HEALTHCARE

BRG

July 2025

Assessing Hospital Access Among the American Indian and Alaska Native Population

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Summary

Between 2019 and 2021, life expectancy for the American Indian and Alaska Native (AI/AN) population declined by more than 9%, dropping from 71.8 years to 65.2 years. This decline has been attributed to several key factors, including heightened vulnerability to COVID-19, long-standing social determinants of health, and lack of access to healthcare services. Provider network adequacy requirements provide a reasonable framework to determine if a particular group has sufficient access to healthcare services. In this paper, we utilize these requirements–specifically, maximum time and distance standards–to determine if the AI/AN population has sufficient access to the hospitals that are intended to address their healthcare needs.

Introduction

Between 2019 and 2021, life expectancy for the American Indian and Alaska Native (AI/AN) population declined more than 9% from 71.8 years to 65.2 years.[1] Researchers have identified three key factors leading to this significant decline. First, the AI/AN population was "1.6 times more likely to have [COVID-19] infection, 3.3 times more likely to be hospitalized, and 2.2 times more likely to die as a result of COVID-19 than non-Hispanic White persons."[2]

Second, well-documented disparities in social determinants of health are thought to have exacerbated an "historic vulnerability of US Native American populations to infectious epidemics."[3] Possible factors such as higher poverty rates,[4] lack of access to clean water,[5] historic traumas,[6] and household size[7] have been offered and studied.

Third, the AI/AN population often has limited—or a complete lack of—access to healthcare services. These barriers to care take many forms, including disparately high uninsured rates,[8] systemic bias or racism, historic distrust of healthcare providers, and lack of culturally appropriate care.[9]

Additionally, there is a well-documented shortage of providers available to treat the AI/AN population in rural locations and on tribal lands.[10] Compounding this shortage are significant transportation challenges that the AI/AN population

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1 Arias, Elizabeth, et al., "Provisional Life Expectancy Estimates for 2021," *CDC Vital Statistics Rapid Release*, No. 23 (August 2022): 3. https://www.cdc.gov/nchs/data/vsrr/vsrr023.pdf. The next nearest drop was among the Black population at four years; the drop among non-Hispanic whites was 2.2 years.

2 Musshafen, L.A., et al., "In-Hospital Mortality Disparities Among American Indian and Alaska Native, Black, and White Patients With COVID-19," *JAMA Netw Open* 5(3) (2022):e224822. doi:10.1001/jamanetworkopen.2022.4822. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2790506

3 Ehrenpreis, Jamie E., and Eli D. Ehrenpreis, "A Historical Perspective of Healthcare Disparity and Infectious Disease in the Native American Population," *The American Journal of the Medical Sciences* 363(4) (2022): 288–294. doi:10.1016/j.amjms.2022.01.005. https://pmc.ncbi.nlm.nih.gov/articles/PMC8785365/pdf/main.pdf. AI/AN populations were heavily impacted by smallpox from the early 1500s (which by some estimates wiped out 50% of some tribes; p. 289) and by the Spanish Flu in the early 1900s (with mortality rates estimated to be four times those of the general population; p. 288).

4 Shrider, Emily A., *Poverty in the United States: 2023*, US Census Bureau Current Population Reports (September 2024), p. 5. https://www2.census.gov/library/publications/2024/demo/p60-283.pdf

5 "American Indian households on tribal reservations are 3.7 times more likely to lack complete indoor plumbing [and access to potable water] than all other households in the United States (as comparison, the group next most likely to lack indoor plumbing are black households, at 1.2 times more likely." Rodriguez-Lonebear, Desi, et al., "American Indian Reservations and COVID-19: Correlates of Early Infection Rates in the Pandemic," *Journal of Public Health Management and Practice* 26(4) (2020): 371–377. doi:10.1097/PHH.0000000000001206. https://pmc.ncbi.nlm.nih.gov/articles/PMC7249493/pdf/jpump-26-371.pdf

6 The Indian Boarding School Policy, which was "expressly intended to implement cultural genocide through the removal and reprogramming" of Indian children, is "considered one of the most devastating traumas that occurred to the Native American people" and a "precursor to many of the existing problems for some Native Americans." See National Native American Boarding School Healing Coalition, "US Indian Boarding School History." https://boardingschoolhealing.org/education/us-indian-boarding-school-history/. See also, United States Commission on Civil Rights, "Broken Promises: Continuing Federal Funding Shortfall for Native Americans" (December 2018), p. 97. https://www.usccr.gov/files/pubs/2018/12-20-Broken-Promises.pdf (hereafter "Broken Promises").

7 Pindus, Nancy, et al., *Housing Needs of American Indians and Alaska Natives in Tribal Areas: A Report From the Assessment of American Indian, Alaska Native, and Native Hawaiian Housing Needs*, US Department of Housing and Urban Development (January 2017). https://www.huduser.gov/portal/sites/default/files/pdf/HNAIHousingNeeds.pdf

8 Hill, Latoya, et al., *Health Coverage Among American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander People*, KFF (November 30, 2023). https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-among-american-indian-and-alaska-native-and-native-hawaiian-and-other-pacific-islander-people/

9 Call, Kathleen Thiede, et al., "Barriers to Care Among American Indians in Public Health Care Programs," *Medical Care* 44(6) (June 2006): 595–600. doi: 10.1097/01.mlr.0000215901.37144.94.

10 US Government Accountability Office (GAO), *Indian Health Service: Agency Faces Ongoing Challenges Filling Provider Vacancies*, GAO-18-580 (August 2018). https://www.gao.gov/assets/gao-18-580.pdf

must overcome, including long drives to reach providers, often over rough rural roads.[11] These transportation challenges disparately impact the AI/AN population[12] and result in missed appointments, low adherence to treatment programs, or delayed care.[13] The analysis described in this white paper lies at the intersection of the provider shortage and transportation challenges that other studies have highlighted.

Our expertise is in analyzing healthcare provider networks according to relevant federal and state regulations, a concept referred to as "provider network adequacy." Network adequacy is partly a function of the number of providers in a network and how proximate they are to the population to which they provide healthcare services. If there are too few healthcare providers and/or they are too distant from the population they serve, the provider network is likely not adequate to address the healthcare needs of that population. When a provider network is not adequate, it reduces the population's ability to access healthcare services.

Provider network adequacy requirements offer a framework to assess whether a particular population—here, the AI/AN population—has sufficient access to healthcare services. In this paper, we evaluate the network of healthcare providers (specifically, hospitals) available to the AI/AN population against network adequacy regulations, specifically the maximum time and distance that the AI/AN population must travel to obtain healthcare services. Based on our analysis, we find that more than 62% of the AI/AN population in states with an Indian Health Services hospital does not have adequate access to hospitals.

IHS Background and Structure

The United States Constitution establishes a government-to-government relationship with the "Indian Tribes."[14] Throughout its history, the US government has entered into treaties with the various Indian Tribes, which formed the "federal government's promise to provide payments and services" as compensation for the seizure of tribal lands by the United States. These treaties have formed the legal basis for a "trust relationship" with Indian Tribes and established a "responsibility for a variety of services and benefits, including healthcare."[15]

The US Congress has declared that "it is the policy of this Nation, in fulfillment of its special trust responsibilities and legal obligations to Indians [...] to ensure the highest possible health status for Indians and urban Indians and to provide all resources necessary to effect that policy."[16] The Indian Health Service (IHS)—an agency within the US Department of Health and Human Services (HHS)—is the "lead federal agency charged with" upholding this policy.[17]

The IHS is the "principal federal health care provider and health advocate for Indian people" and provides a "comprehensive health service delivery system" for the AI/AN population.[18] The IHS provides "primary health and disease prevention services to approximately 2.8 million American Indians and Alaska Natives in 574 federally recognized Tribes."[19] These healthcare services are provided "directly to eligible beneficiaries" as opposed to "reimbursing health care providers for covered health care services or contracting with managed care plans to pay providers for services delivered to program enrollees," as with Medicare and Medicaid.[20]

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11 Mabie, Nora, "'People die like that': Native Americans face serious barriers in accessing care," USC Center for Health Journalism (January 2024). https://centerforhealthjournalism.org/our-work/reporting/people-die-native-americans-face-serious-barriers-accessing-care

12 Call et al. (2006).

13 Johnson, P.J., K.F. Carlson, and M.O. Hearst, "Healthcare disparities for American Indian veterans in the United States: a population-based study," *Med Care* 48(6) (June 2010): 563–569. doi: 10.1097/MLR.0b013e3181d5f9e1. PMID: 20473210; PMCID: PMC2926126.

14 US Constitution, Article I, Section 8.

15 *Broken Promises*, p. 61.

16 25 USC Section 1602.

17 Congressional Research Service, *Tribal Self-Determination Authorities: Overview and Issues for Congress* (January 10, 2025). https://crsreports.congress.gov/product/pdf/R/R48256

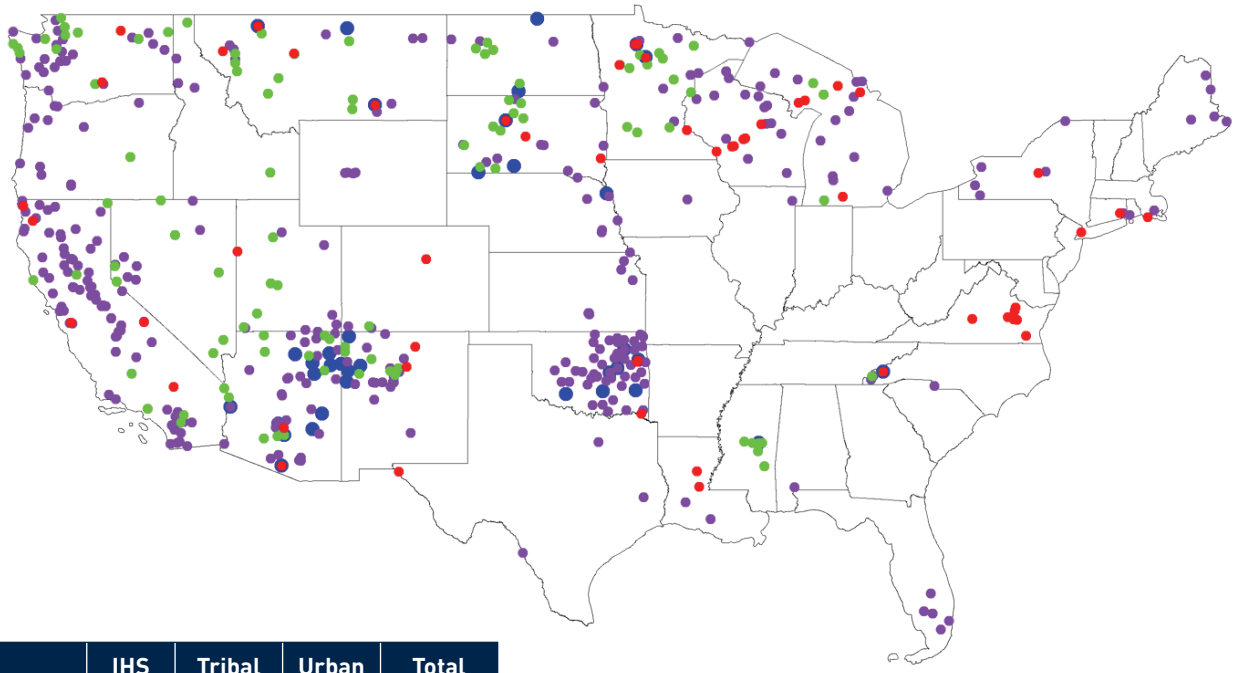
18 Indian Health Service (IHS), "Agency Overview." https://www.ihs.gov/aboutihs/overview/

19 IHS, *Director's Year 2 Accomplishments Report — 2024* (2024), p. 6. https://www.ihs.gov/sites/newsroom/themes/responsive2017/display_objects/documents/factsheets/DirectorsYear2AccomplishmentsReport2024.pdf

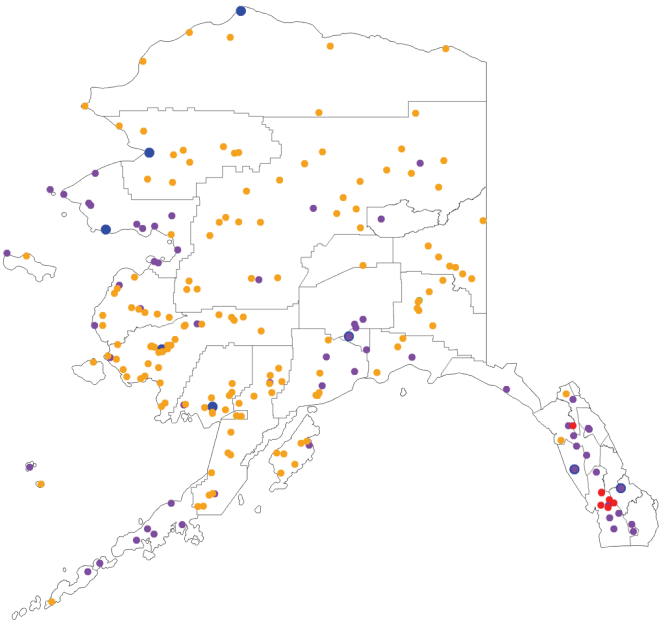
20 US GAO, "Indian Health Service: Spending Levels and Characteristics of IHS and Three Other Federal Health Care Programs," GAO-19-74R (December 2018), p. 3. https://www.gao.gov/assets/gao-19-74r.pdf

Healthcare services are provided to the AI/AN population via a network of healthcare facilities funded by the IHS. These healthcare facilities are administered by the IHS, Indian Tribes, Tribal Organizations, or Urban Indian Organizations (together, "IHS-funded facilities")[21] (Figure 1).

FIGURE 1: IHS-FUNDED FACILITIES
(as of June 8, 2023)[22]



Type of Facility	IHS	Tribal	Urban	Total
Health Center	53	332	38	385
Alaska Village Clinic	0	147	0	147
Health Station	25	75	8	100
Health Location	13	43	5	55
Hospital	21	23	0	44



According to the IHS, these facilities offer a range of healthcare services, but "most of its facilities are smaller and may offer mostly primary and emergency care services."[23] (See Appendix A for complete descriptions of each facility type.) As shown in the analysis that follows, many of these facilities are in rural locations, which presents transportation challenges to providers and patients alike.

21 See IHS, *IHS, Tribal, & Urban Indian Health Facilities List* (June 2023). https://www.ihs.gov/sites/locations/themes/responsive2017/display_objects/documents/ihs_facilities.xlsx

22 Ibid.

23 US GAO, "Indian Health Service: Spending Levels and Characteristics of IHS and Three Other Federal Health Care Programs," GAO-19-74R (December 2018), p. 6. https://www.gao.gov/assets/gao-19-74r.pdf

The IHS Purchased/Referred Care (PRC) program, in which the IHS contracts with healthcare providers in addition to the IHS-funded facilities, is intended to pay for healthcare services that are not available at IHS-funded facilities. However, PRC does not always fill the gap, as there are often not sufficient funds to pay for all necessary care.[24] Additionally, there are strict limits on when PRC can be provided:

> Routine health services (not emergent or urgent) should ordinarily be provided by IHS staff and facilities. Routine health services may be provided through PRC when the CEO has determined that sufficient PRC funds are available for this priority of medical service. **As a general rule, routine health services will not be provided through PRC when an IHS facility capable of providing these services is within 90 minutes one-way surface transportation time from the person's place of residence**.[25]

These limitations often result in denied or deferred care. For example, in 2022, approximately 120,000 requests from eligible patients for $552 million in healthcare services were denied or deferred.[26]

Analysis

Overview of Network Adequacy Requirements

To determine if a provider network is adequate to serve an enrolled population, federal and most state regulators have established provider network adequacy standards. Health insurers that participate in federal healthcare programs, such as Medicare Advantage[27] and Medicaid, or that sell insurance plans on the Affordable Care Act health insurance marketplace[28] are required to meet these standards or may be subject to monetary fines, enrollment sanctions, or other penalties.[29]

The purpose of these requirements is to ensure that health plan enrollees have sufficient access to healthcare services. For example, enrollees don't have to travel too far to go to the hospital or wait too long to get an appointment. Network adequacy requirements can include multiple standards, such as enrollee-to-provider ratios, a minimum number of hospital beds, limits on appointment wait times, provider termination and continuity of care, and "maximum time and distance travelled" standards.[30]

These requirements often vary by provider type (e.g., hospital, primary care physician, specialist) and county type (e.g., rural, urban). For example, the maximum driving time and distance standards often allow for longer drive times and distances to a hospital in a rural county than in an urban county. Similarly, there typically need to be more primary care physicians (PCPs) than specialists in a provider network relative to the enrolled population (e.g., relatively more PCPs than cardiothoracic surgeons).

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24 US GAO, "Indian Health Service: Spending Levels and Characteristics of IHS and Three Other Federal Health Care Programs," GAO-19-74R (December 2018), p. 6. https://www.gao.gov/assets/gao-19-74r.pdf

25 IHS, Indian Health Manual, Part 2, "Services to Indians and Others," Chapter 3, "Purchased/Referred Care" (signed June 28, 2017), Section 2-3.5.E(6). Emphasis added. https://www.ihs.gov/ihm/pc/

26 Zionts, Arielle et al., Patients Suffer When Indian Health Service Doesn't Pay for Outside Care, KFF Health News (September 5, 2024). https://kffhealthnews.org/news/article/indian-health-service-patients-out-of-network-purchased-referred-care-program/

27 CMS provides maximum time and distance and minimum number of provider requirements by county and specialty in 42 CFR 422.116 and its annual Health Service Delivery (HSD) reference file. These standards are the same across all Medicare Advantage insurers. The HSD file contains twenty-nine provider and thirteen facility specialties across all US counties. See CMS, "Medicare Advantage Applications." https://www.cms.gov/medicare/health-drug-plans/medicare-advantage-application

28 All states included in this paper operate on the Federally Facilitated Exchange (FFE) except Minnesota and New Mexico. CMS publishes maximum time and distance standards for states that operate on the FFE in accordance with 45 CFR 156.230. See CMS, "Network Adequacy," Qualified Health Plan Certification Information and Guidance. https://www.qhpcertification.cms.gov/s/Network%20Adequacy.

29 Under Medicare Advantage, "CMS may deny an organization's application if they fail to meet network adequacy requirements. Contracts that fail to meet network adequacy requirements during the contract year may be subject to compliance or enforcement actions." See CMS, *Medicare Advantage and Section 1876 Cost Plan Network Adequacy Guidance* (December 2023), p. 4. https://www.cms.gov/files/document/medicare-advantage-and-section-1876-cost-plan-network-adequacy-guidance12-12-2023.pdf. For Medicaid plans, states can impose sanctions such as civil monetary penalties and termination of contracts. See 42 CFR 438.702.

30 Lipson, Debra J., et al., *Promoting Access in Medicaid and CHIP Managed Care: A Toolkit for Ensuring Provider Network Adequacy and Service Availability*, CMS (2017), p. 35. https://www.medicaid.gov/medicaid/downloads/adequacy-and-access-toolkit.pdf

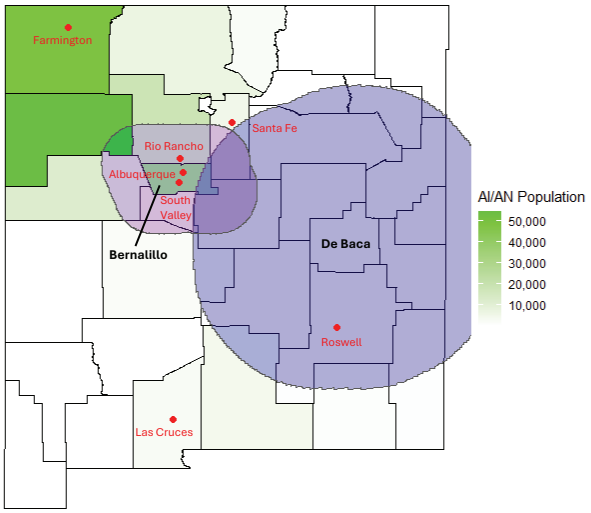
Methodology

1. Network Adequacy Standards

For the purposes of this analysis, we evaluated the network of hospitals that the AI/AN population has access to via either IHS-funded facilities or the Medicaid program. In doing so, we applied the "maximum time and distance" network adequacy standards applicable to Medicaid managed care organizations. The maximum time and distance standards "measure the relationship between the approximate locations of beneficiaries and the locations of the network providers and facilities."[31]

Time and distance standards vary by state and county type. Typically, densely populated, urban counties have shorter time and distance standards than rural counties where the population is more dispersed. For example, Bernalillo County (an Urban county) in New Mexico has a total population of over 670,000 and a 30-mile distance standard, while De Baca County (a Frontier county) has a total population of approximately 1,600 people and a 90-mile standard (Figure 2).

FIGURE 2: DISTANCE RADIUS FOR BERNALILLO COUNTY, NM AND DE BACA COUNTY, NM
(pink and purple shaded areas represent straight-line distance standard radius)



We limited our analysis of the various IHS-funded facilities to hospitals because that facility type is most easily mapped to the network adequacy standards (i.e., the relevant Medicaid programs identify maximum time and distance standards for hospitals). Additionally, due to the variability in the healthcare services provided across—and even within—the other facility types, we could not reliably identify the standards for these facilities. Also, IHS does not publish a directory of individual providers, which would have allowed for additional provider-level network adequacy analyses (e.g., enrollee-provider ratios).[32]

We utilized the Medicaid network adequacy standards for three reasons: 1) the IHS does not define any network adequacy requirements; 2) approximately 40% of the AI/AN population is already enrolled in Medicaid;[33] and 3) based on the decrease in life expectancy mentioned above, the AI/AN population will generally not reach the age of Medicare eligibility.

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31 42 CFR 422.116(d)(1)(i).

32 Health insurance companies that participate in federal healthcare programs or that sell plans on the health insurance marketplace are required to publish directories of all of the healthcare providers in their provider networks.

33 See MACPAC, "Medicaid's Role in Health Care for American Indians and Alaska Natives" (February 2021). https://www.macpac.gov/wp-content/uploads/2021/02/Medicaids-Role-in-Health-Care-for-American-Indians-and-Alaska-Natives.pdf: "Medicaid coverage for AI/AN people increased following the ACA Medicaid expansion. The share of AI/AN people with Medicaid rose from 30 percent in 2013 to 36 percent in 2018." See also, KKF, "Medicaid Coverage Rates for People Ages 0-64 by Race/Ethnicity" (2023). https://www.kff.org/medicaid/state-indicator/people-0-64-medicaid-rate-by-raceethnicity/. Medicaid rose to 40.2% of the AI/AN population in 2023.

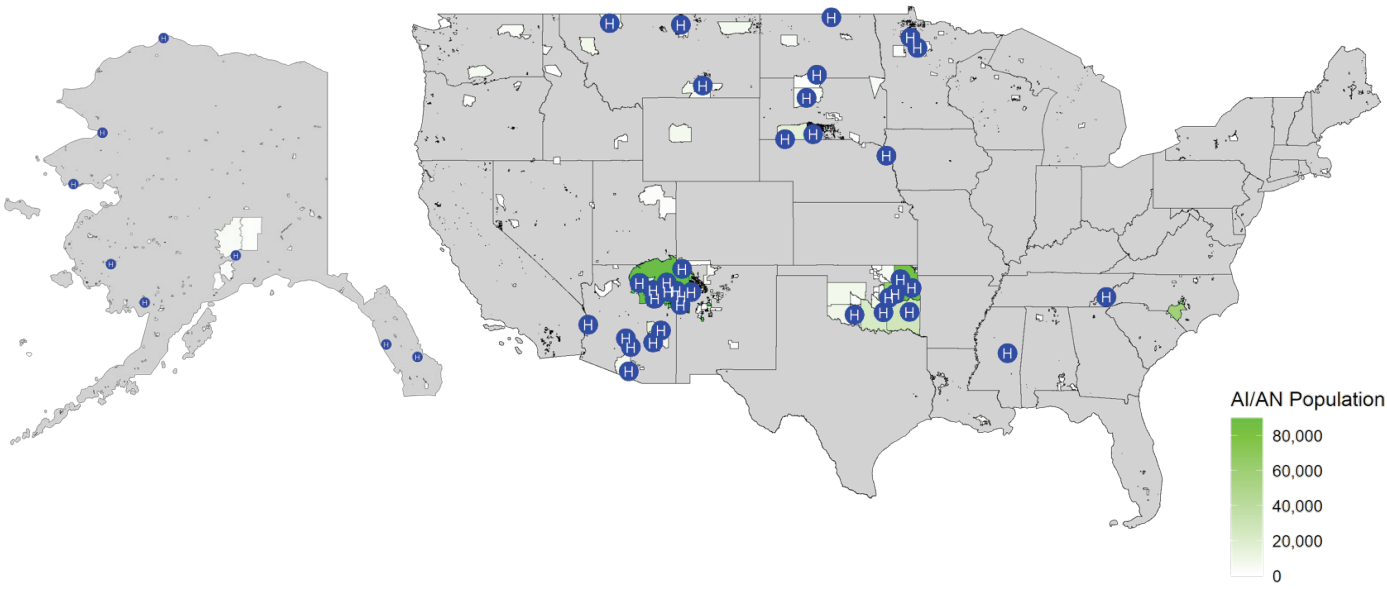
Each state that contracts to deliver Medicaid services "must develop and enforce network adequacy standards."[34] In conducting our analysis, we located the maximum time and distance standards for the Medicaid programs in the states in which there is at least one IHS-funded hospital (Table 1).[35]

TABLE 1: STATES WITH AT LEAST ONE IHS-FUNDED HOSPITAL

Alaska	Arizona	Nebraska	North Carolina	Minnesota	Mississippi
Montana	New Mexico	North Dakota	Oklahoma	South Dakota	

Admittedly, our results are skewed in favor of adequacy simply because we have chosen those states that have IHS-funded hospitals in them. Indeed, these states account for more than 83% of the AI/AN population living on tribal lands. However, as shown in Figure 3 below, several states with an AI/AN population—living on or off tribal lands—have no IHS-funded hospitals. The states in our study account for just over 40% of the AI/AN population nationwide.

FIGURE 3: MAP OF IHS HOSPITAL AND TRIBAL LANDS ACROSS CONTINENTAL UNITED STATES



34 42 CFR 438.68(a).

35 Except Alaska and South Dakota, for which we used ACA standards. See Appendix B for time and distance standards for each state.

2. Network Adequacy Calculations

Per the Medicaid requirements in each of the states listed above, the maximum time and distance standards are met when a certain percentage (e.g., 90%) of the enrolled population has access to at least one hospital that falls within the time *or* distance standards.[36] For the purposes of this analysis, we defined the "enrolled" population to be all persons who identify as AI/AN alone as reported in the US Census,[37] which is consistent with how IHS estimates the IHS service population.[38]

Network adequacy is typically measured at the County level; however, for the purposes of our analysis, we also evaluated network adequacy at the tribal land level. When analyzing network adequacy for tribal lands, we included IHS-funded hospitals only; when analyzing network adequacy at the County level, we included IHS-funded hospitals and hospitals that accept Medicaid beneficiaries.

Tribal lands and counties "passed" the network adequacy test if a certain percentage of the enrolled population in that geography is located within the maximum time *or* distance standard of at least one hospital (even if the hospital is located across state or county lines). For the purposes of our analysis, we used a 90% threshold for each geography, except for geographies in North Carolina, where we used 95%.

Since US Census data do not include home addresses, we utilized the most granular common AI/AN population data available—Census Tracts—with the tract centroid as a proxy for address.

3. Driving Distance and Duration Calculations

We used the Open Source Routing Machine (OSRM) application programming interface (API) to calculate the driving time and distance from each geocoded hospital location to each Census Tract centroid for each geography (County or Tribal Land).[39,40]

Given the rural nature of some geographies, some driving distances could not be calculated because a route could not initially be located. In those instances, we expanded the range around the start and end coordinates until a route could be located. For example, as shown in the table below, we located 95.2% of the routes within 0.5 mile of the actual start and end coordinates. Expanding the range to 5 miles captured 99.9% of the routes (Table 2).[41]

TABLE 2: DISTANCE RANGE OF INPUT START AND END COORDINATES TO OUTPUT COORDINATES USED FOR CALCULATED ROUTES

Range	Routes	% of Total
0.5 mile	152,242	95.2%
1 mile	157,519	98.5%
2 miles	159,183	99.6%
3 miles	159,548	99.8%
4 miles	159,632	99.8%
5 miles	159,697	99.9%
Total	**159,901**	**100%**

We provide the results at different mile thresholds from 0.5 to 5 miles in Appendix C.

36 Arizona and New Mexico counties have a 90% threshold, while North Carolina counties have a 95% threshold. For those states for which a threshold was not defined, we assumed a 90% threshold.

37 Census data contains two different AI/AN indicators: AI/AN alone or in combination with another race.

38 See Congressional Research Service, *The Indian Health Service (IHS): An Overview* (January 2016), p. 4. https://crsreports.congress.gov/product/pdf/R/R43330

39 To limit the number of routes to calculate, geocoded geography-provider pairings were limited to those whose straight-line distance was at or below the network adequacy distance standard (except for Nebraska, in which 45 miles was used given the 30-minute time standard).

40 OSRM router did not capture driving time of day. Therefore, we could not control for typical driving conditions to travel to a hospital.

41 Two Alaska Census Tracts in the Prince of Wales-Hyder Census Area corresponded to fifty-four geography-provider combinations for which driving routes could not be calculated.

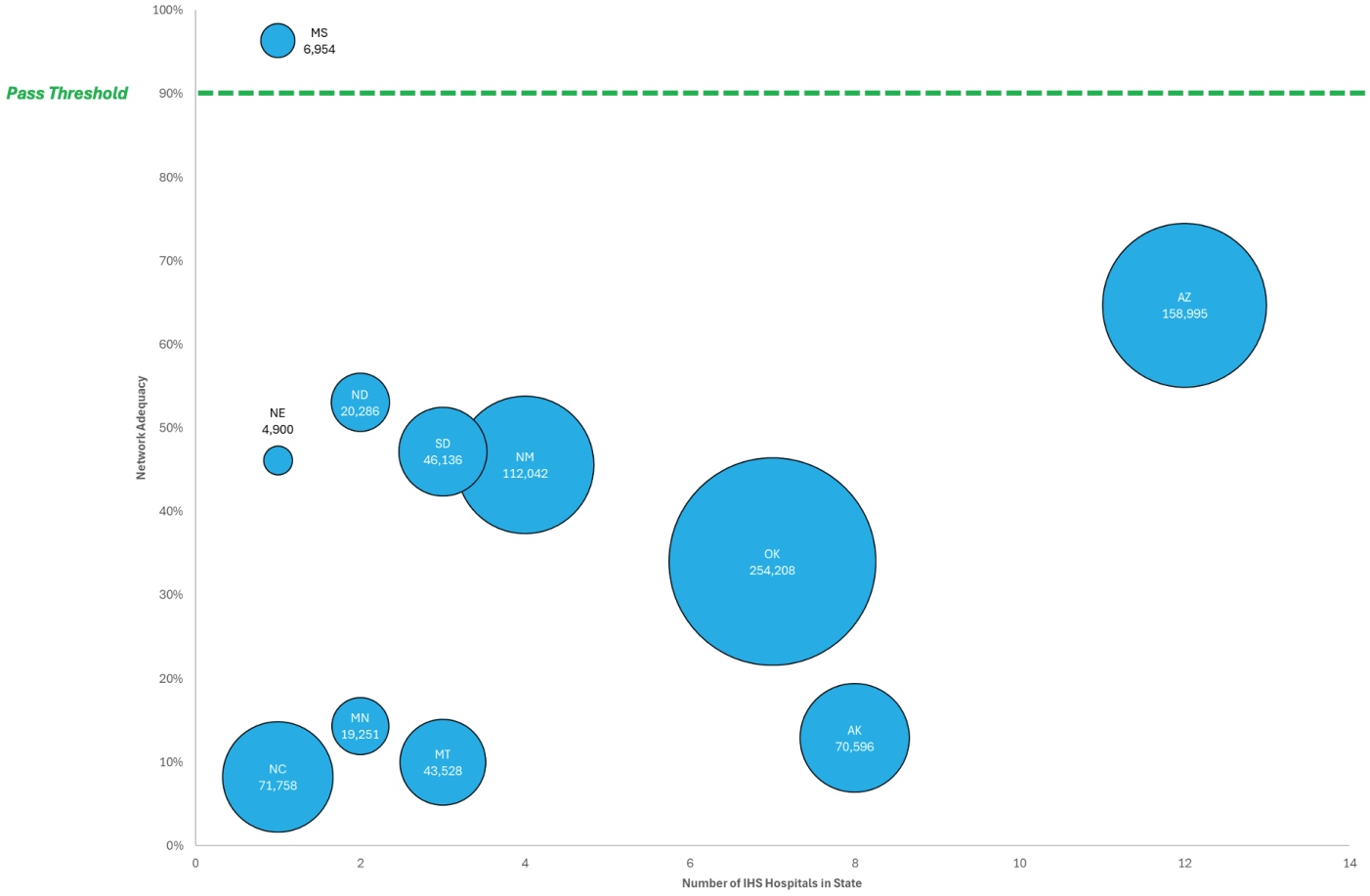
Results

1. Network Adequacy Measurement

A. Network Adequacy Among Tribal Lands (IHS Hospitals Only)

Based on the analysis described above, we found that almost all states fall below the 90% threshold when evaluating by the tribal lands' geography, with only Mississippi (96%) passing. That said, the Mississippi Band of Choctaw Indians (6,954) on their reservation accounts for less than 1% of the AI/AN tribal land population in the eleven states included in our analysis. Across all eleven states, 62% of the AI/AN population on tribal lands lack sufficient access to an IHS-funded hospital, per the maximum time and distance standards (Figure 4).

FIGURE 4: NETWORK ADEQUACY RELATIVE TO AI/AN POPULATION IN TRIBAL LANDS

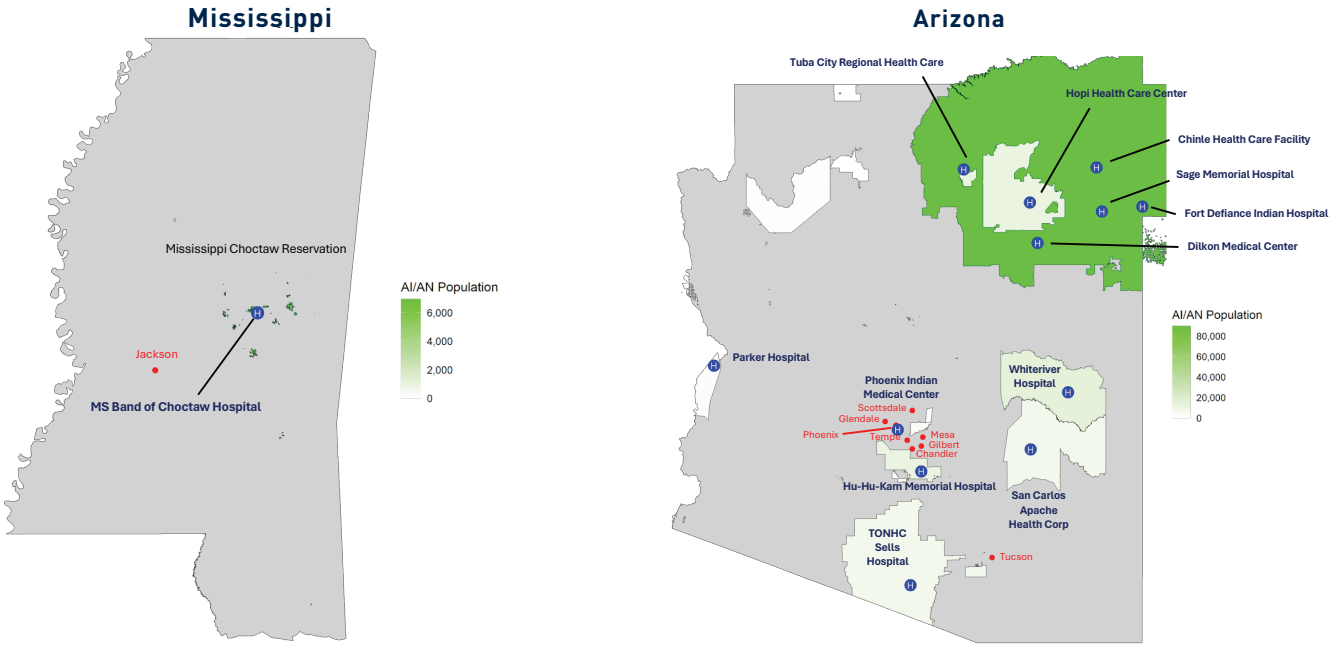


Note: The numbers below each state abbreviation indicate total AI/AN population within tribal lands in that state.

It is clear why Mississippi exceeds the 90% threshold: it has only one hospital that is centrally located and proximate to tribal lands.

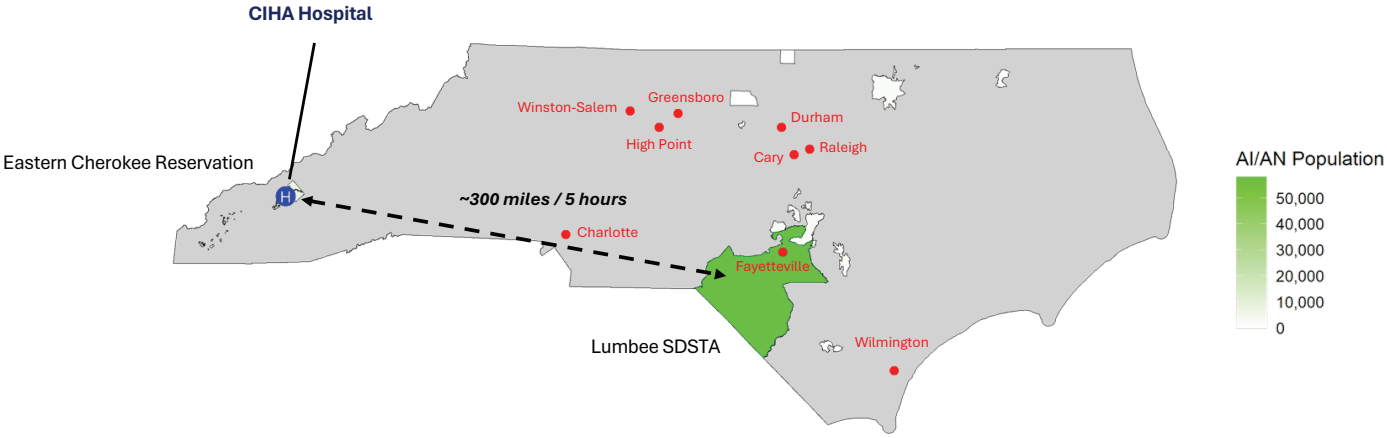
The next highest state is Arizona. Although it falls short of the 90% threshold at the 0.5-mile range, it exceeds 90% once we extend the range to 5 miles to include additional routes. Arizona has twelve hospitals spread across the state, but they are grouped tightly in and around tribal lands (Figure 5).

FIGURE 5: IHS HOSPITAL LOCATIONS RELATIVE TO AI/AN POPULATION IN TRIBAL LANDS



By way of contrast, North Carolina falls well below its threshold of 95%; only about 8% of its AI/AN population on tribal lands have sufficient access. The only IHS hospital is in the western part of the state in Cherokee County, while 81% of the AI/AN population living on tribal lands is located approximately 300 miles away in the Lumbee State Designated Tribal Statistical Area (SDTSA) (Figure 6).

FIGURE 6: NORTH CAROLINA AI/AN POPULATION BY TRIBAL LAND AND IHS HOSPITAL LOCATION

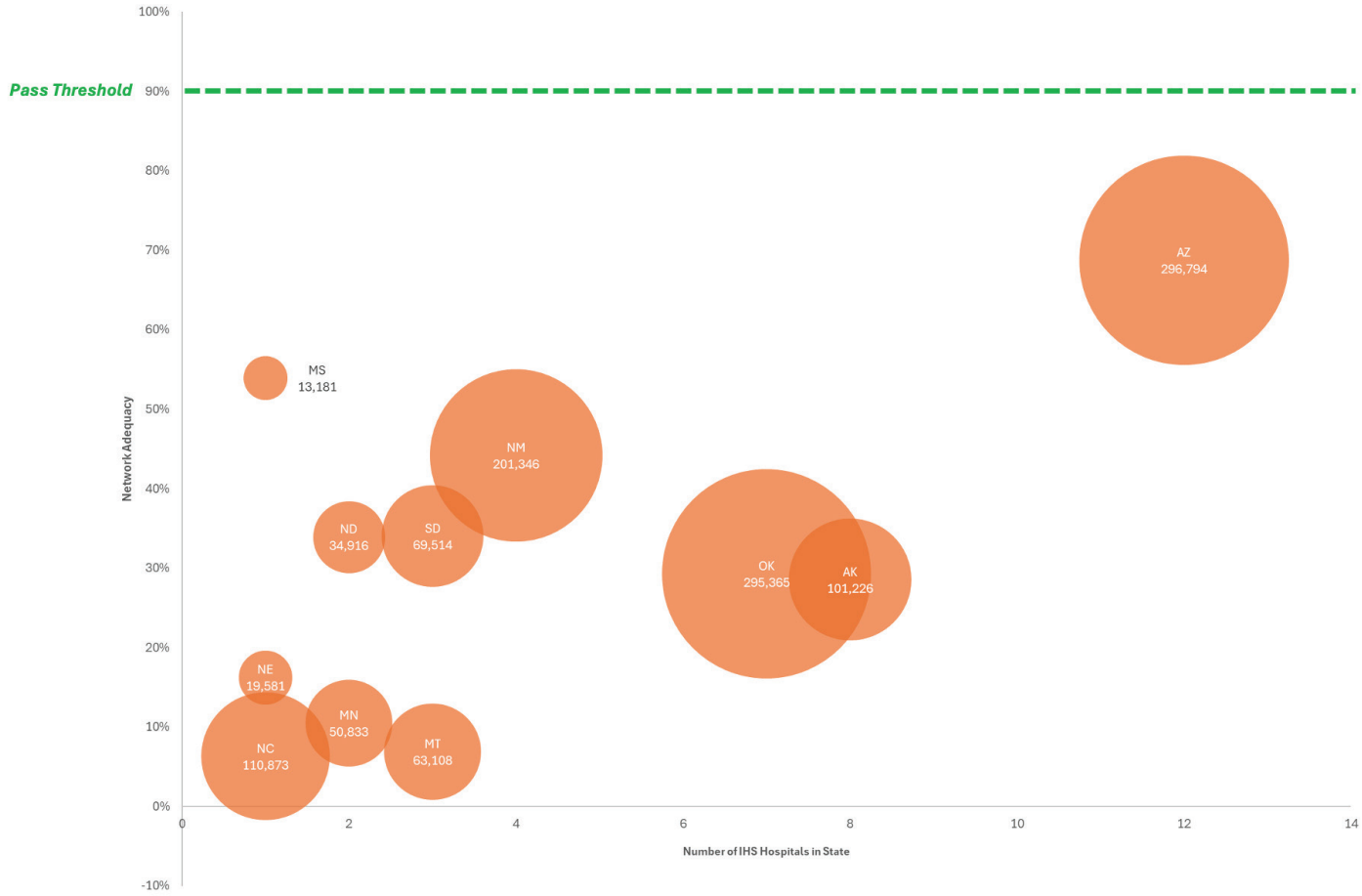


B. Network Adequacy among Counties (IHS Hospitals Only)

The IHS eligibility requirements do not require an AI/AN person to live on tribal lands to be eligible to receive healthcare services at an IHS-funded hospital.[42] That is, an AI/AN person may live outside tribal lands (i.e., elsewhere in the county in which the tribal lands are located) but still need to access an IHS-funded hospital.

Considering this scenario, we ran another test for adequacy at the County level. As expected, almost all states fared significantly worse, with only 6% of counties and 37% of the population passing (Figure 7).

FIGURE 7: NETWORK ADEQUACY AMONG COUNTIES (IHS HOSPITALS ONLY)



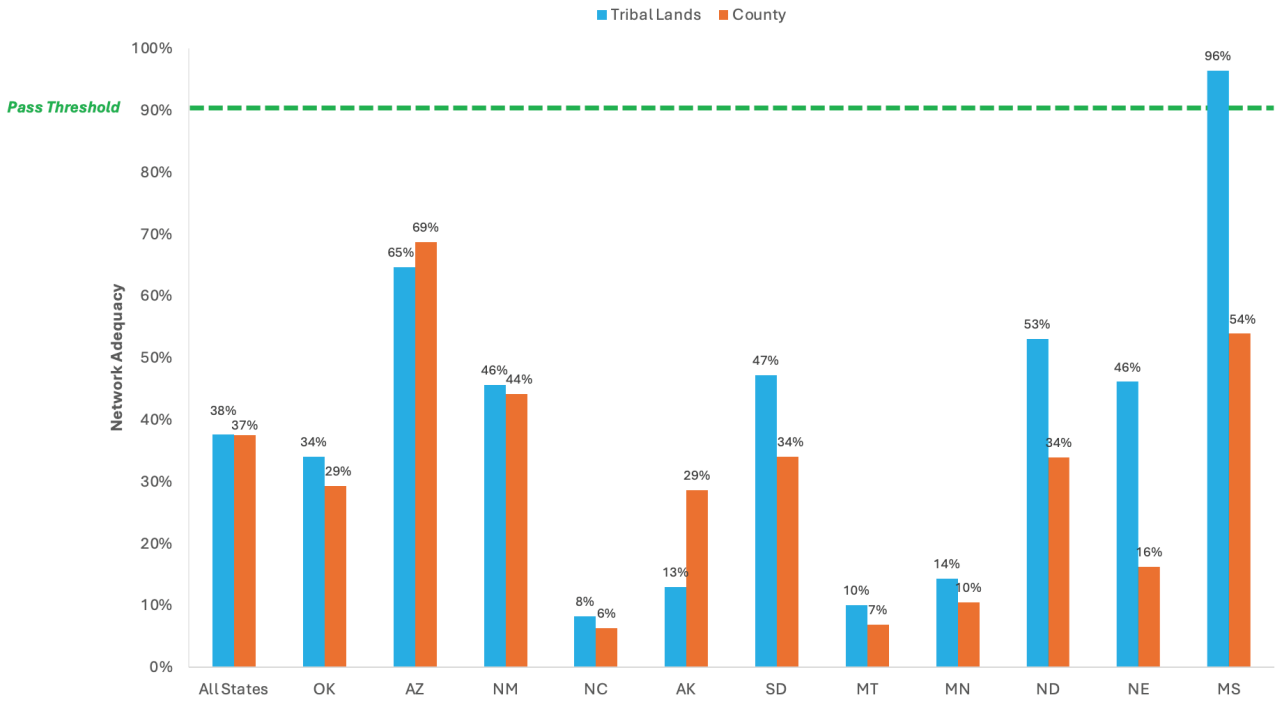
Note: The numbers below each state abbreviation indicate total AI/AN population within counties in that state

42 IHS, *Indian Health Manual*, Part 2, "Services to Indians and Others," Chapter 1, "Eligibility for Services" (signed June 28, 2017), Section 2-1.2. https://www.ihs.gov/ihm/pc/ "A person may be regarded as eligible and within the scope of the IHS health care program if he or she is not-otherwise excluded by provision of law, and is: A. American Indian and/or Alaska Native. American Indian and/or Alaska Native (AI/AN) descent and belongs to the Indian community served by the IHS program, as evidenced by such factors as:

(1) Membership, enrolled or otherwise, in an AI/AN Federally-recognized Tribe or Group under Federal supervision.
(2) Resides on tax-exempt land or owns restricted property.
(3) Actively participates in tribal affairs.
(4) Any other reasonable factor indicative of Indian descent.
(5) In case of doubt that an individual applying for care is within the scope of the program, as established in 42 C.F.R. § 136.12(b), and the applicant's condition is such that immediate care and treatment are necessary, services shall be provided pending identification as an Indian beneficiary."

The percent change between Tribal Land and County metrics ranged from 3% (New Mexico) to 65% (Nebraska) (Figure 8).

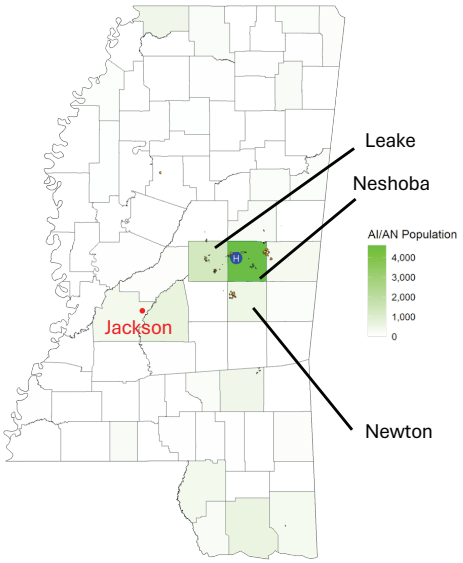
FIGURE 8: COMPARISON OF TRIBAL LAND AND COUNTY AI/AN POPULATION NETWORK ADEQUACY RELATIVE TO IHS HOSPITALS



Again, it's instructive to view on a map: Mississippi and Nebraska both had large disparities when expanding to the County level (Figure 9).

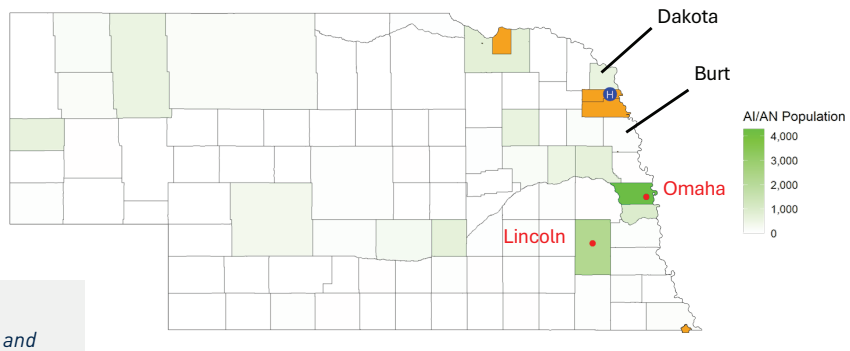
FIGURE 9: MISSISSIPPI AND NEBRASKA AI/AN POPULATION BY COUNTY AND IHS HOSPITAL LOCATION, WITH TRIBAL LANDS OVERLAY

Mississippi



While Neshoba, Leake, Newton, and their neighboring counties meet network adequacy, all other counties in Mississippi fail (46% of the state's AI/AN population).

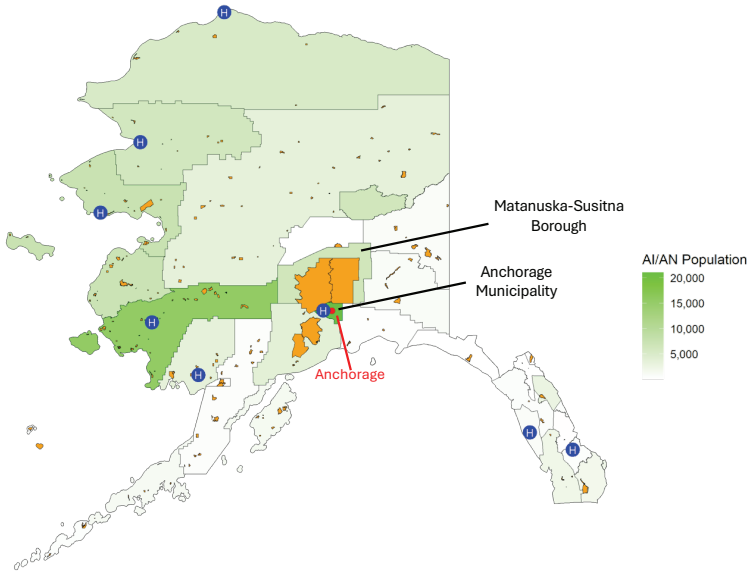
Nebraska



Only Burt and Dakota counties meet network adequacy, which represent just over 3% of the state AI/AN population.

Interestingly, Arizona and Alaska both *increased* in adequacy when shifting to the County level. Figure 10 shows a map of Alaska.

FIGURE 10: ALASKA AI/AN POPULATION BY COUNTY AND IHS HOSPITAL LOCATION, WITH TRIBAL LANDS OVERLAY

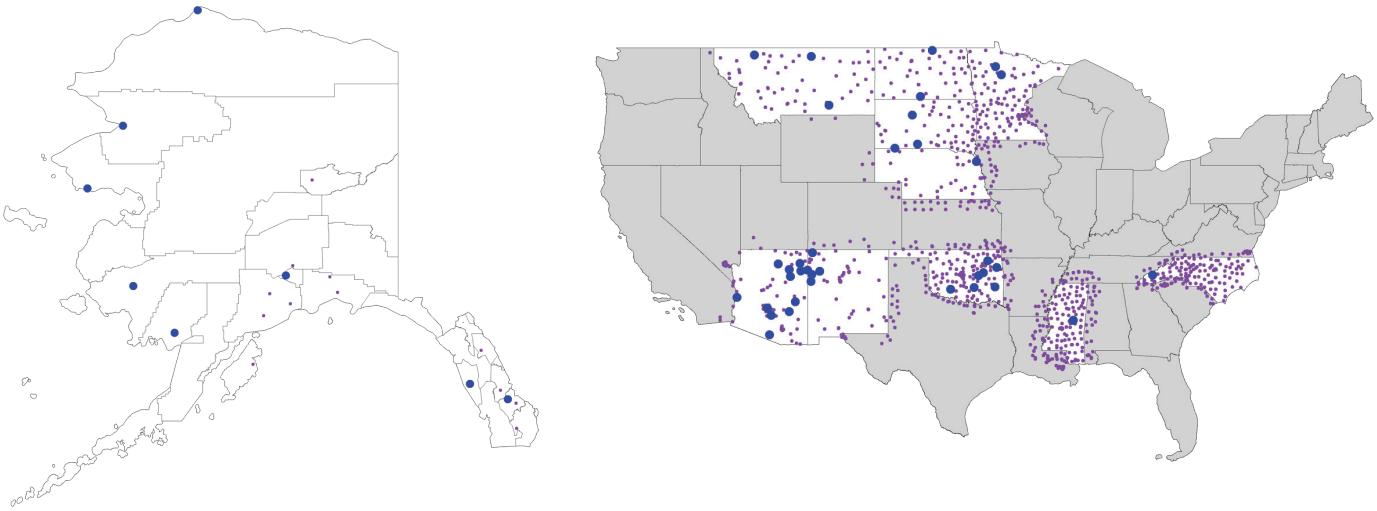


Alaska's 222 Tribal Lands spread across the state. Anchorage Municipality alone passes, contributing to 20% of the adequacy pass rate for the County-level population, resulting in a higher pass rate than at the Tribal Land-level.

C. Network Adequacy among Counties (IHS and Medicaid Hospitals)

As mentioned above, approximately 40% of the AI/AN population is enrolled in Medicaid, which means that an AI/AN person on Medicaid has access to hospitals that accept Medicaid beneficiaries (in addition to having access to an IHS-funded hospital).[43] As a result, we expanded the hospital network to include both IHS-funded and Medicaid hospitals (Figure 11).

FIGURE 11: MAP OF ALL IHS AND MEDICAID HOSPITALS IN/AROUND STATES OF INTEREST[44]

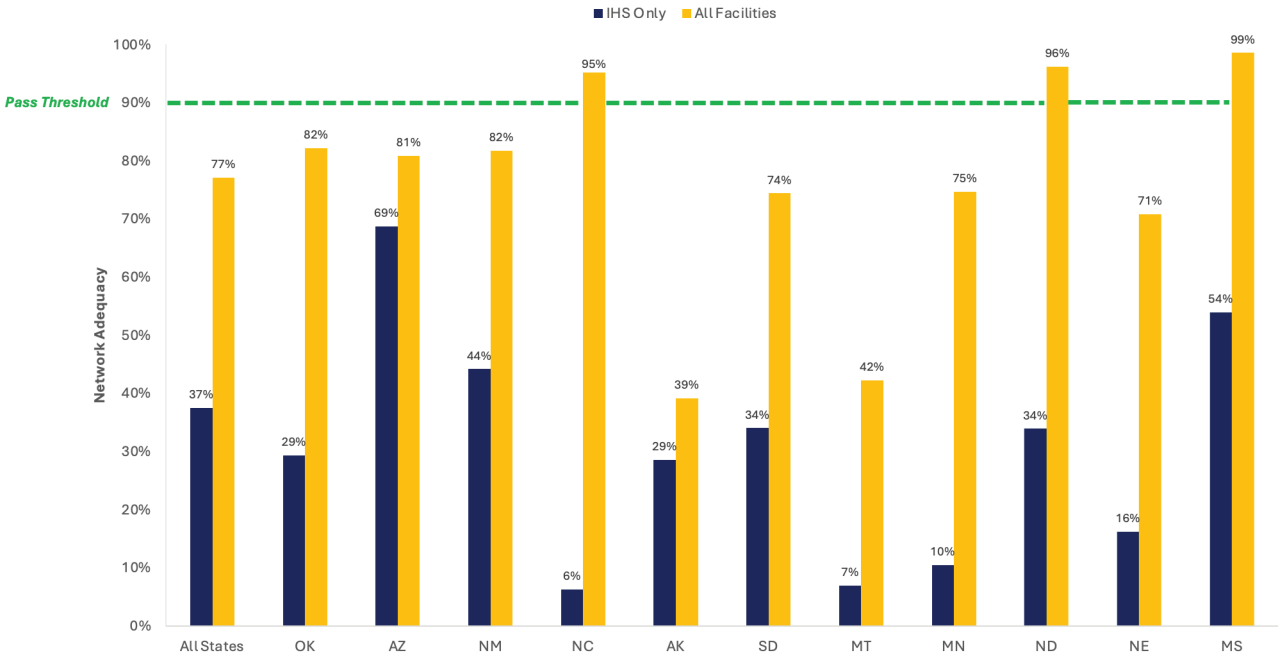


43 AI/AN individuals can receive services via the Purchased/Referred Care (PRC) Program, but this program has limited funds and strict authorization requirements. Generally, PRC is authorized only for those healthcare services that are "required to prevent the immediate death or a serious impairment of the individual"; see Congressional Research Service (2016), pp. 11–12.

44 Medicaid hospitals outside of the eleven states of interest are limited to where the straight-line distance of the hospital is within the network adequacy standard (except for Nebraska, which is limited to within 60 miles).

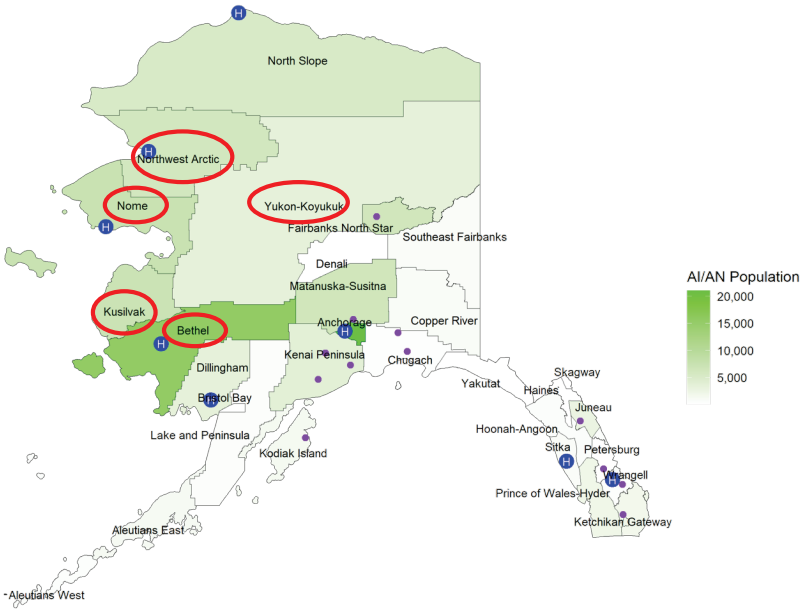
While the overall network adequacy rate more than doubled to 77%, it still falls short of the 90% threshold. This translates to nearly 288,000 of the AI/AN population. Only Mississippi, North Carolina, and North Dakota met the standard (Figure 12).

FIGURE 12: COMPARISON OF COUNTY AI/AN POPULATION NETWORK ADEQUACY RELATIVE TO IHS HOSPITALS ALONE AND BOTH IHS AND MEDICAID HOSPITALS



For example, Alaska is underserved in regions with significant AI/AN populations such as Bethel, Kusilvak, Nome, and Yukon-Koyukuk Census Areas and Northwest Arctic Borough. Approximately 82% of the population (over 58,000 people) in CEAC counties (Counties with Extreme Access Considerations) must travel beyond its 100-mile/110-minute driving standards to access an IHS or Medicaid hospital (Figure 13).

FIGURE 13: ALASKA AI/AN POPULATION BY COUNTY AND IHS AND MEDICAID HOSPITAL LOCATIONS



Conclusions

To be clear, the network adequacy standards that we utilized in our analysis do not apply to the IHS. As mentioned earlier, no regulators have codified any network adequacy standards for the IHS provider network. This exercise was our attempt to quantify one measure of what "lack of access" to healthcare services looks like for the AI/AN population. Indeed, our analysis confirms that much of the AI/AN population must travel great distances to reach an IHS-funded hospital. What our analysis adds is how that would translate were the IHS required to meet the standards that we applied. Specifically, more than 62% of the AI/AN population in states with an IHS hospital—approximately 505,000 persons—lacks sufficient access to an IHS-funded hospital.

Our analysis also shows that the access issue is mitigated to an extent by adding more (i.e., Medicaid) hospitals to the hospital network that the AI/AN population can access. As mentioned above, approximately 40% of the AI/AN population is already enrolled in Medicaid, and hundreds of thousands are eligible to join.[45] Enrolling more AI/AN persons in Medicaid would help improve access overall.

IHS relies on congressional appropriations to operate.[46] Its funding shortfall is widely reported and should come as no surprise. Tribal Leaders have suggested that $48 billion is needed to fully provide sufficient healthcare services[47]; its fiscal year 2025 appropriation is $8.2 billion.[48]

Sufficient funding would help mitigate some issues discussed in this paper, including provider vacancies and shortages, social determinants of health (including bringing running water to households that lack it), and more funding for purchased/referred care.

45 Tribal Self-Governance Advisory Committee, "American Indian and Alaska Native (AI/AN) Marketplace enrollment, including access to cost-sharing protections, and Medicaid enrollment" (December 20, 2019). https://www.tribalselfgov.org/wp-content/uploads/2020/01/TSGAC-Brief-AI-AN-Marketplace-Medicaid-Enroll-2018-2019-12-20f.pdf: "As of 2017, about 50,000 uninsured AI/ANs potentially could qualify for Medicaid if the current non-expansion states with at least one federally-recognized Tribe adopted the expansion; 79% of these uninsured AI/ANs reside in just two states (Oklahoma and South Dakota). And, according to Census Bureau data, in expansion states, there are approximately 68,000 uninsured AI/ANs who might be eligible for, but not enrolled in, Medicaid coverage."

46 The IHS received advance appropriations for the first time in FY 2024.

47 Torres, Amber, et al., *Reclaiming Tribal Health: A National Budget Plan to Rise Above Failed Policies and Fulfill Trust Obligations to Tribal Nations - The National Tribal Budget Formulation Workgroup's Recommendations on the Indian Health Service Fiscal Year 2022 Budget*, National Indian Health Board (April 2020), p. 16. https://www.nihb.org/wp-content/uploads/2025/01/FINAL_FY22-IHS-Budget-Book.pdf

48 US HHS, *Fiscal Year 2025: Budget in Brief*, p. 34. https://www.hhs.gov/sites/default/files/fy-2025-budget-in-brief.pdf

Appendix A

IHS Facility Descriptions[49]

Hospital: A permanent facility which contains inpatient beds, organized staff including physician services, continuous nursing services and that provides comprehensive health care including diagnosis and treatment.

Health Center: A facility, physically separated from a hospital, with a full range of ambulatory services including physician services, nursing, pharmacy, laboratory, and x-ray. Services are available at least 40 hours per week for ambulatory care.

Alaska Village Clinic: A healthcare facility located exclusively within Alaska Native communities and typically leased by IHS; care is usually provided by a community health aide or practitioner.

Health Station: A facility, physically separated from a hospital or health center, where primary care provider services are available on a regularly scheduled basis but for less than 40 hours per week.

Health Location: An ambulatory care location operating with visiting providers less than one day per week in a remote community that provides limited primary care and dental services.

49 IHS, "Facility Type." https://www.ihs.gov/scb/standard-code-book-tables/facility-type/

Appendix B

Network Adequacy Standards[50]

State	County Type	Miles	Minutes	% of Enrollees
AZ	Maricopa + Pima	30	45	90%
	All others	85	95	
MT	All	30		
ND	Urban	30		
	Rural	50		
	Frontier	50		
NM	Urban	30		90%
	Rural	60		
	Frontier	90		
OK	Urban	10		
	Rural	45		
NE	Urban		30	
	Rural/Frontier		>30	
NC	Urban	15	30	95%
	Rural	30	30	
MN	All	30	30	
MS	Urban	30	30	
	Rural	60	60	
AK + SD	Large Metro	10	20	
	Metro	30	45	
	Micro	60	80	
	Rural	60	75	
	CEAC	100	110	

50 Frontier counties are defined as having a population density of fewer than six people per square mile.

Appendix C

Network Adequacy Broken Down by Threshold of Distance of Route to Origin/ Destination Coordinates

Tribal Lands to IHS Hospitals

				Tribal Lands Passing						Tribal Area Pass Rate						Tribal Area Population Pass Rate					
State	# of Tribal Lands	# of Tribal Lands with AI/AN Population >0	Total AI/AN Population	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles
AK	222	222	70,596	2	4	4	6	6	6	1%	2%	2%	3%	3%	3%	13%	22%	22%	23%	25%	25%
AZ	21	21	158,995	4	6	8	9	9	9	19%	29%	38%	43%	43%	43%	65%	78%	87%	92%	92%	92%
MN	13	13	19,251	0	0	1	1	1	1	0%	0%	8%	8%	8%	8%	14%	15%	42%	42%	42%	42%
MS	1	1	6,954	1	1	1	1	1	1	100%	100%	100%	100%	100%	100%	96%	97%	97%	97%	97%	97%
MT	8	8	43,528	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	10%	38%	38%	38%	38%	38%
NC	8	8	71,758	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%	8%	9%	9%	9%	9%	9%
ND	5	5	20,286	1	2	2	2	2	2	20%	40%	40%	40%	40%	40%	53%	59%	59%	59%	59%	59%
NE	7	7	4,900	1	2	2	2	2	2	14%	29%	29%	29%	29%	29%	46%	78%	78%	78%	78%	78%
NM	26	26	112,042	1	2	3	3	3	3	4%	8%	12%	12%	12%	12%	46%	56%	62%	62%	62%	62%
OK	30	30	254,208	3	3	3	3	3	3	10%	10%	10%	10%	10%	10%	34%	37%	37%	37%	37%	37%
SD	12	12	46,136	2	4	5	5	5	5	17%	33%	42%	42%	42%	42%	47%	73%	75%	75%	75%	75%
Total	**353**	**353**	**808,654**	**15**	**24**	**29**	**32**	**32**	**32**	**4%**	**7%**	**8%**	**9%**	**9%**	**9%**	**38%**	**47%**	**50%**	**51%**	**52%**	**52%**

Counties to IHS Hospitals

				Counties Passing						County Pass Rate						County Population Pass Rate					
State	# of Counties	# of Counties with AI/AN Population >0	Total AI/AN Population	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles
AK	30	30	101,226	1	2	2	4	4	4	3%	7%	7%	13%	13%	13%	29%	35%	35%	36%	37%	38%
AZ	15	15	296,794	2	4	6	8	8	8	13%	27%	40%	53%	53%	53%	69%	77%	81%	84%	84%	84%
MN	87	87	50,833	0	0	1	1	1	1	0%	0%	1%	1%	1%	1%	10%	11%	21%	21%	21%	21%
MS	82	71	13,181	8	8	8	8	8	8	11%	11%	11%	11%	11%	11%	54%	54%	54%	54%	54%	54%
MT	56	54	63,108	0	1	1	1	1	1	0%	2%	2%	2%	2%	2%	7%	26%	26%	26%	26%	26%
NC	100	100	110,873	2	2	2	2	2	2	2%	2%	2%	2%	2%	2%	6%	6%	6%	6%	6%	6%
ND	53	49	34,916	3	4	4	4	4	4	6%	8%	8%	8%	8%	8%	34%	37%	37%	37%	37%	37%
NE	93	82	19,581	2	3	3	3	3	3	2%	4%	4%	4%	4%	4%	16%	24%	24%	24%	24%	24%
NM	33	33	201,346	0	2	2	2	2	2	0%	6%	6%	6%	6%	6%	44%	50%	53%	53%	53%	53%
OK	77	77	295,365	10	13	13	13	13	13	13%	17%	17%	17%	17%	17%	29%	32%	32%	32%	32%	32%
SD	66	63	69,514	11	17	18	18	18	18	17%	27%	29%	29%	29%	29%	34%	52%	53%	53%	53%	53%
Total	**692**	**661**	**1,256,737**	**39**	**56**	**60**	**64**	**64**	**64**	**6%**	**8%**	**9%**	**10%**	**10%**	**10%**	**37%**	**43%**	**46%**	**47%**	**47%**	**47%**

Counties to IHS Hospitals and Medicaid Hospitals

				Counties Passing						County Pass Rate						County Population Pass Rate					
State	# of Counties	# of Counties with AI/AN Population >0	Total AI/AN Population	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles	½ Mile	1 Mile	2 Miles	3 Miles	4 Miles	5 Miles
AK	30	30	101,226	2	5	5	7	7	8	7%	17%	17%	23%	23%	27%	39%	48%	48%	51%	52%	54%
AZ	15	15	296,794	3	8	11	14	15	15	20%	53%	73%	93%	100%	100%	81%	90%	95%	98%	99%	99%
MN	87	87	50,833	57	69	72	72	72	72	66%	79%	83%	83%	83%	83%	75%	78%	92%	92%	92%	92%
MS	82	71	13,181	64	70	71	71	71	71	90%	99%	100%	100%	100%	100%	99%	100%	100%	100%	100%	100%
MT	56	54	63,108	13	23	29	30	31	32	24%	43%	54%	56%	57%	59%	42%	71%	73%	73%	73%	73%
NC	100	100	110,873	75	84	86	86	86	86	75%	84%	86%	86%	86%	86%	95%	96%	96%	96%	96%	96%
ND	53	49	34,916	44	48	48	48	48	48	90%	98%	98%	98%	98%	98%	96%	100%	100%	100%	100%	100%
NE	93	82	19,581	35	44	44	44	44	44	43%	54%	54%	54%	54%	54%	71%	81%	81%	81%	81%	81%
NM	33	33	201,346	12	26	32	33	33	33	36%	79%	97%	100%	100%	100%	82%	93%	99%	100%	100%	100%
OK	77	77	295,365	45	60	65	65	65	65	58%	78%	84%	84%	84%	84%	82%	87%	87%	87%	87%	87%
SD	66	63	69,514	42	59	62	62	63	63	67%	94%	98%	98%	100%	100%	74%	96%	100%	100%	100%	100%
Total	**692**	**661**	**1,256,737**	**392**	**496**	**525**	**532**	**535**	**537**	**59%**	**75%**	**79%**	**80%**	**81%**	**81%**	**77%**	**86%**	**89%**	**90%**	**90%**	**91%**

Appendix D

Data Sources

1. IHS-Funded Facilities

IHS maintains a list of IHS-funded facilities.[51] The file contains data elements for each facility, including name, type, address, geocoordinates, and information on who owns and operates it.

2. Medicaid Hospitals

The Centers for Medicare and Medicaid Services maintains individual healthcare provider and facility data in the National Plan and Provider Enumeration System (NPPES) National Provider Identifier (NPI) Registry.[52] Using these data, we identified hospitals based on whether a facility had at least one of three taxonomy codes:[53,54]

Taxonomy	Taxonomy Description
282N00000X	General Acute Care Hospital
282NR1301X	General Acute Care Hospital – Rural
282NC0060X	General Acute Care Hospital – Critical Access

To isolate Medicaid hospitals, we limited to those hospitals where a Medicaid license is present on the NPI Registry record and registered in either (a) one of the eleven states that have at least one IHS-funded hospital or (b) a state that neighbors one of these eleven states.[55]

Since the NPI Registry does not contain geocoordinate data, we used the Turquoise Health Transparency Data and the US Census Geocoder API to geocode each facility location.

3. American Indian and Alaska Native (AI/AN) Population

To estimate the AI/AN population in the United States used in our analysis, we used the 2023 American Community Survey (ACS) demographic and housing five-year estimates at the Census Tract-level.[56]

Because Census Tracts can fall in multiple tribal lands, Census Tract population was adjusted based on the percentage of the Census Tract's land area that falls in the tribal lands of interest.[57] We assumed that the AI/AN population for these Census Tracts was fully contained in the tribal lands. Census Tracts are contained within counties.

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51 This list is publicly available to download: IHS, *IHS, Tribal, & Urban Indian Health Facilities List* (June 2023). https://www.ihs.gov/sites/locations/themes/responsive2017/display_objects/documents/ihs_facilities.xlsx

52 CMS, NPPES NPI Registry, "Search NPI Records." https://npiregistry.cms.hhs.gov/search

53 Facility defined as where "Entity Type Code" is "2."

54 The following hospital-related taxonomy codes were not considered in the analysis: 282NC2000X (General Acute Care Hospital – Children), 282NW0100X (General Acute Care Hospital – Women), and 282E00000X (Long Term Care Hospital).

55 Medicaid hospitals were identified in the NPI Registry where the field "Other Provider Identifier Type Code" is "05."

56 US Census Bureau, American Community Survey, "DP05 | ACS Demographic and Housing Estimates." https://data.census.gov/table/ACSDP5Y2023.DP05?g=010XX00US$1400000

57 US Census Bureau, "2020 American Indian/Alaska Native/Native Hawaiian Area (AIANNH) to 2020 Census Tract Relationship File," https://www2.census.gov/geo/docs/maps-data/data/rel2020/aiannh/tab20_aiannh20_tract20_natl.txt

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