Today's Research on Aging

Program and Policy Implications

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HIV/AIDS and Older Adults in the United States

After three decades of combating HIV/AIDS, scientists have made advances that have helped HIV-infected individuals live longer and better quality lives. These advances have also created new challenges as now over a quarter of the U.S. HIV-infected population is ages 50 and older. The Behavioral and Social Research Division at the National Institute on Aging (NIA) supports research on health and sexuality in the older population and on evaluating the cost-effectiveness of interventions. This work has contributed to understanding HIV/AIDS risk factors in older adults, the cost-effectiveness of HIV screening for older adults, and evaluation of the President's Emergency Plan for AIDS Relief (PEPFAR) in Africa. This newsletter reviews some recent research, both NIA-sponsored and other research, on aging and HIV/AIDS.

Aging With HIV/AIDS

With the success of antiretroviral medications, longevity has increased for those with HIV and AIDS. In addition, improved screening methods identify more new cases of HIV/AIDS. As a result, the number of older adults living with these conditions will likely increase in the years to come. Adults ages 50 and older accounted for approximately:

- 10 percent of new HIV infections in the United States in 2006.
- 21 percent of AIDS diagnoses in 2006 and 2007.
- 28 percent of persons living with HIV/AIDS in 2007.
- 34 percent of those living with AIDS in 2007, up from 24 percent in 2003.

For more details on HIV/AIDS diagnoses and prevalence among older adults in the United States, see the box "Demography and Epidemiology of HIV/AIDS in Older U.S. Adults" (page 2).

Advances in HIV disease treatment in the United States include prevention of opportunistic infections such as pneumonia, use of antiretroviral medicines, and prevention of mother-to-child transmission of HIV. Estimates of the extent to which these advances increased longevity suggest that with the most recent advances, individuals diagnosed with AIDS in 2003 and who received treatment would live, on average, 14 more years than if they had not been treated at all (Walensky et al. 2006). Moreover, HIV patients who remain or become asymptomatic with treatment experience an improved quality of life, with research suggesting that these patients may achieve levels of physical functioning similar to that of the general U.S. population (Hays et al. 2000).

However, some outcomes for older adults (ages 50 and older) with HIV/AIDS are not as good as for younger adults (Nokes et al. 2000; Emlet and Farkas 2002). Mortality rates are higher for older adults with AIDS, and survival time after diagnosis is shorter. Older individuals with HIV or AIDS also report more chronic medical conditions and limitations in physical functioning.

Researchers reviewed what is known about clinical aspects of HIV infection and aging in a workshop summarized in *Clinical Infectious Disease* (Effros et al. 2008). In short, they found that HIV infection may compress the aging process, accelerating comorbidities and frailty (a condition of the elderly that makes people more vulnerable to illness, injury, and death). The presence of multiple diseases is more common in

In This Issue

This review summarizes research related to the objectives of the National Institute on Aging, with emphasis on work conducted at the NIA demography centers. Our objective is to provide decisionmakers in government, business, and nongovernmental organizations with up-to-date scientific evidence relevant to policy debates and program design. These newsletters can be accessed at www.prb.org/TodaysResearch.aspx.

HIV-infected patients than in other patients, and age-associated comorbidities compound this problem for older HIV-infected people. In addition, treatment may not be as effective or may have more adverse effects on older people. One study showed that even while receiving highly active antiretroviral treatment (HAART), middle-aged men with HIV had a reduced ability to exercise and lower functional performance, both indicators of increased frailty (Oursler et al. 2006). As they age, individuals receiving HAART also face increased risk of adverse reactions to drugs and drug interactions.

Screening Older Adults

Early identification of HIV may prevent irreversible damage to the immune system and reduce complications associated

Demography and Epidemiology of HIV/AIDS in Older U.S. Adults

Between 2003 and 2007, the annual estimated number of individuals ages 50 and older living with AIDS increased over 60 percent. In 2006, new HIV infections in persons age 50+ accounted for 5,800 or 10 percent of new infections, representing an infection rate of 6.5 per 100,000. Most important, the infection rate among those ages 40 to 49 and relatively high survival rates suggest that the number of older persons living with HIV/AIDS will continue to increase steadily.

Risk factors for older adults are largely the same as for younger people. These include unprotected sex, drug use, and lack of knowledge about how HIV/AIDS is transmitted. Although some risks may be lower in older adults, identification of these risks may also be less likely because physicians do not often initiate discussion of HIV testing with older adults (Lindau 2006).

A recent study in the *New England Journal of Medicine* found that 73 percent of adults ages 57 to 64, 53 percent ages 65 to 74, and 26 percent ages 75 to 85 years are sexually active but a much smaller share have discussed sex with a physician since reaching age 50 (Lindau et al. 2007). Earlier studies of behavioral risk and prevention show that the majority of adults ages 50 to 75 do not engage in risky sexual behavior and that among older adults with at least one known risk factor for HIV infection, only a small percentage use a condom during sex or have undergone HIV testing (Mack and Ory 2003; Stall and Catania 1994).

Sexually active older women may be at greater risk than older men for several reasons (Linsk 2000; Lindau 2006).

The estimated numbers of persons ages 50 and older living with AIDS in the United States and dependent areas has increased steadily from 2003 to 2007.

Age at end of year	2003	2004	2005	2006	2007
<40	123,763	119,456	115,185	111,829	109,831
40-44	86,383	91,397	94,026	94,735	93,297
45-49	71,286	77,390	84,045	90,325	97,017
50-54	46,661	53,125	59,045	66,003	72,991
55-59	23,976	28,149	33,279	38,626	44,298
60-64	11,224	13,232	15,265	17,878	21,196
>65	8,842	10,450	12,232	14,386	17,005

Source: Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report* 19 (2007): table 12.

Postmenopausal women face increased risk of sexually transmitted infection (STI) because of hypoestrogenism and resulting vaginal dryness that occurs with aging. Psychologically, women who do not require contraception may also be more reluctant to use condoms than those women who need contraception, particularly as condom use can be difficult for their older male partners.

Drug and alcohol use are associated with increased sexual risk for HIV/AIDS for all adults, even those ages 50 and older

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The estimated rate (per 100,000 people) of new HIV infections in adults ages 50 and older in the United States is much higher among men.

Age at HIV infection (2006)	Male			Female		
	Number	Percent	Rate	Number	Percent	Rate
13-29	14,400	35	39.2	4,860	32	14.0
30-39	12,750	31	61.8	4,620	31	22.8
40-49	10,100	24	45.0	3,780	25	16.6
>50	4,130	10	10.1	1,710	11	3.5

Source: Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report* 19 (2007): table 3.

Persons 50+ living with HIV/AIDS in 2007 represent a greater percent of the estimated total number living with HIV/AIDS than in 2004.

Age at end of year	2004	2005	2006	2007
<50	78	76	74	72
<40	39	37	35	33
40-44	22	21	21	20
45-49	17	18	18	19
50+	22	24	26	28
50-54	11	12	13	14
55-59	6	7	7	8
60-64	3	3	3	4
>65	2	2	3	3

Source: Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report* 19 (2007): table 9 (based on reports from 34 states and five U.S. dependent areas with confidential name-based HIV-infection reporting).

with the disease. Early diagnosis also offers an opportunity to reduce transmission of HIV through changes in risk behavior. Even more important, diagnosed cases may receive treatment with HAART, likely reducing infectivity and thereby decreasing transmission. Gillian Sanders and her colleagues developed a model to evaluate the cost effectiveness of routine screening for HIV. Their results were reported in the *New England Journal of Medicine* (2005) and demonstrated that the cost effectiveness of HIV screening was similar to that of commonly accepted medical interventions.

Because prevalence of HIV is lower in adults over age 55, the benefits relative to costs of screening may not be as high for older people as for younger ones. Older people have a higher chance of dying from other causes, making the benefits of testing potentially shorter term. Finally, one main benefit—further reducing transmission of

Demography and Epidemiology of HIV/AIDS in Older U.S. Adults *(continued from page 2)*

AIDS cases diagnosed at ages 50 and older in the United States and dependent areas have increased steadily since 2003.

Age at diagnosis	2003	2004	2005	2006	2007	Cumulative from the beginning of the epidemic to 2007
<50	32,155	30,654	29,250	28,334	28,507	886,759
<40	18,771	17,461	16,327	15,772	15,945	596,613
40-44	7,708	7,687	7,261	7,106	6,813	177,250
45-49	5,676	5,506	5,662	5,456	5,749	112,896
50+	6,739	6,980	6,878	7,361	7,456	131,670
50-54	3,393	3,466	3,472	3,578	3,636	63,408
55-59	1,711	1,830	1,839	2,005	2,040	34,160
60-64	865	898	856	949	980	18,249
>65	770	786	711	829	800	15,853

Source: Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report* 19 (2007): table 4.

(Emlet 2004). Results from the 2008 National Survey on Drug Use and Health show that adults ages 50 and older do use illicit drugs, although at a much lower rate than young adults. The most common drug use among adults age 50 and older stems from use of pain relievers, stimulants, and tranquilizers in a nonmedical manner. Binge and heavy use of alcohol remains substantial among older adults, declining from about 20 percent for those ages 50 to 54 to around 8 percent for those 65 or older. One study of older injection drug users found that they were much less likely than younger users to have had sex in the previous month and also had less risky needle-sharing practices (Kwiatkowski and Booth 2003).

Sources

Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report, 2007* (Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2009).

Charles Emlet, *HIV/AIDS and Older Adults: Challenges for Individuals, Families, and Communities* (New York: Springer Publishing Group, 2004).

Carol F. Kwiatkowski and Robert E. Booth, "HIV Risk Behavior Among Older American Drug Users," *Journal of Acquired Immune Deficiency Syndromes* 33, supp. 2 (2003): S131-37.

Karin A. Mack and Marcia G. Ory, "AIDS and Older Americans at the End of the Twentieth Century," *Journal of Acquired Immune Deficiency Syndromes* 33, supp. 2 (2003): S68-75.

Ron Stall and Joe Catania, "AIDS Risk Behaviors Among Late Middle-Aged and Elderly Americans: The National AIDS Behavioral Surveys," *Archives of Internal Medicine* 154, no. 1 (1994): 57-63.

Stacy Tessler Lindau et al., "A Study of Sexuality and Health Among Older Adults in the United States," *New England Journal of Medicine* 357, no. 8 (2007): 762-74.

Stacy Tessler Lindau et al., "Older Women's Attitudes, Behavior, and Communication About Sex and HIV: A Community-Based Study," *Journal of Women's Health* 15, no. 6 (2006): 747-53.

Nathan L. Linsk, "HIV Among Older Adults: Age-Specific Issues in Prevention and Treatment," *AIDS Read* 10, no. 7 (2000): 430-40.

Substance Abuse and Mental Health Services Administration, *Results From the 2008 National Survey on Drug Use and Health: National Findings* (Rockville, MD: Office of Applied Studies, 2009).

HIV—may not be as important in older adults because they are less sexually active than younger adults.

The Centers for Disease Control and Prevention (CDC) recommends routine HIV screening only through age 64. For those 65 or older, CDC recommends testing people who have risk factors for HIV. Recent research indicates that under certain conditions, screening of individuals between age 55 and 75 is cost effective: if HIV prevalence is 0.1 percent or greater and the patient has a sexual partner at risk (Sanders et al. 2005). Under these conditions, HIV screening accompanied by streamlined counseling for people ages 55 to 75 years is cost effective.

Caregiving

Diverse Needs

Characteristics and care needs of the older HIV population vary both by race and by the origins of their exposure to HIV (Crystal et al. 2003). Research indicates that older gay men with HIV/AIDS tend to be predominantly white and to have health insurance, while older injection drug users (IDUs) with HIV/AIDS are predominantly black with high unemployment and low incomes. With respect to care needs, older IDUs report low levels of physical functioning and emotional support relative to younger IDUs, whereas older gay men did not significantly differ from younger gay men.

Other research has found that older HIV-infected adults are more socially isolated than younger HIV-infected individuals. They have more difficulty obtaining support than younger adults with HIV because they are reluctant to disclose their HIV status, want to remain self-reliant and independent, and may have fewer immediate family members living with them or nearby (Scrimshaw and Siegel 2003). One national study indicates that older persons with HIV/AIDS are as likely as younger persons to use home care; however, among those who use home care, older persons are less likely than younger persons to use unpaid care and more likely to use paid care

Evaluating U.S. AIDS Relief in Africa

The President's Emergency Plan for AIDS Relief (PEPFAR), initiated in 2003, addresses the global HIV/AIDS epidemic through treatment, care, and evidence-based prevention strategies. Among these strategies is the ABC Strategy (Abstain, Be Faithful, correct and consistent use of Condoms) for reducing sexual transmission and male circumcision. Eran Bendavid and Jay Bhattacharya of Stanford University (2009) evaluated PEPFAR outcomes by comparing trends in HIV-related death rates and HIV prevalence rates before and after PEPFAR in 41 sub-Saharan African countries—12 countries where the program is active and 29 control countries with a generalized HIV epidemic but little to no PEPFAR assistance.

Results of this evaluation indicate that after the inception of PEPFAR, the number of HIV-related deaths was lower than it otherwise would have been in countries where the program was implemented. However, there was no difference between PEPFAR and control countries in the prevalence of HIV before and after 2003.

This analysis of PEPFAR also demonstrates challenges of evaluating a nonrandomized intervention, particularly in the presence of limited country data. The United States did not choose PEPFAR focus countries randomly. The selection was related to the HIV/AIDS burden of disease, governmental commitment to fighting HIV, administrative capacity, and a willingness to partner with the United States. These selection criteria mean that the focus and control countries differed significantly in the baseline period with respect to the maturity of the epidemic and available data on HIV-related deaths.

Because of gaps in country data, Bendavid and Bhattacharya use UNAIDS estimates of AIDS deaths, based on model calculations of the number of people needing antiretroviral treatment (ART), the number receiving ART, and assumptions about survival with and without ART. Consequently, study findings that PEPFAR contributed to a reduction in AIDS deaths, while based on the best available data, rely on the assumption that ART reduces mortality. The extent to which ART reduces mortality affects the results but not significantly so, as the study's authors document in sensitivity analyses.

Another evaluation issue arises because although the comparison countries received relatively little direct PEFPAR assistance, they probably benefited from spillover effects such as improved regional supply chains and lower costs for antiretroviral medicines and monitoring equipment. The authors make spillover benefits a part of their counterfactual estimates.

Sources

Eran Bendavid and Jay Bhattacharya, "The President's Emergency Plan for AIDS Relief in Africa: An Evaluation of Outcomes," *Annals of Internal Medicine* 150, no. 10 (2009): 688-95.

Robert Gross and Gregory Bisson, "Evaluating the President's Emergency Plan for AIDS Relief: Time to Scale It Up," *Annals of Internal Medicine* 150, no. 10 (2009): 727-28.

Mead Over, "PEPFAR Might Be Saving Millions of Lives—But We Don't Have Evidence Yet" (April 28, 2009), accessed online at http://blogs.cgdev.org/globalhealth/2009/, on Sept. 28, 2009.

Older Adults and HIV/AIDS in Africa and Asia—Publications Update

The global burden of HIV/AIDS is predominantly in Africa and Asia. In these countries, older adults are affected by HIV/AIDS mainly because they care for their HIV-infected adult children and for "AIDS orphans" and experience emotional and financial costs when an adult child dies. In one set of projections for Thailand, Ken Wachter and his colleagues (2002) estimated that parental bereavement between 2003 and 2007 would peak at 80,000 per year and that 13 percent of Thais who were age 50 in 1995 would lose at least one adult child to AIDS.

Researchers at the NIA Centers for the Economics and Demography of Aging discuss these and related issues in a number of recent publications:

Anne Case et al., "Paying the Piper: The High Cost of Funerals in South Africa," *NBER Working Paper* 14456 (2008).

Angus Deaton, Jane Fortson, and Robert Tortora, *Life (evaluation), HIV/AIDS, and Death in Africa* (Princeton, NJ: Princeton University, 2008), accessed online at www.princeton.edu/~deaton/downloads/Life_and_death_in_Africa_Dec08_Complete.pdf, on Sept. 28, 2009.

John E. Knodel et al., "Community Reaction to Older-Age Parental AIDS Caregivers and Their Families: Evidence From Cambodia," *PSC Research Report* 09-673 (2009), accessed online at www.psc.isr.umich.edu/pubs/abs/5656, on Sept. 28, 2009.

John Knodel et al., "The Role of Parents and Family Members in ART Treatment Adherence: Evidence From Thailand," *PSC Research Report* 09-686 (2009), accessed online at www.phishare.org/documents/AIDSELD/7737/, on Sept. 28, 2009.

Sebastian Linnemayr, "Consumption Smoothing and HIV/AIDS: The Case of Two Communities in South Africa," *Economic Development and Cultural Change* (forthcoming).

"Symposium on Interactions Between Poverty and HIV/AIDS," *Economic Development and Cultural Change* 56, no. 2 (2008), accessed online at www.journals.uchicago.edu/toc/edcc/2008/56/2, on Sept. 28, 2009.

Kenneth W. Wachter, John E. Knodel, and Mark Van Landingham, "AIDS and the Elderly of Thailand: Projecting Familial Impacts," *Demography* 39, no. 1 (2002): 25-41.

Nathalie Williams et al., "Overlooked Potential: Older-Age Parents in the Era of ART," *AIDS Care* 20, no. 10 (2008): 1169-76.

(London et al. 2001). Additionally, like older persons in general, persons with HIV/AIDS often move for care (London, Wilmoth, and Fleishman 2004). Older adults are less likely than younger adults to move post-HIV, whether their reasons for moving are related to care or not. This may be because older people are more established in their communities, have higher opportunity costs associated with moving, already live in urban areas where informal and formal HIV care is widely available, and have more economic resources allowing them to obtain needed care in their current locations.

Older Caregivers

Many adults who are ill with HIV/AIDS receive support—financial, medical, or emotional—from older relatives (Goodkin et al. 2003). In addition, grandparents care for most "AIDS orphans," whose caregiving parent has died from AIDS. One review of studies on HIV/AIDS caregivers found that the majority are members of minority groups, women, and older than 45 (Goodkin et al. 2003). Although available research on older caregivers for HIV/AIDS individuals is limited, qualitative and exploratory studies suggest that stigma and social support are issues. Older caregivers often do not reveal the HIV status of their children or grandchildren, which means they miss out on both formal and informal support.

Earlier research on caregivers to persons with HIV/AIDS documents the proliferation of care-related stress and its detrimental effects on both the physical and mental health of informal caregivers (Pearlin, Aneshensel, and LeBlanc 1997; LeBlanc, London, and Aneshensel 1997). Older caregivers report suffering from chronic conditions such as arthritis, diabetes, asthma, and hypertension (Goodkin et al. 2003). However, they tend to put the needs of those for whom they care ahead of their own needs, leading to neglect of their own health.

Future Research

U.S. government agencies are now taking into account the increased population of adults ages 50 and older with HIV/AIDS. CDC's HIV-screening recommendations now include provisions for testing adults ages 65 and older, and the U.S. Department of Health and Human Services has recommended that Medicare cover HIV screening tests for at-risk beneficiaries and for those beneficiaries who request the service. Efforts to identify and fill research gaps on how HIV and antiretroviral therapy affect aging are underway. Still, much of the information on social service aspects such as caregiving comes from small community samples and qualitative studies, not from population-based samples or large-scale surveys.

References

Stephen Crystal et al., "The Diverse Older HIV-Positive Population: A National Profile of Economic Circumstances, Social Support, and Quality of Life," *Journal of Acquired Immune Deficiency Syndromes* 33, supp. 2 (2003): S76-83.

Rita B. Effros et al., "Workshop on HIV Infection and Aging: What is Known and Future Research Directions," *Clinical Infectious Diseases* 47, no. 4 (2008): 542-53.

Charles A. Emlet and Kathleen J. Farkas, "Correlates of Service Utilization Among Midlife and Older Adults With HIV/AIDS: The Role of Age in the Equation," *Journal of Health and Aging* 14, no. 3 (2002): 315-35.

Karl Goodkin et al., " 'Putting a Face' on HIV Infection/AIDS in Older Adults: A Psychosocial Context," *Journal of Acquired Immune Deficiency Syndromes* 33, supp. 2 (2003): S171-84.

Ron Hays et al., "Health-Related Quality of Life in Patients With Human Immunodeficiency Virus Infection in the United States: Results From the HIV Cost and Services Utilization Study," *American Journal of Medicine* 108, no. 9 (2000): 714-22.

Allen J. LeBlanc, Andrew S. London, and Carol S. Aneshensel, "The Physical Costs of AIDS Caregiving," *Social Science and Medicine* 45, no. 6 (1997): 915-23.

Nathan Linsk, Cynthia Cannon Poindexter, and Sally Mason, "Policy Implications for HIV-Affected Older Relative Caregivers," in *Invisible Caregivers: Older Adults*, ed. Daphne Joslin (New York: Columbia University Press, 2002): 248-77.

Andrew S. London et al., "Use of Unpaid and Paid Home Care Services Among People With HIV Infection in the USA," *AIDS Care: Psychological and Socio-Medical Aspects of AIDS/HIV* 13, no. 1 (2001): 99-121.

Andrew S. London, Janet M. Wilmoth, and John A. Fleishman, "Moving for Care: Findings From the U.S. HIV Cost and Services Utilization Study," *AIDS Care* 16, no. 7 (2004): 858-75.

Kathleen Nokes et al., "Health-Related Quality of Life in Persons Younger and Older Than 50 Who Are Living With HIV/AIDS," *Research on Aging* 22, no. 3 (2000): 290-310.

Marcia G. Ory and Karin A. Mack, "Middle-Aged and Older People With AIDS: Trends in National Surveillance Rates, Transmission Routes, and Risk Factors," *Research on Aging* 20, no. 6 (1998): 653-64.

K.K. Oursler et al., "Reduced Aerobic Capacity and Physical Functioning in Older HIV-Infected Men," *AIDS Research and Human Retroviruses* 22, no. 11 (2006): 1113-21.

Leonard I. Pearlin, Carol S. Aneshensel, and Allen J. LeBlanc, "The Forms and Mechanisms of Stress Proliferation: The Case of AIDS Caregivers," *Journal of Health and Social Behavior* 38, no. 3 (1997): 223-36.

Gillian Sanders et al., "Cost-Effectiveness of Screening for HIV in the Era of Highly Active Antiretroviral Therapy," *New England Journal of Medicine* 352, no. 6 (2005): 570-85.

Gillian Sanders et al., "Cost Effectiveness of HIV Screening in Patients Over 55 Years of Age," *Annals of Internal Medicine* 148, no. 12 (2008): 889-903.

Eric W. Schrimshaw and Karolynn Siegel, "Perceived Barriers to Social Support From Family and Friends Among Older Adults With HIV/AIDS," *Journal of Health Psychology* 8, no. 6 (2003): 738-52.

Rochelle P. Walensky et al., "The Survival Benefits of AIDS Treatment in the United States," *Journal of Infectious Diseases* 194, no. 1 (2006): 11-19.

The NIA Demography Centers

The National Institute on Aging supports 14 research centers on the demography and economics of aging, based at the University of California at Berkeley, the University of Chicago, Duke University, Harvard University, Johns Hopkins University, the University of Michigan, the National Bureau of Economic Research, the University of Pennsylvania, Princeton University, RAND Corporation, Stanford University, Syracuse University, the University of Southern California/ University of California at Los Angeles, and the University of Wisconsin-Madison.

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For More Information

Focus on HIV/AIDS—United States

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www.uic.edu/jaddams/college/faculty_staff/faculty/linsk.html

HIV Among Persons Ages 50 and Older
www.cdc.gov/hiv/topics/over50/index.htm

Statement of National Institutes of Health on National HIV/AIDS and Aging Awareness Day, Sept. 18, 2009
www.nih.gov/news/health/sep2009/niaid-17.htm

HIV/AIDS and Older Adults
www.med.unc.edu/aging/elderhiv/resources.htm

AIDS and Aging, Special Issue of AIDS 18 (supplement, 2004)
http://journals.lww.com/aidsonline/toc/2004/01001

HIV/AIDS and Aging: Interventions for Older Adults
http://journals.lww.com/jaids/toc/2003/06012

Illness Narratives Among Aging People Living With HIV/AIDS (PLWHA) in New York City
http://micda.psc.isr.umich.edu/project/detail/34584

Focus on HIV/AIDS—Global

Anne Case
www.princeton.edu/~accase/papers.html

Princeton AIDS Initiative
www.princeton.edu/pai/

Harvard School of Public Health AIDS Initiative
www.aids.harvard.edu/

AIDS and Older Persons: Studies of the Impact in Thailand and Cambodia
www.phishare.org/partners/AIDSELD

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