

# **HIVAIDS**

## **Surveillance Supplemental Report**

===== Volume 9, Number 3 =====

### **Selected measures of access to and utilization of treatment and prophylaxis for HIV-infected persons**



DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Centers for Disease Control and Prevention  
Atlanta, Georgia 30333



The *HIV/AIDS Surveillance Supplemental Report* is published by the Behavioral and Clinical Surveillance Branch and the HIV Incidence and Case Surveillance Branch of the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention (CDC).

Suggested Citation: Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Supplemental Report*, 2003;9(No. 3):[inclusive page numbers].

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# Commentary

Since the widespread use of highly active antiretroviral therapy (HAART), the number of persons diagnosed with AIDS declined dramatically during 1996 and 1997, and then leveled through 2000. The number of deaths in persons with AIDS also declined dramatically during 1996 and 1997; annual declines in deaths in persons with AIDS have continued through 2000 but are smaller in magnitude. Proportionate declines in both AIDS cases and deaths vary by race/ethnicity, risk, and sex. Differences in proportionate declines in AIDS diagnoses and deaths may be due to late test seeking behaviors, limited access to or use of health care services, limitations of current therapies among persons receiving treatment or suboptimal drug adherence. Monitoring the proportions of HIV-infected population that are receiving the standard of care can help in understanding observed differences in morbidity and mortality associated with HIV infection. These data are useful in identifying populations with met and unmet needs for strategies to improve resource allocation in Ryan White CARE Act and HIV prevention community planning processes.

This report presents selected measures of treatment and receipt of recommended prophylaxis from four supplemental surveillance studies. These supplemental studies are conducted in selected geographic areas and are useful to address questions related to the prescription and use of antiretroviral and prophylactic medications in the population, and clinical procedures that may contribute to delays in disease progression, but cannot be answered by routine HIV/AIDS case reporting data. Data presented in this report are from 1) the Adult/Adolescent Spectrum of HIV Disease (ASD) project, a longitudinal medical record review study conducted in >100 selected facilities in 11 major U.S. cities; 2) the Survey of HIV Disease and Care (SHDC), a cross-sectional, population-based medical record review project conducted in 3 areas (sites A, B, and C); 3) the Supplement to HIV/AIDS Surveillance (SHAS) project, an interview project of persons with HIV/AIDS conducted by 12 state/local health departments; and 4) the Missed Opportunities for Tuberculosis Prevention (MOPTB) study, a medical record review of a population-based sample of persons newly diagnosed with HIV or AIDS in 3 major US cities (see Technical Notes). The time period described varied by study, but all data were from the period 1995 through 1999. Persons enrolled in ASD and SHAS are patients receiving medical care. The inclusion of several large public hospitals and clinics that treat HIV/AIDS patients in both ASD and SHDC likely contributes to higher proportions of patients being pro-

vided the standard of care across insurance types. The technical notes describes the methods of data collection and analysis as well as the time period for each of these studies.

This report is organized in 3 sections: 1) antiretroviral medications; 2) *Pneumocystis carinii* pneumonia; and 3) tuberculin skin test. Readers should consider several issues in interpreting data in this report:

- Summaries of data presented here do not allow determinations of appropriate prescription of antiretroviral therapy across strata by race/ethnicity, insurance status, and sex. All HIV infected persons should receive treatment in accordance with current treatment guidelines.

- *Pneumocystis carinii* pneumonia was the first opportunistic illness associated with HIV infection; however, the incidence of PCP declined substantially, in part due to the implementation of U.S. Public Health Service/Infectious Diseases Society of America (PHS/IDSA) prophylaxis recommendations. Guidelines in place during the period studied indicate that HIV-infected persons with CD4+ counts <200 cells/microliter should receive PCP prophylaxis, but discontinuation of prophylaxis is possible among persons responding to HAART.(1)

- Guidelines in place during the period studied for the prevention of tuberculosis as an opportunistic illness among HIV infected persons recommended annual skin testing (TST) beginning immediately following HIV diagnosis.(1)

The intent of this report is to identify if findings are consistent across the different studies in the areas of access, treatment and receipt of prophylaxis. Readers are cautioned against numerically summing data from different tables, as their methods are different and combining results is inappropriate. The goal is to inform public health organizations, patient advocates, and the public health community of several indicators of the quality of care being provided to patients with HIV and AIDS. Examination of these data sources together provides an opportunity to examine similarities and differences in data obtained from medical record reviews and patient interviews and validates findings from individual projects.

## Key Findings

- Overall, the proportion of patients enrolled in these studies who were ever prescribed antiretroviral therapy was 91–95%; 83–88% were currently prescribed antiretroviral therapy; 61–64% were currently prescribed highly active antiretroviral therapy (HAART).

- In both ASD and SHAS, similar proportions of males and females were *ever* prescribed antiretroviral therapy (95% of both males and females in ASD; 91% of males and 88% of females in SHAS), and *currently* prescribed ART (83% of males and 79% of females in ASD; 91% of males and 84% of females in SHAS). Similar proportions of males compared with females were *currently* prescribed HAART in ASD (62% of males and 58% of females) and SHDC Sites A and B (68% of males and 67% of females; 64% of males and 66% of females, respectively).

- Current receipt of antiretroviral therapy was highest among patients with private insurance in ASD and SHDC, and higher among patients with public insurance compared with those with no insurance for all data sources. Prescription of HAART was generally highest for privately insured patients.

- Of patients interviewed in SHAS in 1999 or who had follow-time in 1999 for ASD and 1998 for SHDC, the proportion of patients ever diagnosed with *Pneumocystis carinii* pneumonia (PCP) ranged from 6% to 19%. Higher proportions of males compared with females were ever diagnosed with PCP across all studies. In ASD and 1 SHDC site, lesser proportions of patients with private insurance were prescribed primary PCP prophylaxis compared with patients with public insurance or no insurance, and in ASD and 2 of 3 SHDC sites, similar proportions of patients with public insurance and no insurance were prescribed PCP prophylaxis. High proportions of patients with public insurance or no insurance prescribed PCP prophylaxis may be due to the inclusion of several large public hospitals and clinics that treat HIV/AIDS patients in both studies.

- Among eligible patients in ASD, a higher proportion of males (62%) than females (60%) were prescribed primary PCP prophylaxis, but a greater proportion of females (63%, 67%, 76%) were prescribed prophylaxis compared with males (52%, 54%, 67%) in the three SHDC sites. Similar proportions of patients were prescribed primary PCP prophylaxis by race/ethnicity in all data sources, with the proportion in SHDC Site C slightly higher.

- The proportion of patients receiving a TST ranged from 34% before or during 1998 in SHDC to 75% ever receiving a TST after HIV diagnosis in SHAS. Similar proportions of males and females from all data sources received a TST; little variation was found by race/ethnicity.

### Suggested reading

1. Centers for Disease Control and Prevention. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents. *MMWR* 1998;47(No. RR-5):42-82. Updated as the living document February 2001 on the HIV/AIDS Treatment web site, [www.hivatis.org](http://www.hivatis.org).

2. Centers for Disease Control and Prevention. USPHS/IDSA guidelines for the prevention of opportunistic infections in persons with human immunodeficiency virus. *MMWR* 1999, 46(No. RR-10):4-7.

3. Karon JM, Fleming PL, Steketee RW, DeCock KM. HIV in the United States at the turn of the century: an epidemic in transition. *Am J Public Health*. 2001;91:1060-1068.

4. Kaplan JE, Hanson D, Dworkin MS, Frederick T, Bertolli J, Lindegren ML, Holmberg S, Jones JL. Epidemiology of human immunodeficiency virus-associated opportunistic infections in the United States in the era of highly active antiretroviral therapy. *Clin Infect Dis* 2000; 30 (Suppl 1):S5-14.

## Section A. Antiretroviral Medications

**Data in Tables 1-2 are based on the following analyses:**

- ❖ In ASD, among patients eligible for antiretroviral therapy (ART) according to guidelines in place in 1999 (1), what is the proportion of patients ever prescribed ART?
- ❖ In SHAS, among patients interviewed in 1999 with CD4 <500 cells/μL, what is the proportion of patients who reported ever receiving ART to treat HIV?

**Table 1. HIV-infected patients ever prescribed antiretroviral therapy by data source and sex**

Data Source	Total		Male		Female	
	%	Treated/Eligible	%	Treated/Eligible	%	Treated/Eligible
ASD	95	8,483/8,923	95	6,203/6,520	95	2,280/2,403
SHAS	91	1,230/1,357	91	961/1,053	88	269/304

- Overall, the proportion of patients ever prescribed antiretroviral therapy was high: 91–95%.
- Overall, the proportion of persons ever prescribed antiretroviral therapy is probably higher in ASD because only patients eligible for antiretroviral therapy were included in the analysis. In addition, many of these patients have been observed since 1990, and have had greater opportunity to be prescribed antiretroviral therapy.
- Among those eligible, similar proportions of males and females were ever prescribed antiretroviral therapy in both the ASD and SHAS projects.
- Data from the SHDC and MOPTB studies were not available for this question.

**Table 2. HIV-infected patients ever prescribed antiretroviral therapy by data source and race/ethnicity**

Data Source	Total		White		Black		Hispanic		Asian/Pacific Islander		American Indian/ Alaska Native	
	%	Treated/Eligible	%	Treated/Eligible	%	Treated/Eligible	%	Treated/Eligible	%	Treated/Eligible	%	Treated/Eligible
ASD*	95	8,483/8,923	95	2,672/2,809	95	3,878/4,084	95	1,778/1,866	96	90/94	91	43/47
SHAS*	91	1,230/1,357	92	376/408	88	555/630	94	251/268	100	6/6	90	18/20

\*The ASD total contains 23 patients with unknown race/ethnicity. The SHAS total contains 25 patients with unknown race/ethnicity.

- Among those eligible in ASD, >90% of each of the racial/ethnic groups were ever prescribed antiretroviral therapy.
- Among the racial/ethnic groups in SHAS, blacks had the lowest proportion who ever received antiretroviral therapy (88%).
- Results for racial and ethnic groups with small numerators and/or denominators should be interpreted with caution.
- Data from the SHDC and MOPTB studies were not available for this question.

**Data in Tables 3-5 are based on the following analyses:**

- ❖ Among patients eligible according to guidelines in place in 1999 (2), what is the proportion of patients prescribed ART in ASD in 1999 and SHDC in 1998?
- ❖ In SHAS, among patients interviewed in 1999 with CD4 <500 cells/μL, what is the proportion of patients who reported taking ART at the time of their interview?

**Table 3. HIV-infected patients currently prescribed antiretroviral therapy by data source and insurance status\***

Data Source	Total		Private		Public		No Insurance	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD	83	3,098/3,751	90	1,064/1,184	80	1,642/2,054	76	392/513
SHDC Site A	86	208/242	92	97/105	85	88/104	71	27/38
SHDC Site B	86	147/171	93	41/44	87	150/172	84	46/55
SHDC Site C	88	219/244	92	76/83	91	119/131	70	23/33
SHAS*	86	986/1153	94	164/175	86	613/715	79	209/263

\*Persons with unknown insurance status were not included.

- Overall, 83–88% of eligible patients were currently prescribed ART.
- Receipt of antiretroviral therapy was greatest among eligible patients with private insurance, followed by patients with public insurance compared with those with no insurance for all data sources.
- A lower proportion of eligible patients in ASD received antiretroviral therapy from public providers compared with SHDC and SHAS.
- Similar proportions of patients with private insurance in ASD, SHDC and SHAS received antiretroviral therapy.
- Proportions of patients with no insurance receiving antiretroviral therapy varied among studies and among SHDC sites.
- Data from the MOPTB study were not available for this question.

**Table 4. HIV-infected patients currently prescribed antiretroviral therapy by data source and sex**

Data Source	Total		Male		Female	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD	82	7,298/8,923	83	5,396/6,520	79	1,902/2,403
SHDC Site A	86	208/242	87	137/157	80	79/97
SHDC Site B	86	147/171	87	99/114	85	48/57
SHDC Site C	88	219/249	92	169/184	75	47/63
SHAS	86	1,051/1,224	91	872/958	84	224/266

- The proportion of patients prescribed antiretroviral therapy by sex was 75–92%.
- Consistent across all data sources, a higher proportion of males were prescribed antiretroviral therapy.
- Data from the MOPTB study were not available for this question.

**Table 5. HIV-infected patients currently prescribed antiretroviral therapy by data source and race/ethnicity**

Data Source	%	Total	White		Black		Hispanic		Asian/Pacific Islander		American Indian/ Alaska Native	
		%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	
ASD*	82	7,298/8,923	85	2,386/2,809	79	3,224/4,084	83	1,553/1,866	87	82/94	68	32/47
SHDC Site A	86	208/242	88	104/110	78	53/68	—	—	—	—	—	—
SHDC Site B	86	147/171	92	67/73	83	74/89	—	—	—	—	—	—
SHDC Site C	88	219/249	95	117/123	83	92/111	—	—	—	—	—	—
SHAS*	86	1,051/1,224	86	325/376	84	462/553	91	225/248	100	6/6	72	13/18

\*The ASD total contains 23 patients with unknown race/ethnicity. The SHAS total contains 23 patients with unknown race/ethnicity.

- The proportion of eligible patients currently prescribed antiretroviral therapy by race/ethnicity was 68–95%.
- Greater proportions of whites were currently prescribed antiretroviral therapy compared with blacks.
- Proportions by race/ethnicity were comparable for the SHAS study, with slightly lower proportions of American Indians/Alaska Natives and blacks receiving antiretroviral therapy compared with other races/ethnicities.
- Proportions were not presented for Hispanics, Asian/Pacific Islanders, and American Indian/Alaska Natives in SHDC because estimates were based on a small number of cases.
- Results for racial and ethnic groups with small numerators and/or denominators should be interpreted with caution.
- Data from the MOPTB study were not available for this question.



**Data in Tables 6-8 are based on the following analyses:**

- ❖ Among patients eligible according to guidelines in place in 1999, what is the proportion of patients prescribed highly active antiretroviral therapy<sup>1</sup> (HAART) in ASD in 1999 and SHDC in 1998?

**Table 6. HIV-infected patients currently prescribed highly active antiretroviral therapy (HAART) by data source and insurance status**

Data Source	Total		Private		Public		No Insurance	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD	61	2,298/3,751	64	762/1,184	60	1,223/2,054	61	313/513
SHDC Site A	68	166/242	66	69/105	75	79/104	57	22/38
SHDC Site B	64	111/171	75	33/44	54	39/72	65	36/55
SHDC Site C	69	161/249	80	166/83	75	98/131	27	9/33

\*Persons with unknown insurance status were not included.

- Overall, 61-69% of all eligible patients were prescribed HAART as defined by 1999 guidelines.
- Prescription of HAART was greater among patients with private insurance for all data sources except SHDC Site A.
- HAART prescription for patients with no insurance was substantially lower for SHDC Site C compared with the other SHDC sites and ASD. This may be due to the populations represented by the samples at the 3 SHDC sites (see Technical Notes). Sites A and B may contain more providers in and near metropolitan areas who routinely provide HIV-related care and may be more likely to prescribe HAART regardless of the patient's insurance status.
- Data from the SHAS and MOPTB studies were not available for this question.

<sup>1</sup>HAART was defined as two nucleoside analogue reverse transcriptase inhibitors (zidovudine+didanosine, zalcitabine or lamivudine or stavudine+didanosine or lamivudine) plus at least one protease inhibitor (amprenavir, indinavir, nelfinavir, ritonavir, saquinavir) or non-nucleoside analogue reverse transcriptase inhibitor (delavirdine, efavirenz, nevirapine).[2]

**Table 7. HIV-infected patients currently prescribed highly active antiretroviral therapy (HAART) by data source and sex**

Data Source	Total		Male		Female	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD	61	5,479/8,923	62	4,074/6,520	58	1,405/2,403
SHDC Site A	68	166/242	68	104/157	67	74/99
SHDC Site B	64	111/171	64	73/114	66	38/57
SHDC Site C	69	161/249	75	138/184	51	32/63

- Among patients eligible for ART, similar proportions of males compared with females were currently prescribed HAART at SHDC Sites A and B. In ASD and SHDC Site C, greater proportions of males were currently prescribed HAART compared with females.
- Differences in the populations represented by the samples at the 3 SHDC sites may account for the difference in HAART prescription by sex (see Technical Notes). Providers at Sites A and B may provide more HIV-related care to females and may be more likely to prescribe HAART compared with providers not in or near metropolitan areas at Site C.
- Data from the SHAS and MOPTB studies were not available for this question.

**Table 8. HIV-infected patients currently prescribed highly active antiretroviral therapy (HAART) by data source and race/ethnicity**

Data Source	Total		White		Black		Hispanic		Asian/Pacific Islander		American Indian/ Alaska Native	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD*	61	5,479/8,923	63	1,758/2,809	59	2,416/4,084	64	1,201/1,866	66	62/94	55	26/47
SHDC Site A	68	166/242	66	78/118	71	48/68	—	—	—	—	—	—
SHDC Site B	64	111/171	70	51/73	61	54/89	—	—	—	—	—	—
SHDC Site C	69	161/249	77	95/123	68	75/111	—	—	—	—	—	—

\*The ASD total contains 23 patients with unknown race/ethnicity

- The proportion of eligible patients currently prescribed HAART by race/ethnicity varied from 55% among American Indians/Alaska Natives to 77% among whites.
- Similar proportions of whites compared with blacks were prescribed HAART at SHDC Site A, and a greater proportion of whites than blacks were prescribed HAART at SHDC Site B and Site C.
- Proportions were not presented for Hispanics, Asian/Pacific Islanders, and American Indian/Alaska Natives in SHDC because estimates were based on a small number of cases.
- Results for racial and ethnic groups with small numerators and/or denominators should be interpreted with caution.
- Data from the SHAS and MOPTB studies were not available for this question.

## Section B. *Pneumocystis carinii* pneumonia

**Data in Tables 9-10 are based on the following analyses:**

- ❖ Among patients in ASD in 1999 and in SHDC in 1998, what proportion have ever been diagnosed with PCP?
- ❖ In SHAS, among patients interviewed in 1999, what proportion of patients have ever been told they had PCP?

**Table 9. HIV-infected patients ever diagnosed with *Pneumocystis carinii* pneumonia (PCP) by data source and sex**

Data Source	Total		Male		Female	
	%	Numerator/ Denominator	%	Numerator/ Denominator	%	Numerator/ Denominator
ASD	14	1,357/9,598	15	1,048/6,926	12	309/2,672
SHDC Site A	15	43/288	16	28/178	8	9/100
SHDC Site B*	6	15/253	8	13/158	1	1/95
SHDC Site C	9	34/374	10	26/258	6	7/16
SHAS	19	437/2,264	20	339/1,675	17	98/589

\*Information regarding diagnosis of PCP for some patients was limited to those made during the interval for SHDC Site B.

- Less than 20% of patients in ASD, SHDC Site A, and SHAS were ever diagnosed with PCP; lower proportions were reported by SHDC Site B and Site C.
- Greater proportions of males compared with females were ever diagnosed with PCP in all data sources.
- SHAS and ASD reported the greatest proportions of females ever diagnosed with PCP.
- Data from the MOPTB study were not available for this question.

**Table 10. HIV-infected patients ever diagnosed with *Pneumocystis carinii* pneumonia (PCP) by data source and race/ethnicity**

Data Source	Total		White		Black		Hispanic		Asian/Pacific Islander		American Indian/ Alaska Native	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD*	14	1,357/9,598	14	414/2,980	15	686/4,439	12	239/2,001	12	12/99	5	3/56
SHDC Site A	15	43/288	15	21/143	15	13/84	—	—	—	—	—	—
SHDC Site B <sup>†</sup>	6	151/253	9	8/92	3	5/153	—	—	—	—	—	—
SHDC Site C	9	34/374	13	23/175	5	9/179	—	—	—	—	—	—
SHAS*	19	437/2,264	23	138/593	17	197/1,133	19	84/448	57	4/7	19	6/31

\*The ASD total contains 3 patients with unknown race/ethnicity. The SHAS total contains 8 patients with unknown race/ethnicity.

<sup>†</sup>Information regarding diagnosis of PCP for some patients was limited to those made during the interval for SHDC Site B.

- In ASD, slightly higher proportions of whites and blacks were ever diagnosed with PCP than persons of other race/ethnicities.
- Greater proportions of whites compared with blacks were ever diagnosed with PCP at SHDC Site B and Site C.
- In SHAS, a greater proportion of whites compared with Hispanics and blacks reported ever being diagnosed with PCP.
- Due to the small numerators and denominators for Asian/Pacific Islanders and American Indian/Alaska Natives, proportions should be interpreted with caution.
- Proportions are not presented for Hispanics, Asian/Pacific Islanders and American Indian/Alaska Natives in SHDC because of small numbers of cases.
- Results for racial and ethnic groups with small numerators and/or denominators should be interpreted with caution.
- Data from the MOPTB study were not available for this question.

**Data in Tables 11-13 are based on the following analyses:**

- ❖ In ASD (1999) and SHDC (1998), what proportion of eligible<sup>1</sup> patients were prescribed primary prophylaxis for PCP?

**Table 11. HIV-infected patients currently prescribed primary *Pneumocystis carinii* pneumonia (PCP) prophylaxis by data source and insurance status\***

Data Source	Total		Private		Public		No Insurance	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD	59	1,178/1,994	56	343/611	60	684/1,143	63	151/240
SHDC Site A	55	96/174	55	46/83	50	37/74	57	10/17
SHDC Site B	58	73/125	34	12/35	63	102/162	70	20/28
SHDC Site C	67	136/203	73	49/67	77	85/111	35	9/25

\*Persons with unknown insurance status are not included.

- Overall, between 55-67% of patients eligible to receive PCP prophylaxis were currently prescribed it.
- Greater proportions of eligible patients were prescribed PCP prophylaxis at SHDC Site C compared with the other data sources.
- For ASD and SHDC Site B, lesser proportions of patients with private insurance were prescribed PCP prophylaxis compared with patients with public insurance and with no insurance. ASD facilities include several large public hospitals and clinics that treat patients with HIV/AIDS, likely resulting in larger proportions of eligible patients with public insurance being prescribed PCP prophylaxis compared with patients with private insurance.
- Similar proportions of patients with public insurance and no insurance were prescribed PCP prophylaxis in ASD and SHDC Site A. This may be due to the populations represented by the samples at the 3 SHDC sites (see Technical Notes). Sites A and B may contain more providers in and near metropolitan areas that routinely provide HIV-related care and may be more likely to prescribe prophylaxis regardless of the patient's insurance status.
- Data from the SHAS and MOPTB studies were not available for this question.

<sup>1</sup>Patients who have been previously diagnosed with PCP were excluded from this analysis because they are not eligible for primary prophylaxis.

**Table 12. HIV-infected patients prescribed primary *Pneumocystis carinii* pneumonia (PCP) prophylaxis by data source and sex**

Data Source	Total		Male		Female	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD	60	2,848/4,771	62	2,218/3,591	53	630/1,180
SHDC Site A	55	96/174	52	60/116	64	37/58
SHDC Site B	58	73/125	54	45/83	67	28/42
SHDC Site C	67	136/203	67	106/158	76	34/45

- In ASD, a higher proportion of eligible males were prescribed PCP prophylaxis than females.
- All SHDC sites had a greater proportion of eligible females prescribed prophylaxis compared with males.
- Data from the SHAS and MOPTB studies were not available for this question.

**Table 13. HIV-infected patients prescribed primary *Pneumocystis carinii* pneumonia (PCP) prophylaxis by data source and race/ethnicity**

Data Source	Total		White		Black		Hispanic		Asian/Pacific Islander		American Indian/ Alaska Native	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
ASD*	60	2,848/4,771	53	790/1,484	64	1,372/2,130	59	627/1,056	56	30/54	63	22/35
SHDC Site A	55	96/174	53	45/85	50	23/46	—	—	—	—	—	—
SHDC Site B	58	73/125	45	25/56	60	97/162	—	—	—	—	—	—
SHDC Site C	67	136/203	69	74/107	76	67/88	—	—	—	—	—	—

\*The ASD total contains 12 patients with unknown race/ethnicity.

- Whites had the lowest proportion of patients currently prescribed PCP prophylaxis in each data source except SHDC Site A.
- Results for racial and ethnic groups with small numerators and/or denominators should be interpreted with caution.
- Proportions are not presented for Hispanics, Asian/Pacific Islanders, and American Indian/Alaska Natives in SHDC because of small numbers of cases.
- Data from the SHAS and MOPTB studies were not available for this question.

## Section C. Tuberculin Skin Test (TST)

*Data in Tables 14-15 are based on the following analyses:*

- ❖ Proportion of patients in SHDC receiving a TST before or during 1998.
- ❖ Among patients interviewed in SHAS in 1999, proportion with no prior history of TB and no prior positive TST who received a TST.
- ❖ Among newly diagnosed HIV/AIDS patients in MOPTB ever receiving a TST after HIV diagnosis.

**Table 14. HIV-infected patients receiving a Tuberculin Skin Test (TST) by data source and sex**

Data Source	Total		Male		Female	
	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible
SHDC Site A	55	158/288	56	100/178	54	59/110
SHDC Site B	62	157/253	63	100/158	58	55/95
SHDC Site C	34	127/374	33	85/258	37	43/116
SHAS	75	1,497/2,002	76	1,113/1,470	72	384/532
MOPTB*	50	437/869	51	320/629	49	116/235

\*The MOPTB total contains 5 patients with missing sex.

- Overall, the proportion of patients receiving a TST varied across studies from 34% to 75%.
- Data collected for patients in SHDC are limited to those receiving a TST from their SHDC provider. Receipt of a TST from a non SHDC provider would not be documented in the patients medical record unless disclosed by the patient and documented by the provider.
- Similar proportions of males and females from all data sources received a TST.
- Differences in the populations represented by the samples at the 3 SHDC sites may account for the difference in receipt of TST (see Technical Notes). Providers at Sites A and B may provide more HIV-related care and are therefore more likely to provide a TST compared with providers not in or near metropolitan areas at Site C.
- Among the 437 newly diagnosed HIV/AIDS cases in MOPTB, 83% of the tests were performed within 12 months of diagnosis.

**Table 15. HIV-infected patients receiving a Tuberculin Skin Test by data source and race/ethnicity**

Data Source	%	Total	White		Black		Hispanic		Asian/Pacific Islander		American Indian/ Alaska Native	
		%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%	Treated/ Eligible	%
SHDC Site A	55	108/288	55	47/85	52	24/46	—	—	—	—	—	—
SHDC Site B	62	157/253	64	36/56	60	37/62	—	—	—	—	—	—
SHDC Site C	34	127/374	33	35/107	36	32/88	—	—	—	—	—	—
SHAS*	75	1,497/2,002	74	420/568	76	747/978	71	274/386	86	6/7	76	22/29
MOPTB*	50	437/869	56	137/243	49	213/436	44	67/151	—	—	—	—

\*The SHAS total contains 34 patients with unknown race/ethnicity. The MOPTB total contains 21 patients with unknown race/ethnicity.

- Similar proportions of patients by race/ethnicity received a TST across all data sources.
- Differences in the populations represented by the samples at the 3 SHDC sites may account for the difference in receipt of TST (see Technical Notes). Providers at Sites A and B may provide more HIV-related care and are therefore more likely to provide a TST compared with providers not in or near metropolitan areas at Site C.
- Results for racial and ethnic groups with small numerators and/or denominators should be interpreted with caution.
- Proportions are not presented for Hispanics, Asian/Pacific Islanders and American Indian/Alaska Natives in SHDC because of small numbers of cases.
- Proportions are not presented for Asian/Pacific Islanders and American Indian/Alaska Natives in MOPTB because of small numbers of cases.



# Technical Notes

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**ASD** is a multicenter medical record review surveillance project in selected medical facilities in Atlanta, Dallas, Denver, Detroit, Houston, Los Angeles, New Orleans, New York City, Bayamon (Puerto Rico), San Antonio, and Seattle. Facilities include a variety of public and private providers in inpatient and outpatient facilities, private offices, HMOs, and other settings. HIV-infected persons aged  $\geq 13$  years who attend participating clinics are eligible for enrollment in ASD. The methods used in ASD have been previously described (1). The medical records of ASD participants are reviewed for the 12 months before their enrollment date and at subsequent 6-month intervals until death or loss to follow-up. Information collected includes basic demographic data, mode of exposure to HIV, prescription of antiretroviral and other medications, CD4+ T-lymphocyte counts, HIV RNA viral load, complete history of AIDS-defining opportunistic illnesses (OIs), other infections, and other conditions and behaviors of medical importance. The ASD project has been ongoing since 1990; in this report data were limited to patients with time observed in 1999 ( $n=9,598$ ). Whether a patient was “ever” prescribed a medication or “ever” had a condition is limited to the information in the patients’ medical records at the participating provider facility and for some patients may be limited to time observed in ASD. Information on insurance coverage was restricted to time observed in 1999 and was not applicable to medications “ever” prescribed.

**SHDC** is a cross-sectional, population-based, medical record abstraction project commenced in 1999 collecting information from the medical records of HIV-infected persons aged  $\geq 13$  years in care. A 2-stage sampling design with unequal selection probabilities is used to identify providers of care for HIV-infected patients and select a representative sample of patients in care from those providers. Providers are selected from those reporting HIV and AIDS cases to state and local health departments. Medical records of sampled patients were retrospectively reviewed for calendar year 1998. Three sites drew representative samples and collected data for this report. Site A was representative of a county including a metropolitan area ( $>500,000$  population); Site B was representative of the southeast portion of a state including a major metropolitan area; and Site C was representative of an entire state which contains 3 metropolitan areas. Site A abstracted the medical records of 288 patients, representing 4,358 patients in care; Site B 253 pa-

tients, representing 7,304 patients; and Site C 374 patients, representing 8,099 patients in care. Data elements collected included: demographics, mode of HIV exposure, opportunistic illness diagnoses, prescription of antiretroviral therapies and prophylactic medications, other prophylactic practices such as vaccinations and tuberculin skin testing, laboratory markers of HIV infection including CD4+ and viral load, and comorbid conditions such as mental illness and substance use.

**SHAS** is a cross-sectional interview study of persons age  $\geq 18$  reported with HIV or AIDS to 12 participating state or local health departments: Arizona, Colorado, Connecticut, Delaware, Florida, Georgia, Los Angeles, Michigan, New Jersey, New Mexico, South Carolina, and Washington. SHAS methods have been previously published (4). Questionnaires are administered in a standardized manner by trained interviewers. Modules include questions on demographics, sexual behavior, drug use, medical and social service information, and use of preventive therapies. Informed consent is obtained prior to interview, and data are stripped of personal identifiers before being sent to CDC. SHAS originated in 1990 and through the end of 1999 over 23,000 interviews have been completed. SHAS data were limited to patient interviews conducted during calendar year 1999 for this report ( $n=2,287$ ).

**MOPTB** was a medical record review of a population-based sample of persons newly diagnosed with HIV or AIDS reported to the state or local health department as HIV or AIDS cases in Seattle, Washington; Jersey City, New Jersey; and New Orleans, Louisiana during 1995 through 1997 ( $n=869$ ). The objective of the study was to examine whether the US Public Health Service guidelines for the prevention of TB among persons with HIV are being implemented. We studied rates of TST and follow up of reactive skin tests among persons newly diagnosed with HIV or AIDS.

Patients were considered eligible for antiretroviral therapy (ART) if they had been previously diagnosed with an AIDS-defining opportunistic illness (OI), CD4+  $< 500$  cells/ $\mu\text{L}$ , or HIV RNA viral load  $>20\,000$  copies/ $\mu\text{L}$  by reverse transcriptase polymerase chain reaction (RT-PCR) or  $>10\,000$  copies/mL by branched chain deoxyribonucleic acid (bDNA) (2). ART was defined as prescription of any antiretroviral medication (including HAART). HAART was defined as two nu-

cleoside analogue reverse transcriptase inhibitors (zidovudine+ didanosine, zalcitabine or lamivudine or stavudine+ didanosine or lamivudine) plus at least one protease inhibitor (amprenavir, indinavir, nelfinavir, ritonavir, saquinavir) or non-nucleoside analogue reverse transcriptase inhibitor (delavirdine, efavirenz, nevirapine) (2).

Patients were considered eligible for primary *Pneumocystis carinii* pneumonia (PCP) prophylaxis if they had a history of an AIDS OI or CD4+ <200 cells/ $\mu$ L and had not been previously diagnosed with PCP (1). PCP prophylaxis was defined as any prescribed use of trimethoprim-sulfamethoxazole (TMP-SMZ), dapsone, aerosolized pentamidine, or atovaquone, alone or in combination, prior to or in the absence of PCP diagnosis (3).

Patients were considered eligible for a tuberculin skin test (TST) if they had no prior history of tuberculosis and no prior positive TST as documented in their medical record or indicated by the patient during an interview.

Public insurance was defined as: Medicaid, Medicare, and other public funded insurance in ASD; Medicaid, Medicare, state-funded assistance programs, CHAMPUS, and Veteran's Administration medical coverage in both SHDC and SHAS. Private insurance was defined as any private insurance (including HMOs) with premiums paid for by an employer or self-paid (including COBRA) in ASD, SHDC and SHAS.

No insurance was specifically documented in the medical record for ASD and SHDC or stated in the interview for SHAS.

In this surveillance report, we present observed data from various studies, but do not conduct hypothesis testing or compare proportions among reported groups. Therefore, comments about proportions which are higher or lower than other proportions are not meant to imply statistically significant differences.

## References

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