Utilization of On-Site Primary Care Services by HIV-Seropositive and Seronegative Drug Users in a Methadone Maintenance Program

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Synopsis ....

The feasibility of onsite primary care services and their use by human immunodeficiency virus HIV-seropositive and seronegative injecting drug users within an outpatient methadone maintenance program are examined. A 16-month prospective study was conducted within an ongoing cohort study of HIV infection at a New York City methadone program with onsite primary care services. The study group consisted of 212 seropositive and 264 seronegative drug injectors. A computerized medical encounter data base, with frequencies of primary care visits and with diagnoses for each visit, was linked to the cohort study data base that contained information on patients' demographic characteristics, serologic status, and CD4+ T-lymphocyte counts.

Eighty-one percent of the drug injectors in the study voluntarily used onsite primary care services in the methadone program. Those who were HIV-seropositive made more frequent visits than those who were seronegative (mean annual visits 8.6 versus 4.1, P <.001), which increased with declining CD4+ T-lymphocyte counts; 79 percent of those who were seropositive with CD4 counts of less than 200 cells per cubic millimeter received onsite zidovudine therapy or prophylaxis against Pneumocystis carinii pneumonia, or both.

Common primary care diagnoses for patients seropositive for HIV included not only conditions specific to the human immunodeficiency virus but also bacterial pneumonia, tuberculosis, genitourinary infections, asthma, dermatologic disease, psychiatric illness, and complications of substance abuse; those who were seronegative were most frequently seen for upper respiratory infection, psychiatric illness, complications of substance abuse, musculoskeletal disease, hypertension, asthma, and diabetes mellitus. Vaginitis and cervicitis, other gynecologic diseases, and pregnancy were frequent primary care diagnoses among both seropositive and seronegative women.

Onsite primary medical care services were readily and frequently used by patients within the methadone maintenance program. Such sites may be strategically important for delivery of HIV-related care to drug injectors. In addition, however, primary care services for drug users also must address a range of acute and chronic diseases, medical sequelae of substance abuse, and women's health care needs, regardless of patients' serologic status. These results support policy and planning initiatives for the integration of primary care, substance abuse treatment, and AIDS prevention and treatment activities.

AMBULATORY CARE and early intervention increasingly have been the focus of treatment for acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection, leading to a growing involvement of primary care providers in HIV-related medical care (1–8). Because injecting drug users account for a growing number and percentage of persons with HIV infection and AIDS in the United States, it is particularly critical to address the primary care needs of this population (9–12). Indeed, the provision of primary medical care to HIV-infected drug users,

and the linkage of medical care with substance abuse treatment and HIV-related interventions recently have begun to receive attention as important health policy and planning issues (13-20).

One model for providing such care has been to develop onsite primary care services within drug abuse treatment programs (14,20-25). Although there has been much interest in this model of care for drug users with or at risk of HIV infection, there has been little empirical study of the delivery and use of primary care services in drug treatment settings. At Montefiore Medical Center, we have developed onsite primary care services within a methadone maintenance treatment program that has also been the location for an ongoing prospective cohort study of HIV infection (21,26-30).

In this current analysis, we have examined the pattern and frequency of the use of primary care services and the diagnoses made among HIV-seropositive and seronegative drug users participating in both the methadone treatment program and the cohort study. We used a computerized medical encounter data base, containing specific diagnoses generated at each primary care visit, and linked it to our prospective cohort study data base that contains sociodemographic information, HIV serologic test results, and clinical data, including CD4+ T-lymphocyte determinations for HIV-infected patients. This has enabled us to examine primary care utilization and diagnoses in relation to demographic variables, HIV serologic status, and levels of immune dysfunction in our study population over the 16 months of the study.

Methods

Study site and patient population. The study was conducted at a 900-patient methadone maintenance treatment program affiliated with a teaching hospital, with two clinic sites in the central and south Bronx in New York City. The methadone program provides long-term treatment for opiate addiction; in addition to methadone, counseling and other support services are available, as mandated by existing State and Federal regulations. The study sample consisted of all patients enrolled in the methadone program during all or part of the 16-month study period who were also enrolled in the prospective cohort study being conducted at the same sites. The study period extended from November 1, 1989, to February 28, 1991.

Prospective cohort study. Since 1985, this methadone program has been the site of a voluntary,

population-based, prospective cohort study of HIV infection. As described elsewhere in detail (26-30), patients enrolled in this cohort study undergo baseline evaluations with histories, physical examinations, and laboratory testing, including HIV serologic tests and lymphocyte subset studies; repeat examinations with similar followup studies are performed at 6-month intervals after enrollment.

Previous analyses have compared HIV-seropositive and seronegative groups within the cohort with respect to demographic, behavioral, clinical, and epidemiologic variables (26-30). In these prior studies, we found no significant differences between cohort study participants and nonparticipants with regard to demographic variables, the duration or outcome of methadone treatment, or other available indicators.

Primary care service. Basic onsite primary care services have been available at Montefiore's methadone program since the early 1980s. Since 1984 they have been further developed and expanded in response to the AIDS epidemic. In 1989, these services were funded as one of 21 demonstration projects in a joint initiative for the integration of primary care and substance abuse treatment sponsored by the National Institute on Drug Abuse and the Health Resources and Services Administration (14). This support has enabled us to offer comprehensive primary care services on a voluntary basis for all patients within the methadone program.

Care is delivered on both a scheduled and walk-in basis and is provided by a clinical staff of physicians, physician assistants, nurse practitioners, and nursing coordinators. Primary care is provided in addition to the methadone-specific medical functions required by State and Federal regulations—for example, induction onto methadone, dosage changes, and admission and annual physical examinations. All primary care providers perform these methadone-related duties as well. During this study, primary care clinicians in the methadone program followed protocols for HIV-related outpatient care that were consistent with standard practice and recommendations then in existence.

Data sources. Our analysis relies on two principal sources of data:

1. A computerized medical encounter data base, in which every patient visit to the methadone program primary care service results in a provider-generated encounter form. This form, which is also used for billing purposes, includes patient identifi-

Table 1. Demographic characteristics of injecting drug users utilizing and not utilizing primary care services in a methadone maintenance program, New York City, 1989–91

Characteristics	Total population	Using services[1] Number	Percent	Not using services Number	Percent
All methadone program patients	476	386	81	90	19
Sex:					
Female..........	241	206	85	35	[2]15
Male	235	180	77	55	23
Race-ethnicity:					
Hispanic.........	258	213	83	45	17
Black	99	82	83	17	17
White	119	91	76	28	24
Mean age (years) ..	37.9	38.1		37.2	
HIV antibody status:					
Seropositive	212	190	90	22	[2]10
Seronegative.....	264	196	74	68	26

[1] All patients enrolled in the methadone program and in the prospective cohort study making at least 1 visit to methadone program primary care service during the study period.
[2] P <0.01, females versus males, HIV-seropositives versus HIV-seronegatives. All other comparisons not significant.
NOTE: Percents indicated are row percents.

Table 2. Use of on-site primary care services and frequency of visits by HIV-seropositive and seronegative drug users in a methadone program over 16-month study period, New York City, 1989–91

Variables	Total	HIV-positive Number	Percent	HIV-negative Number	Percent
Use of services					
Total patients	476	212	45	264	55
Using services:					
No..............	90	22	24	68	[1]76
Yes.............	386	190	49	196	51
Visit frequency					
Total visits.........	3,254	2,184	67	1,070	[1]33
Visits per patient (users only):					
Mean	8.4	11.5		[1]5.5	
Median..........	5	7		4	
Range..........	1–63	1–63		1–38	
Annualized mean number of visits...	6.3	8.6		[1]4.1	

[1] P <.001, comparing proportions of users versus nonusers, proportions of patients versus proportions of visits, and mean visit frequencies, by HIV status.
NOTE: Percents indicated are row percents.

ers and up to four hierarchically ordered medical diagnoses per visit entered by the medical providers at the time of the visit. Diagnostic codes are entered according to the International Classification of Health Problems in Primary Care (ICHPPC) (*31*), linked to the International Classification of Disease (ICD-9) classification system. For this analysis, we have grouped certain individual diagnoses into more inclusive categories, for example, gastrointestinal illness, genitourinary tract infection or disease.

2. The prospective cohort study data base that includes baseline interview data and results of followup interviews and examinations. This data base includes information on patients' HIV serologic status, serial lymphocyte subset studies, HIV-related clinical status, and use of zidovudine therapy and *Pneumocystis carinii* pneumonia prophylaxis. Although there is much overlap between the primary care and cohort study data bases, it should be noted that patients' HIV serologic status, determined through research examinations, has not always been known or available to primary care staff members (especially for asymptomatic patients).

Statistical considerations. Use of primary care services, frequency of visits, and the specific diagnoses indicated on the encounter forms were determined for the entire patient population and compared with different subgroups. Chi square and Mantel-Haenszel tests and, when appropriate, Fisher's exact tests were used for analysis of categorical data and comparisons across strata; T-tests were used for comparisons of group means.

Results

There were 1,196 patients enrolled in the methadone program during all or part of the study period, of whom 476 (39 percent) were also enrolled in the prospective cohort study. As in previous analyses (*26–30*), cohort study participants and nonparticipants did not differ with respect to demographic valuables or the duration of methadone treatment, nor, in the current analysis, with regard to the frequency or patterns of use of primary care services within the methadone program.

Of the 476 patients enrolled both in the methadone program and the prospective cohort study during any part of our study period, 81 percent made at least one visit to the methadone program's primary care service (table 1). There were no significant differences in primary care use by race-ethnicity or age, although females were more likely to use primary care services than males (85 percent vs. 77 percent); 90 percent of HIV-seropositive patients made primary care visits versus 74 percent of the HIV-seronegative group (P <.01) (table 1). Examining use of primary care by HIV serologic status, we found that those who were HIV-seropositive accounted for 49 percent of the 386 patients making primary care visits and made 67 percent of all primary care visits (table 2). HIV-seropositive patients had 8.6 annualized mean num-

Table 3. Frequency of primary care visits and use of HIV-related therapy for 176 HIV-seropositive drug users, by CD4 + T-lymphocyte count, during 16-month study period, New York City, 1989–91

CD4 + T-lymphocyte count per mm³	HIV-seropositive (N = 176)[1]	Made primary care visits		Received zidovudine or anti-pneumocystis prophylaxis, or both		Mean number of visits for primary care users	Annualized mean number of visits
		Number	Percent	Number	Percent		
More than 500	64	54 of 64	84	8 of 54	15	7.4	5.6
200–500	66	61 of 66	92	33 of 61	54	12.5	9.4
Less than 200	46	43 of 46	93	34 of 43	[2]79	[2]16.2	[2]12.2

[1] Missing data on CD4+ T-lymphocyte counts for 14 of 190 HIV-seropositive patients.

[2] $P < .05$ for all stratum-specific comparisons.
NOTE: Percents are row percents. mm³ = cubic millimeters.

ber of visits compared with 4.1 for those who were seronegative ($P < .001$). Of the 90 patients who did not use primary care services, only 24 percent were HIV-seropositive.

Frequency of visits for HIV-infected patients increased steadily as a function of declining CD4 + T-lymphocyte count (table 3). The annualized visit frequencies for HIV-seropositive patients were 5.6 for those with CD4 counts greater than 500 cells per cubic millimeter (mm³), 9.4 for those with 200–500 per mm³, and 12.2 for those with less than 200 per mm³ during the study period ($P < .05$). Of 43 patients with at least one CD4 count lower than 200 cells per mm³, 34 (79 percent) received either zidovudine or prophylaxis against *Pneumocystis carinii* pneumonia (with trimethoprim-sulfamethoxazole, dapsone, or aerosolized pentamidine), or both, from the methadone program's primary care service during the study period (table 3). Overall, 67 of the 104 patients (64 percent) with CD4 counts below 500 cells per mm3 received one or both of these HIV-related therapies.

Table 4 lists the most common diagnoses recorded for methadone program primary care visits, for HIV-seropositive and seronegative patients. Percentages indicate the proportion of visits in which the diagnosis is mentioned for the 15 leading diagnoses. (The diagnoses listed are not necessarily the primary diagnoses, but they indicate the most common entries for the maximum of four diagnoses, not mutually exclusive, allowed for each visit on the provider-generated encounter form.)

Among seropositive patients, more than 50 percent of visits included a mention of AIDS-related complex, AIDS, or HIV infection as one of the diagnoses listed. When analyzed by primary diagnosis only (data not shown), these three categories accounted for 37 percent of seropositive patients' total visits.

Other common overall diagnoses for HIV-seropositive patients included HIV-related respiratory infections such as bacterial pneumonia, bron-

chitis, tuberculosis; constitutional symptoms; substance abuse; psychiatric illness; asthma; pregnancy; gastrointestinal symptoms and illness; and genitourinary infections and disease.

Leading diagnoses for HIV-seronegative patients included conditions related to substance abuse and its sequelae, psychiatric illness, pregnancy, and common chronic diseases of young adulthood such as diabetes mellitus, asthma, and hypertension. Of the 15 leading primary care diagnoses for each group, eight were shared by both groups (table 4).

Table 5 presents the frequency of selected diagnoses by HIV serologic status, expressed as the proportion of patients with one or more visits in which the diagnosis was mentioned. Seropositive patients were significantly more likely to be diagnosed with a wide range of infectious diseases, as well as eczema-dermatitis, neurologic disease, gastrointestinal illness, anemia, and substance abuse.

As previously mentioned, female patients used primary care services more frequently than males. Among HIV-infected patients, there were no significant differences by sex in the frequency of any of the AIDS-specific or other infectious disease diagnoses, except for syphilis, herpes simplex, and other genitourinary infections, which were more common in HIV-seropositive females than males. Table 5 presents visit frequencies for selected gynecologic and reproductive health diagnoses for female patients only, by HIV serologic status.

It must be noted that this analysis excludes cervical dysplasia and carcinoma, both of which have been clearly associated with HIV infection and concurrent human papillomavirus infection in our population (32). These conditions are diagnosed and followed separately as part of an independent research protocol and are not captured in data on primary medical care service visits within the methadone program.

Other than an increased frequency of syphilis and genital herpes simplex virus infection in HIV-infected women, there were no significant differ-

Table 4. Leading diagnoses mentioned from on-site primary care visits for 386 HIV-seropositive and seronegative drug users in a methadone program, New York City, 1989–91

Leading diagnoses	Percent of visits in which diagnosis mentioned[1]
HIV-Seropositives (total visits 2,184)	
AIDS-related complex..................	20.2
AIDS................................	18.3
HIV infection........................	13.6
Psychiatric illness	5.9
Upper respiratory infection	5.8
Bronchitis, pneumonia	5.7
Substance abuse.....................	5.4
Asthma..............................	4.7
Eczema, dermatitis	4.5
Pregnancy...........................	4.4
Fatigue..............................	3.8
Gastrointestinal illness................	3.7
Headache	3.4
Genitourinary infection, disease	3.1
Tuberculosis.........................	2.9
HIV-Seronegatives (total visits 1,070)	
Upper respiratory infection	8.7
Pregnancy...........................	7.9
Psychiatric illness	7.8
Substance abuse.....................	7.6
Diabetes mellitus.....................	7.1
Hepatitis, cirrhosis....................	6.6
Arthritis, musculoskeletal pain	4.7
Asthma..............................	4.6
Gastrointestinal illness................	4.4
Hypertension	4.2
Eczema, dermatitis	4.1
Seizure disorder	4.0
Injury	3.3
Genitourinary infection, disease	3.2
Skin, soft tissue infection	3.0

[1] 15 leading diagnoses, not mutually exclusive; up to 4 diagnoses per visit allowed.

ences compared with HIV-seronegative women in the frequency of vaginitis-cervicitis, other genitourinary infections (including pelvic inflammatory disease), breast disease, other gynecologic disease, or pregnancy. Most of these diagnoses were common occurrences in female patients regardless of HIV serologic status. Vaginitis-cervicitis was the most frequent gynecologic diagnosis in both HIV-seropositive and seronegative women. Vaginitis included all common types and was most typically caused by candida or trichomonas in both groups of women; however, no significant increase in the frequency or severity of vaginal candidiasis was seen in HIV-infected women.

Discussion

This study demonstrates that onsite primary medical care services were used readily by more than three-fourths of the patients in an inner-city methadone maintenance treatment program. Services were most heavily used by women and by patients with HIV infection, although the great majority of males and HIV-seronegative patients also used the clinic-based primary care services. These data indicate that methadone programs may be strategic sites for the development of primary care and AIDS-related medical services for a population that is otherwise unlikely to receive ongoing care outside of emergency rooms and other acute care sites. This study was not designed as a comparative trial of methadone program-based primary care versus other models of care for drug injectors, and it does not intend to imply that this model is appropriate for all methadone programs. The data do suggest, however, that such a model is feasible, effective, and capable of delivering comprehensive primary care services in such a setting.

Much of the primary care activity in our patient population was HIV-related. HIV-infected patients, comprising 49 percent of the care-using population, generated 67 percent of the primary care visits. The frequency of visits among HIV-seropositive patients increased with greater degrees of immunosuppression, a finding similar to that of a study of self-reported medical care among injecting drug users in Baltimore (33). It is notable that nearly 80 percent of HIV-infected patients with CD4 counts lower than 200 cells per mm^3 received either zidovudine, prophylaxis against Pneumocystis carinii pneumonia, or both, as did more than 60 percent of those with CD4 counts lower than 500 cells per mm3. These data suggest, in contrast to popular perception, that such therapy may be administered effectively to drug injectors within drug treatment settings (22).

The importance of these findings is highlighted by recent data suggesting that drug injectors as a population have been less likely to receive AIDS-specific therapy and, consequently, have not shown a therapy-associated decline in AIDS incidence rates compared with homosexual men (34–37). From a health services perspective, more effective provision of antiretroviral therapy (38) and specific prophylactic agents to HIV-infected patients in drug treatment settings could be expected to result in decreased costs for acute care. In addition, comprehensive HIV-related primary care, linked to risk-reduction counseling and other behavioral interventions among drug users, might help reduce future HIV transmission and thereby reduce the future economic impact of the epidemic. Studies at Montefiore and elsewhere are now underway to address these issues more definitively.

It is also noteworthy, however, that there remained a subset of eligible HIV-infected patients in

Table 5. Frequency of selected diagnoses mentioned during one or more primary care visits, by serologic status of 386 total patients and 206 female patients in a methadone maintenance program, New York City, 1989–91

Selected diagnosis	HIV-seropositive patients (N = 190)		HIV-seronegative patients (N = 196)		
	Number with diagnosis	Percent	Number with diagnosis	Percent	Percent
All patients					
Bronchitis, pneumonia	58	31	21	13	<.001
Tuberculosis (latent and active)..	31	16	19	10	.04
Skin, soft tissue infections	35	18	20	10	.02
Herpes simplex	12	6	4	2	.04
Herpes zoster..................	8	4	1	0.5	.02
Syphilis	17	9	7	4	.03
Genitourinary infection, disease .	36	19	22	11	.02
Eczema, dermatitis	56	29	28	14	<.001
Otitis media...................	17	9	5	3	.007
Headache	36	19	19	10	.007
Neurologic disease	29	15	14	7	.009
Gastrointestinal illness	50	26	34	17	.02
Fever	10	5	3	2	.05
Anemia.......................	31	16	13	7	.002
Fatigue.......................	41	22	12	6	<.001
Substance abuse...............	64	34	43	22	.007
Female patients only [1]					
Vaginitis, cervicitis	29	30	25	23	0.19
Syphilis	10	10	3	3	0.04
Herpes simplex	9	9	1	1	0.007
Genitourinary infection (other) ...	23	23	17	16	0.11
Gynecologic disease (other)	13	13	14	13	1.0
Breast disease	6	6	2	2	0.15
Pregnancy.....................	24	24	21	19	0.24

[1] 98 seropositive, 108 seronegative. NOTE: Percents are column percents.

our population who did not receive HIV-specific therapy. Preliminary data (not shown) from our continuing study suggest that ongoing illicit drug use, especially cocaine, may be a key impediment to engagement and followup with medical care for HIV-infected patients in our population (39). This supports an earlier observation from our primary care program that a return to active drug use was the most common reason for noncompliance among patients receiving HIV-related care (21).

These findings underscore the importance of addressing not only HIV-related but also drug use-related clinical issues in the effective medical management of drug injectors with HIV infection. Further, they support the growing emphasis in health policy and planning on the linkage or integration of primary care, substance abuse treatment, and AIDS care and prevention (13,14,16–25).

Concerning the analysis of diagnoses from primary care visits, it must be recognized that the medical encounter data base used for this study was established and used primarily for clinical and administrative purposes, and unlike the cohort study data base, it was not developed as part of a formal research study design. Nevertheless, it is possible to draw some inferences concerning the nature and pattern of clinical primary care diagnoses within the limitations of the available data and diagnostic categories.

In our analysis, HIV-specific diagnoses (AIDS, AIDS-related complex, HIV infection) were mentioned by care providers in more than 50 percent of visits of HIV-infected patients but were listed as primary diagnoses in only 37 percent of visits. Other common diagnoses indicated for HIV-seropositive patients included specific infectious diseases known to be associated with HIV infection, including bacterial pneumonia and bronchitis, tuberculosis, herpes zoster, and syphilis (27–30,40–43), as well as other infectious diseases, and non-specific constitutional symptoms. HIV-seropositive patients were also more likely than HIV-seronegative ones to be diagnosed with genitourinary tract disease, neurologic disease, and gastrointestinal symptoms. These data suggest that the full range of HIV-related morbidity in primary care settings may not be appreciated by limiting attention to the occurrence of HIV-specific diagnoses alone.

In addition, both HIV-seropositive and seronegative patients made frequent visits for substance abuse-related problems, psychiatric illness, asthma,

and dermatologic disease, indicating that primary care services for drug users must be comprehensive in scope and not limited simply to the provision of HIV-specific therapies. Furthermore, diagnoses of pregnancy, gynecologic disease, and vaginitis-cervicitis were common in both HIV-seropositive and seronegative women. This finding underscores the importance of reproductive health care services for female drug users, in general, regardless of HIV serologic status.

Concerning the relationships between HIV infection and specific types of gynecologic disease, our group has reported previously on the importance of human papillomavirus infection and cervical neoplasia in HIV-infected women in the same patient population; other published reports have also demonstrated this association (32,44–46). In contrast with case series that have not included HIV-seronegative comparison groups (47,48), however, we did not find an increased frequency of clinical diagnoses of vaginitis—including vulvovaginal candidiasis—among HIV-seropositive women compared with seronegative women in the sample for this analysis. This may reflect clinical underdetection in our primary care service, small sample size (although the current analysis had close to 100 women in each group), the lack of a true etiologic relationship between vaginal candidiasis or other forms of vaginitis and HIV infection, or the fact that high levels of gynecologic disease among HIV-seronegative drug-using women may obscure any additional HIV-related effects in our population. Our findings also highlight the need for prospective, population-based studies of the gynecological manifestations of HIV infection in both drug-using and nondrug-using women.

The development of primary care services within a methadone maintenance program has not been without administrative and organizational problems. Differences in reimbursement systems and Medicaid rate structures for methadone treatment and primary care services hindered our ability to expand medical care until this constraint was eliminated through direct negotiation with the New York State Department of Health. Similar administrative obstacles may need to be addressed in other drug treatment settings before primary care services can be developed effectively.

Onsite primary care services may also generate the need for subspecialty referrals and other hospital-based services. Our program has benefitted in this regard by being hospital-affiliated, but there have been other recent examples of nonhospital-based drug treatment programs developing varying levels of onsite primary care services, sometimes including formal linkage or referral arrangements between freestanding drug treatment programs and cooperating medical centers (14,23).

Clinically, the development of primary care services within a methadone program has also posed challenges in integrating two distinct and, at times, apparently conflicting clinical paradigms: the consistent limit-setting, structure, and strict regulations necessary in a methadone program may conflict with the need for flexibility and accommodation in primary care delivery, especially for HIV-infected patients. This tension between drug treatment and primary care agendas has posed interesting challenges in the areas of staff training, education, and interdisciplinary communication. On balance, however, the development of medical services and the consequent broadening of clinical practice within the methadone program has enriched the clinical and educational experience of both medical and counseling staff members and has proven to be an asset in recruitment and retention of professional personnel.

In conclusion, our project has demonstrated that methadone programs may be strategic sites for the development of comprehensive primary medical care services for drug injectors, a population with otherwise fragmented and episodic contacts with the health care system. Such programs provide what may be unique opportunities for the promotion and delivery of HIV-related care, which will be especially critical as the outpatient management of HIV infection increasingly defines this disease over the next decade. Equally important, however, is our finding that a wide range of primary care services is needed in such settings, including not only HIV-specific care, but also treatment for substance abuse and its medical complications, mental health and reproductive health care services, and treatment and prevention of common chronic diseases seen in medically underserved populations. Administrative, fiscal, programmatic, and clinical issues may be challenging and complex, and no one model will be an ideal template for all such efforts. Nevertheless, the failure to respond both to the drug treatment and primary care needs of this population will constitute a failure to address effectively the clinical dimensions of the AIDS epidemic among drug users in the years ahead.

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Birth Outcomes of Korean Women in Hawaii

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Synopsis.................................

Since the end of the Korean War, immigration of Koreans to the United States has increased rapidly. In 1990, 11.6 percent of all Asians in the United States were of Korean ethnicity, and it is projected that Koreans will outnumber all other Asian groups, except Filipinos, in the United States by the year 2030.

Despite the growing size of this population, very little is known about their health status. This study, using 1979-89 Hawaii vital record data, investigates the relationship between maternal sociodemographic characteristics, prenatal care utilization factors, and birth outcomes among Koreans as compared with Caucasians. The ethnic term "Caucasian" is used in Hawaii's vital records and is synonymous with non-Hispanic whites.

Korean mothers were more likely to be older and have lower educational attainment, and less likely to be adolescent, single, or to have received adequate prenatal care than Caucasian mothers. More than 80 percent of the Korean mothers were foreign born. Significantly higher risks for very preterm delivery (less than 33 weeks) and very low birth weight births were observed for Koreans as compared with Caucasians. Nativity had no effect on birth outcome in this population. The results of this study suggest that prevention of preterm birth is an important focus for improving pregnancy outcomes in this growing ethnic group.

SINCE the end of the Korean War, Koreans in increasing numbers have migrated to the United States and are now one of the more numerous Asian ethnic groups in this country (1). After the United States Immigration and Nationality Act of 1965, the number of immigrants from Korea increased rapidly, from approximately 18,500 during 1965-69 to 163,000 during 1980-84 (1).