Organization and Financing of Alcohol and Substance Abuse Programs for American Indians and Alaska Natives

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Objectives. Although American Indians and Alaska Natives have high rates of substance abuse, few data about treatment services for this population are available. We used national data from 1997–2002 to describe recent trends in organizational and financial arrangements.

Methods. Using data from the Indian Health Service (IHS), the Substance Abuse and Mental Health Services Administration, the National Institute on Alcohol Abuse and Alcoholism, the Henry J. Kaiser Family Foundation, and the Census Bureau, we estimated the number of American Indians served by substance abuse treatment programs that apparently are unaffiliated with either the IHS or tribal governments. We compared expected and observed IHS expenditures.

Results. Half of the American Indians and Alaska Natives treated for substance abuse were served by programs (chiefly in urban areas) apparently unaffiliated with the IHS or tribal governments. IHS substance abuse expenditures were roughly what we expected. Medicaid participation by tribal programs was not universal.

Conclusions. Many Native people with substance abuse problems are served by programs unaffiliated with the IHS. Medicaid may be key to expanding needed resources. (*Am J Public Health.* 2006;96:1469–1477. doi:10.2105/AJPH.2004.050575)

American Indians have the highest prevalences of substance abuse and dependence among the racial and ethnic groups comprising the United States[1–8] but are served by the country's most complicated behavioral health care system.[9–11] Substance abuse treatment services for Natives are provided by tribes, tribal organizations, urban Indian programs, the Indian Health Service (IHS), the Department of Veterans Affairs, and state, local, and other programs.[9,12–15]

Recently there have been dramatic changes both in indigenous populations (e.g., growth in size and urbanization)[16–18] and in health services for Native Americans.[10,12–19] Although most Native Americans live in urban areas,[20,21] only about 1% of the IHS budget is spent on urban Indian programs.[16,18,22] In a recent Kaiser Family Foundation survey, only 20% of American Indians reported that they had access to IHS programs.[23] Also, many tribes have taken over health care delivery from the IHS, using assorted funding mechanisms.[10,13,19,24–26] For example, contracts with the IHS allow tribes to manage specific programs.[24] A contract is generally an agreement between the purchaser of services (the IHS) and the service provider (such as a tribal organization) that includes a detailed scope of work. Compacts between tribes and the IHS are somewhat analogous to block grants and provide considerable flexibility for tribal program design and management.[24] A compact can be regarded as an understanding between 2 nations (the United States and the tribal government) about transfer of funds and overall service provision.

Services for American Indians with alcohol or other drug problems are in flux[13] as tribes negotiate new relationships with the IHS and with state Medicaid agencies.[11,19,24,25,27] Substance abuse treatment services are usually divided according to the stage of abuse addressed: the acute detoxification stage, the rehabilitation phase, and the maintenance phase or recovery.[28,29] Services include self-help programs such as Alcoholics Anonymous[30,31] and brief interventions within primary care.[32–35] We focused on treatments in the behavioral health specialty sector,[28] including traditional American Indian healing practices that some might regard as complementary, alternative, or supplementary to those usually offered in the "mainstream" service system.[1,36–38] Although the evidence is equivocal,[39,40] it is generally agreed that professional substance abuse rehabilitation services are efficacious.[28,29,41–44] Because people with substance abuse problems who receive treatment generally have better outcomes than those who do not,[29,44–46] the idea is that treatment works.[40,45,47–49]

Substance abuse treatment in the United States is largely funded by the public sector.[50,51] Coffey et al.[52,53] reported that the largest payers for substance abuse treatment in 1997 were state and local governments (28% of total substance abuse expenditures) followed by Medicaid (20%) and the Substance Abuse and Mental Health Services Administration's Substance Abuse Prevention and Treatment block grants to the states (16%). These percentages may have increased recently, given decline in private-sector chemical dependency insurance benefits[54] and the limited enthusiasm of private-sector purchasers for these services.[55]

Medicaid may be especially important for American Indians with substance abuse problems.[22,56] Medicaid is a joint federal–state program designed primarily to fund health care for low-income people.[57] American Indians have the highest Medicaid enrollment of any racial/ethnic group.[22,23] Congress addressed the reimbursement relationship between American Indians and Medicaid in the Alaska Native and American Indian Direct Reimbursement Act of 2000, which modified Title XIX of the Social Security Act to authorize direct billing by tribes or tribal organizations that have compacts or contracts with the IHS. Under the Direct Reimbursement Act, tribes or tribal organizations with IHS compacts or contracts can bypass state Medicaid agencies and submit bills directly to the federal Center for Medicare and Medicaid Services.

There have been numerous calls for information about the organization and financing

of health services for Native people,[10,23,58] but few data are available. Our goals were to provide background on substance abuse problems among American Indians; to describe organizational and financial arrangements of substance abuse treatment services for Natives; to examine recent changes in those arrangements; and to provide guidance to policymakers responsible for Native chemical dependency treatment programs.

METHODS

Data on services provided by the IHS, funded by the IHS, or both were obtained from the 1997 *Evaluation of the Indian Health Service Adolescent Regional Treatment Centers*,[59] the IHS *Accountability Report, Fiscal Year 1998*,[60] the 2002 *Indian Health Service Alcohol and Substance Abuse Program National Consultation Briefing Book*,[61] and IHS budget justification and budget request documents for federal fiscal years 1999 through 2002.[62–65] The budget justifications and requests provided information about revenues and expenditures as well as aggregate data on services such as numbers of outpatient visits and days of residential treatment. Because the service data were not unduplicated, an individual with 2 or more visits or admissions would be represented more than once in the database. The *National Consultation Briefing Book* included profiles of the 309 substance abuse treatment programs supported in 2002 by the 12 IHS area offices. Of these programs, 81 offered residential (almost all nonhospital) services, whereas the others were almost exclusively outpatient nonmethadone programs.

The Alcohol and Drug Services Study (ADSS)[66] provided detailed information about clients (including race and ethnicity) and services for a random sample of public-sector substance abuse treatment agencies (including tribal programs but excluding IHS facilities) studied from late 1996 through 1999. The ADSS Cost Study[67] provided detailed information about expenditures for a random sample of those agencies.

We also obtained data from the National Survey of Substance Abuse Treatment Services (N-SSATS),[68,69] which began (in its present form) during 2000 and takes place more or less every other year. The survey is conducted through the mail, with telephone follow-up. It uses as its sampling frame the Inventory of Substance Abuse Treatment Services, which attempts to identify all public-sector entities in the United States that provide alcohol or drug abuse treatment services. Some private providers who receive no public funds may not be included in the Inventory[70–73]; however, the enumeration is believed to be complete for entities that obtain public support. The response rate is said to exceed 90%. Especially important for this project were data on facility ownership (i.e., tribal, IHS, or other) and Medicaid billing.

Data on admissions to substance abuse treatment programs (also not unduplicated, so that a given person might be represented more than once) were obtained from the Treatment Episode Data Set,[74] which focuses on substance abuse treatment programs that obtain at least some public funding.[75] Treatment Episode Data Set data are analogous to cumulative treated incidence.[76] All states are required to submit minimum data set information on demographics, substance use, and intended treatment. Data such as age at first substance use and frequency of substance use were combined to form a severity measure similar to that used by Caspi et al.[77] and Deck and McFarland.[78] The measure reflects the seriousness of the person's addiction and ranges from 0 (least severe) to 1 (most severe).

Data from the 1990 US Census and the 2000 US Census were used to estimate population,[79,80] location (urban vs rural),[79,81] and poverty status.[82–85] The IHS accountability report for federal fiscal year 1998 provided information on the population served in 1997.[60] The IHS budget justification for federal fiscal year 2004 provided data on population served in 2002.[65] Data from the Henry J. Kaiser Family Foundation were used to estimate Medicaid enrollment in 1998[86] and 2001.[87] Rates of alcohol abuse and alcohol dependency in 1992 and 2002 were based on estimates from surveys conducted by the National Institute on Alcohol Abuse and Alcoholism.[4]

To estimate non-IHS spending on public outpatient and residential substance abuse treatment for Native people, we used 2 methods. Method A was based on ADSS phase 1 facility data and N-SSATS 2000 data (for IHS facilities), which showed there were 22 873 American Indian current clients in nontribal, non-IHS outpatient or residential programs. The total ADSS plus IHS facility current outpatient or residential client count was 923 463. Therefore, the percentage of American Indian clients in nontribal, non-IHS facilities was 2.48%. Method B was based on the Treatment Episode Data Set for 1997, which showed there were 24 717 metropolitan American Indian or Alaska Native admissions, whereas the total number of Treatment Episode Data Set admissions in 1997 was 1 589 716. Therefore, the percentage of metropolitan American Indian or Alaska Native admissions was 1.55%. We then multiplied the average from the 2 methods (2.02%) by the US public outpatient and residential substance abuse spending estimate from Coffey et al.[52,53]

We used 2 approaches to estimate expected IHS Alcohol and Substance Abuse Program expenditures. We obtained national data from the 48 ADSS Cost Study agencies that offered nonhospital residential treatment and the 222 ADSS Cost Study programs that provided only outpatient nonmethadone services.[67] The rationale for this selection was that IHS and tribal government programs are almost exclusively residential (nonhospital) or outpatient nonmethadone programs, according to the *National Consultation Briefing Book*.[61] Similarly, data from the 2002 N-SSATS showed only 2 hospital inpatient substance abuse treatment programs (owned by the IHS) and 3 methadone programs owned by tribal governments.[69]

The ADSS Cost Study analysis focused largely on measures of annual agency expenditures, which were highly correlated with agency revenues ($R=0.99$; $n=270$). The ADSS Cost Study data showed that measures of agency expenditures varied by program size. For example, among outpatient nonmethadone programs, there was a nonlinear relation between cost per visit and current client count. We examined several functional forms to find useful predictors of cost per visit based on current client count. In addition, we estimated regression equations with and without exclusion of outliers. Some regressions were restricted to the not-for-profit programs

in the ADSS Cost Study. We estimated equations with weighted regression to account for the complex sampling scheme in the ADSS Cost Study. Several models were generated for each expenditure. One equation pertaining to outpatient nonmethadone programs (estimated without excluding outliers or for profit programs) was

(1) Cost per Visit = \$89.69 − \$12.986 ln (Current Client Count),

for which R^2 was 0.13 (n = 221). According to this equation, an agency with only 1 current client would (on average) have a cost per visit of \$89.69, whereas larger agencies would have lower costs per visit. For residential programs, one equation (estimated without excluding outliers or for-profit programs) was

(2) Cost per Day = \$206.79 − \$39.32 ln (Current Client Count),

for which R^2 was 0.32 (n = 48). Other models from the ADSS Cost Study addressed total annual program costs for outpatient nonmethadone and residential (nonhospital) agencies. For outpatient agencies, a log-log model was the best functional form. One equation (estimated without excluding outliers or for-profit programs) was

(3) ln (Total Annual Cost) = 9.628 + 0.649 ln (Current Client Count),

for which R^2 was 0.55 (n = 222). For residential programs, a linear model was the best functional form. One model (estimated without excluding outliers or for-profit agencies) was

(4) Total Annual Cost = \$321 637 + \$13 212 (Current Client Count),

for which R^2 was 0.59 (n = 48).

For each cost measure in the ADSS Cost Study data, we constructed models with and without outliers as well as with and without for-profit agencies. The several models were then used to generate ranges of expenditure estimates for alcohol and substance abuse programs funded by the IHS. Current client count data were obtained from the N-SSATS for 2000 focusing on programs owned by tribal governments (n = 170 respondents) or the IHS (n = 40 respondents). Means and medians were obtained after the distributions of expenditure estimates were generated.

Approach 1 generated estimates of total annual costs for "typical" residential and outpatient (nonresidential) agencies) funded by the IHS. We then multiplied these cost estimates by the estimated numbers of each type of agency (outpatient or residential) and summed the results to obtain total "expected" IHS Alcohol and Substance Abuse Program expenditures. The IHS reported that it funded some 300 alcohol and substance abuse programs in federal fiscal year 1998.[60] The numbers of residential and outpatient-only programs were estimated at 79 and 221, respectively, on the basis of the distribution of program type for agencies owned by tribal governments or the IHS in the 2000 N-SSATS.[68]

In approach 2, we multiplied the cost per visit and cost per day figures estimated from the ADSS Cost Study by the number of reported visits and days in the IHS budget justification for federal fiscal year 1999.[62] The residential days included an estimated 37 000 adolescent regional treatment center days per year from the 1997 evaluation of IHS adolescent regional treatment centers.[59]

We reviewed administrative records of federally funded discretionary grant applications provided by the Center for Substance Abuse Prevention and the Center for Substance Abuse Treatment at the Substance Abuse and Mental Health Services Administration to determine the fraction of programs for American Indians and Alaska Natives that focused on Native people living in urban areas.

RESULTS

American Indians and Alaska Natives constitute about 1% of the US population (Table 1). The "service population" encompasses American Indians or Alaska Natives who typically live on or near reservations and make use of programs funded by the IHS. The "nonservice population" is defined as those Natives who do not use programs funded by the IHS (although nonservice Natives may well use treatment programs not funded by the IHS). There are large numbers of nonservice Natives. Between 1997 and 2002 there was an increase of 43% in the estimated nonservice

TABLE 1—Health Services Use, Demographic Characteristics, and Substance Abuse in the General US and American Indian/Alaska Native (AIAN) Populations, 1997 and 2002

	1997		2002	
	US	AIAN	US	AIAN
Total population,[a] no.	267 800 000	2 300 000	288 400 000	2 800 000
Estimated IHS service population,[b] no.	NA	1 460 000	NA	1 600 000
Estimated nonservice population,[c] no.	NA	840 000	NA	1 200 000
Urban,[d] %	75	51	79	61
Living below federal poverty level,[e] %	13	31	12	26
Enrolled in Medicaid,[f] %	10	17	11	25
Abusing alcohol,[g] %	3.0	8.1	4.6	5.8
Alcohol dependent,[g] %	4.4	9.0	3.8	6.4
Alcohol severity of admittees[h] (SD)	0.42 (0.35)	0.49 (0.34)	0.35 (0.36)	0.45 (0.35)

Note. IHS = Indian Health Service; NA = not applicable.
[a] Based on projections from US Census data.[79,80]
[b] Estimates from IHS.[60,65]
[c] Differences between total AIAN population and estimated IHS service population.
[d] Data from US Census Bureau.[80-82]
[e] Data from US Census Bureau.[82-85]
[f] Data from Henry J. Kaiser Family Foundation.[86,87]
[g] Data from the National Institute on Alcohol Abuse and Alcoholism.[4]
[h] The severity measure,[78] calculated with data from the Treatment Episode Data Set,[74] denotes the seriousness of addiction (0 = least severe, 1 = most severe).

TABLE 2—Characteristics of Substance Abuse Treatment Programs Overall and Those Serving at Least 1 American Indian/Alaska Native (AIAN) Client, 1997 and 2002

	1997		2002	
	All Programs	AIAN Programs	All Programs	AIAN Programs
All programs[a]				
Programs, no.	12 425	2 844	13 720	. . .
Clients, no.	1 090 009	33 455	1 136 287	. . .
No. of clients per program, average (SE)	87.8 (6.6)	148.7 (17.3)	89.6 (1.4)	. . .
Programs with residential (nonhospital) beds, %	25.2	21.8	27.6	. . .
IHS programs[b]				
Programs, no.	NA	39	NA	27
Clients, no.	NA	2 316	NA	1 339
No. of clients per program, average (SE)	NA	59.4 (13.5)	NA	49.6 (15.1)
Programs with residential (nonhospital) beds, %	NA	27.5	NA	25.0
Tribal government programs[b]				
Programs, no.	NA	167	NA	170
Clients, no.	NA	12 082	NA	10 127
No. of clients per program, average (SE)	NA	72.4 (14.4)	NA	59.6 (6.4)
Programs with residential (nonhospital) beds, %	NA	27.6	NA	26.7
Admissions[c]				
No.	1 607 957	41 402	1 882 584	44 346
% In metropolitan areas	83.9	59.7	83.2	66.8
% Residential (nonhospital)	16.8	23.2	16.1	19.0
% Outpatient, nonmethadone	57.4	50.3	58.3	52.2
% Detoxification (hospital and residential)	21.5	22.3	22.5	23.0
% With alcohol as primary substance	49.5	67.7	43.9	59.6
Alcohol severity measure[d] (SD)	0.42 (0.35)	0.49 (0.34)	0.35 (0.36)	0.45 (0.35)
Aggregate measures[e]				
Visits to outpatient nonmethadone programs	123 857 124	590 000	. . .	750 000
Days in residential (nonhospital) care	36 461 675	322 000	. . .	402 000
Ratio of visits to days	3.40	1.83	. . .	1.87

Note. IHS = Indian Health Service; NA = not applicable.
[a]For 1997, data for all programs are from the Alcohol and Drug Services Study[66,67] and data for AIAN programs are from the National Survey of Substance Abuse Treatment Services.[68] For 2002, data are from the National Survey of Substance Abuse Treatment Services.[69]
[b]Data from the National Survey of Substance Abuse Treatment Services.[68,69]
[c]Data taken from the Treatment Episode Data Set.[74]
[d]The severity measure,[78] calculated with data from the Treatment Episode Data Set,[74] denotes the seriousness of addiction (0 = least severe, 1 = most severe).
[e]For 1997, data for all programs are from the Alcohol and Drug Services Study Cost Study[67]; data for AIAN programs are from the Indian Health Service (IHS).[59,62] For 2002, data are from the IHS[65] (aggregate measures for 2002 pertain only to IHS programs).

population versus a 10% increase for the service population and a 22% increase in the Native population overall. There has been a notable increase in the percentage of American Indians living in urban areas.

American Indians were greatly overrepresented among Medicaid recipients in 1997 and even more so in 2002, which is to be expected, given the large percentage of Natives living below the federal poverty level. Indeed, the percentage of the Native population enrolled in Medicaid was roughly twice as high as the percentage of the overall population enrolled in Medicaid. Interestingly, the percentage of Natives living below the federal poverty level apparently declined during the 1990s, but Medicaid participation increased.

Table 1 shows the prevalence of alcohol abuse and dependence in epidemiological studies conducted 10 years apart.[4] Native people have substantially higher rates of alcohol problems than the population overall. There were no statistically significant time trends in Native alcohol abuse or dependence, whereas abuse increased but dependence declined in the general population in the 10 years between studies.[4] In other words, although there were alcohol abuse and alcohol dependence prevalence changes over time in the overall population, the prevalence of alcohol abuse and the prevalence of alcohol dependence among Natives apparently did not change over the 10 years. Also, severity measures for Natives admitted for treatment of alcohol problems are higher than comparable figures for admissions overall. The severity measures for both Native and overall admissions declined from 1997 to 2002.

Table 2 provides information about substance abuse treatment in all programs and in programs serving at least 1 individual identified as American Indian or Alaska Native. About a quarter of tribal and IHS agencies offered residential care, which was very close to the overall percentage.

In 1997 (the year for which the most complete data were available), American Indians and Alaska Natives were served by numerous public sector treatment agencies in addition to those operated by tribes or the IHS; 2844 agencies apparently served at least 1 person identified as American Indian or Alaska

Native at the time of the survey (Table 2, top row). Indeed, some 22 956 American Indians or Alaska Natives were estimated (from ADSS phase 1) to be receiving services in facilities other than those operated by tribal governments or the IHS. These nontribal, non–IHS programs apparently served more Native clients than the agencies operated by tribes or the IHS. American Indians and Alaska Natives represented 2.8% of overall current clients (or more than twice the percentage expected on the basis of population).

Another important point illustrated in Table 2 is the size of tribal and IHS programs. These programs had notably smaller current client counts (per program, on average) than nontribal, non–IHS programs. When we compared IHS annual revenues for 285 American Indian nonresidential outpatient substance abuse programs in 2002[61] with revenues for 222 outpatient-only nonmethadone agencies in the ADSS Cost Study (1997), we found that even without adjustment for inflation the Native programs had much lower revenues than programs run by nationally representative agencies (median of $120 000 vs $324 000; $P<.001$ by Mann–Whitney test).

The majority of American Indian and Alaska Native admissions were to programs (presumably operated by nontribal, non–IHS agencies) in metropolitan areas. By 2002 about two thirds of Native admissions were to such programs. American Indian and Alaska Native admittees were somewhat more likely to seek residential treatment than were admittees overall. However, differences between Native and overall admissions with regard to residential treatment decreased between 1997 and 2002. Alcohol remained the primary substance of abuse for Native admittees in 2002. Differences between American Indian and Alaska Native admissions and all admissions with regard to primary substance of abuse declined between 1997 and 2002. Overall, American Indians and Alaska Natives accounted for 2.6% of admissions to all programs (tribal; IHS; and nontribal, non–IHS) in 1997 and 2.4% of admissions to all programs in 2002 (or more than twice the percentage expected on the basis of population).

Table 2 also provides aggregate data on visits to outpatient programs and days in residential treatment. National data can be compared with IHS data for 1997 (the only year for which national figures are available). The national data show about 3 outpatient visits per residential day, but the Native agencies' figure is roughly 2 visits per residential day. This ratio changed little between the 2 study years. The implication here is that programs supported by the IHS generate more residential bed days (vs outpatient visits) than would be expected from national data.

The expenditures compiled in Table 3 represent the most current comparable financial information for all programs and programs serving at least 1 individual identified as American Indian or Alaska Native. On average, the United States spent about 1% of health care dollars on substance abuse treatment in 1997–1998. This overall substance abuse treatment figure includes services provided by public and private programs involving solo practitioners, for-profit agencies, and hospitals. Publicly funded outpatient and residential programs accounted for about half the substance abuse treatment spending.

The IHS spent about 4% of its budget on substance abuse services in federal fiscal year 1998 (Table 3). The current figure is similar. It is important to appreciate that the figures for national spending on total health care and for spending on substance abuse treatment overall were calculated in ways quite different

TABLE 3—Expenditures for Health Care and Substance Abuse Treatment in US Programs Overall and Those Serving at Least 1 American Indian/Alaska Native (AIAN) Client, 1997–1998

	All Programs	AIAN Programs
Total health care,[a] $ millions	1 057 493	NA
Total public health care,[b] $ millions	458 548	2460[c]
Substance abuse treatment overall,[a] $ millions	11 419	NA
Substance abuse treatment, public outpatient and residential,[a] $ millions	5 321	NA
IHS Alcohol and Substance Abuse Program,[d] $ millions	NA	91.78
Urban Indian alcohol programs,[d] $ millions	NA	3.05
Total IHS-supported substance abuse treatment programs, $ millions	NA	94.83
Non-IHS public outpatient and residential care, estimated,[e] $ millions	NA	107.48
Total public outpatient and residential substance abuse treatment for Natives, $ millions	NA	202.31
Substance abuse treatment as proportion of total health care expenditures,[f] %		
Overall as proportion of total	1.08	NA
Public outpatient and residential care as proportion of total public health care	1.16	NA
IHS Alcohol and Substance Abuse Program	NA	3.73
Urban Indian alcohol programs	NA	0.12
Total IHS-supported substance abuse treatment programs	NA	3.85
Substance abuse treatment expenditures per capita,[g] $		
Substance abuse treatment overall	42.85	NA
Public substance abuse treatment, outpatient and residential	19.97	NA
Substance abuse treatment for IHS service population, estimated	NA	64.95
Substance abuse treatment for American Indian nonservice population	NA	127.95
Substance abuse treatment for total American Indian and Alaska Native population	NA	87.96

Note. IHS = Indian Health Service; NA = not applicable.
[a] Data from Coffey et al.[52,53]
[b] Data for all programs from Coffey et al.[52,53]; data for AIAN programs from IHS.[60]
[c] IHS programs only; does not include other public programs serving Native people (such as Medicaid).
[d] Data from IHS.[62–64]
[e] Estimated as described in Methods, with data from the Alcohol and Drug Services Study[66] and the National Survey of Substance Abuse Treatment Services[68] to approximate percentage of clients in non-IHS, nontribal programs (Method A) and data from the Treatment Episode Data Set[74] to estimate percentage of metropolitan AIAN clients (Method B). The averaged percentage was then multiplied by the public outpatient and residential figures from Coffey et al.[52,53]
[f] Percentages based on numerators and denominators from upper portion of this table.
[g] Population denominators from Table 1.

from the methods used to determine total IHS spending and IHS spending for substance abuse treatment. However, it is reasonable to compare national spending on public outpatient and residential substance abuse treatment with the analogous expenditures by the IHS. This comparison suggests that the fraction of IHS funds devoted to substance abuse treatment is roughly 3 times what would be expected from national data.

It is also instructive to compare the ratios of expenditures (national vs IHS) with the prevalence and severity data. Surveys suggest that alcohol dependence is roughly twice as common among Natives as in the overall population (Table 1). Severity data suggest that the degree of addiction for admitted American Indian clients was about 20% to 30% greater than that for the overall population. The ratio of alcohol dependence prevalence among Natives to alcohol dependence prevalence in the general population was 2.04 for 1997 (from Table 1). The ratio of Native admittee severity to the severity of general population admittees was 1.17 (from Table 1). Multiplying these ratios yields a figure of 2.39, which is a bit smaller than the ratio of substance abuse expenditure percentages shown in Table 3.

It is also illuminating to examine per capita expenditures. Overall, the United States spent about $43 per capita for substance abuse treatment in 1997. One can calculate several per capita figures pertaining to American Indians and Alaska Natives. Perhaps the most informative such figure combines services delivered by tribes or the IHS with treatment provided by programs unaffiliated with tribes or the IHS. This total figure was about $88 per capita in 1997. The per capita expenditure ratio between American Indians and the overall population is only 2.1, which is less than would be expected given population differences in substance abuse prevalence and severity.

Another important aspect of Table 3 is estimated spending on American Indian and Alaska Native clients by substance abuse treatment programs unaffiliated with tribes or the IHS. Both the current client count data and the metropolitan admissions data for 1997 suggest that treatment for American Indians and Alaska Natives in nontribal, non–IHS programs accounted for roughly 2% of spending on public sector outpatient and residential services. The expenditure figure (some $107 million) is very close to the IHS substance abuse spending (roughly $95 million) during that year. Spending on substance abuse treatment for American Indians and Alaska Natives in programs unaffiliated with tribes or the IHS is substantial. Given the rise in the percentage of metropolitan area treatment program admissions for American Indians and Alaska Natives between 1997 and 2002 (Table 2), this issue is increasing in importance.

Observed spending for the IHS Alcohol and Substance Abuse Program was $94.83 million. We estimated expected expenditures at $75.37 million to $87.04 million by using approach 1 and at $56.41 million to $58.30 million by using approach 2. Omission of outliers and private programs from the national data had little impact on estimates, whereas using means versus medians in the estimation of expenditures for American Indian programs made a considerable difference. Consequently, these ranges chiefly reflect differences between means and medians. Given the challenges of these calculations, it appears that IHS Alcohol and Substance Abuse Program expenditures are more or less what would be expected from national figures, given program sizes and possible underreporting of residential days and outpatient visits.

Another important finding is that Medicaid participation by tribal or IHS programs is not uniform across the country. During 2002 there were 7 states (of the 25 that had tribal or IHS substance abuse programs) in which no Native facility reported Medicaid billing. For 2003 the figures were 7 states (Colorado, Idaho, Iowa, Louisiana, Missouri, Texas, and Utah) of 26. In the N-SSATS data there were few predictors of Medicaid billing by tribal or IHS agencies other than Medicare billing ($P<.001$ by χ^2 test).

Finally, the Substance Abuse and Mental Health Services Administration devoted some 6% of its total 2002 discretionary grant program to American Indian or Alaska Native addiction prevention or treatment programs. A review of 102 programs aimed at American Indians or Alaska Natives supported by the Center for Substance Abuse Prevention or the Center for Substance Abuse Treatment in 23 states since 2000 showed that a quarter were focused on urban areas (including state incentive grants addressing prevention).

DISCUSSION

Given the limited information available about Native substance abuse treatment and outcomes, we must be circumspect in interpreting these results.[10,88] The IHS's Integrated Behavioral Health information technology initiative[89] may be an opportunity to compile more complete data. In addition, substance abuse programs funded by the IHS should be encouraged to participate in the N-SSATS. It may be helpful to create an additional category in the N-SSATS to identify urban Indian programs that are neither tribal nor IHS but do receive IHS funds.

Analysis of the financial picture is also challenging because IHS budgets are subdivided in complex ways (with tribal contracts and compacts introducing even more complexity). Also, Native substance abuse services are financed by numerous programs (e.g., Medicaid) in addition to the IHS.[8] Moreover, Alaska Native programs are notably different from American Indian services in the lower 48 states.

Nonetheless, several conclusions can be drawn from these data. Substance misuse is a considerable problem for Native people and has changed little in the past decade. Large numbers (probably the majority) of Native clients treated for substance abuse disorders are served by agencies apparently unaffiliated with the IHS or tribal governments. Similarly, the Substance Abuse and Mental Health Services Administration earmarks a notable percentage of its funds for American Indians and Alaska Natives but urban indigenous people may be underrepresented in allocation of this money. One concern is the extent to which the federal government is meeting its treaty responsibilities.[19,90]

Another concern is the treatment provided to American Indian clients in mainstream (i.e., not affiliated with tribal governments or the IHS) agencies. The percentage of programs funded by the IHS that offer residential care is about the same as the percentage of programs with residential services in

mainstream agencies. Moreover, both Native and mainstream programs presumably have waiting lists. However, tribal governments and the IHS operate small programs, whereas Native clients in agencies unaffiliated with tribal governments or the IHS may find themselves being treated by relatively large institutions that may not deliver culturally competent services. A notable qualitative study conducted 2 decades ago raised serious questions about the cultural appropriateness of mainstream substance abuse treatment programs for urban Indians with alcohol problems.[91] Quality of care needs to be examined.[10,92,93] Indeed, an important topic for future research is the effectiveness of culturally relevant treatments.

The expenditure calculations address the "efficiency"[94] of substance abuse treatment programs supported by the IHS. Given the crude data, funding for IHS alcohol and substance abuse programs seems more or less what would be expected from national data when program size and possible underreporting of services are taken into account.

In 2003 only half the tribal or IHS substance abuse treatment programs reported accepting Medicaid. Given their small size (most have client counts of half to two thirds those found in programs overall), it is not surprising that Native agencies may have difficulties with Medicaid bureaucracy. The Robert Wood Johnson Resources for Recovery program is designed to facilitate access to Medicaid substance abuse treatment funding.[95] Policymakers should consider providing training and technical assistance to American Indian agencies in Medicaid billing, along with publicizing findings from the Resources for Recovery program.

Medicaid funding and substance abuse treatment for American Indians and Alaska Natives not in the "service population" should also be scrutinized.[96] As noted, during 2003 there were 7 states (of the 26 that had Native substance abuse programs) in which no American Indian facility reported Medicaid billing. Policymakers should consider expanding Medicaid eligibility definitions in order to increase American Indian Medicaid enrollment and thereby satisfy federal treaty obligations to Native people.[97] Expanding the Medicaid budget for increasing enrollment will be very difficult, however, given current constraints on federal spending, including the IHS.[98]

Finally, consideration should be given to prevention.[99] American Indians and Alaska Natives represent more than 500 sovereign nations that can adopt, and have adopted, policies designed to prevent substance abuse.[100,101] Tribal sovereignty offers opportunities for universal prevention policies that may include, among others, alcohol and tobacco sales restrictions, alcohol and tobacco taxes, minimum drinking ages, and blood alcohol concentration legislation.[100,101] As with treatment services, evaluation of outcomes for substance abuse prevention programs will be important. Numerous approaches must be undertaken to meet the needs of urban and reservation American Indian and Alaska Natives for substance abuse prevention and treatment services. ■

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B.H. McFarland, R.M. Gabriel, and R.D. Walker obtained the data, and B.H. McFarland conducted the data analysis. All authors participated in designing the study and writing the article.

Human Participant Protection

Institutional review board approval was waived for this study, which used only publicly available data.

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