

State of Illinois
Pat Quinn, Governor

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HIV/AIDS in Persons > 50 Years, Illinois, 1996-2009

Introduction

This report summarizes the epidemiology of HIV and AIDS infection among persons age 50 years and older in Illinois from 1996 through 2009. It is projected that by 2015, more than half of all HIV-infected individuals in the United States will be older than the age of 50¹.

The number of persons 50 years and older living with HIV/AIDS has been increasing in recent years because older patients are more likely than younger patients to present late for HIV diagnosis and care², and many HIV-positive people receiving appropriate care are living into middle and old age^{3,4}. A prompt HIV diagnosis is important for older adults because HIV may accelerate aging, and aging may speed up HIV progression.

Studies conducted before the advent of highly active antiretroviral therapy (HAART) reported that aging is associated with rapid progression to AIDS, particularly among people who were age 40 or older at seroconversion.⁵⁻⁷

Incidence and Prevalence Trends

In 2009, Illinois residents 50 years and older accounted for 259 (14%) of new (incidence) HIV/AIDS diagnoses and 3,244 (10%) of prevalent cases – also referred to as persons living with HIV/AIDS (PLWHA).

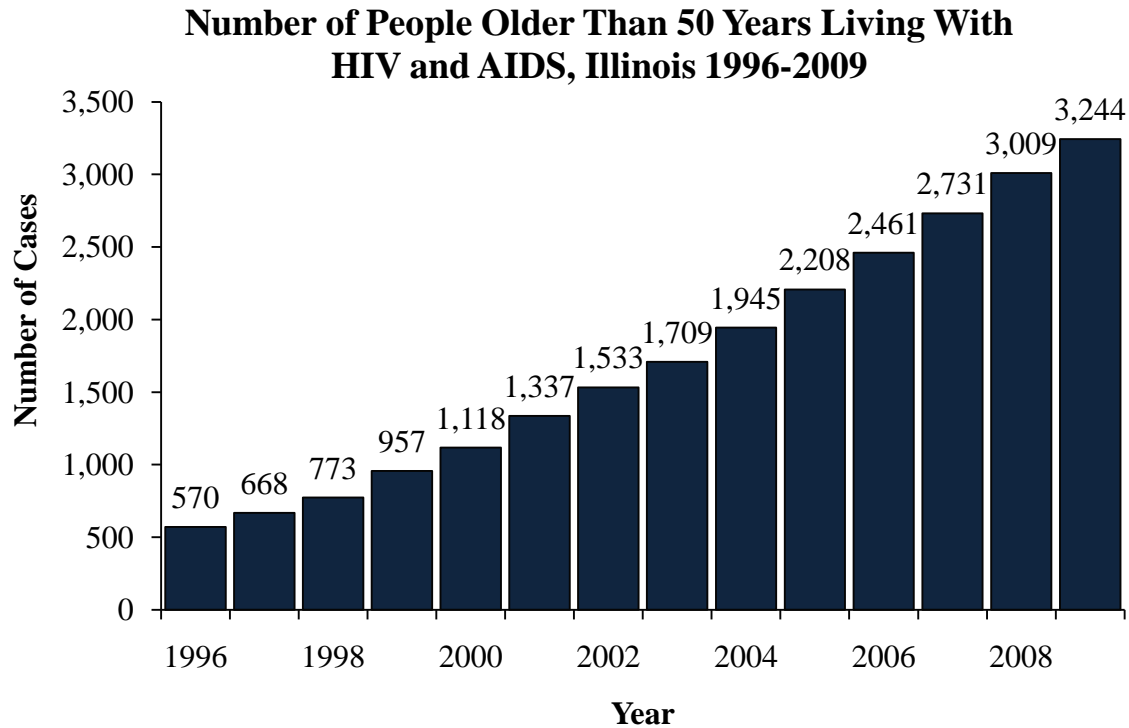
Table 1: Number of New and Prevalent Cases Among Persons 50 years Illinois, 1996-2009

Year	Incidence Among Persons ≥ 50years	PLWHA Among Persons ≥ 50years
1996	237	570
1997	201	668
1998	196	773
1999	265	957
2000	264	1,118
2001	328	1337
2002	330	1,533
2003	280	1,709
2004	324	1,945
2005	339	2,208
2006	346	2,461
2007	325	2,731
2008	329	3,009
2009	259	3,244

The number of new cases of HIV and AIDS among persons age 50 years or older in Illinois was 237 in 1996, peaked in 2006 at 346 and declined to 259 in 2009. The overall average annual percent increase in number of new cases was 2 percent. During the same period, the number of persons 50 years and older and living with HIV/AIDS in Illinois has increased

steadily each year from 570 in 1996, to 3,244 in 2009 with an overall average annual percent increase of 14 percent.

Figure 1: Number of Persons Older Than 50 Years Living With HIV/AIDS



Incidence by Gender

From January 1996 through December 2009, 4,022 Illinois residents aged 50 years and older, received a diagnosis of HIV/AIDS; 2,429 (60%) received a diagnosis of AIDS and 1,593 (40%) had HIV. By gender, 3,172 (77%) were males and 850 (23%) were females. For HIV and AIDS, males accounted for 80 percent and 77 percent of cases respectively.

Incidence by Race, Ethnicity and Gender

From 1996 through 2009, African-Americans (AA) males and females had the highest incidence rates; for males the rate was between 67 and 101 cases per 100,000 population compared with a range of between 9.8 and 30.9 per 100,000 population for females. When compared with other ethnic groups, the incidence rate for AA males is seven to 11 times compared with white males and two to six times compared with Hispanic males.

For AA females, the incidence rate was between 12 and 60 times compared with white females and between 1.2 and six times compared with Hispanic females. In 1996, the AA female incidence rate was almost equal to that of a white male. From 1997 through 2009, AA female incidence rates were between two and three times higher when compared with white males, and

between one and six times higher when compared with Hispanic females. The male-female rate ratio for AA has decreased gradually from 8.2 in 1996 to 2.9 in 2009.

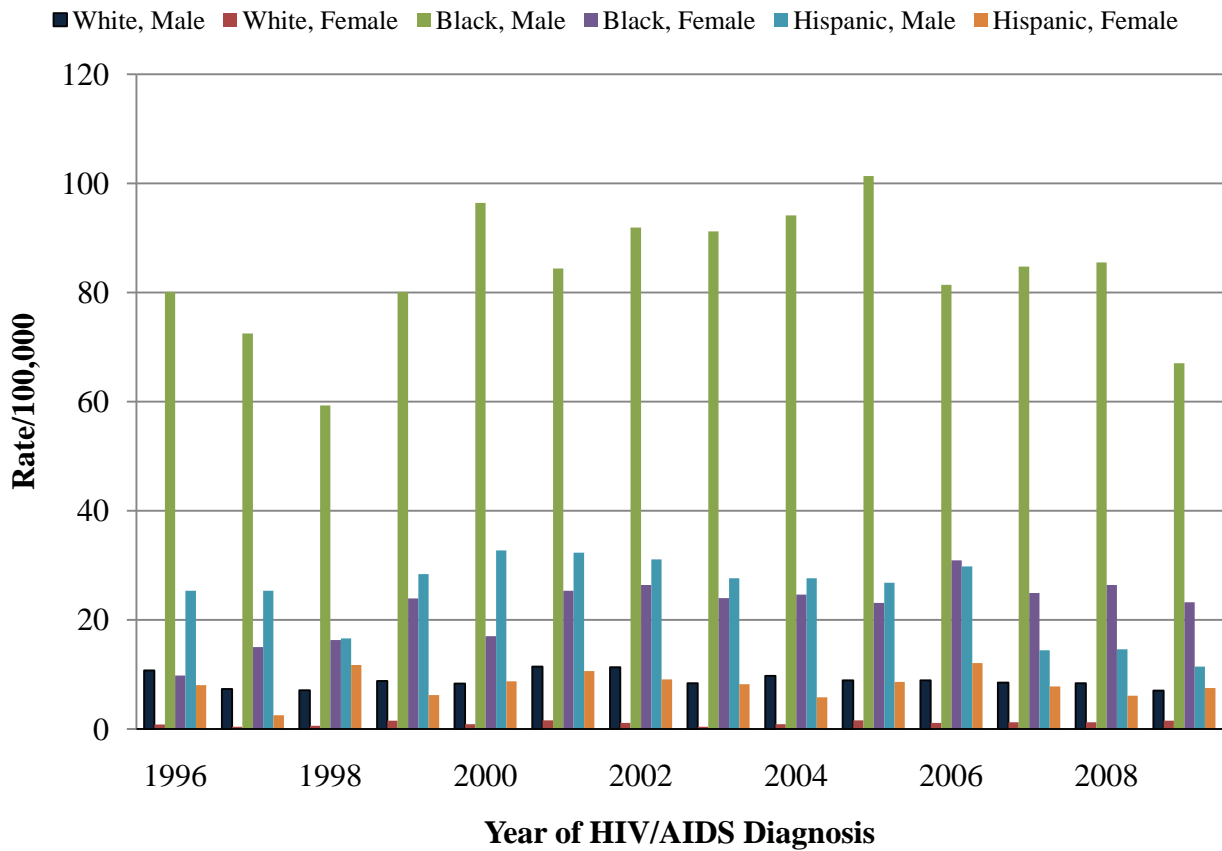
For white males, the incidence rate decreased 34 percent from 10.7 per 100,000 in 1996 to 7.0 per 100,000 in 2009; compared with an 87 percent rate increase for females. For the study period, the male female ratio decreased from 14.3 to 4.8. For Hispanic males, the incidence rate has fluctuated since 1996; the incidence rate for males decreased by 121 percent compared with 6 percent decrease for females. The male female rate ratio decreased from 3.1 in 1996 to 1.5 in 2009 (Table 2 and Figure 2).

Table 2: Rates of HIV/AIDS Infection per 100,000 Population Among Persons Age 50 Years and Older by Gender, Race and Ethnicity – Illinois, 1996-2009

Year	White, Non-Hispanic			African American, Non-Hispanic			Hispanic		
	Male	Female	Rate Ratio*	Male	Female	Rate Ratio	Male	Female	Rate Ratio
1996	10.7	0.8	14.3	80.1	9.8	8.2	25.3	8.0	3.1
1997	7.3	0.4	16.7	72.5	15.0	4.8	25.3	2.5	10.2
1998	7.1	0.6	11.4	59.3	16.3	3.6	16.6	11.7	1.4
1999	8.8	1.5	5.9	80.1	23.9	3.4	28.4	6.2	4.6
2000	8.3	0.9	9.5	96.4	17.0	5.7	32.7	8.7	3.8
2001	11.4	1.6	7.0	84.4	25.3	3.3	32.3	10.6	3.0
2002	11.3	1.1	10.1	91.9	26.4	3.5	31.1	9.1	3.4
2003	8.4	0.4	22.6	91.2	24.0	3.8	27.6	8.2	3.4
2004	9.7	0.9	10.5	94.1	24.6	3.8	27.6	5.8	4.8
2005	8.9	1.6	5.4	101.3	23.1	4.4	26.8	8.6	3.1
2006	8.9	1.1	8.2	81.4	30.9	2.6	29.8	12.1	2.5
2007	8.5	1.2	7.0	84.7	24.9	3.4	14.4	7.8	1.8
2008	8.4	1.2	7.1	85.5	26.4	3.2	14.6	6.1	2.4
2009	7.0	1.5	4.8	67.0	23.2	2.9	11.4	7.5	1.5

*Rate ratio = Male to female rate ratio

Figure 2: Comparison of HIV/AIDS Incidence Rate per 100,000 Population Among Persons older than 50 Years, Illinois by Race and Gender 1996-2009



Early Vs Late Testers

Of the 4,022 persons 50 years and older who received a diagnosis of HIV or AIDS in Illinois, information to classify as early or late testers was available for 3,051 (76%) were classified as either early or late testers. Of the 3,051 persons 50 years and older testing either early or late¹, 1,012 (34%) were classified as early testers and 2,039 (66%) were classified as late testers compared with 10,407 (49%) classified as early testers and 10,684 (51%) who tested late for persons younger than 50 years (*P* younger than 0.001) (Table 3).

	Table 3: Comparison of Late and Early Testers by Age Category, Illinois 1996-2009	
	Less Than 50 Years	50 Years and Older
	N (%)	N (%)
Early Tester	10,407 (49)	1,012 (34)
Late Tester	10,683 (51)	2,039 (66)

¹ Early testers are defined as persons who reported that they had their first positive HIV test 5 years or more before the diagnosis of AIDS or had 5 years or more without a diagnosis of AIDS after their first positive HIV test. Late testers are defined as persons who had their first positive HIV test 1 year or less before the diagnosis of AIDS.

Total	21,090	3,051
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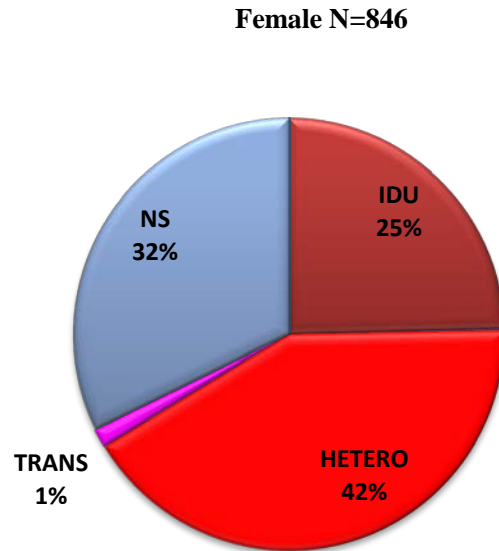
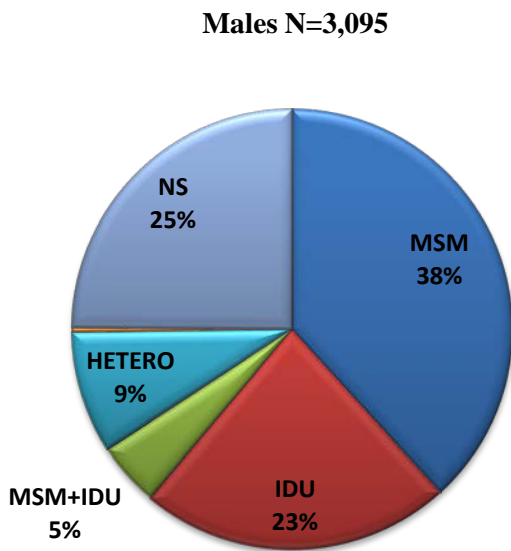
Among the late testers 50 years and older, 1,133 (56%) were African American, 587 (29%) were white, and 273 (13%) were Hispanic.

Risk Factor

Overall, the most common risk factor for persons 50 years and older was men who have sex with men (MSM). This category accounted for 30 percent of all diagnoses followed by injection drug use (IDU) (26%), high-risk heterosexual contact (HRH) (16%) and MSM+IDU (4%). No risk was reported for 26 percent of cases among persons 50 years and older. Risk factors varied by gender. Among males, the most common risk factor was MSM, which accounted for 1,184 (38%) of all cases. Among females, HRH was the most common risk factor, accounting for 352 (42%) of all cases (figures 3 and 4).

Figure 3: Risk Factor Distribution for Males

Figure 4: Risk Factor Distribution for Females



Race and Ethnicity Risk Factors

Similar to the overall HIV/AIDS population in the United States, racial and ethnic minorities are disproportionately represented among HIV/AIDS patients 50 years and older in Illinois. In 2009, African Americans and ethnic minorities accounted for approximately 70 percent of new HIV/AIDS cases among men and women 50 years of age and older.

Table 4: Rates of HIV/AIDS Infection per 100,000 Population Among Persons Age 50 Years and Older by Race/ Ethnicity and Risk Factor – Illinois, 1996-2009

Risk	Rate per 100,000 Population			
	White, Non-Hispanic	African American, Non-Hispanic	Hispanic	Other
MSM ²	57.8	228.5	158.7	34.8
IDU ³	3.6	201.1	51.1	0.1
MSM+IDU ⁴	1.2	23.7	15.2	*
Adult Hemophilia	0.0	0.5	0.6	*
Heterosexual	4.6	94.4	76.1	6.4
Transfusion/Transplant ⁵	0.3	2.8	1.8	*
Risk Not Specified	10.5	162.9	71.2	16.4

Between January 1996 and December 2009, the incidence rate of HIV/AIDS among persons 50 years and older was 13 times higher among African Americans (580.6/100,000 population), and six times higher among Hispanics (293.5/100,000 population) compared with whites (45.9/100,000 population). The rates per 100,000 population of risk factors differ by race and ethnicity. All risk factors were higher for African Americans and Hispanics compared with whites (Table 4).

² MSM: Men Who Have Sex With Men

³ IDU: Injection Drug User

⁴ MSM+IDU: Men Who Have Sex With Men and Injection Drug User

⁵ Transfusion/Transplant: Persons who received a blood transfusion and/or organ transplant

CD4 Count at Diagnosis

Persons 50 years and older had a lower CD4 count at time of diagnosis (195 cells/ μ L) compared with persons younger than 50 years (263 cells/ μ L). For persons 50 years and older, the median CD4 count at time of diagnosis was 195 cells/ μ L for males compared with 192 cells/ μ L for females. Overall for both age categories, males had a slightly lower CD4 count compared with females (231 cells/ μ L versus 234 cells/ μ L, respectively).

**Table 5: Median CD4 Count at Diagnosis by Gender
1996 - 2009**

Year	Persons 50 Years and Older		Persons Less Than 50 Years	
	Male	Female	Male	Female
1996	129.5	166.5	168.5	156
1997	179	123.5	188	181
1998	195	194.5	218.5	196
1999	196.5	186.5	264	338
2000	185	227	252	315
2001	263.5	273.5	294	297
2002	211	180	267	228
2003	235.5	189	255	240
2004	226.5	244	277.5	269.5
2005	198.5	197.5	264.5	262
2006	195	296	280	267
2007	183	162.5	255	266
2008	177	302	257	240
2009	174.5	170	271	279
Overall Median	195	191.8	260.5	264

Mortality

Between 1996 and December 2009, there were 1,013 deaths among persons who received a diagnosis of HIV/AIDS who were 50 years and older at time of death. Of the 1,013 deaths, 847 (84%) received a diagnosis of AIDS and 166 (16%) a diagnosis of HIV. Of the 847 AIDS deaths, 509 (60%) occurred in AA, 233 (27%) in white, and 100 (11%) in Hispanics. Of the 166 HIV deaths, 108 (65%) occurred among AA, 41 (25%) in white, and 17 (10%) occurred among Hispanics. The number of deaths was higher among males 799 (79%) compared with females. The overall number of deaths also was highest among AA with 617 deaths (61%) compared with 274 (27%) whites and 117(12%) Hispanics (See table 6).

Table 6: Mortality of HIV and AIDS Among Persons Age 50 and Older by Race/Ethnicity– Illinois, 1996-2009

Race	AIDS (n=847)	HIV (n=166)	Total (n=1013)
White, No. (%)	233 (23)	41 (4)	274 (27)
African American, No. (%)	509 (50)	108 (11)	617 (61)
Hispanic, No. (%)	100 (10)	17 (2)	117 (11.5)
Other, No. (%)	5 (0)	0 (0)	5 (0.4)
Total	847 (84)	166 (16)	1,013 (100)

By risk factor, race and ethnicity, the highest number of deaths occurred in AA IDUs (260 or 26%), followed by AA with no reported risk factor (144 or 14%), and white MSM (135 or 13%) (Table 7).

Table 7: Mortality of HIV and AIDS Among Persons Age 50 and Older by Race/Ethnicity and Risk Factor – Illinois, 1996-2009

	White ^a (n=274)	African American ^b (n=617)	Hispanic ^c (n=117)	Total
MSM ^d , No. (%)	135 (13)	88 (9)	26 (3)	249 (25)
IDU ^e , No. (%)	31 (3)	260 (26)	27 (3)	318 (32)
MSM+IDU ^f , No. (%)	9 (1)	25 (2)	7 (1)	41 (4)
Adult Hemophilia, No. (%)	1 (0)	1 (0)	0 (0)	2 (0)
Heterosexual, No. (%)	23 (2)	96 (10)	31 (3)	150 (15)
Transplant/Transfusion ^g , No. (%)	2 (0)	3 (0)	0 (0)	5 (0)
Risk Not Specified, No. (%)	73 (7)	144 (14)	26 (3)	243 (24)
Total	274 (27)	617 (61)	117 (12)	1,008 (100)

^a White: White, Non-Hispanic, ^b AA: African American, Non-Hispanic, ^c Hispanic: Latino/Hispanic

^d MSM: Men Who Have Sex With Men, ^e IDU: Injection Drug User, ^f MSM+IDU: Men Who Have Sex With Men and Injection Drug User

^g Transfusion/Transplant: Persons who received a blood transfusion and/or organ transplant

The mortality rate of AA (128 deaths per 100,000 population) and Hispanics (60 deaths per 100,000 population) were 16 and 7.5 times that of whites (8 deaths per 100,000 population). (Table 7).

Discussion

Our study shows that for all races and ethnic groups, the male female rate ratio has remained above one; however, the ratio in African Americans has steadily declined reflecting an increase in the number of female infections. For whites, the ratio has fluctuated with the peak of 22.6 recorded in 2003. For Hispanics the ratio also fluctuated, the highest ratio was noted in 1997 and the lowest at 1.4 in 1998. In 2009, the rate ratio was 1.5. The number of new cases of HIV and AIDS among Hispanic males was 25.3 in 1996, peaked in 2006 at 32.7 and declined to 11.4 in 2009.

MSM is the predominant risk factor for males 50 years and older diagnosed with HIV/AIDS, accounting for 30 percent of the new cases, and HRH is the prominent risk factor for females accounting for 42 percent of cases. NHAA accounted for 57 percent of new cases compared with NHW (30%), and Hispanics (12%). These findings are similar to a retrospective case control study where patients in the older age group were more likely to be male and African American or Hispanic; the most common risk factor for acquisition of HIV infection among the study patients was MSM contact⁸. The proportion of cases among persons 50 years and older that identified IDU as a risk factor for HIV infection was higher compared with persons younger than 50 years (23% versus 15%, respectively).

One quarter (25%) of males 50 years and older diagnosed with HIV/AIDS have no reported risk factor compared with 32% among females. Some of these cases may reflect older adults who have monogamous sexual partnerships with persons they believe are not at risk, others may be reluctant to report they have engaged in stigmatized risk behaviors. Some may have engaged in risky behavior while intoxicated and may not recall or acknowledge their behavior. Some may not be aware of their transfusion history⁹.

The number of persons 50 years and older living with HIV and AIDS in Illinois continues to increase annually. Data from other studies suggest that physicians are less likely to discuss HIV/AIDS and related risk factors with older patients despite the fact that older adults remain sexually active.¹⁰ When physicians do take a sexual history, older patients may be reluctant to discuss their high-risk sexual activities or they may not recognize the high-risk nature of their sexual practices. HIV-infected individuals who are older and asymptomatic are less likely to seek out testing and medical care, while symptomatic older HIV-infected individuals are more likely to attribute HIV-related symptoms to other illnesses or to the normal aging process.¹¹

Males 50 years and older at time of diagnosis have an overall lower CD4 count at time of diagnosis compared with females. Late testers were most likely to be NHAA MSMs, and older than the age of 70. The annual trend of median CD4 count at time of diagnosis from 1996 through 2009 shows that Hispanics had a lower CD4 count at diagnosis compared with NHAA and NHW.

The overall median CD4 count at diagnosis by age group was higher for the 50-59 age category (209 cells/ μ L), compared with the 60-64 (182 cells/ μ L), 65-69 (149 cells/ μ L), and 70 years and older (147 cells/ μ L) age categories (Table 5). Even though the upper age limit for

routine testing currently recommended by the CDC is 64 years, our data shows persons 65 years and older are being diagnosed at late stages as evidenced by lower overall median CD4 count. This current testing recommendation increases the possibility of continued diagnosis at advance stages of disease, and missing diagnoses in those 64 years of age or younger.

Conclusion

This analysis demonstrates the increasing prevalence of HIV and AIDS in persons 50 years and older, and the importance of using population-based public health surveillance to characterize the state-specific epidemiology of HIV and AIDS among persons ages 50 years and older, as state patterns may not reflect national trends.

Due to the significant numbers of cases with no reported risk factor, sensitive risk assessment for HIV and AIDS in persons 50 years and older is necessary. Public health efforts in Illinois should include heightening awareness of the medical community and public regarding high-risk groups, the importance of obtaining sexual history of persons 50 years and older, monitoring older patients for use of injection drugs or other recreational drugs that can put patients at risk for HIV infection, symptomatology, early testing, and the need for prompt assessment and treatment.

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