



Christiana Stoddard
Montana State University

Determinants of the Use of Supplemental Security Income by American Indian and Alaska Natives

Center for Financial Security

University of
Wisconsin-Madison

1300 Linden Drive
Madison, WI 53706

608-890-0229
cfs@mailplus.wisc.edu
cfs.wisc.edu

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Abstract

American Indian and Alaska Natives (AIAN) participate in the Supplemental Security Income (SSI) program at about twice the rate of the general population. Despite experiencing some of the worst poverty and mortality rates of demographic groups in the US, there is very little research examining how the social safety net affects these individuals. Are there specific factors that drive utilization of public support and public health programs? How do these programs interact with one another to improve well-being? This study examines the expansion of Medicaid to eligible adults on SSI participation by AIAN individuals, the interaction between Medicaid and the Indian Health Service (IHS) system, and geographic variation in economic opportunities stemming from the expansion of Indian gaming.

Keywords: Medicaid, Supplemental Security Income, Indian Health Services JEL No: I38 I18

1 Introduction

The Supplemental Security Income (SSI) program is a cash income program for low income disabled, blind, and older (65+) individuals in the United States. The eligibility requirements differ from Social Security (SS) and Social Security Disability Insurance (SSDI), which are insurance programs with participation based on sufficient work credits. In contrast, SSI provides income benefits to disabled or elderly individuals with no or limited work histories whose income is below a given threshold.

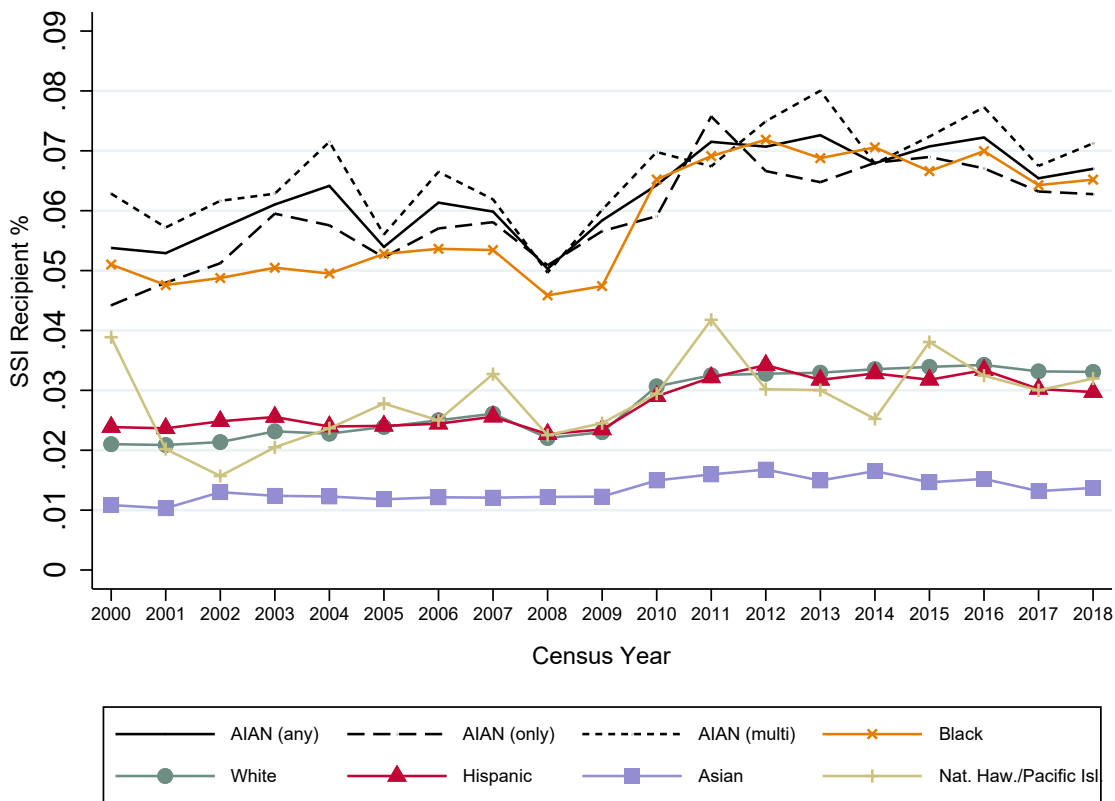
According to self-reports in the American Community Survey, American Indian and Alaska Native (AIAN) individuals participate in the SSI program at about twice the rate of the general population, with about 6 percent of the adult non-elderly population receiving SSI benefits. Although there is a substantial literature about contributors to SSI use in the general population, there is limited research on factors specific to Native individuals. This population is likely to be highly sensitive to policy changes because of the complex relationships among multiple relevant programs. We investigate the impact of three such policies on AIAN participation in SSI.

First, how does greater availability of public insurance, in this case through Medicaid, affect AIAN enrollment in SSI? Prior to the Affordable Care Act (ACA), 23 percent of non-elderly AIAN individuals lacked health insurance, compared to 16 percent for the total non-elderly population. This dropped nearly in half to 15 percent by 2015, with Medicaid providing coverage for 27 percent of non-elderly AIAN adults and half of AIAN children (Kaiser Family Foundation, 2017). For many years, SSI was one of the few ways that non-elderly childless adults could access health insurance through Medicaid. Burns and Dague (2017) show that state Medicaid expansions reduced participation in SSI, arguably because individuals could access Medicaid insurance separate from their disability status. This report builds on that research to examine whether Medicaid expansions had differential effects on AIAN individuals. If Medicaid is a more relevant substitute for AIAN individuals considering SSI in part to obtain health insurance, then Medicaid expansions could have had a different effect on Native individuals.

Second, does access to health care services more broadly change the probability that an individual enrolls in SSI? If access to health care can prevent health conditions from becoming debilitating, SSI rates might be lower in areas with better health care services. This question is normally intractable because higher disability rates in a region might also attract more health care service providers, making the causal effect of access difficult to determine. This paper examines the distribution of IHS clinics and changes in federal policy regarding reimbursement for IHS services as sources of variation in health care services that are particularly salient for Native individuals.

Third, how do local economic opportunities affect SSI enrollment? SSI receipt is in some sense the intersection between a disability and low earnings opportunities. Native communities frequently are located in areas with high poverty rates and low employment rates, and the effects of broader economic development on participation in social safety net is of interest both to Native communities and more generally. Again, this is a difficult question

Figure 1: Self Reported Participation in SSI, 2000-2018



Source: 2000 Decennial Census and 1 year American Community Survey 2001-2018.

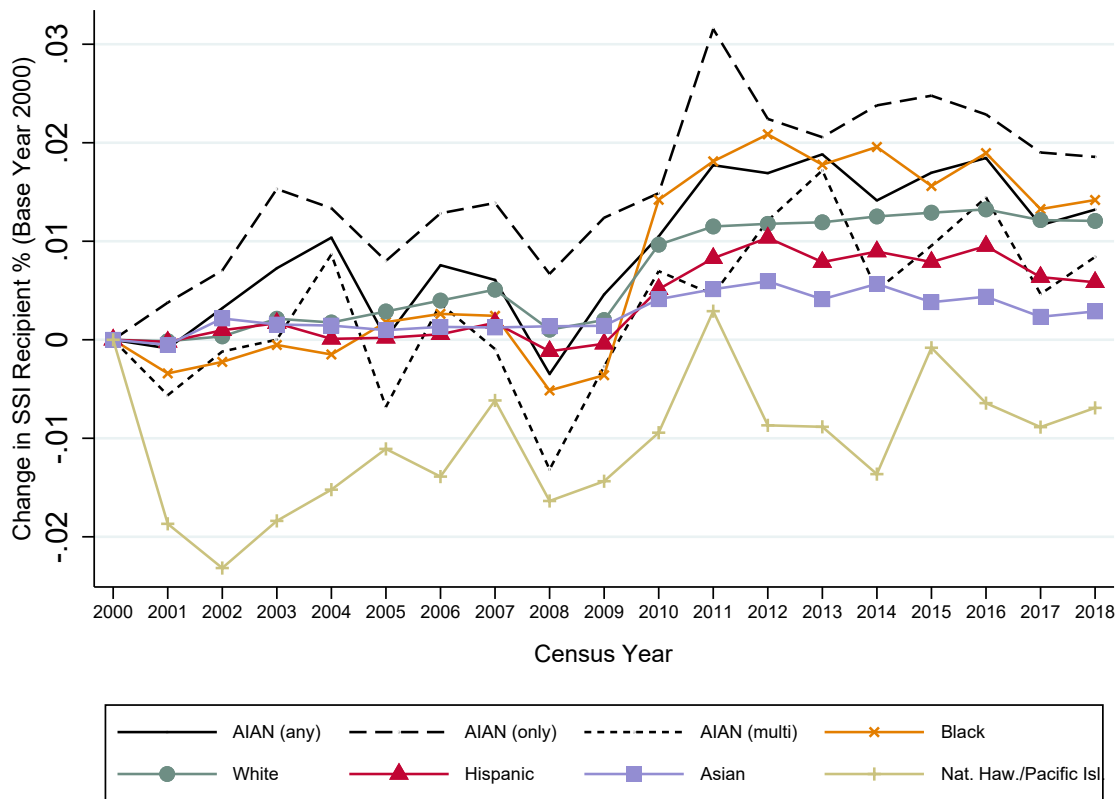
to address causally. However, the expansion of tribally run gaming operations constitutes a plausibly exogenous shock in the local economic climate, allowing estimation of the effects of changes in earnings opportunities on SSI participation.

2 AIAN participation in SSI

Figure 1 shows receipt rates of SSI for different race and ethnicities, as reported by individuals in the 2000 Census and the subsequent American Community Surveys (ACS) through 2018. As noted, AIAN individuals have some of the highest rates of participation of all major racial or ethnic groups. Figure 1 shows this is true whether AIAN is defined as an individual who reports any AIAN ancestry, AIAN ancestry alone, or AIAN ancestry in combination with other races. This is consistent with Smith-Kaprosy et al. (2012), who document that elderly AIAN populations have approximately the same receipt of Old-Age, Survivors, and Disability Insurance (OASDI) Social Security benefits but that the AIAN population has a higher receipt level of SSI than the general population.

Figure 2 normalizes the trends in Figure 1 to show growth in SSI receipt using 2000 as the

Figure 2: Changes in Self Reported Participation in SSI, 2000-2018



Source: 2000 Decennial Census and 1 year American Community Survey 2001-2018.

base year. This figure indicates that all individuals that report any AIAN ancestry have growth rates similar to other racial and ethnic groups, with patterns that are most similar to Black individuals. Individuals who report AIAN ancestry in combination with other race and ethnicities have growth rates that are slightly lower and are similar to the trends for Hispanic and White individuals. However, as the top line in this figure indicates, individuals that report AIAN as their only or primary race or ethnicity have growth rates in SSI receipt that consistently exceed those of all other groups. This is perhaps not surprising due to the relatively low income of AIAN-only reporting individuals; again according to the ACS, 24 percent of AIAN individuals have household incomes below the poverty line, as compared to 9 percent of White individuals, 21 percent of Black individuals, and 17 percent of Hispanic individuals.

3 Policy Background

3.1 Medicaid and Indian Health Services

A number of previous studies have investigated the relationship between SSI and public health insurance (Medicaid or Medicaid-like substitutes) (e.g., Yelowitz (2000), Baicker et al. (2013), Maestas et al. (2014)). The most relevant of these studies, Burns and Dague (2017), found that the state Medicaid expansions decreased SSI participation by on average by about 7 percent for childless adults. The hypothesized mechanism is that prior to these expansions, SSI was one of the only ways childless adults could obtain public health insurance. SSI imposes binding income limits and a significant disability screening process to access these benefits. This is a burdensome way to obtain Medicaid. Having Medicaid more generally available makes SSI less attractive, especially for marginal applicants with relatively better work opportunities or disabilities that are more costly to document. Individuals with high documentation costs might be those with disabilities that are less immediately obvious and require a specialist to determine (e.g., mental health conditions as opposed to blindness), but applications costs have also been found to be higher in areas with fewer field offices and for individuals with lower education levels Deshpande and Li (2019). States with high AIAN populations vary across those that expanded Medicaid coverage (e.g., Arizona, New Mexico, California, and Montana, and North Dakota) that those that did not (e.g., Oklahoma, South Dakota, Wyoming, and Texas).

Medicaid is not the only public source of health care for Native individuals. Federal provision of health care was included in treaties with tribes as a guaranteed trust service in exchange for tribal lands. In 1955, Indian Health Services began operating clinics with a range of services to fulfill these trust obligations. Services are provided free of charge to individuals who are enrolled members of federally recognized tribes or who meet other indicators of Indian descent¹. Currently, IHS clinics serve about two and a half million Native individuals across rural and urban areas. Eligible individuals typically reside on or near reservations within one of the twelve IHS Service Areas, although some care is also offered through urban Indian health programs. There are currently 168 service units, with 107 operated by tribes and the remainder operated by IHS at the end of our period under study Indian Health Service (2014). IHS service populations and the provided resources vary significantly across regions. For example, the Alaska and Oklahoma regions serve populations with relatively low poverty rates (20-22 percent), while Aberdeen and Navajo service much higher poverty populations (40-44 percent). Numbers of facilities also vary significantly across IHS areas (from 18 to 198 Ambulatory facilities and 0 to 8 hospitals). Further, IHS regions can vary within states (for example, Arizona is a part of three IHS regions—Phoenix, Tuscon, and Navajo) while some regions contain multiple states (for example, Aberdeen Service Area contains ND, SD, NE, and IA).

Funding for IHS is an annual appropriation of Congress. This contrasts with Medicaid, which is a guaranteed entitlement without a budgetary limit. This means that when demand for IHS services exceeds funding, care is rationed. For example, a General Account Office report in 2005 documented wait times of 2 to 6 months for many types of appointments and gaps

¹Eligibility is laid out in the online Indian Health Manual at <https://www.ihs.gov/IHM/pc/part-2/p2c1/2-1.2>

in services for some non-emergency conditions like chronic pain (General Accounting Office, 2005).

In 1976, the Indian Health Care Improvement Act (IHCIA) allowed for reimbursement by Medicaid and Medicare for services provided at Indian Health Service clinics to Medicaid and Medicare beneficiaries. The Act allowed for 100 percent coverage by the federal government of specified services. However, this act expired in 2000. Although attempts were made to reauthorize it over the 2000s, these failed until the Act was made permanent in 2010 as part of the Affordable Care Act. In 2017, Medicaid made up about 13 percent of the \$6.15 total IHS Program funding. Existing research indicates that Native individuals who are uninsured or have Medicaid coverage are more likely to rely on Indian Health Service coverage Kaiser Family Foundation (2017). To the degree that the billing changes reduced budgetary pressure at IHS clinics, health of AIAN individuals using the clinics may have improved, potentially affecting disability rates.

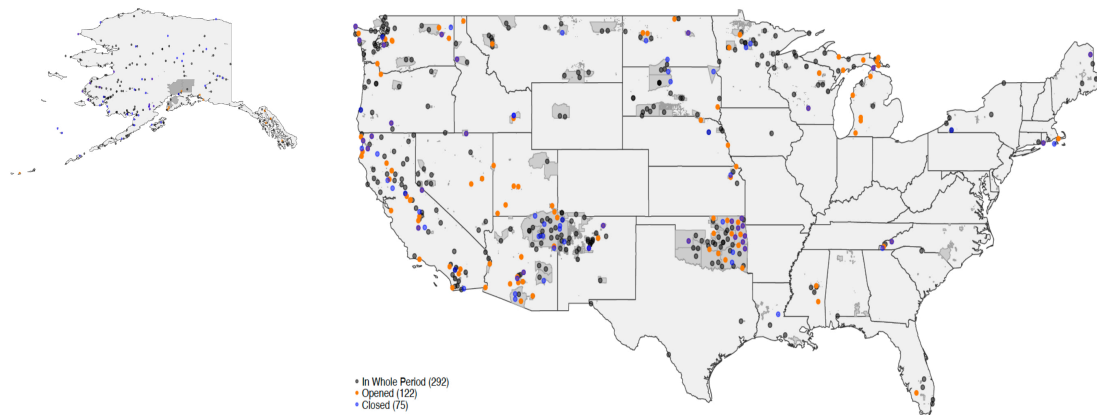
3.2 Tribally Operated Gaming and Economic Development

According to Census tabulations, about 20 percent of American Indians and Alaska Natives live on reservations, which historically have limited economic opportunities. The introduction of casinos and gaming operations has been one of the most significant changes in the economic landscape in many of these communities over the past two decades. Gaming on reservations largely began with the federal Indian Regulatory Gaming Act of 1988. This act allowed federally recognized tribes to operate Class III gaming operations under tribal-state compacts in states that permit any type of these Las Vegas-style games. Gaming prior to the Act was much more limited, with revenues of \$100 million in 1988. These grew to more than \$34 billion in 2019. By 2015, about 450 tribal gaming operations were in place in 31 states.

A number of exogenous factors influence the location of gaming operations. First, tribal gaming operations are permitted only if they are located on tribal trust land, which means that most are located in rural areas on reservations. As Akee et al. (2015) note, “Consequently, the geographic distribution of Indian gaming reflects the historic contingencies of American Indian land cessions and federal reservation-making, not the market demand for an early 21st century leisure industry” (p. 195). Second, Cookson (2010) shows that the legal institutions governing contracts also have substantial impacts on tribal gaming operations. Finally, states that do not permit gaming in other parts of the state are not required to authorize tribal operations.

Akee et al. (2015) document the sizeable positive economic benefits of Indian gaming on local economies, improving labor markets, reducing poverty, and increasing tribal revenues for education, economic development, and poverty reduction projects. Artiga, Ubry, and Foutz (Artiga et al.) show that the introduction of casinos lowered unemployment rates and raised wages particularly for low-skilled workers, and Cornell et al. (1998) found casinos disproportionately hired previously unemployed individuals. Given the income requirements of SSI, the expansion of tribal gaming may have also had effects on SSI participation.

Figure 3: Changes in Location of IHS Facilities with Primary Care Services, 2000 to 2014



4 Data

A major component of this project is the creation of a longitudinal data set of policies and institutions at the tribal and reservation level that may affect SSI receipt. A cornerstone of that new data set is information on Indian Health Services facilities over time. Indian Health Services generously provided locations of clinics and hospitals for many years from 1975 through 2019, although most of this data was not systematic or digitized. Available information includes the type of facility, the affiliation of the provider (E.g. Title 1, Title 5, etc), whether primary care is available, and whether there is a pharmacy is available. The data for the 2000s are less complete than from 1975-1996, and future efforts will complete the missing years. We match facilities over time using names and locations, cross checking with online information and phone calls when necessary.

Figure 3 shows the changes in locations of the IHS facilities that provide primary care services over the period of our study. The black dots indicate facilities that existed at the beginning and end of the period, blue dots represent new facilities added during this period and orange dots represent facilities that closed over the period. The grey shaded areas are the boundaries of Homeland areas.

Public Census data report residence in a homeland area, but they do not report the specific reservation. We therefore match individuals to reservations based on their state, tribal affiliation, and homeland status. Future work with restricted access Census data can provide more granular geographic information, but the current study focuses on counties that contain homeland areas.

Casino data come from annual gaming directory data scraped from www.gamingdirectory.com. These data contain locations of both tribally run and non-tribal casino operations, square footage, number of employees, number of slots, and other measures of the facility. We combine this with dates of the Bureau of Indian Affairs Class III Gaming compacts and amendments.

We merge these data with individual level records from the 2000 decennial census and 5-year American Community Survey spanning 2005 through 2014. It is important to note that ACS self-reported SSI receipt differs from SSA claimant data. Race data for the SSA has not been reported since 2002 due to a decline in data quality. The public-use ACS data does not provide usable information for most reservations annually. Consequently, the analysis for this phase of our research project relies on the state level for Medicaid and other policies that vary by state. The subsequent reservation level analysis requires the use of the Census and 5-year ACS data. This current study is based on three aggregated time periods– the US Census Decennial year 2000, the data from the 5-year ACS for 2005-2009 and from the 5-year ACS for 2010-2014.

Medicaid policy data is from Burns and Dague (2017). This tracks state level Medicaid income limits for childless adults and includes several measures of state Medicaid expansions. We use the childless adult coverage rate and the simulated eligibility rate. The simulated eligibility rate has been used by a number of authors to compare policy generosity across states. A state with more low income childless adults would automatically have more childless adults covered by Medicaid than a state with the same policy but fewer low income childless adults. The simulated eligibility rate therefore takes a consistent set of individuals (with the average characteristics for the US) and calculates the percentage that would be eligible for Medicaid in each state. Because the characteristics are the same, any differences are therefore due to policy and not demographics. Note that if demographic characteristics also influence the take up rate for Medicaid, the actual coverage rate will also include that variation while the simulated eligibility rate will not.

Table 1 reports the descriptive statistics for AIAN individuals and non-AIAN Individuals.

Table 1: Descriptive Statistics

	AIAN	Non-AIAN
SSI receipt	0.063 (.2423)	0.029 (0.169)
In Medicaid Expansion State	0.276 (0.447)	0.323 (0.468)
Childless adult coverage	0.499 (.500)	0.417 (0.493)
Simulated Eligibility	0.878 (1.105)	0.696 (1.079)
County has Homeland	0.467 (0.499)	.179 (0.383)
County has IHS facility	0.149 (0.356)	0.092 (0.290)
Number of IHS Facilities in county	0.534 (1.622)	0.296 (1.198)
Number of tribal casinos in county	0.441 (1.458)	0.317 (1.267)
N	207,966	12,717,730

Source: Individual data from 2000 Decennial Census and 5 year ACS for 2005-2014. IHS facilities compiled by author. Medicaid variables from (Burns and Dague, 2017). Simulated eligibility calculates the fraction of childless adults who are eligible for Medicaid coverage by using a sample with constant characteristics across states. Indian gaming and non-tribal casino facilities from www.gamingdirectory.com

5 Methods

The analysis uses difference-in-difference (DD) methods to estimate the effects of state or tribal policies and conditions on SSI participation. Difference-in-difference methods examine changes in outcomes for individuals before and after a policy has been implemented and compares those changes with the corresponding trends in a location where no such policy was in place. The basic DD empirical model can be summarized with an equation modeling the outcome of SSI participation for only AIAN individuals:

$$SSI_{i,s,t} = X_{i,s,t}\beta + Z_{s,t}\gamma + P_{s,t}\delta + \mu_s + \tau_t + \epsilon_{i,j,s,t}$$

The subscripts refer to an individual i living in location s (state or county) in year t . X is a matrix of individual characteristics such as age, gender, and household composition. Z is a matrix of time varying characteristics of the location that affect SSI participation, some of which may be specific to group j . As noted, the data include three waves for the 2000 decennial census and the 2 5-year ACS periods. Therefore, the time-varying characteristics contained in Z represent changes over these three time periods in the number of IHS facilities or casinos in a geographic region and state-level employment rates. P is the matrix of policy measures, like state expansions of Medicaid or the ability of IHS to bill Medicaid. The error term includes μ_s and τ_t , the location and year fixed effects. As written, the equation above specifies a difference in difference model.

We also estimate triple difference specifications by making these comparisons for AIAN individuals and for non-AIAN individuals residing in the same locations. This serves two purposes. First, it allows us to uncover any effects specific to American Indians, testing, for example whether the Medicaid expansions had differential effects on AIAN individuals. Second, the triple difference serves as a validation check for policies that should only affect AIAN or tribal members. For example, IHS facilities only serve tribal members and their descendants. If IHS facilities are found to affect SSI receipt for non-AIAN individuals, this makes it more probable that the IHS indicators are picking up time varying location attributes.

To implement the triple difference model, we interact the matrix P (and elements of Z where relevant) with the dummy variable for racial/ethnic group status as shown in equation 2 below.

$$SSI_{i,j,s,t} = X_{i,j,s,t}\beta + Z_{j,s,t}\gamma + G_j\sigma + P_{s,t}\delta + P_{s,t} * G_j\kappa + \mu_s + \tau_t + \epsilon_{i,j,s,t}$$

In this equation, j indicates the group, G is the vector of the group indicator variables, and σ represents the group fixed effects. The coefficients on the triple interaction terms, κ , indicate the differential effect of the policies for the specified group by comparing their changes over time and across regions with the changes for other groups.

6 Results

To recap, the analysis focuses on three main questions. First, did the expansion of Medicaid affect AIAN individuals' use of SSI differently than other groups? Second, how does greater access to health care affect SSI receipt? Specifically, how does the availability of IHS facilities combined with the ability of IHS to bill Medicaid (and therefore alleviate funding constraints) affect SSI receipt? Third, how do economic opportunities affect SSI receipt? To address that question, we analyze the expansion of tribal gaming as a specific economic shock to AIAN individuals.

Tables 2 and 3 consider the potentially differential effects of state Medicaid expansions. Table 2 measures state Medicaid expansion using the percentage of childless adults who are covered by Medicaid; Table 3 uses the simulated eligibility rate. Both tables closely replicate Burns and Dague (2017) with a few differences. The first two columns of Table 2 reports effects of Medicaid expansion on SSI receipt that resemble Burns and Dague (2017), but the specification allows the effects of the Medicaid expansion to differ by race and ethnicity. These tables use AIAN individuals as the baseline group, and so all estimates for other groups are relative to the AIAN sample. Table 2 indicates that White and Hispanic individuals are 3 to 4 percent less likely to receive SSI than AIAN individuals, with Black individuals 1 to 2 percentage points more likely. For AIAN individuals, the Medicaid expansion has a statistically insignificant effect on SSI participation. However, none of the interaction terms between childless adult coverage rates and race are statistically significant, indicating that the expansion of Medicaid affected different groups in a relatively uniform way after conditioning on individual characteristics. (This is partly due to the relatively large standard errors for AIAN individuals. Appendix Table ?? shows results with White and Other individuals grouped as the baseline, with results that are comparable numerically to Burns and Dague (2017).)

The second two columns of Table 2 expand the period of interest to 2000 through 2014, as opposed to 2001 to 2013 in Burns and Dague (2017). The overall patterns are similar, again with no differences in the impact of Medicaid expansion by race. Table 3 is nearly identical, again with the measure of Medicaid expansion (here simulated eligibility) appears to be uniform across racial and ethnic groups.

Table 2: SSI Receipt by Race and Expanded Medicaid Coverage of Childless Adults
 Baseline racial/ethnic category is AIAN

	(1)	(2)	(3)	(4)
	2001-2013	2001-2013	2000-2014	2000-2014
Childless adult coverage (CACov)	-0.0008 (0.0047)	-0.0015 (0.0046)	0.0038 (0.0030)	0.0031 (0.0029)
White	-0.0412*** (0.0033)	-0.0401*** (0.0034)	-0.0379*** (0.0025)	-0.0374*** (0.0026)
Black	0.0167*** (0.0026)	0.0126*** (0.0029)	0.0130*** (0.0029)	0.0095*** (0.0030)
Hispanic	-0.0376*** (0.0027)	-0.0267*** (0.0020)	-0.0348*** (0.0037)	-0.0244*** (0.0032)
Other	-0.0130*** (0.0032)	-0.0091*** (0.0033)	-0.0124*** (0.0033)	-0.0086*** (0.0029)
CACov X White	0.0008 (0.0047)	0.0008 (0.0047)	-0.0032 (0.0031)	-0.0030 (0.0031)
CACov X Black	0.0022 (0.0057)	0.0041 (0.0053)	0.0019 (0.0076)	0.0038 (0.0069)
CACov X Hisp	0.0055 (0.0076)	0.0044 (0.0070)	0.0026 (0.0058)	0.0015 (0.0055)
CACov X Other	-0.0126** (0.0054)	-0.0071 (0.0051)	-0.0150*** (0.0037)	-0.0101*** (0.0034)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Individual Controls	No	Yes	No	Yes
Observations	9,042,830	9,042,830	12,925,696	12,925,696

Notes: Columns 1 and 2 follow Burns and Dague (2017) only including ACS data. Columns 3 and 4 also include the 2000 Decennial Census. All standard errors clustered at the state level. Individual level control replicate those in Burns and Dague (2017), including indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate.

Table 3: SSI Receipt by Race and Simulated Medicaid Eligibility Expansions
 Baseline racial/ethnic category is AIAN

	(1)	(2)	(3)	(4)
	2001-2013	2001-2013	2000-2014	2000-2014
Simulated Eligibility (SimElig)	0.0001 (0.0017)	-0.0003 (0.0017)	0.0015 (0.0013)	0.0011 (0.0013)
White	-0.0409*** (0.0027)	-0.0399*** (0.0028)	-0.0385*** (0.0024)	-0.0379*** (0.0024)
Black	0.0172*** (0.0031)	0.0131*** (0.0031)	0.0124*** (0.0034)	0.0090*** (0.0033)
Hispanic	-0.0370*** (0.0041)	-0.0263*** (0.0036)	-0.0344*** (0.0035)	-0.0239*** (0.0031)
Other	-0.0130*** (0.0032)	-0.0091*** (0.0033)	-0.0144*** (0.0032)	-0.0100*** (0.0027)
SimElig X White	0.0003 (0.0018)	0.0003 (0.0018)	-0.0012 (0.0013)	-0.0010 (0.0013)
SimElig X Black	0.0007 (0.0033)	0.0016 (0.0030)	0.0017 (0.0035)	0.0025 (0.0032)
SimElig X Hisp	0.0023 (0.0034)	0.0019 (0.0032)	0.0008 (0.0027)	0.0003 (0.0026)
SimElig X Other	-0.0056*** (0.0020)	-0.0029 (0.0019)	-0.0061*** (0.0015)	-0.0040*** (0.0014)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Individual Controls	No	Yes	No	Yes
Observations	9,042,830	9,042,830	12,925,696	12,925,696

Notes: Columns 1 and 2 follow Burns and Dague (2017) only including ACS data. Columns 3 and 4 also include the 200https://www.overleaf.com/project/60a533ab8d53ac75f7bcc5630 Decennial Census. All standard errors clustered at the state level. Individual level controls include indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate. Simulated eligibility calculates the fraction of childless adults who are eligible for Medicaid coverage by using a sample

Table 4 turns to other geographic factors that may be specifically related to AIAN receipt of SSI. The regressions reported in this table include all of the covariates in the previous two tables. This table reports the DD results for the sample of only AIAN individuals. This changes the interpretation of coefficients slightly. For instance, the childless adult coverage rate is positive and statistically significant in this specification. For brevity, Table ?? only reports results with the childless adult coverage rate (results with the simulated eligibility rate are nearly identical). Columns 1 through 3 include state fixed effects; Column 4 includes county fixed effects.

Table 4: SSI Receipt and Indian Health Services, Only AIAN Individuals

	(1)	(2)	(3)	(4)
Childless adult coverage (CACov)	0.0039*	0.0048**	0.0048**	0.0055***
	(0.0020)	(0.0019)	(0.0019)	(0.0018)
County contains Homeland	0.0048	0.0052	0.0052	–
	(0.0039)	(0.0043)	(0.0043)	
IHS can bill Medicaid X IHS facility		-0.0108**	-0.0107***	-0.0175***
		(0.0041)	(0.0022)	(0.0022)
County has IHS facility		-0.0016		
		(0.0041)		
Number of IHS Facilities within county			-0.0004	-0.0005
			(0.0003)	(0.0006)
Individual Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Geographic FE	State	State	State	County
Observations	207,967	207,967	207,967	207,967

Notes: Data includes 2000 Decennial Census and 5 year ACS. All standard errors clustered at the state level. Individual level control replicate those Table 2, including other racial/ethnicity indicators, interactions with Medicaid policy, indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate.

A number of findings in Table 4 stand out. First, Columns 1 through 3 include an indicator for whether or not the respondent lives in a county that contains an AIAN homeland area

(typically a reservation). Counties that contain homelands have higher SSI receipt, but the estimate is not statistically significant. Second, the presence or number of IHS facilities that provide primary care is not associated with differences in SSI receipt.

What does appear to matter is whether an AIAN individual lives in an area with IHS services that can be billed to Medicaid. The point estimate here is about -0.01 percent, which is about a quarter of the difference in participation rates between AIAN individuals and more than twice as large as the effect of the Medicaid expansion alone. The effect holds with both state and county fixed effects. This result is particularly compelling given that the ability to bill Medicaid was a Congressional decision that was exogenous to specific county attributes. The existence of an IHS facility is likely related to many county level features, but the timing of the IHS billing ruling was not.

Table 5 presents the triple difference estimates, now comparing the differential effect for AIAN individuals. These results indicate that counties that include Homelands have higher SSI receipt, but only for non-AIAN individuals. (It may be that AIAN individuals in these relatively remote counties have more employment opportunities than non-AIAN individuals if they have more access to jobs in tribal government or other tribal services.) Counties that simply have IHS facilities do not have any greater or lower SSI receipt, whether looking at the double or triple difference results. In contrast, during the years when IHS could bill Medicaid directly for services, SSI receipt is significantly lower—but only for AIAN individuals. The magnitude is on the order of 0.6 to 1 percentage point, somewhat smaller than the point estimates in Table 4, but again this is about a third the size of the AIAN differential coefficient. These results cannot reveal the mechanism for this effect, but one plausible argument is that being able to bill Medicaid allows IHS facilities to offer higher levels of medical services than when funding is restricted. Obviously, this mechanism would only hold for those eligible for IHS services.

Table 5: SSI Receipt and Indian Health Services, All Individuals

	(1)	(2)	(3)	(4)
Childless adult coverage (CACov)	-0.0009 (0.0007)	-0.0009 (0.0007)	-0.0009 (0.0007)	-0.0010 (0.0007)
AIAN	0.0315*** (0.0030)	0.0317*** (0.0031)	0.0316*** (0.0030)	0.0312*** (0.0031)
CACov X AIAN	0.0040 (0.0025)	0.0047* (0.0026)	0.0047* (0.0026)	0.0043* (0.0024)
County contains Homeland	0.0042*** (0.0013)	0.0043*** (0.0012)	0.0043*** (0.0013)	– –
Homeland X AIAN	-0.0030 (0.0043)	-0.0030 (0.0045)	-0.0030 (0.0044)	-0.0037 (0.0042)
IHS can bill Medicaid X IHS facility X AIAN		-0.0066** (0.0031)	-0.0073*** (0.0018)	-0.0108*** (0.0017)
County has IHS facility		-0.0008 (0.0020)		
County has IHS facility X AIAN		-0.0033 (0.0029)		
Number of IHS Facilities in county			-0.0001 (0.0003)	-0.0003 (0.0004)
Num IHS X AIAN			-0.0008** (0.0004)	-0.0006 (0.0004)
Individual Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Geographic FE	State	State	State	County
Observations	12,925,696	12,925,696	12,925,696	12,925,696

Notes: Data includes 2000 Decennial Census and 5 year ACS. All standard errors clustered at the state level. Individual level control replicate those Table 2, including other racial/ethnicity indicators, interactions with Medicaid policy, indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate.

The next two tables turn next to shocks to economic opportunities, as opposed to shocks in health care access. Table 6 presents the DD results for only AIAN individuals, while Table 7 reports the triple difference results that show differential effects for AIAN individuals.

Column 1 of Table 6 shows that the number of tribally run casinos in a county reduces SSI participation by 0.02 percentage points, which is small in magnitude but statistically significant. Column 1 of Table 7 shows that this effect only holds for the AIAN sample—the point estimate for non-AIAN individuals is an order of magnitude smaller and not significant at conventional levels. The point estimate for AIAN individuals, however, is nearly identical to Table 6. Columns 2 and 3 of both tables show that non-tribal casinos have no effect on SSI receipt for AIAN individuals, again with point estimates that are less than a hundredth of a percentage point. The estimated coefficients are consistent with the hypothesis that expansion of tribally run gaming operations is a specific shock that largely targets AIAN communities, not that there is something about gaming in general that affects SSI receipt.

Table 6: SSI Receipt and the Expansion of Tribal Gaming, Only AIAN Individuals

	(1)	(2)	(3)
County contains Homeland	0.0047 (0.0046)	0.0042 (0.0038)	–
Number of Tribal Casinos in county	-0.0021*** (0.0004)	-0.0020*** (0.0004)	-0.0019 (0.0014)
Number of Non-tribal Casinos in county	–	-0.0001 (0.0001)	0.0003 (0.0002)
Individual Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Geographic FE	State	State	County
Observations	207,967	207,967	207,967

Notes: Data includes 2000 Decennial Census and 5 year ACS. All standard errors clustered at the state level. Individual level control replicate those Table 2, including other racial/ethnicity indicators, interactions with Medicaid policy, indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate.

Table 7: SSI Receipt and the Expansion of Tribal Gaming, All Individuals

	(1)	(2)	(3)
AIAN	0.0339*** (0.0026)	0.0344*** (0.0026)	0.0337*** (0.0026)
County contains Homeland	0.0042*** (0.0013)	0.0039*** (0.0013)	–
Homeland X AIAN	-0.0024 (0.0045)	-0.0022 (0.0044)	-0.0029 (0.0042)
Num Tribal Casinos in County	-0.0002 (0.0002)	-0.0003 (0.0002)	-0.0008 (0.0007)
Tribal Casinos X AIAN	-0.0018*** (0.0004)	-0.0015*** (0.0004)	-0.0015*** (0.0003)
Number of Non-tribal Casinos in County	–	-0.0000 (0.0000)	0.0002*** (0.0001)
Non-tribal Casinos X AIAN	–	-0.0002* (0.0001)	-0.0001* (0.0001)
Individual Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Geographic FE	State	State	County
Observations	12,925,696	12,925,696	12,925,696

Notes: Data includes 2000 Decennial Census and 5 year ACS. All standard errors clustered at the state level. Individual level control replicate those Table 2, including other racial/ethnicity indicators, interactions with Medicaid policy, indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate.

7 Conclusion

SSI receipt sits at the intersection of disability status and limited economic opportunities, and AIAN individuals participate in SSI at about twice the rate of the general population. According to the American Community Survey, in the 10 states with the largest AIAN populations AIAN individuals make up 7 percent of the total population but 15 percent of the SSI recipients in the those states.² The unique determinants of SSI use for this population can therefore have outsized impacts.

How do expansions of health insurance, health care access, and economic opportunities affect SSI receipt? These are questions of general policy interest, but the policy changes we study in this report are arguably exogenously determined. While the specific policies apply only to Native individuals, the results are of general interest. We develop a novel data set on Indian Health Service locations and combine this with data on tribal and non-tribal gaming to examine patterns specific to AIAN individuals. We find that in general, state expansions of Medicaid had the same impact on AIAN individuals as others. However, the ability of IHS to bill Medicaid and the number of IHS facilities in a county both reduce AIAN participation in SSI, with the ability to bill Medicaid having about a 1 percentage point reduction. This is about 12 percent of the raw gap in participation between AIAN individuals and White individuals, and it is about 1/3 of the gap after controlling for other covariates. Further, the expansion of tribal gaming operations (but not other casinos) reduced SSI receipt for AIAN individuals, although the effect here is smaller. Each casino is associated with one-fifth of a percentage point decline in SSI receipt. We find no parallel effects of IHS or tribal gaming for non-AIAN individuals residing in the same locations, implying that the results are not simply picking up factors related to areas where Native individuals live, where IHS facilities are located, or gaming in general. This leads further credibility to the causal interpretation of the estimates, implying that expanding health care access and economic opportunity may lead to changes in SSI receipt nationally.

These results also imply more narrowly that reducing the strain on IHS resources could potentially have sizeable impacts of SSI receipt in years to come. As of April 2021, the proposed federal budget included an increase from \$6.3 to \$8.8 billion dollars of funding for IHS, a sizeable increase of more than a third. This proposal still remains far short of the \$12.8 billion dollars that the National Indian Health Board recommends to fully fund IHS facilities to prevent rationing of care. The existing constraints in health care resources for Native individuals have been found to particularly constrain care for pain management and mental health, two health conditions with strong associations to SSI. Consequently, the Social Security Administration may find that the increased funding for IHS has sizeable impacts on SSI receipt, and that advocating for higher IHS funding has an offsetting effect on federal budgets through the SSI program.

²Those states in order of percent AIAN are Alaska, Oklahoma, New Mexico, South Dakota, Montana, North Dakota, Arizona, Wyoming, Oregon, and Washington.

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Appendix Tables

Table 8: SSI Receipt by Race and Expanded Medicaid Coverage of Childless Adults
 Baseline racial/ethnic category is White individuals to compare to Burns and Dague (2017)

	(1)	(2)	(3)	(4)
	2001-2013	2001-2013	2000-2014	2000-2014
Childless adult coverage (CACov)	-0.0018** (0.0007)	-0.0018*** (0.0007)	-0.0010 (0.0007)	-0.0009 (0.0007)
AIAN	0.0340*** (0.0033)	0.0326*** (0.0034)	0.0317*** (0.0024)	0.0308*** (0.0025)
Black	0.0148*** (0.0027)	0.0117*** (0.0029)	0.0115*** (0.0029)	0.0090*** (0.0029)
Hispanic	-0.0022 (0.0027)	0.0036* (0.0020)	-0.0022 (0.0024)	0.0036* (0.0020)
CACov X AIAN	0.0015 (0.0042)	0.0008 (0.0041)	0.0044 (0.0028)	0.0037 (0.0027)
CACov X Black	0.0020 (0.0056)	0.0037 (0.0053)	0.0012 (0.0074)	0.0029 (0.0069)
CACov X Hisp	0.0062 (0.0056)	0.0048 (0.0052)	0.0071 (0.0051)	0.0057 (0.0048)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Individual Controls	No	Yes	No	Yes
Observations	9,042,830	9,042,830	12,925,696	12,925,696

Notes: Columns 1 and 2 follow Burns and Dague (2017) only including ACS data. Columns 3 and 4 also include the 2000 Decennial Census. All standard errors clustered at the state level. Individual level control replicate those in Burns and Dague (2017), including indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate.

Table 9: SSI Receipt by Race and Simulated Medicaid Eligibility Expansions
 Baseline racial/ethnic category is White individuals to compare to Burns and Dague (2017)

	(1)	(2)	(3)	(4)
	2001-2013	2001-2013	2000-2014	2000-2014
Simulated Eligibility (SimElig)	-0.0004*	-0.0004*	-0.0004	-0.0003
	(0.0002)	(0.0002)	(0.0003)	(0.0003)
AIAN	0.0346***	0.0333***	0.0326***	0.0316***
	(0.0028)	(0.0028)	(0.0023)	(0.0023)
Black	0.0152***	0.0123***	0.0108***	0.0084**
	(0.0031)	(0.0031)	(0.0033)	(0.0032)
Hispanic	-0.0016	0.0042*	-0.0009	0.0048**
	(0.0028)	(0.0024)	(0.0026)	(0.0023)
SimElig X AIAN	0.0003	-0.0001	0.0015	0.0011
	(0.0015)	(0.0015)	(0.0011)	(0.0011)
SimElig X Black	0.0006	0.0014	0.0015	0.0022
	(0.0032)	(0.0031)	(0.0034)	(0.0032)
SimElig X Hisp	0.0027	0.0020	0.0024	0.0017
	(0.0029)	(0.0029)	(0.0024)	(0.0024)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Individual Controls	No	Yes	No	Yes
Observations	9,042,830	9,042,830	12,925,696	12,925,696

Notes: Columns 1 and 2 follow Burns and Dague (2017) only including ACS data. Columns 3 and 4 also include the 2000 Decennial Census. All standard errors clustered at the state level. Individual level controls include indicator for male, age, indicator for ever been married, indicator for “speaks English well,” indicator for born in US, indicator for high school diploma or GED, state change in unemployment, state lagged unemployment rate. Simulated eligibility calculates the fraction of childless adults who are eligible for Medicaid coverage by using a sample with constant characteristics across states.



Center for Financial Security

School of Human Ecology
University of Wisconsin-Madison

1300 Linden Drive
Madison, WI 53706

608-890-0229
cfs@mailplus.wisc.edu
cfs.wisc.edu