sample size (number)	Unweighted percent	Calibrated weight (number)[1]	Weighted percent
All physicians	2,400	100.0	615,757.2	100.0
1. Eligible respondent, complete	340	14.2	84,186.1	13.7
2. Eligible, refused	41	1.7	10,310.1	1.7
3. Ineligible, out of scope	347	14.5	105,470.4	17.1
4. Ineligible, not locatable	339	14.1	102,576.5	16.7
5. Unknown eligibility, refusal	57	2.4	15,417.1	2.5
6. Eligible respondent, partially complete	57	2.4	13,638.1	2.2
7. Unknown eligibility, partially complete	1,058	44.1	248,635.8	40.4
8. Eligible, post-survey	150	6.3	34,182.7	5.6
9. Ineligible, out of scope, post-survey	11	0.5	1,340.5	0.2

[1]Sampling weights are calibrated to numbers of physicians listed in files from the American Medical Association in June 2017 and the American Osteopathic Association in December 2016.

NOTE: CLAS is culturally and linguistically appropriate services.

SOURCE: National Center for Health Statistics, National CLAS Physician Survey public-use file documentation, 2016.

total of full and partial responders. The weighted response rate used the same computation procedures as used for the unweighted response rate, except that estimated physician counts replaced the unweighted sample counts in those computations. The physician-level response rate for the 2016 National CLAS Physician Survey sample was 33.8% (weighted). This was lower than the 46.0% weighted physician-level response rate for the core 2016 NAMCS (14).

Some factors that may have contributed to the lower response rate in the 2016 National CLAS Physician Survey compared with the 2016 NAMCS include differences in the fielding period, differing modes of data collection, and higher percentages of physicians with unknown eligibility. The 2016 NAMCS physician-level response rate was based on successful collection of data in the physician induction interview. The National CLAS Physician Survey fielding period was slightly delayed. As a result, the data collection schedule was compressed. The data collection ended during the winter holiday season when many physicians are unavailable. This negatively impacted participation rates. The 2016 NAMCS physician induction interview was conducted as a computer-assisted telephone interview or computer-assisted in-person interview. The 2016 National CLAS Physician Survey was conducted via self-administered web questionnaire, self-administered mail paper questionnaire, or computer-assisted telephone interview. Lastly, unlike the CLAS survey, eligibility was able to be assessed for all physicians sampled in the 2016 NAMCS physician induction interview.

Data Processing and Weighting

Data Edits and Quality Control

SRA International, Inc. was the data collection contractor for the National CLAS Physician Survey. After SRA collected electronic data from the web-based questionnaire, several steps were required for data processing. More detail on this process can be found in the public-use file documentation (15).

Upon receipt, all mailed questionnaires were put into batches. A data entry operator entered the questionnaire batches into the system. Another operator rekeyed each batch into the system. A third person resolved any discrepancies between the first and second data entry operators. The discrepancy rate was 0.58 discrepancies per questionnaire (15). Survey eligibility status could not be determined for a large number of National CLAS Survey physicians (n = 1,115 or 46.4%) (15).

Estimation Procedures and Weighting

Statistics produced from the 2016 National CLAS Physician Survey use a multistage estimation procedure. The objective of these procedures is to produce essentially unbiased national estimates (15). The weighting procedure has three components: 1) inflation by reciprocals of the selection probabilities, 2) ratio adjustment to fixed totals, and 3) adjustment for nonresponse (15). Each of these components is described in more detail later in this report; the information provided is entirely from the 2016 National CLAS Survey public-use file documentation (15).

Inflation by Reciprocals of Sampling Probabilities

The first weight component is the sampling weight (or reciprocal of the physician's selection probability). Because the survey used a one-stage sample design, the sampling probabilities were determined by sampling strata defined by U.S. Census Bureau region and physician specialty group. For each sampling stratum, the initial selection probability is the number of sample physicians in the stratum divided by the total number of physicians listed in the sampling frame for that stratum.

Ratio Adjustment

The initial sampling weights were adjusted to assure that estimates would reflect the physician population in 2016, when the survey was conducted. A post-ratio adjustment was made within each of the sampling strata defined by Census region and physician specialty group to adjust for changes in

the physician population represented in the sampling frame between the time when the sample was selected and when the survey was conducted. The ratio adjustment numerator was the number of sample-eligible physicians listed for the stratum in the American Medical Association master files obtained in June 2017 (that is, the first files obtained after the end of 2016) and American Osteopathic Association master files obtained in June 2017, and the denominator was the estimate of the numerator based on the sample. This adjusted sampling weight is referred to as PS_WGT.

Adjustment for Nonresponse and Eligibility

After the ratio was adjusted, the National CLAS Physician Survey weights were adjusted to account for nonresponse and eligibility by defining a composite response or eligibility class for each sample unit. An adjustment was made for those physicians whose eligibility for the survey was not determined, and for in-scope physicians who did not participate in the survey. Ultimately, adjustments were made by shifting the weights of nonrespondent or noneligible physicians to those who were deemed eligible respondents within the same Census region, specialty type (primary care, surgical specialty, or medical specialty), and physician specialty group. Smoothing techniques were used to avoid outlier weights. This weight, which was formed by multiple sequential adjustments, defines the final survey weight, CLASWEIGHT.

Final Estimation and Analytic Weights

The 2016 National CLAS Physician Survey data file contains the CLASWEIGHT, which is the physician-level analysis weight for producing national estimates from sample data (15). Each record in the data file represents one physician in the sample, and that single physician represents physicians within their region and specialty group. By combining the weights contained in the CLASWEIGHT variable on the 397 sample records for 2016, the user can obtain the estimated total of 293,306 physicians in the United States (15). This number is slightly lower than the physician estimate of 330,582 obtained from the 2016 NAMCS (14). The difference is due to the large number of National CLAS Physician Survey physicians for whom survey eligibility status could not be determined, *n* = 1,115 or 46.4% (Table D, final disposition codes 5 and 7) (15).

These weights allow data users to calculate estimates and the associated variances. See examples for SUDAAN, SAS, Stata, and SPSS code in Appendix III.

Assessment of Nonresponse Bias and Weighting Evaluation

Nonresponse bias in the National CLAS Physician Survey estimates was evaluated at the physician level. This involved several comparisons. Comparison 1 estimates use the ratio-adjusted weights (PS_WGT) between all sampled physicians and CLAS respondents. Comparison 1 could indicate if differences exist in the selected sample and the respondent sample. If so, this could indicate potential bias before nonresponse and eligibility adjustment. Note that if the selected sample contains many ineligible physicians, the characteristics of the eligible respondent physicians may differ from the sampled physicians despite the lack of nonresponse bias. Comparison 2 estimates among CLAS respondents use the final weights adjusted for nonresponse and unknown eligibility (CLASWEIGHT) between estimates of CLAS respondents and all sampled physicians using PS_WGT. This comparison was conducted to indicate whether the nonresponse and unknown eligibility adjustments improved the estimates by reducing nonresponse bias. Comparison 3 estimates of CLAS respondents use CLASWEIGHT to 2016 NAMCS respondents using the final weights for that survey (PHYZWT). The comparison could indicate whether differences exist for shared variables for CLAS and 2016 NAMCS respondents. The 2016 NAMCS was used for this analysis because it was conducted among office-based physicians in the same survey year. Wald 95% confidence intervals were constructed for comparison.

Comparing different weighting-adjustment methods or different survey systems by direct testing methods requires an understanding of all sources of variation. When such information is deemed limited or difficult to assess, an "overlap of confidence intervals" method is often used (29). This approach was used for this analysis. Although there are multiple ways to assess nonresponse bias, the confidence interval method was chosen because it allowed comparison of the complex structured data in the surveys. Additionally, it did not require a gold standard to be chosen for the analysis, because no gold standard has been established for the National CLAS Physician Survey and NAMCS measures used in this analysis. If the confidence intervals generated by estimates from both weighting schemes in the CLAS survey, or when comparing the CLAS survey with NAMCS, did not overlap, that was considered evidence of a difference. An overlap was treated as indication of similarity between the weights.

Potential bias was assessed according to sex (female or male), physician age (younger than 50 or 50 and older), and metropolitan status of the physician practice (metropolitan statistical area or nonmetropolitan statistical area). These variables were available in the sample files for both surveys and were not involved in the adjustment of weights. Other important factors may have contributed to nonresponse bias that were not measured and, as a result, could not be compared in the bias assessment.

Results of Nonresponse Bias

Figure 1 compares the weighted percent distributions of the 2016 National CLAS Physician Survey for all sampled physicians and respondents by physician sex and age, and the metropolitan status of physician practice. Estimates of females and males were similar between respondent physicians

and sampled physicians, using the base weight (PS_WGT). Although the confidence intervals overlapped, they were wider for respondent physicians compared with sampled physicians. Results for CLAS respondents using the adjusted weight (CLASWEIGHT) were similar to those using the base weight. Results by metropolitan statistical area status showed similar patterns. However, estimates of age did not follow this pattern. The percentage of physicians younger than 50 was lower among respondent physicians using the base weights compared with sampled physicians with base weights, and their confidence intervals did not overlap. However, the final weights enhanced the estimate of respondent physicians younger than 50 and resulted in overlapping confidence intervals with sampled physicians with base weights, although estimates were still lower (33.8% for respondent physicians compared with 41.4% for sample physicians). The pattern of enhanced estimates of physicians age 50 and older using the final weights was similar. However, because the percentage estimate of physicians younger than 50 is complementary to the percentage estimate of physicians 50 and older, the relative magnitudes of the percentage estimates using base weights and final weights with respondents and base weights with all sampled physicians were in the opposite direction, compared with the pattern observed for physicians younger than 50.

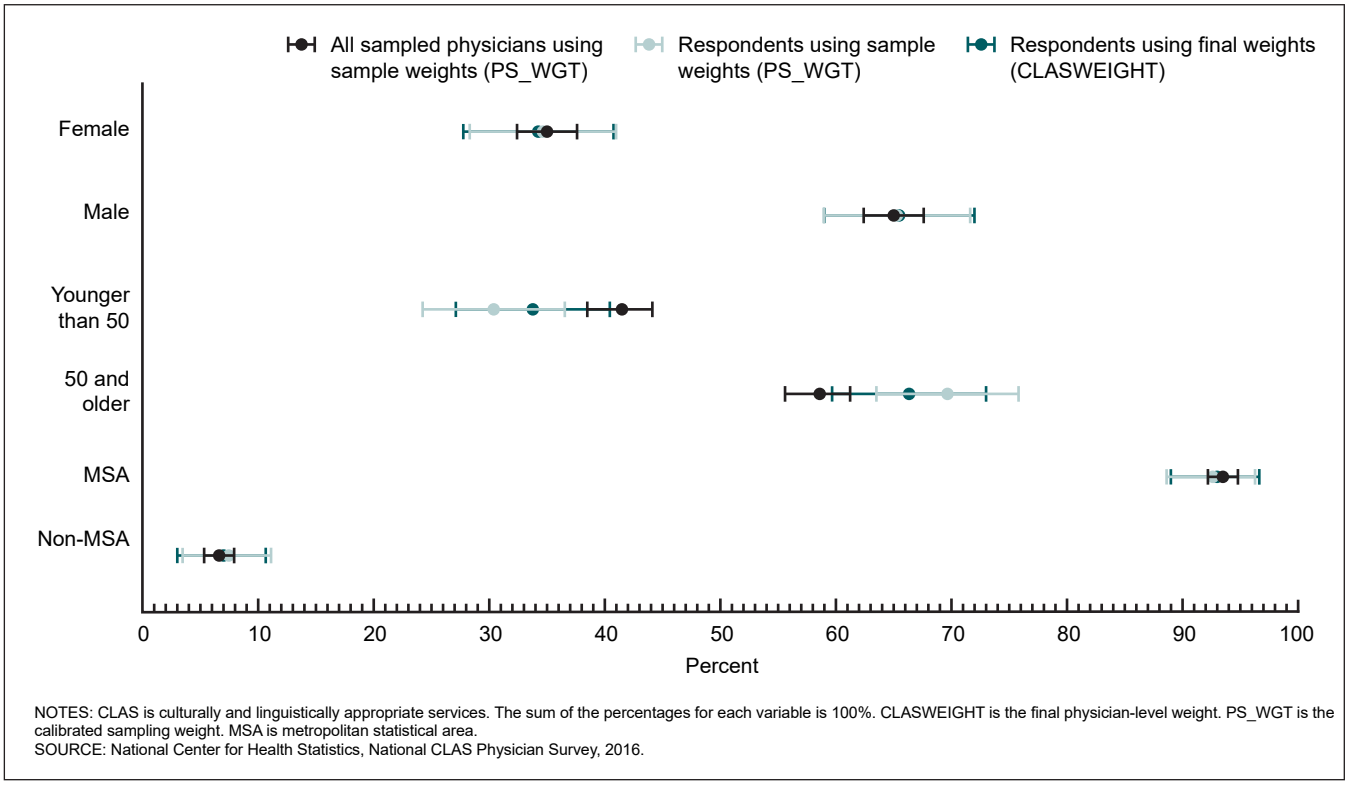
Figure 2 compares weighted percent distributions after weight adjustments accounting for nonresponses of CLAS survey estimates (CLASWEIGHT) compared with NAMCS estimates (PHYZWT). Based on the overlap of the confidence intervals, no significant differences were observed between physician sex, physician age, or metropolitan statistical area of the physician practice in the National CLAS Physician Survey and 2016 NAMCS.

Item Nonresponse

Item nonresponse occurs when a survey respondent does not answer one or more items on the questionnaire. Among the many reasons for item nonresponse are a) respondent refusal to answer certain items and b) incorrect following of the questionnaire flow by the respondent. Refusal to answer certain items could be due to the sensitive nature of the item, the respondent not knowing the answer to the item, or the respondent simply choosing not to respond. Incorrect questionnaire flow occurs when the respondent skips items that should have been answered or answers items that should have been skipped. Unweighted item nonresponse rates were 5.0% or less for all items except the items in Table E.

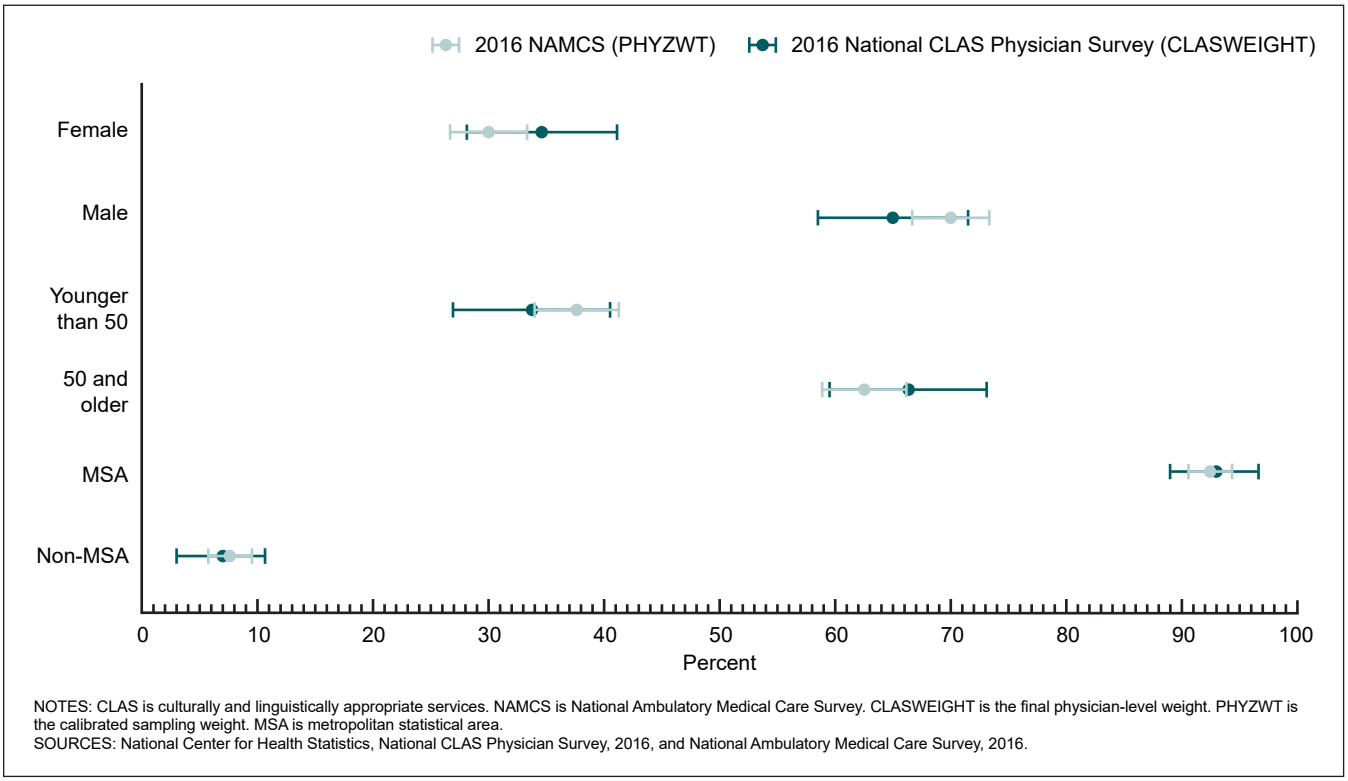
The denominators for the rates of missing values were adjusted to account for skip patterns in the questionnaire. For example, only questionnaires from physicians who used interpreter services were included in the calculation of item nonresponse on the items concerning how often the physician used various types of interpreters.

Figure 1. Weighted percent distribution of all sampled physicians and respondents, by selected physician characteristics, 2016 National CLAS Physician Survey



NOTES: CLAS is culturally and linguistically appropriate services. The sum of the percentages for each variable is 100%. CLASWEIGHT is the final physician-level weight. PS_WGT is the calibrated sampling weight. MSA is metropolitan statistical area.
SOURCE: National Center for Health Statistics, National CLAS Physician Survey, 2016.

Figure 2. Final estimates for 2016 National CLAS Physician Survey and 2016 National Ambulatory Medical Care Survey



NOTES: CLAS is culturally and linguistically appropriate services. NAMCS is National Ambulatory Medical Care Survey. CLASWEIGHT is the final physician-level weight. PHYZWT is the calibrated sampling weight. MSA is metropolitan statistical area.
SOURCES: National Center for Health Statistics, National CLAS Physician Survey, 2016, and National Ambulatory Medical Care Survey, 2016.

Data Access

Data users can obtain the National CLAS Physician Survey public-use file and the documentation for the data file on the NAMCS website: https://archive.cdc.gov/www_cdc_gov/nchs/ahcd/datasets-documentation-related-archived.htm.

Additionally, a restricted data file is available at the Research Data Center. More information about accessing data at the Research Data Center is available from: https://www.cdc.gov/rdc/?CDC_AAref_Val=https://www.cdc.gov/rdc/index.htm. Data from the two National CLAS Physician Survey questions that are included in the 2015 and 2016 NAMCS physician induction interview are available in the Research Data Center. Data users with questions may contact the National Center for Health Statistics, Division of Health Care Statistics, Data Analytics and Production Branch at 301–458–4600 or ambcare@cdc.gov.

Guidelines for Data Use

With the goal of mutual benefit, NCHS requests that recipients of data files use them for specific purposes.

Any published work using the National CLAS Physician Survey should acknowledge NCHS as the original source. The suggested citation, ''Data Source: National Center for Health Statistics, National Culturally and Linguistically Appropriate Services Survey for Office-based Physicians, 2016'' should appear at the bottom of all tables. Published work using the data should also include a disclaimer that credits any analyses, interpretations, or conclusions to the author and not to NCHS, which is responsible only for the initial data. Consumers who wish to publish a technical description of the data should make a reasonable effort to ensure that the description is consistent with that published by NCHS.

The Confidential Information Protection and Statistical Efficiency Act and the Public Health Service Act (Section 308d) require that these data collected by NCHS should be used only for health statistical reporting and analysis. Any effort to determine the identity of any reported case is prohibited by these laws. NCHS takes extraordinary measures to assure that the identity of survey subjects cannot be disclosed. All direct identifiers, as well as any characteristics that might lead to identification, have been omitted from the data set. Any intentional identification or disclosure of a person or establishment violates the assurances of confidentiality given to the providers of the information. As a result, users must:

- Use the data in this data set for statistical reporting and analysis only
- Make no use of the identity of any person discovered, inadvertently or otherwise, and advise the Director of NCHS of any such discovery (301–458–4500)
- Not link this data set with individually identifiable data from any other NCHS or non-NCHS data sets

Table E. Questionnaire items with nonresponse rates greater than 5%, variable names, instructions, denominator, and unweighted percentage missing: National CLAS Physician Survey, 2016

Questionnaire number	Variable name	Relevant instructions or context and question text	Denominator	Percent missing
8a	CME12POP1-6	Which of these population groups have been addressed in the training(s) for cultural competency in which you have participated in the past 12 months?	81	8.6
8b	CME12AREA1-5	Which of the following areas have been typically included in training(s) for cultural competency in which you have participated in the past 12 months?	81	8.6
10	OFFERTRG	How often does your practice offer or make available training in cultural competency?	397	9.4
11a	AWAREPOLICY	If "yes" to CLASPOLICY (Does your practice have at least one written policy related to the provision of culturally and linguistically appropriate services?), if you work in a non-solo practice, how aware are you of your practice's written policy related to culturally and linguistically appropriate services?	168	16.1
14	INTERP	Do you use interpreters when working with patients who have limited English proficiency?	397	8.1
14a1	INTERPTY1	If "yes" to INTERP (Do you use interpreters when working with patients who have limited English proficiency?), when you use interpreters, how often do you use staff/contractor trained as a medical interpreter?	340	17.1
14a2	INTERPTY2	If "yes" to INTERP (Do you use interpreters when working with patients who have limited English proficiency?), when you use interpreters, how often do you use bilingual staff?	340	13.5
14a3	INTERPTY3	If 'yes' to INTERP (Do you use interpreters working with patients who have limited English proficiency?), when you use interpreters how often do you use the patient's relative or friend?	340	12.5
16	LANGUAGE	Are you fluent in a language besides English?	397	6.6
17	LANGSERV	How many languages, other than English, do you feel comfortable enough to provide health care services?	397	8.6
18	KNOWBELIEFS	How knowledgeable are you of your patients' health beliefs, customs, and values?	397	7.1
30	FORMALPOLICY	How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients—Formal policy?	203	7.9
31	RESOURCES	How has each of the following factors affected you in providing cultural and linguistically appropriate services to your patients?—Organizational resources	250	8.4
32	CULTRTRG	How has each of the following factors affected you in providing cultural and linguistically appropriate services to your patients?—Training in cultural competency	234	10.3
33	PATKNOW	How has each of the following factors affected you in providing cultural and linguistically appropriate services to your patients?—Personal knowledge about the prevailing beliefs, customs, norms, and values of the diverse groups in your patient load	348	6.0
35a1–5	CLASKNOW1—CLASKNOW5	If CLASKNOW (How familiar are you with the National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care [the National CLAS Standards]?), is "heard of it but do not know much about it," "know something about it," or "very familiar with it," how have you gained knowledge about the National CLAS Standards?—through initial employment orientation in my current organization; through other trainings such as in-service, continuing education, or professional development activities in my current organization; through attending a training/meeting/webinar outside of my current organization; through reading a report, publication, newsletter, or other materials publicly available; other	142	30.3

See footnotes at end of table.

Table E. Questionnaire items with nonresponse rates greater than 5%, variable names, instructions, denominator, and unweighted percentage missing: National CLAS Physician Survey, 2016—Con.

Questionnaire number	Variable name	Relevant instructions or context and question text	Denominator	Percent missing
36	CLASADOPT	Has your practice adopted the National CLAS Standards?	142	12.7
41a	…	What percent of your patient population is represented by each of the following categories?	271	29.2
	PATHISPANICR	Hispanic or Latino, of any race	…	…
	PATAINALNR	American Indian or Alaska Native, not Hispanic or Latino	…	…
	PATASIANR	Asian, not Hispanic or Latino	…	…
	PATBLACKR	Black or African American, not Hispanic or Latino	…	…
	PATNHOPIR	Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	…	…
	PATWHITER	White, not Hispanic or Latino	…	…
	PAT2MORER	Two or more races, not Hispanic or Latino	…	…
	PATDKNOWR	I don't know	…	…
41	PHYRACER	What is your race?	397	7.3

… Category not applicable.

NOTE: CLAS is culturally and linguistically appropriate services.

SOURCE: National Center for Health Statistics, National CLAS Physician Survey public-use file documentation, 2016.

Use of the data set signifies users' agreement to comply with these statutory-based requirements.

Conclusion

Ambulatory care providers serve as a critical access point of care for many diverse populations. Through the provision of CLAS, they can reduce longstanding health disparities. The National CLAS Physician Survey was the first national survey to collect data that assessed the current practices, showed areas where physicians may be aware of and practicing the standards, and showed potential gaps among a nationally representative sample of office-based physicians. The survey is designed to provide accurate, reliable, and timely findings on key factors related to providing CLAS in ambulatory care settings that can better inform health policy, medical practice, quality-of-care research, education for health professionals, and future evaluations of CLAS. It will produce not only the first nationally representative results on CLAS in physician offices, but also baseline results for benchmarking the progress of meeting the key objectives of the National CLAS Standards among office-based physicians. The findings from the National CLAS Physician Survey will describe how the National CLAS Standards have been implemented by office-based physicians and may inform future policy discussions and development.

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Appendix I. National CLAS Physician Survey Questionnaire

National Ambulatory Medical Care Survey Supplement on
Culturally and Linguistically Appropriate Services

OMB No. 0920-1119: Approval expires 06/30/17

Notice – Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a current valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing burden to: CDC/ATSDR Information Collection Review Office, 1600 Clifton Road, MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-1119).

Assurance of Confidentiality - All information which would permit identification of an individual, a practice, or an establishment will be held confidential, will be used for statistical purposes only by NCHS staff, contractors, and agents only when required and with necessary controls, and will not be disclosed or released to other persons without the consent of the individual or establishment in accordance with section 308(d) of the Public Health Service Act (42 USC 242m) and the Confidential Information Protection and Statistical Efficiency Act (PL107-347).

National Ambulatory Medical Care Survey Supplement on Culturally and Linguistically Appropriate Services

This survey is affiliated with the National Ambulatory Medical Care Survey (NAMCS). The survey should only be completed by the physician to whom it is addressed. The purpose of this survey is to understand the provision of culturally and linguistically appropriate services among office-based physicians. Culturally and linguistically appropriate services consider cultural health beliefs, practices, and preferred languages associated with various racial, ethnic, linguistic or religious groups. Your participation in this survey is voluntary and greatly appreciated. Your answers are completely confidential. If you have questions or comments about this survey, please call 866-966-1473.

1. Including residency, how many years have you been providing direct care for patients in an office-based setting?

_____

2. What is your specialty?

☐1 General practice/family medicine
☐2 Internal medicine
☐3 Pediatrics
☐4 Obstetrics and gynecology
☐5 Geriatrics
☐6 Other (please specify): _____

3. Do you provide direct care for patients in an office-based setting?

☐1 Yes
☐2 No
☐3 I am no longer in practice

} *Please stop here and return the questionnaire in the envelope provided. Thank you for your time.*

4. In what setting do you typically provide care to the most patients? (Check all that apply)

☐1 Solo or group practice
☐2 Freestanding clinic or urgent care center
☐3 Community health center (e.g., Federally Qualified Health Center (FQHC), federally-funded clinics or "look-alike" clinics)
☐4 Mental health center
☐5 Non-federal government clinic (e.g., state, county, city, maternal and child health, etc.)
☐6 Family planning clinic (including Planned Parenthood)
☐7 Health maintenance organization or other prepaid practice (e.g., Kaiser Permanente)
☐8 Faculty practice plan (an organized group of physicians that treat patients referred to an academic medical center)
☐9 Hospital emergency or hospital outpatient department
☐10 None of the above

} *If you select **only** 9 or 10, skip to 42*

For the remaining questions, please provide answers reflecting your experiences at the location where you see the most patients that are not in hospital emergency or hospital outpatient departments. If you feel you see the same number of patients at more than one location please select one.

5. What are the county, state and zip code for the location where you typically see the most patients?

Country: __USA__ County: _____

State: _____ Zip Code: _____

6. Did you receive any training in cultural competency in your clinical training programs including medical school and residency? Training in cultural competency includes educational opportunities that address topics of culture in settings such as employee orientation, continuing medical education, conferences, or webinars.

☐1 Yes ☐2 No

7. After medical school and residency, have you participated in training for cultural competency such as continuing medical education (CME)?

☐1 Yes ☐2 No *(Skip to 9)*

a. Which of these population groups have been addressed in the training(s) for cultural competency in which you have participated? (Check all that apply)

☐1 Racial/ethnic minorities
☐2 Religious groups
☐3 Lesbian, gay, bisexual, transgender (LGBT) populations
☐4 Persons with limited English proficiency (LEP)
☐5 Inmates/formerly incarcerated
☐6 Other (please specify): _____

b. Which of the following areas have been typically included in training(s) for cultural competency in which you have participated? (Check all that apply)

☐1 Cultural beliefs, values, and behaviors
☐2 Organizational policies, plans, and protocols regarding culturally and linguistically appropriate services
☐3 Health disparities
☐4 Complementary and alternative healing practices
☐5 Other (please specify): _____

c. Was your participation in training for cultural competency to satisfy a continuing medical education unit (CME) requirement or as requirement for credentialing?

☐1 Yes ☐2 No

8. Within the past 12 months, have you participated in any training for cultural competency?

☐1 Yes ☐2 No *(Skip to 9)*

a. Which of these population groups have been addressed in the training(s) for cultural competency in which you have participated in the past 12 months? (Check all that apply)

☐1 Racial/ethnic minorities
☐2 Religious groups
☐3 Lesbian, gay, bisexual, transgender (LGBT) populations
☐4 Persons with limited English proficiency (LEP)
☐5 Inmates/formerly incarcerated
☐6 Other (please specify): _____

b. Which of the following areas have been typically included in training(s) for cultural competency in which you have participated in the past 12 months? (Check all that apply)

☐1 Cultural beliefs, values, and behaviors
☐2 Organizational policies, plans, and protocols regarding culturally and linguistically appropriate services
☐3 Health disparities
☐4 Complementary and alternative healing practices
☐5 Other (please specify): _____

c. Was your participation in training for cultural competency in the past 12 months to satisfy a continuing medical education unit (CME) requirement or as requirement for credentialing?

☐1 Yes ☐2 No

9. Is training in cultural competency required for newly hired physicians who join your practice?

☐1 Yes ☐2 No

10. How often does your practice offer or make available training in cultural competency?

☐1 Annually
☐2 Biannually
☐3 Quarterly
☐4 Other (please specify): _____
☐5 Not applicable. My practice does not offer or make available training in cultural competency.

11. Does your practice have at least one written policy related to the provision of culturally and linguistically appropriate services?

☐1 Yes ☐2 No *(Skip to 12)* ☐3 I don't know *(Skip to 12)*

a. If you work in a non-solo practice, how aware are you of your practice's written policy related to culturally and linguistically appropriate services?

☐1 Not applicable
☐2 Not at all
☐3 Barely
☐4 Fairly well
☐5 Very well

12. In what format are printed materials provided to your patients with limited English literacy? (Check all that apply)

☐1 Documents created with plain language software or reviewed for literacy level
☐2 Universal symbols (A sign recognized by most people. Example: a square around a plus sign for first aid)
☐3 Infographics (A visual image such as a chart or diagram used to represent information or data)
☐4 Other (please specify): _____
☐5 Not applicable. No printed materials are available to my patients with limited literacy.

13. Which of these free language-assistance services are available to patients <u>in your practice</u>? (Check all that apply)

☐1 Translated informational documents
☐2 Recorded messages in different languages on telephone lines
☐3 Translated signage and notices at key points of contact throughout the office
☐4 Other (please specify): _____
☐5 Not applicable. Free language-assistance is not available to my patients.

14. Do you use interpreters when working with patients who have limited English proficiency?

☐1 Yes ☐2 No *(Skip to 15)*

a. When you use interpreters how often do you use each type?	Often	Sometimes	Rarely	Never
Staff/contractor trained as a medical interpreter	☐1	☐2	☐3	☐4
Bilingual staff	☐1	☐2	☐3	☐4
Patient's relative or friend	☐1	☐2	☐3	☐4

2

15. What types of materials, in language(s) other than English, are available to your patients? (Check all that apply)

- ☐1 Wellness/Illness related education
- ☐2 Patient rights/ Informed consent documents
- ☐3 Advanced directives
- ☐4 Payment
- ☐5 Care plan
- ☐6 Other (please specify): _____
- ☐7 Not applicable. No translated materials are available to my patients.

16. Are you fluent in a language besides English?

☐1 Yes ☐2 No

17. How many languages, other than English, do you feel comfortable enough to provide healthcare services?

☐1 0 ☐2 1 ☐3 2 ☐4 3 ☐5 4 or more

18. How knowledgeable are you of your patients' health beliefs, customs, and values?

☐1 Not at all ☐2 Barely
☐3 Fairly Well ☐4 Very Well

19. When assessing your patients' medical needs, how often do you consider:	Often	Sometimes	Rarely	Never
a. Race/ethnicity?	☐1	☐2	☐3	☐4
b. Other cultural factors such as health beliefs, customs, values?	☐1	☐2	☐3	☐4
20. When diagnosing your patients, how often do you consider:				
a. Race/ethnicity?	☐1	☐2	3	☐4
b. Other cultural factors such as health beliefs, customs, values?	☐1	☐2	☐3	☐4
21. When treating your patients, how often do you consider:				
a. Race/ethnicity?	☐1	☐2	☐3	☐4
b. Other cultural factors such as health beliefs, customs, values?	☐1	☐2	☐3	☐4
22. When conducting health education with your patients, how often do you consider:				
a. Race/ethnicity?	☐1	☐2	☐3	☐4
b. Other cultural factors such as health beliefs, customs, values?	☐1	☐2	☐3	☐4

23. How often does your practice assess your services to patients for their cultural and linguistic appropriateness?

- ☐1 More than 4 times a year
- ☐2 About 2 to 4 times a year
- ☐3 About once a year
- ☐4 Less than once a year
- ☐5 My services are not assessed for their cultural and linguistic appropriateness

Mark your agreement or disagreement with the following statements. By providing culturally and linguistically appropriate services to my patients I expect:	Strongly Disagree	Disagree	Agree	Strongly Agree
24. Improved patient satisfaction with the services provided	☐1	☐2	☐3	☐4
25. Improved comprehension of treatment and lifestyle recommendations	☐1	☐2	☐3	☐4
26. Better adherence to treatment and lifestyle recommendations	☐1	☐2	☐3	☐4
27. Improved patient trust	☐1	☐2	☐3	☐4
28. Improved quality of patient care (e.g., diagnostics, communication, treatment)	☐1	☐2	☐3	☐4
29. Decreased likelihood of liability/malpractice claims	☐1	☐2	☐3	☐4

How has each of the following factors affected you in providing culturally and linguistically appropriate services to your patients?	Helped	Helped a Little	Did not Help	Not Applicable
30. Formal written policy	☐1	☐2	☐3	☐4
31. Organizational resources	☐1	☐2	☐3	☐4
32. Training in cultural competency	☐1	☐2	☐3	☐4
33. Personal knowledge about the prevailing beliefs, customs, norms, and values of the diverse groups in your patient load	☐1	☐2	☐3	☐4
34. Other (please specify):_____	☐1	☐2	☐3	☐4

35. How familiar are you with the National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care (the National CLAS Standards)?

☐1 Never heard of it *(Skip to 37)*
☐2 Heard of it but do not know much about it
☐3 Know something about it
☐4 Very familiar with it

a. How have you gained knowledge about the National CLAS Standards? (Check all that apply)

☐1 Through initial employment orientation in my current organization
☐2 Through other trainings such as in-service, continuing education, or professional development activities in my current organization
☐3 Through attending a training/meeting/webinar outside of my current organization
☐4 Through reading a report, publication, newsletter, or other materials publicly available (please list the title of the material you read): _____
☐5 Other (please specify): _____

36. Has your practice adopted the National CLAS Standards?

☐1 Yes ☐2 No ☐3 I don't know

We have a few demographic questions.

37. Does your practice record your patients' race or ethnicity?

☐1 Yes ☐2 No *(Skip to 38)* ☐3 I don't know *(Skip to 38)*

a. What percent of your patient population is represented by each of the following categories? Write "0" for any categories with no patients. Values should add to 100.

_____Hispanic or Latino, of any race
_____American Indian or Alaska Native, not Hispanic or Latino
_____Asian, not Hispanic or Latino
_____Black or African American, not Hispanic or Latino
_____Native Hawaiian or Other Pacific Islander, not Hispanic or Latino
_____White, not Hispanic or Latino
_____Two or more races, not Hispanic or Latino
_____I don't know

38. What information does your practice record on your patients' culture and language characteristics? (Check all that apply)

☐1 Nationality/Nativity
☐2 Patient's primary language
☐3 Sexual orientation/gender identity
☐4 Religion
☐5 Income
☐6 Other (please specify): _____
☐7 Not applicable. We do not collect information related to culture and language.

39. What is your sex?

☐1 Female ☐2 Male

40. Are you Hispanic, Latino/a, or Spanish Origin? (Check all that apply)

☐1 No, not of Hispanic, Latino/a, or Spanish origin
☐2 Yes, Mexican, Mexican American, Chicano/a
☐3 Yes, Puerto Rican
☐4 Yes, Cuban
☐5 Yes, Another Hispanic, Latino/a or Spanish origin

41. What is your race? (Check all that apply)

☐1 White
☐2 Black or African American
☐3 American Indian or Alaska Native
☐4 Asian Indian
☐5 Chinese
☐6 Filipino
☐7 Japanese
☐8 Korean
☐9 Vietnamese
☐10 Other Asian
☐11 Native Hawaiian
☐12 Guamanian or Chamorro
☐13 Samoan
☐14 Other Pacific Islander

42. We may contact you in the future on this topic. What is a reliable E-mail address for you?

_____@_____

☐ I verify that this questionnaire was completed by the physician to whom it was addressed.

Thank you for your participation. Please return your survey in the envelope provided. If you have misplaced the envelope, please send the survey to: P.O. Box 13668, Durham, NC 27709.

Boxes for Admin Use

Appendix II. National CLAS Physician Survey Objectives and Related Item Descriptions

Table. National CLAS Physician Survey items and corresponding survey objective or National CLAS Standard

Survey objective and enhanced National CLAS Standard	Item number	Item description
Survey objective		
1. What is the nature and extent of ambulatory care provider awareness and knowledge of the National CLAS Standards?	35, 36	Awareness of the National CLAS Standards, practice's adoption of the National CLAS Standards
2. What is the nature and extent of ambulatory care provider implementation of culturally and linguistically appropriate services?	11–34	Written policy on CLAS; available free language-assistance services; interpreter use and material availability for patients with limited English proficiency, fluency in other languages; comfort providing care in another language; physician knowledge of patients' beliefs, customs, and values; consideration of cultural factors when assessing, diagnosing, and treating patients and when conducting health education; frequency of practice assessment of CLAS; attitudinal questions about both the expected outcomes of providing culturally and linguistically appropriate services; effect of factors that help or hinder the provision of CLAS
3. What factors enable or hinder the provision of culturally and linguistically appropriate services in ambulatory care settings?	30–34	Effect of factors that help or hinder the provision of CLAS
Enhanced National CLAS Standard		
Principal standard:	6–34, 36–38	…
1. Provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs.	19–22, 24–29, 30–34	Consideration of cultural factors when assessing, diagnosing, and treating patients and when conducting health education; attitudinal questions about expected outcomes of providing CLAS; effect of factors that help or hinder the provision of CLAS
Governance, leadership, and workforce:	6–11, 36	…
2. Advance and sustain organizational governance and leadership that promote CLAS and health equity through policy, practices, and allocated resources.	11, 36	Written policies regarding CLAS; practice's adoption of the National CLAS Standards
3. Recruit, promote, and support a culturally and linguistically diverse governance, leadership, and workforce that are responsive to the population in the service area.	9–11	Training in cultural competency required for hire; practice makes available cultural competency training; written policies regarding CLAS
4. Educate and train governance, leadership, and workforce in culturally and linguistically appropriate policies and practices on an ongoing basis.	6–10	Training in cultural competency in clinical training, medical school, and in the last 12 months
Communication and language assistance:	12–17	…
5. Offer language assistance to people who have limited English proficiency or other communication needs, at no cost to them, to facilitate timely access to all healthcare and services.	12–14	Format of printed materials for patients with limited English proficiency; available free language-assistance services; interpreter use for patients with limited English proficiency; types of interpreters used
6. Inform all people of the availability of language-assistance services clearly and in their preferred language, verbally and in writing.	14, 16, 17	Interpreter use for patients with limited English proficiency; types of interpreters used; physician fluency in languages other than English; number of languages the physician is comfortable using to provide healthcare services

See footnotes at end of table.

Table. National CLAS Physician Survey items and corresponding survey objective or National CLAS Standard—Con.

Survey objective and enhanced National CLAS Standard	Item number	Item description
7. Ensure the competence of people providing language assistance, recognizing that the use of untrained people or minors as interpreters should be avoided	14, 16, 17	Interpreter use for patients with limited English proficiency; types of interpreters used; physician fluency in languages other than English; number of languages the physician is comfortable providing healthcare services
8. Provide easy-to-understand print and multimedia materials and signage in the languages commonly used by the populations in the service area	12, 13, 15	Format of printed materials for patients with limited English proficiency; available free language-assistance services; materials available for patients with limited English literacy
Engagement, continuous improvement, and accountability:	11, 18, 23, 36–38	…
9. Establish culturally and linguistically appropriate goals, policies, and management accountability, and include them the organization's planning and operations.	11, 36	Written policy on CLAS; practice's adoption of National CLAS Standards
10. Conduct ongoing assessments of the organization's CLAS-related activities and integrate CLAS-related measures into measurement and continuous quality improvement activities.	18, 23, 37, 38	Physician knowledge of patient health beliefs, customs and values; frequency the practice assesses CLAS; recording of patient characteristics related to ethnicity, race, culture, and language
11. Collect and maintain accurate and reliable demographic data to monitor and evaluate the impact of CLAS on health equity and outcomes and to inform service delivery.	37, 38	Recording of patient characteristics related to ethnicity, race, culture and language
12. Conduct regular assessments of community health assets and needs and use the results to plan and implement services that respond to the cultural and linguistic diversity of populations in the service area.	---	---
13. Partner with the community to design, implement, and evaluate policies, practices, and services to ensure cultural and linguistic appropriateness.	---	---
14. Create conflict and grievance resolution processes that are culturally and linguistically appropriate to identify, prevent, and resolve conflicts or complaints.	---	---
15. Communicate the organization's progress in implementing and sustaining CLAS to all stakeholders, constituents, and the general public.	---	---
Items to determine eligibility or are required for weighting:	…	…
Eligibility	2–4	Physician specialty; direct patient care; setting where the physician sees the most patients
Weighting	2, 5	Physician specialty; setting where the physician sees the most patients

… Category not applicable.
--- Information not available; not captured in National CLAS Physician Survey items.

NOTE: CLAS is culturally and linguistically appropriate services.

SOURCES: U.S. Department of Health and Human Services, Office of Minority Health; and National Center for Health Statistics, National CLAS Physician Survey, 2016.

Appendix III. Examples for SUDAAN, SAS, STATA, and SPSS Code for National CLAS Physician Survey, 2016

Standard Errors and Variance Estimation

Standard error is primarily a measure of the sampling variability that occurs by chance because only a sample is surveyed, rather than the entire universe.

The sampling methodology used in the 2016 National CLAS Physician Survey uses a list sample. The design variables reflect this sampling methodology. Examples of SUDAAN, SAS, Stata, and SPSS statements that incorporate these design variables for variance estimation follow. All examples use a data set named "CLASdata" that represents the National CLAS Physician Survey public-use micro-data file.

Variance Estimation Examples in SUDAAN

The linearized Taylor series procedure in SUDAAN software is used to estimate variances for the National CLAS Physician Survey estimates. SUDAAN's 1-stage WR (with replacement) option is used. This code provides a without replacement ultimate cluster (1-stage) estimate of standard errors for a cross-tabulation with a data set called CLASdata. SAS-callable SUDAAN software requires that the data set be sorted by the NEST variable before analysis. In this case, SAS's PROC SORT procedure was used to sort the data set:

```
PROC SORT DATA=CLASdata; by CSTRATM; run;
```

The required SUDAAN statements for estimating variances in the sorted data set are:

```
PROC (procedure) DATA = CLASdata DESIGN = (statistic type);
NEST CSTRATM / MISSUNIT;
WEIGHT CLASWEIGHT;
```

The items in parentheses are replaced with the information required by the specific SUDAAN procedure used, and design type specified. The variance variables required by the software are included in a VAR, CLASS, LEVEL, and TABLE statements (see below).

For example, to produce frequency tables using the CROSSTAB procedure in SAS-callable SUDAAN, the following statements are used:

```
PROC CROSSTAB DATA=CLASdata filetype=SAS Design=WR;
NEST CSTRATM / MISSUNIT;
WEIGHT CLASWEIGHT;
CLASS REGION CLASTRAIN;
TABLE REGION*CLASTRAIN;
```

Variance Estimation Examples in SAS

The following is an example of the PROC CROSSTAB SUDAAN analysis (shown previously) using the SAS SURVEYFREQ procedure:

```
PROC SURVEYFREQ DATA=CLASdata;
STRATA CSTRATM;
WEIGHT CLASWEIGHT;
TABLE REGION*CLASTRAIN;
run;
```

Variance Estimation Examples in STATA

The pweight (CLASWEIGHT), stratum (CSTRATM), and psu (PHYCODE) are set with the svyset command as follows:

Stata 8:

```
svyset [pweight=CLASWEIGHT], psu (PHYCODE) strata(CSTRATM)
```

Stata 9 and later:

```
svyset PHYCODE [pweight=CLASWEIGHT], strata(CSTRATM)
```

Variance Estimation Examples in SPSS

To obtain variance estimates, which account for the sample design, IBM SPSS Statistics's "Complex Samples" module can be used. This description applies to version 24.0. From the main menu, click on "Analyze," "Complex Samples," then "Prepare for Analysis." The "Analysis Preparation Wizard" can be used to set CSTRATM as the stratum variable, PHYCODE as the cluster variable, and CLASWEIGHT as the weighting variable. The WR design option may be chosen. This will create the PLAN FILE syntax, which should resemble the following code, where PLAN FILE reflects the location selected to store the file on the computer:

```
CSPLAN ANALYSIS
/PLAN FILE='DIRECTORY\PLANNAME.CSAPLAN'
/PLAN VARS ANALYSISWEIGHT=CLASWEIGHT
/PRINT PLAN
/DESIGN STAGELABEL= 'ANY LABEL' STRATA=CSTRATM CLUSTER=PHYCODE
/ESTIMATOR TYPE=WR.
```

For more information, see the National CLAS Physician Survey public-use file documentation (15).

Appendix IV. Data Tables

Tables I and II are data tables for Figures 1 and 2, respectively.

Table I. Weighted percent distribution of all sampled physicians and respondents, by selected physician characteristics: National CLAS Physician Survey, 2016

Physician characteristic from sample frame[1] (variable name)	All sampled physicians using sample weights		Respondents using sample weights			Respondents using final weights		
	Weighted percent	Standard error	Weighted percent	Standard error	Standardized bias[2]	Weighted percent	Standard error	Standardized bias[2]
Sex (PHYSEX)								
Female	35.0	1.3	34.8	3.3	0.00	34.6	3.3	0.01
Male	65.0	1.3	65.2	3.3	0.00	65.4	3.3	0.01
Age (recoded PYOB)								
Younger than 50	41.4	1.4	30.3	3.1	0.23	33.8	3.4	0.15
50 and older	58.6	1.4	69.7	3.1	0.23	66.2	3.4	0.15
Metropolitan status								
Metropolitan statistical area	93.3	0.7	92.7	2.0	0.02	93.0	2.0	0.01
Nonmetropolitan statistical area	6.7	0.7	7.3	2.0	0.02	7.0	2.0	0.01

[1]Information from the master files of the American Medical Association and the American Osteopathic Association.
[2]Calculated using the formula:

$$\frac{|\text{Weighted percentage of respondents} - \text{Weighted percentage of all sampled physicians}|}{\sqrt{\text{Weighted percentage of all sampled physicians} \bullet (100\% - \text{Weighted percentage of all sampled physicians})}}$$

NOTE: CLAS is culturally and linguistically appropriate services.

SOURCE: National Center for Health Statistics, National CLAS Physician Survey, 2016.

Table II. Comparing final estimates between 2016 National CLAS Physician Survey and 2016 National Ambulatory Medical Care Survey

Physician characteristic from sample frame[1] (variable name)	2016 National CLAS Physician Survey		2016 NAMCS	
	Weighted percent	Standard error	Weighted percent	Standard error
Total	100.0	…	100.0	…
Sex (PHYSEX)				
Female	34.6	3.3	30.0	1.7
Male	65.4	3.3	70.0	1.7
Age (recoded PYOB)				
Younger than 50	33.8	3.4	37.6	1.8
50 and older	66.2	3.4	62.4	1.8
Metropolitan status				
Metropolitan statistical area	93.0	2.0	92.4	1.0
Nonmetropolitan statistical area	7.0	2.0	7.6	1.0

... Category not applicable.
[1]Information from the master files of the American Medical Association and the American Osteopathic Association.

NOTES: CLAS is culturally and linguistically appropriate services. NAMCS is National Ambulatory Medical Care Survey.

SOURCES: National Center for Health Statistics, National CLAS Physician Survey, 2016, and National Ambulatory Medical Care Survey, 2016.

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National Center for Health Statistics
Centers for Disease Control and Prevention
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Hyattsville, MD 20782

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