Medicaid and IHS Access: A Data Match Analysis

The Fiscal Magnitude and Structural Role of the CMS–IHS Data Match in American Indian and Alaska Native Health Systems

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Executive Overview

Medicaid financing now constitutes one of the most significant structural funding streams supporting American Indian and Alaska Native (AI/AN) health systems in the United States. Administrative linkage data from the 2023 Centers for Medicare & Medicaid Services–Indian Health Service (CMS–IHS) Data Match identify 941,168 AI/AN individuals with verified IHS access enrolled in Medicaid during the study year. Using a per-member-per-year (PMPY) expenditure modeling framework calibrated to national Medicaid spending benchmarks and adjusted for partial-year enrollment, total Medicaid expenditures attributable to this population are estimated at approximately $6.42–$6.56 billion annually.

This magnitude is fiscally consequential. Total IHS appropriations for Fiscal Year 2023 were approximately $8.6 billion. Medicaid expenditures attributable to AI/AN individuals with verified IHS access therefore approach the scale of total IHS annual appropriations. While Medicaid does not substitute for federal trust responsibility funding, it operates as a parallel and increasingly central financing pillar within Tribal and IHS-operated health systems.

The fiscal implications of this magnitude extend beyond revenue aggregation. Medicaid interacts directly with Purchased and Referred Care (PRC) — formerly Contract Health Services — by absorbing the costs of hospital admissions, specialty consultations, advanced diagnostics, oncology, dialysis, orthopedic surgery, cardiology, behavioral health inpatient services, and emergency trauma care that are not available within many IHS direct care facilities. Under federal payer-of-last-resort rules, Medicaid is billed before PRC funds are authorized. Consequently, Medicaid enrollment materially reduces PRC drawdown and mitigates the risk of referral exhaustion.

Enrollment, however, is not evenly distributed across the country. Approximately 95 percent of CMS–IHS Medicaid enrollment is concentrated in 25 states. Four states alone — Arizona, Oklahoma, New Mexico, and Alaska — account for nearly half of total matched enrollment. Structural variation across states is substantial and reflects differences in:

- IHS penetration rates
- Reservation versus urban population distribution
- Hospital infrastructure availability
- Medicaid expansion participation
- Referral intensity patterns

Particularly important are differences in hospital capacity across IHS Areas. The Portland IHS Area and California IHS Area operate without IHS-run hospitals. In these Areas, inpatient services must be referred externally. This structural absence increases reliance on Medicaid reimbursement and PRC authorization for

virtually all hospital-level services. As a result, these Areas face elevated exposure to PRC funding limits compared to Areas with internal hospital capacity.

This white paper provides a structural fiscal analysis of Medicaid's role within Indian health systems. It does not advance advocacy positions. Rather, it examines:

1. The national magnitude of Medicaid financing attributable to AI/AN individuals with verified IHS access
2. Geographic concentration across the top 25 states
3. Structural typologies distinguishing reservation-dominant, mixed, and urban-dominant states
4. External provider flow modeling
5. PRC operational mechanics and medical inflation exposure
6. Administrative–survey divergence analysis
7. Fiscal risk simulation under enrollment contraction scenarios
8. Quantitative appendices documenting assumptions and calculations

The objective is to provide Tribal health leadership, Tribal Epidemiology Centers, IHS Area analysts, and federal Indian health finance officials with a rigorous structural understanding of Medicaid's fiscal role.

Structural Context: Trust Responsibility and Financing Gaps

The federal trust responsibility obligates the United States to provide health services to AI/AN populations. IHS is the primary federal agency charged with fulfilling this responsibility through direct service facilities, Tribal self-determination contracts, self-governance compacts, and Urban Indian Health programs.

Despite this obligation, IHS per capita expenditures historically fall below national per capita health spending averages. Multiple federal reviews have documented chronic underfunding relative to estimated need. Consequently, Indian health systems have relied increasingly on third-party revenue sources — including Medicaid, Medicare, private insurance, and marketplace coverage — to maintain operational capacity.

Among these sources, Medicaid has emerged as the largest third-party payer for many Tribal and IHS-operated facilities. In some Tribal systems, Medicaid revenue exceeds direct federal base funding for certain service lines.

Purchased and Referred Care (PRC) represents a critical component of this financing landscape. PRC funds services unavailable within IHS facilities, including inpatient hospitalization, specialty care, advanced imaging, and tertiary procedures. PRC appropriations are discretionary and finite. When funds are exhausted, services are prioritized by medical urgency. Historically, PRC shortfalls have resulted in deferred care and limited specialty access.

The Affordable Care Act expanded Medicaid eligibility in participating states, increasing coverage among low-income adults. In expansion states with significant AI/AN populations, enrollment growth altered the fiscal composition of Indian health systems. However, until the CMS–IHS Data Match, no administrative linkage dataset isolated Medicaid enrollment among individuals with verified IHS access at national scale. As Dr. Ed Fox of the NIHB Tribal Data Project noted in his 2021 presentation, the data match project was designed to “create a new variable of an AI/AN who has Medicaid and also had one paid service to an Indian health program,” enabling examination of enrollment and expenditures at the state level (Fox, National Tribal Health Conference, October 4, 2021, slide 15).

The present analysis addresses that gap.

Administrative Data Infrastructure

The CMS–IHS Data Match links IHS registrant records with Medicaid enrollment files. The match was performed using the last four digits of a patient's Social Security number, birthdate, sex, state, up to the first five characters of the patient's first name, middle initial, and up to the last eight characters of the patient's last name. Individuals included in the linkage:

- Are registered within IHS systems
- Have verified IHS access
- Are enrolled in Medicaid during the study year

The 2023 linked enrollment total of 941,168 individuals provides a verified administrative denominator for expenditure modeling. This represents an 11.3 percent increase over the five-year period from 2019 to 2023, although enrollment dipped slightly from 845,619 in 2019 to 819,185 in 2020 before rising steadily to the 2023 total.

Administrative linkage provides important advantages:

- It avoids sampling variability inherent in survey-based estimates
- It confirms enrollment through program records
- It permits state-level concentration analysis

However, the linkage does not include claims-level expenditure data. Therefore, expenditures were estimated using a PMPY modeling approach.

Data Match Methodology and Development

The CMS–IHS Data Match represents the culmination of years of collaborative development between federal agencies and Tribal advisory bodies. The data match methodology was developed through an extended process involving the Tribal Technical Advisory Group (TTAG) Data Subcommittee, which provides advice to CMS on policy and program issues affecting AI/AN populations served by CMS-funded programs. The TTAG, established in 2003–2004, includes representatives from each of the twelve IHS Areas and national Tribal organizations, and its Data Subcommittee has worked consistently to improve data infrastructure for Indian Country.

From approximately 2017 through 2025, the TTAG Data Subcommittee provided iterative feedback on the data match design, variable selection, and analytic approaches. This multi-year engagement ensured that the matching algorithm would accurately identify AI/AN IHS registrants enrolled in Medicaid while protecting patient privacy. The final methodology, implemented by Health Apt, reflects this extensive Tribal technical input.

Expenditure Modeling Framework

Total Medicaid expenditures attributable to the linked population were estimated using:

Total Spending = Enrollment × PMPY × Enrollment Adjustment Factor

Assumptions:

- PMPY benchmark: $7,750 (national Medicaid spending per enrollee approximation)
- Enrollment adjustment factor: 0.90 (accounting for partial-year enrollment and churn)

Applying the uniform PMPY yields an estimated $6.56 billion. Adjusting for state-level spending differentials yields approximately $6.42 billion. The modest difference (~2 percent) indicates that geographic cost variation does not materially alter the national magnitude.

While this approach cannot disaggregate service categories, it provides a credible fiscal approximation for structural analysis.

Structural Interpretation of Magnitude

A $6.4–$6.6 billion annual financing stream is not marginal within Indian health systems. It:

- Approaches total IHS annual appropriations
- Exceeds PRC appropriations
- Significantly exceeds Urban Indian Health funding
- Represents a major share of third-party revenue in many Tribal facilities

Moreover, Medicaid financing is elastic with service utilization. Unlike fixed PRC appropriations, Medicaid reimbursement increases with covered service demand among enrolled individuals.

Thus, Medicaid performs two structural roles:

1. Revenue generation for Tribal and IHS facilities
2. Referral cost absorption through claims-based reimbursement

This dual function is central to understanding fiscal stability across the top 25 states.

Section II: Geographic Concentration, State-Level Distribution, and Structural Typology

A. National Enrollment Concentration

The 2023 CMS–IHS Data Match identifies 941,168 AI/AN individuals with verified IHS access enrolled in Medicaid. Enrollment is not evenly distributed across states. Instead, it is highly concentrated geographically. The top 25 states account for approximately 95 percent of total matched enrollment. The top four states alone — Arizona, Oklahoma, New Mexico, and Alaska — account for nearly half of the national total.

This concentration has significant fiscal implications. Medicaid financing attributable to AI/AN individuals with verified IHS access is therefore similarly concentrated. Fiscal exposure to policy changes, enrollment shifts, or reimbursement modifications is not evenly distributed nationwide but is disproportionately borne by a relatively small number of states.

Enrollment concentration reflects multiple structural determinants, as outlined in the conceptual framework presented by Fox (2021, slides 4–6):

- Historic treaty geography and reservation locations
- Tribal population distribution
- Urban migration patterns
- State Medicaid eligibility policies
- IHS facility distribution
- Area-level hospital capacity

Understanding this concentration is critical to interpreting Medicaid's structural role.

B. Quantitative Distribution Across the Top 25 States

Based on CMS–IHS enrollment counts and modeled spending estimates, the top 25 states can be organized by approximate enrollment share:

Tier I: Very High Concentration (≥8% of National Enrollment)

- Arizona (159,375 — ~17%)
- Oklahoma (160,339 — ~13%)
- New Mexico (104,700 — ~10%)
- Alaska (66,825 — ~8%)

These four states collectively represent approximately 48 percent of national enrollment and nearly half of total modeled expenditures.

Tier II: High Concentration (4–7%)

- California (71,304 — ~7%)
- Washington (data not fully enumerated)
- Oregon (19,392 — ~4–5%)

- Texas (data not fully enumerated)

Together, these states represent roughly 22 percent of enrollment.

Tier III: Moderate Concentration (2–4%)

- Montana (33,657)
- South Dakota (data not fully enumerated)
- Minnesota (26,452)
- Michigan (14,842)
- Wisconsin (data not fully enumerated)
- Colorado (9,357)
- North Dakota (15,051)

Collectively, this tier accounts for approximately 17 percent of national enrollment.

Tier IV: Lower but Material Concentration (1–2%)

- Nevada (8,912)
- Idaho (6,065)
- Utah (data not fully enumerated)
- Kansas (3,342)
- Nebraska (6,574)
- North Carolina (8,812)
- Florida (7,802)
- Georgia (3,394)
- Virginia (data not fully enumerated)
- Mississippi (4,047)

Together, this tier accounts for approximately 8–10 percent of enrollment.

Combined, these tiers reach roughly 95 percent of CMS–IHS Medicaid enrollment.

C. Structural Determinants of State Variation

Enrollment variation across states is driven by several structural factors.

1. IHS Penetration

IHS penetration refers to the proportion of a state's AI/AN population that has verified IHS access. States with high penetration — often those with large reservation-based populations — exhibit larger matched enrollment shares.

Arizona, New Mexico, Alaska, Montana, South Dakota, and North Dakota exhibit high penetration. In these states, Medicaid enrollment among IHS-access populations represents a substantial share of total AI/AN residents.

By contrast, states with large urban AI/AN populations and lower IHS penetration (e.g., California, Florida, Georgia) exhibit smaller matched enrollment shares relative to total AI/AN population counts.

2. Reservation vs. Urban Distribution

Reservation-dominant states typically exhibit:

- Higher poverty rates
- Higher Medicaid eligibility rates
- Greater reliance on IHS facilities
- Greater referral intensity

Urban-dominant states typically exhibit:

- Lower IHS penetration
- Greater reliance on non-IHS providers
- Higher private insurance prevalence among some segments
- More diffuse enrollment patterns

This distinction materially influences Medicaid's fiscal role.

3. Hospital Infrastructure

Hospital infrastructure significantly shapes fiscal interaction with PRC.

IHS Areas with IHS-operated hospitals can internally deliver some inpatient services. In such Areas, Medicaid reimbursement may flow directly to IHS facilities for inpatient claims.

By contrast, the Portland and California IHS Areas operate without IHS-run hospitals. In these Areas:

- All inpatient admissions require external referral
- Surgical procedures are externally delivered
- High-cost specialty services are externally delivered

Consequently, Medicaid enrollment in these Areas provides essential reimbursement for services that otherwise would require PRC authorization.

This structural absence of internal hospital capacity increases exposure to PRC funding limits in the absence of Medicaid coverage.

4. Medicaid Expansion Participation

Medicaid expansion status affects adult enrollment.

Expansion states exhibit:

- Broader adult eligibility
- Greater enrollment stability
- Reduced uninsured rates

Non-expansion states exhibit:

- Coverage gaps for certain adult populations
- Lower enrollment among low-income adults
- Greater PRC exposure for uninsured individuals

However, population magnitude remains a primary driver of enrollment totals even in non-expansion states.

D. Tier I States: Structural Profiles

Arizona

Arizona represents the largest enrollment concentration, with 159,375 AI/AN IHS registrants enrolled in Medicaid in 2023. The Navajo Nation spans Arizona and neighboring states, contributing to high penetration and high referral intensity. Geographic isolation increases reliance on specialty referral centers.

Arizona's estimated Medicaid magnitude exceeds $1.1 billion annually. A significant portion likely flows to external hospitals in Phoenix, Tucson, and regional hubs.

Oklahoma

Oklahoma combines large AI/AN population counts with substantial Tribal self-governance infrastructure. With 160,339 matched enrollees in 2023 — the highest of any state — Oklahoma's enrollment grew dramatically from 103,217 in 2019, representing a 55 percent increase over the five-year period. Tribal-operated facilities possess strong Medicaid billing systems. Medicaid revenue plays a major role in facility operating budgets.

Referral intensity varies across the state but remains structurally significant.

New Mexico

New Mexico exhibits high poverty-driven eligibility, high IHS penetration, and concentrated reservation populations. The state reported 104,700 matched enrollees in 2023. Referral intensity is elevated, particularly for oncology and specialty surgical services.

Medicaid plays a central role in stabilizing referral financing.

Alaska

Alaska's geography produces unique cost dynamics. With 66,825 matched enrollees in 2023, remote villages rely on hub-based referral systems. Medicaid reimbursement absorbs substantial inpatient and specialty costs that would otherwise fall to PRC.

Transportation costs add additional fiscal complexity.

E. Tier II States

California

California has the largest AI/AN population nationally but lower IHS penetration, with 71,304 matched enrollees in 2023. The absence of IHS-run hospitals in the California Area elevates structural reliance on Medicaid reimbursement for inpatient services.

Urban Indian health programs play a significant role in primary care delivery.

Washington and Oregon

The Portland IHS Area includes Oregon, Washington, and Idaho. No IHS-run hospitals operate in this Area. Oregon reported 19,392 matched enrollees in 2023, up from 17,384 in 2019. Washington state data, while

not fully enumerated, represents a substantial enrollment population within the Portland Area.

As a result:

- All inpatient admissions are externally delivered
- Medicaid enrollment reduces PRC drawdown significantly
- Structural exposure to PRC limits is elevated relative to Areas with internal hospitals

Washington and Oregon represent expansion states with relatively stable enrollment.

F. Tier III and IV States

States in these tiers exhibit more modest enrollment shares but remain structurally important.

Montana (33,657 enrollees in 2023) and South Dakota exhibit high penetration and reservation concentration. Medicaid enrollment stabilizes referral financing in geographically isolated regions.

Midwestern states combine urban and reservation populations: Minnesota (26,452), Michigan (14,842), and Wisconsin demonstrate meaningful enrollment totals. Medicaid revenue supports both Tribal facilities and non-IHS providers.

Southeastern states exhibit lower penetration but meaningful enrollment totals due to urban population size: North Carolina (8,812), Florida (7,802), and Georgia (3,394).

G. Structural Implications of Concentration

Enrollment concentration in 25 states produces several implications:

1. Fiscal exposure to policy change is geographically concentrated
2. PRC stabilization effects vary by Area hospital infrastructure
3. Expansion-state participation shapes enrollment stability
4. Urban-dominant states channel a larger share of expenditures to non-IHS providers

Importantly, the absence of IHS-run hospitals in the Portland and California Areas increases the structural importance of Medicaid enrollment in those jurisdictions.

Section III: Purchased and Referred Care (PRC), Medical Inflation Exposure, Administrative Divergence, and Structural Risk Modeling

A. Operational Structure of Purchased and Referred Care (PRC)

Purchased and Referred Care (PRC), formerly known as Contract Health Services, represents one of the most structurally consequential financing components within Indian health systems. PRC funds are used to purchase medical services not available within IHS-operated or Tribal-operated direct care facilities. These services include:

- Inpatient hospital admissions
- Emergency trauma care
- Specialty surgical procedures
- Oncology treatment
- Dialysis
- Cardiology
- Advanced diagnostic imaging (MRI, CT, PET)
- Behavioral health inpatient services
- Subspecialty consultations

PRC appropriations are discretionary and allocated annually by Congress. Funds are distributed to IHS Areas and Tribal programs based on historical allocation formulas and service demand patterns. Unlike entitlement programs, PRC funding does not automatically adjust for increases in population, utilization, or medical cost inflation.

When PRC funds are insufficient to meet total referral demand, services are prioritized by medical urgency under defined priority levels. In some Areas, funding constraints have historically limited authorizations to the most urgent categories (e.g., life- or limb-threatening conditions). Lower-priority referrals may be deferred until additional funds become available or may remain unfunded.

This prioritization structure underscores the significance of Medicaid enrollment. When a referred service is covered by Medicaid and the patient is enrolled, Medicaid becomes the primary payer. PRC funds are preserved for individuals without third-party coverage or for non-covered services.

Thus, Medicaid enrollment does not merely add revenue to facilities; it materially reduces PRC expenditure pressure.

B. Structural Interaction Between Medicaid and PRC

The interaction between Medicaid and PRC operates through federal payer-of-last-resort rules. These rules require that third-party coverage be billed before PRC funds are authorized. The structural effect is a substitution mechanism:

Without Medicaid coverage: referral costs draw directly from PRC appropriations. With Medicaid coverage: referral costs are reimbursed through Medicaid, and PRC funds are conserved.

Under midpoint modeling, approximately 50 percent of the estimated $6.4–$6.6 billion in Medicaid expenditures likely supports services delivered outside IHS facilities. This implies that roughly $3.2–$3.3 billion annually is absorbing referral-type costs that might otherwise draw upon PRC.

Even under conservative assumptions (40 percent external delivery), approximately $2.6 billion would represent referral absorption. Under a 60 percent assumption, the figure approaches $4 billion.

This substitution magnitude must be interpreted relative to total PRC appropriations. While exact PRC totals vary by year, the scale of Medicaid absorption is substantial relative to PRC funding levels.

C. Area-Level Hospital Infrastructure and Differential Exposure

Hospital infrastructure is one of the most important structural determinants of PRC exposure.

Areas with IHS-Operated Hospitals

In Areas such as Navajo, Phoenix, Alaska, and Billings, IHS-operated hospitals provide inpatient services, some specialty surgical capacity, and limited intensive care services.

In these Areas, certain inpatient costs may be absorbed internally within IHS facility budgets. Medicaid reimbursement for inpatient services may flow directly to IHS facilities.

Although external referral remains necessary for tertiary care, internal hospital capacity moderates PRC exposure.

Portland and California IHS Areas: No IHS-Operated Hospitals

The Portland IHS Area (covering Oregon, Washington, Idaho) and the California IHS Area operate without IHS-run hospitals.

This structural absence has profound fiscal implications:

1. All inpatient admissions require referral to non-IHS hospitals
2. Surgical procedures are externally delivered
3. Emergency trauma care is externally delivered
4. Oncology and subspecialty care are externally delivered

As a result, nearly all hospital-level services in these Areas depend either on Medicaid reimbursement or PRC authorization.

In the absence of Medicaid enrollment, PRC demand would increase sharply. Because PRC funds are finite, exhaustion risk is elevated in Areas without internal hospital capacity.

Thus, Medicaid enrollment in Portland and California Areas provides a critical stabilizing function by absorbing inpatient and specialty costs that would otherwise overwhelm PRC appropriations.

D. Medical Inflation and Purchasing Power Erosion

PRC appropriations are not indexed to medical inflation. Over multi-year periods, medical costs — particularly hospital and specialty services — have frequently grown faster than discretionary federal appropriations.

Historical comparison illustrates this divergence. During selected multi-year intervals, medical Consumer Price Index (CPI) growth significantly exceeded IHS appropriation growth. For example, in the mid-1990s, IHS appropriations increased by approximately 8 percent over five years, while medical CPI increased by more than 20 percent. Hospital service inflation often exceeded general CPI by multiple percentage points annually.

This divergence erodes PRC purchasing power. If hospital costs rise 5–6 percent annually while appropriations increase 2–3 percent annually, fewer referrals can be authorized in real terms.

Medicaid reimbursement systems, while not immune to rate constraints, operate within claims-based frameworks that reflect prevailing payment rates and utilization patterns. As long as beneficiaries remain enrolled and services are covered, Medicaid reimbursement expands proportionally with service demand.

Thus, Medicaid enrollment provides inflation responsiveness that PRC appropriations lack. In Areas without IHS hospitals, where nearly all inpatient services are externalized, this inflation buffering function becomes even more consequential.

E. Administrative vs. Survey-Based Enrollment Divergence

Comparison of CMS–IHS administrative enrollment counts with American Community Survey (ACS) estimates reveals substantial divergence in many states.

More than 40 states exhibit divergence greater than 40 percent between administrative counts and survey-based estimates of AI/AN Medicaid enrollment with IHS access.

Several factors likely explain this divergence:

1. Sampling Instability

AI/AN populations represent a relatively small share of total state populations in many jurisdictions. Survey sample sizes for AI/AN respondents may therefore be limited, producing higher margins of error. As Fox (2021, slide 11) noted, ACS data includes margins of error that summarize the uncertainty in the ACS estimates at a 90 percent confidence level.

In states with small AI/AN populations, modest changes in respondent counts can produce large percentage swings. Administrative data are not subject to sampling error.

2. Question Interpretation

Survey respondents must interpret whether they are currently enrolled in Medicaid, whether they have IHS access, and how to report AI/AN identity (alone or in combination). The ACS specifically asks about both AI/AN race and whether a household has access to Indian Health Service (Fox, 2021, slide 8). Variation in interpretation can introduce measurement error.

Administrative linkage confirms enrollment through program files and confirms IHS access through registrant records.

3. Timing Differences

ACS estimates reflect survey responses during a given period and may not align perfectly with administrative enrollment months. Churn, partial-year enrollment, and reporting lag can produce discrepancies.

4. Institutional Awareness

In states with limited IHS infrastructure, respondents may be less familiar with IHS eligibility categories or may misclassify insurance coverage types. Administrative linkage eliminates recall bias.

Interpretation

The divergence pattern does not indicate administrative overcounting. Rather, it suggests survey underestimation or measurement variability. The CMS–IHS data match, as envisioned by Fox (2021, slide 15), was explicitly designed to create a new variable identifying an AI/AN individual who has Medicaid and also had one paid service to an Indian health program, enabling more precise state-level analysis than survey data alone could provide.

For fiscal modeling and PRC interaction analysis, administrative linkage provides a more stable denominator.

F. Structural Risk Simulation

To evaluate fiscal exposure, two contraction scenarios were modeled: a 10 percent reduction in enrollment and a 20 percent reduction in enrollment.

National impact: a 10 percent reduction yields approximately $650 million in lost revenue; a 20 percent reduction yields approximately $1.3 billion.

These reductions would not eliminate demand for hospital or specialty services. Instead, costs would shift toward PRC appropriations, uncompensated care in referral hospitals, and delayed or deferred specialty access.

Reservation-Dominant States

Arizona, New Mexico, Alaska, Montana, South Dakota, North Dakota. These states exhibit high IHS penetration, high referral intensity, and geographic isolation. Enrollment contraction would rapidly increase PRC drawdown.

Mixed States

Oklahoma, Washington, Oregon, Minnesota, Wisconsin, Michigan. Enrollment reduction would reduce facility revenue and increase referral billing pressure. In the Portland Area, absence of IHS hospitals would amplify PRC strain.

Urban-Dominant States

California, Florida, Georgia, Virginia. In California, absence of IHS-run hospitals increases exposure to PRC limits. Urban-dominant states would experience revenue contraction primarily in Tribal clinics and urban programs, but referral absorption effects would remain material.

G. Integrated Structural Interpretation

Across the top 25 states, Medicaid financing functions as a major revenue source, a referral absorption mechanism, and an inflation-responsive financing stream.

PRC appropriations remain essential but structurally constrained. Areas without internal hospital capacity face elevated PRC exposure and heightened dependence on Medicaid enrollment stability.

Section IV: Quantitative Appendix, Modeling Detail, and Integrated Fiscal Synthesis

A. Enrollment Baseline and Modeling Formula

The CMS–IHS Data Match identified 941,168 AI/AN individuals with verified IHS access enrolled in Medicaid in 2023. This administrative count serves as the foundational denominator for expenditure modeling. Dr. Rochelle Ruffer from the National Indian Health Board (NIHB) accessed and analyzed the matched data within the Virtual Research Data Center (VRDC).

Because claims-level spending data were not available within the linkage dataset, expenditures were estimated using a per-member-per-year (PMPY) modeling approach. The formula applied:

Total Medicaid Spending = Enrollment × PMPY × Adjustment Factor

Where enrollment equals 941,168, the PMPY benchmark equals $7,750, and the adjustment factor equals 0.90. The adjustment factor accounts for partial-year enrollment, churn across eligibility categories, and timing misalignment between enrollment and expenditure.

941,168 × $7,750 × 0.90 ≈ $6.56 billion

When state-level spending ratios are applied to adjust for geographic cost variation, the total decreases slightly to approximately $6.42 billion. The limited variance (~2 percent) indicates that geographic cost differences do not materially alter national magnitude.

B. State-Level Quantitative Concentration (Top 25)

The following table summarizes approximate enrollment and modeled expenditure distribution across the top 25 states. Percentages reflect share of national CMS–IHS enrollment.

State	2023 Enrollment	% of National Total	Modeled Spending ($M)
Arizona	159,375	16.9%	1,110
Oklahoma	160,339	17.0%	1,120
New Mexico	104,700	11.1%	730
Alaska	66,825	7.1%	470
California	71,304	7.6%	500
Washington	not separately enumerated	~5.0%	~330
Oregon	19,392	2.1%	140
Montana	33,657	3.6%	240
Minnesota	26,452	2.8%	190
Michigan	14,842	1.6%	110
North Dakota	15,051	1.6%	110
South Dakota	not separately enumerated	~2.5%	~170

State	2023 Enrollment	% of National Total	Modeled Spending ($M)
Texas	not separately enumerated	~6.0%	~400
Wisconsin	not separately enumerated	~2.0%	~140
Colorado	9,357	1.0%	70
Nevada	8,912	0.9%	65
Idaho	6,065	0.6%	45
Nebraska	6,574	0.7%	50
Kansas	3,342	0.4%	30
North Carolina	8,812	0.9%	65
Florida	7,802	0.8%	60
Georgia	3,394	0.4%	30
Mississippi	4,047	0.4%	30
Louisiana	3,645	0.4%	30
New York	18,533	2.0%	140

Collectively, these states account for approximately 95 percent of total CMS–IHS enrollment and modeled expenditures.

C. External Provider Flow Scenarios

Because claims-level provider data are unavailable within the CMS–IHS linkage dataset, external provider flow was modeled under three scenarios: conservative (40 percent external delivery), midpoint (50 percent external delivery), and high (60 percent external delivery).

Under midpoint assumptions:

$6.5 billion × 0.50 = $3.25 billion

Thus, approximately $3.25 billion annually may flow to non-IHS providers, including regional hospitals, specialty clinics, oncology centers, dialysis facilities, and behavioral health inpatient providers.

In Areas without IHS-operated hospitals (Portland and California), the external delivery share may exceed midpoint assumptions due to structural referral dependence.

Medicaid therefore functions not merely as supplemental funding but as a foundational structural financing pillar within Indian health systems.

Summary

This analysis examines the critical role of Medicaid financing in American Indian and Alaska Native (AI/AN) health systems using 2023 CMS–IHS administrative data. The key findings include:

Financial Magnitude: The 941,168 AI/AN individuals with verified IHS access enrolled in Medicaid generate an estimated $6.42–$6.56 billion in annual Medicaid expenditures — approaching the scale of total IHS appropriations ($8.6 billion in FY2023).

Data Source: These figures derive from the first-ever CMS–IHS data match, a milestone in Tribal public health that linked IHS registrant records with Medicaid enrollment files for 2019–2023 using a multi-variable matching algorithm. As Fox (2021, slide 15) anticipated, this linkage created a new variable identifying AI/AN individuals with both Medicaid coverage and IHS access, enabling state-level enrollment analysis.

Analytic Leadership: The analysis of matched data was conducted by Dr. Rochelle Ruffer at the National Indian Health Board, with Jeannie Le providing invaluable technical support and contributing to the presentation and interpretation of the data.

Developmental Context: The data match methodology was developed through an extended collaborative process involving the CMS Tribal Technical Advisory Group (TTAG) Data Subcommittee from approximately 2017 through 2025. The TTAG, established in 2003–2004, includes representatives from each IHS Area and national Tribal organizations, and its Data Subcommittee provided iterative feedback on the matching algorithm and analytic approach. Results were presented to the TTAG Data Subcommittee on July 21, 2025, and August 26, 2025, with final presentation scheduled for November 12, 2025.

Geographic Concentration: Medicaid enrollment is highly concentrated, with approximately 95 percent occurring in just 25 states. Four states (Arizona, Oklahoma, New Mexico, and Alaska) account for nearly half of all matched enrollment. Oklahoma showed the largest numeric increase, growing from 103,217 in 2019 to 160,339 in 2023.

Structural Variation: States differ significantly in IHS penetration rates, reservation versus urban population distribution, hospital infrastructure, and Medicaid expansion participation. Critically, the Portland and California IHS Areas operate without IHS-run hospitals, making them entirely dependent on external referrals for inpatient services.

PRC Interaction: Medicaid functions as a payer-of-first-resort, absorbing approximately $2.6–$4 billion in referral costs that would otherwise strain finite Purchased and Referred Care (PRC) appropriations. This substitution effect is especially vital in areas without internal hospital capacity.

Administrative Data Advantage: The CMS–IHS administrative linkage provides more reliable enrollment counts than survey-based estimates, with over 40 states showing greater than 40 percent divergence between administrative and survey data. As Fox (2021, slide 8) demonstrated, ACS questions on insurance coverage and IHS access, while valuable, are subject to sampling variability and interpretation differences that administrative data can overcome.

Conclusion

Medicaid has evolved from a supplementary revenue source into a structural pillar of Indian health system financing. Its $6.4–$6.6 billion contribution rivals total IHS appropriations and performs dual critical

functions: generating facility revenue and absorbing external referral costs that would otherwise overwhelm discretionary PRC funding.

The geographic concentration of this financing creates significant fiscal exposure in relatively few states. Areas lacking IHS-operated hospitals — particularly Portland and California — face heightened vulnerability, as virtually all inpatient and specialty services require external delivery. For these jurisdictions, Medicaid enrollment isn't merely beneficial — it's essential to maintaining access to hospital-level care.

Unlike fixed PRC appropriations, which erode under medical inflation and don't expand with service demand, Medicaid provides inflation-responsive, utilization-elastic reimbursement. This characteristic makes it particularly valuable as healthcare costs continue rising faster than discretionary federal appropriations.

Risk modeling demonstrates that even modest enrollment contractions (10–20 percent) would shift $650 million to $1.3 billion in costs toward already-strained PRC budgets or uncompensated care, potentially forcing service prioritization and delays. Reservation-dominant states with high poverty rates and geographic isolation would face the most immediate impact.

The CMS–IHS data match represents a transformative advancement in Indian health data infrastructure. As the October 2025 report acknowledges, this data match represents a milestone in Tribal public health: for the first time, thanks to the data match efforts across federal agencies, NIHB has access to data on Medicaid enrollment for American Indians and Alaska Natives. Future work incorporating claims data would enable even more precise analysis of health outcomes, expenditure patterns, and the full fiscal interaction between Medicaid and PRC.

This analysis establishes that Medicaid financing is no longer peripheral to Indian health systems — it is central to their operational stability, fiscal sustainability, and ability to deliver comprehensive care. While it does not replace federal trust responsibility obligations, it has become an indispensable complement to IHS appropriations, particularly for accessing the specialty and inpatient services that many IHS facilities cannot provide directly.

IHS in this paper typically means IHS-funded and includes Tribes and Tribally operated facilities and programs.

References

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