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HIV/AIDS TREATMENT AND U.S. HEALTH CARE POLICY: LANDMARK GAINS OR MISSED OPPORTUNITIES?

Despite treatment advances that have transformed HIV from a death sentence to a manageable chronic disease, hundreds of thousands of Americans still lack optimal HIV/AIDS care. New research from the USC Leonard D. Schaeffer Center for Health Policy & Economics published in the journal Health Affairs *examines how coverage expansion under the Affordable Care Act (ACA) could remove barriers to HIV testing and care critical to treating, preventing and ultimately eliminating the disease. The research also quantifies how appropriate treatment for people with HIV saves money and lives, finding that early treatment led to life expectancy gains valued at $80 billion for people infected with HIV between 1996 and 2009 and prevented another 188,000 people from contracting the virus. Researchers also examined how the ACA may affect existing support through the Ryan White Program for comprehensive care for people living with HIV/AIDS. Whether the ACA signals landmark gains or missed opportunities in HIV/AIDS prevention will depend on coordinated state and federal policy choices to effectively target scarce resources for improved access to optimal care for Americans living with HIV.*

Testing, Effective Treatment Initiation and Adherence Key to HIV/AIDS Prevention

Since reports of the first AIDS cases in 1981, scientific advances—especially the advent of combination antiretroviral treatment, or cART—have transformed HIV infection from a fatal diagnosis to a manageable chronic condition. However, of the estimated 1.1 million Americans now living with HIV, about one in five is unaware they are infected, leaving them cut off from effective treatment and increasing the likelihood they will infect others.

The growing availability of cART has helped change the course of the HIV/AIDS epidemic in the United States. Long the standard treatment for people with advanced HIV as measured by CD4 white blood cell counts—as HIV progresses, CD4 counts decline—cART is now recommended for people as soon as they are diagnosed with HIV. Before 2009, U.S. treatment guidelines called for cART only for patients whose CD4 counts had fallen below 350, but guideline revisions have moved the bar—first in 2009 to people with CD4 counts of 350 to 500 and then in 2012 to people with CD4 counts greater than 500.

But scientific and treatment advances alone will not turn the prospect of a generation free of HIV into reality. Smart, evidence-based policies also are needed to target limited resources effectively to help ensure that as many people as possible are tested, diagnosed, linked to care and adhere to treatment that can help them stay healthier and prevent HIV transmission. New research from the USC Leonard D. Schaeffer Center for Health Policy & Economics published in the March 2014 *Health Affairs* adds to growing evidence that policies supporting "treatment as prevention" are a promising public health strategy to stem HIV/AIDS (see Data Source).

Early Treatment Dividends

Less than one in three HIV-positive Americans in 2012 received antiretroviral therapy, and even fewer achieved viral load suppression—where the level of HIV in the patient's blood is low or undetectable (see Figure 1). Generally, HIV-positive people with undetectable viral loads are healthier and less likely to transmit HIV to their sexual partners.

The Schaeffer Center research adds to evidence that investing in early cART initiation pays dividends both to HIV-positive patients and society as a whole. Researchers analyzed the life expectancy gains of people infected with HIV between the 1996 introduction of cART and the 2009 treatment guideline revisions. Compared to people who initiated cART late—CD4 count less than 350—those who started treatment earlier—CD4 count of 350-500—could expect to live 6.1 years longer. And people who started treatment at CD4 counts greater than 500 had even larger expected survival gains—9 years.

For the entire group that initiated cART at CD4 counts of 350 or more, the estimated value of life expectancy gains was $80 billion, with each life-year valued at $150,000. Researchers also analyzed

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how earlier cART initiation affected drug manufacturer profits, finding that the value of life expectancy gains was 2.2 times greater than the increase in drug revenues. Roughly a quarter of increased drug revenues was attributable to earlier use of cART, while the rest resulted from use over longer lifetimes.

Along with extending lives of HIV-positive people, early cART initiation from 1996 to 2009 in the United States prevented an estimated 188,000 HIV infections—about 13,500 people a year—and avoided $128 billion in life expectancy losses, again assuming a life-year value of $150,000 (see Figure 2). Four-fifths of the 188,000 HIV cases prevented through early treatment resulted from cART initiation at CD4 counts above 500, underscoring the prevention value of very early treatment.

While the United States now recommends cART at all CD4 levels, the World Health Organization only recently expanded its treatment guidelines to include patients with CD4 counts of 350-500. Researchers cautioned that their findings are not necessarily generalizable beyond the United States, but earlier cART initiation is likely to hold value in international contexts even as the preventive benefits of very early treatment must be weighed against risks of sparking new HIV strains resistant to existing drugs.

HIV and ACA Coverage Expansions

A major barrier to increased HIV testing and treatment is lack of health insurance. People living with HIV/AIDS are much more likely to be uninsured or covered by public insurance than other Americans. For example, 65 percent of all Americans in 2011 had private insurance, compared to 17 percent of HIV-positive people. Likewise, people living with HIV/AIDS are about twice as likely to be uninsured—roughly 30 percent vs. 15 percent of the overall U.S. population. And people living with HIV/AIDS are more than three times as likely to have Medicaid coverage as other Americans—40 percent vs. 12 percent.

While the federal Ryan White Program provides assistance to about a half a million people living with HIV/AIDS, the program does not provide comprehensive health insurance, which is associated with increased use of antiretroviral therapy and other life-extending care. Under the ACA, the federal government initially will pay the full cost of expanding Medicaid to all otherwise ineligible adults with incomes up to 138 percent of poverty, or about $16,104 a year for a single person. After 2016, the federal share of Medicaid costs phases down, reaching 90 percent in 2020.

In June 2012, the U.S. Supreme Court ruled that states could opt out of the ACA Medicaid expansion, and as of January 2014, 23 states had done so, effectively forgoing billions of dollars in federal aid. According to Schaeffer Center researchers, an estimated 115,000 uninsured, low-income people living with HIV/AIDS would be eligible for Medicaid if all states adopted the expansion. However, nearly 60,000 live in states not expanding Medicaid, including Florida, Texas and Georgia.

Another ACA provision provides subsidies to people with incomes between 100 percent and 400 percent of the federal poverty level to buy private coverage on the new insurance exchanges. But many—perhaps 70 percent—of the low-income, uninsured HIV-positive people in states not expanding Medicaid are too poor to qualify for subsidies, leaving them with no path to health insurance. Given the importance of insurance coverage to optimal HIV/AIDS care and the connection between optimal care and decreased risk of HIV transmission, state decisions about expanding Medicaid will have consequences not only for people living with HIV but those at risk of new infections. Similarly, people who know they are HIV-positive are much less likely to engage in risky sexual behavior, but more than 18 percent of Americans living with HIV/AIDS are unaware they are infected.

State Medicaid expansion decisions also will affect how many additional people are likely to receive HIV testing, which is critical to treatment initiation and prevention of additional HIV infections. Based on the 18 states and District of Columbia committed to expanding Medicaid as of July 2013, Schaeffer Center researchers estimated the impact of the ACA on HIV testing, diagnoses and awareness of HIV status, finding that 466,153 more people would be tested for HIV and 2,598 new diagnoses would be made by 2017. Researchers also estimated that the ACA's impact on HIV testing

and diagnoses would be nearly 30 percent larger—an estimated 603,204 people tested and 3,300 new diagnoses—if all 50 states expanded Medicaid.

Despite ACA, Ryan White Still Key to Optimal Care

Given the ACA's implementation, some policymakers have questioned the continued relevance of the Ryan White HIV/AIDS Program. Pending congressional reauthorization since September 2013, the Ryan White Program provides about $2.5 billion annually to support both medical and support services—including so-called wraparound services, such as emergency housing, transportation and case management—for about a half a million Americans with HIV/AIDS.

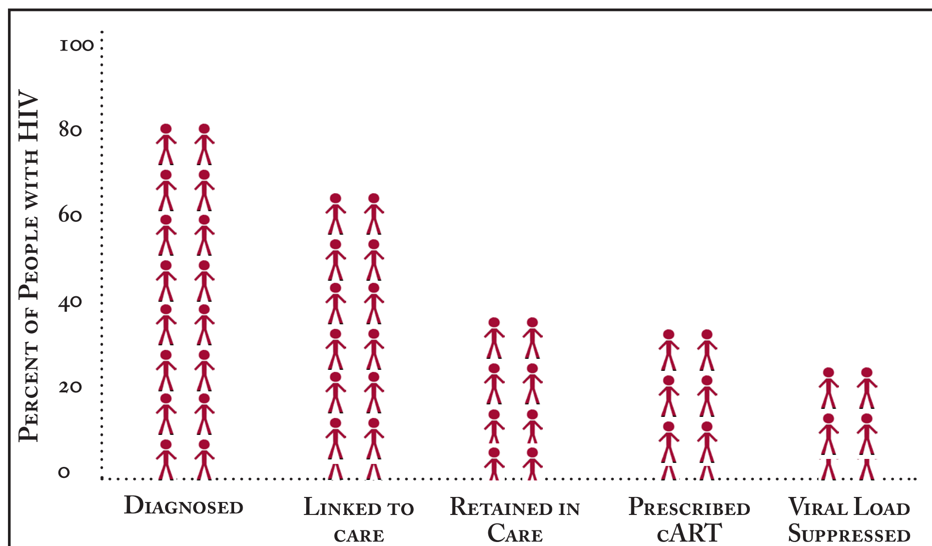
While the ACA coverage expansions promise new resources to identify and care for HIV-positive people, many HIV-care providers are concerned that private insurance and Medicaid alone will not provide sufficient support services critical for high-quality care, according to a survey conducted by Schaeffer Center researchers. Of the 516 HIV care providers—primarily physicians, physician assistants and nurse practitioners—included in the survey, large majorities reported that the Ryan White Program is critical to providing high-quality care and could serve as a model for people with other diseases that benefit from intensive case management and wraparound services. More than three-quarters of providers identified concerns about HIV-positive people transitioning to Medicaid and private insurance, including:

- Patients may need to designate a new provider/medical home, and new providers may not have the capabilities to manage HIV patients.
- New drug formularies may jeopardize treatment adherence.
- Patients may drop out of care.

More than 90 percent of respondents indicated that the following services for HIV-positive people should be expanded after implementation of the ACA: medical case management, substance abuse care, mental health services, testing and outreach, treatment adherence counseling, health education, and emergency housing.

Figure 1

Percentage of HIV-Positive Americans, by Testing or Care Stages, 2012

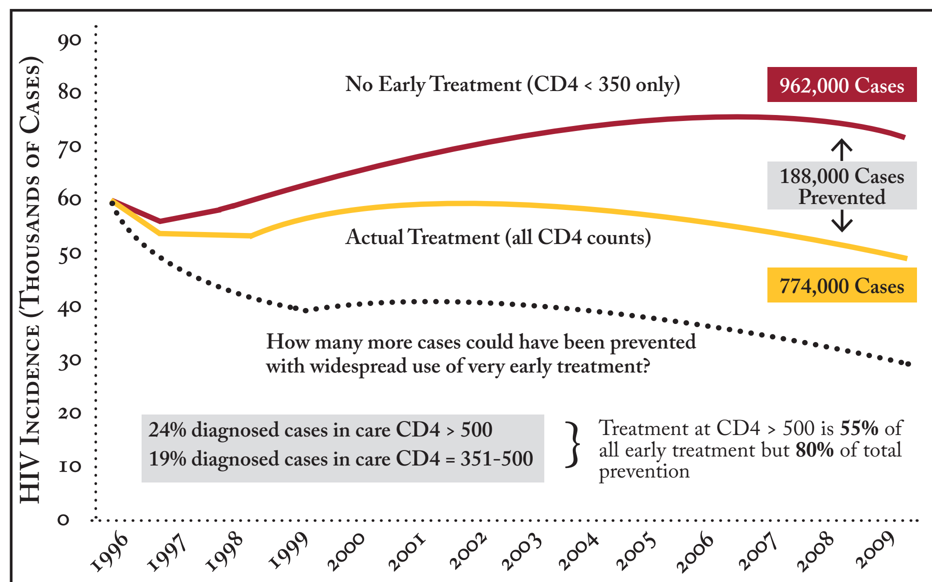


Note: cART is combination antiretroviral therapy.

Source: Adapted from Centers for Disease Control and Prevention, HIV in the United States: The Stages of Care, *CDC Fact Sheet (July 2012).*

Figure 2

Early Treatment Prevented 188,000 HIV Cases from 1996-2009



Notes: "Actual treatment" (all CD4 counts) is the estimated rate of treatment with combination antiretroviral therapy (cART), according to CD4 count during the period 1996–2009. "No early treatment" is treatment at CD4 counts of less than 350 cells per cubic millimeter only. "Very early treatment" is treatment at CD4 counts of greater than 500 cells per cubic millimeter.

Source: Authors' calculations.

Targeting Scarce Resources Effectively

Policymakers and public health officials charged with slowing the spread of HIV/AIDS and caring for HIV-positive people constantly face trade-offs about how to allocate scarce resources effectively. Using data-driven decision-making tools that allow policymakers to compare various intervention strategies across thousands of simulated future scenarios could significantly alter the calculus of resource allocation across the five major intervention areas for HIV-prevention and treatment. To get the best return on investment, policymakers

Data Source

This Issue Brief summarizes seven articles published in the March 2014 edition of the peer-reviewed journal *Health Affairs*. The studies were conducted by researchers affiliated with the USC Schaeffer Center for Health Policy & Economics, with additional support from external funders. The seven articles are as follows:

- Goldman, Dana P., et al., "The Prospect of a Generation Free of HIV May Be Within Reach If the Right Policy Decisions Are Made."
- Romley, John A., et al., "Early HIV Treatment Led to Life Expectancy Gains Valued at $80 Billion for People Infected in 1996-2009."
- Goldman, Dana P., et al., "Early HIV Treatment in the United States Prevented Nearly 13,500 Infections Per Year During 1996-2009."
- Snider, Julia Thornton, et al., "Nearly 60,000 Uninsured and Low-Income People with HIV/AIDS Live in States That Are Not Expanding Medicaid."
- Wagner, Zachary, Yanyu Wu and Neeraj Sood, "The Affordable Care Act May Increase the Number of People Getting Tested for HIV by Nearly 500,000 by 2017."
- Sood, Neeraj, et al., "HIV Care Providers Emphasize the Importance of the Ryan White Program for Access to and Quality of Care."
- Ryan, Gery W., et al., "Data-Driven Decision-Making Tools to Improve Public Resource Allocation for Care and Prevention of HIV/AIDS."

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need to decide what emphasis to place on the following interventions:

- Focusing on altering risky sexual and other behaviors that increase the likelihood of HIV infection.
- Using biomedical prevention to stem HIV transmission with prophylactic antiretroviral therapy.
- Using HIV testing to increase awareness of HIV status.
- Linking HIV-positive people with caregivers and medical services.
- Initiating and maintaining adherence to cART regimens to suppress viral loads to undetectable levels.

Relying on a methodology developed by RAND known as robust decision making, or RDM, that uses available data to make complex decisions under uncertain conditions, researchers used Los Angeles County to model the results of reallocating resources across the major intervention strategies. In computer simulations, the success of the reallocation strategies were considered successful if they met three policy goals: 1) reducing the overall number of new HIV infections by 15 percent; 2) increasing the share of HIV-positive people who know their status to 90 percent; and 3) increasing the proportion of HIV-positive people aware of their status who achieve viral load suppression by 20 percent.

Based on the findings of at least 10,000 simulations for each intervention strategy, researchers concluded that the best approach to meeting the three policy goals in Los Angeles was to shift resources from trying to alter risky sexual behaviors to initiating cART and supporting treatment adherence.

Policy Implications

Taken as a whole, the new Schaeffer Center research findings related to HIV/AIDS published in *Health Affairs* provide policymakers with important new information and insights about the most effective approaches to preventing HIV infections and caring for people already living with HIV/AIDS.

In summary, the findings indicate that early initiation of cART pays both personal and societal dividends through longer lives and prevention of HIV infections. The return on investment for earlier cART treatment—life expectancy gains valued at $80 billion—was about 2.2 times greater than the increase in drug manufacturers' profits from increased use of drugs to treat HIV/AIDS between 1996 and 2009. Likewise, early cART initiation prevented an estimated 188,000 HIV infections between 1996 and 2009, avoiding about $128 billion in life expectancy losses.

Medicaid expansion under the ACA could potentially extend coverage and improve access to optimal care to more than 115,000 low-income, uninsured people living with HIV, but more than half live in states not expanding Medicaid, and 70 percent are too poor to qualify for subsidies to buy private insurance through the new exchanges. And state policymaker decisions to forgo expanding Medicaid will mean fewer people receive HIV testing and fewer new diagnoses are made, undermining HIV prevention efforts.

Reauthorization of the Ryan White Program is pending, with some questioning the program's importance as ACA implementation proceeds. Yet, clinicians on the front lines caring for patients with HIV/AIDS resoundingly hold up the Ryan White Program as a model for managing complex diseases requiring intensive case management and non-medical support services. They also fear that without the program's emphasis on wraparound services not covered by Medicaid or other insurance providers, including emergency housing and transportation, many people with HIV/AIDS will drop out of treatment.

On a more positive note, the advent of new data-driven decision-making tools could help policymakers bring science to bear on how best to allocate scarce public resources and increase the HIV testing, optimal care and treatment adherence that are critical to preventing and ultimately eliminating the disease. In little more than three decades, scientific advances have transformed HIV/AIDS into a manageable chronic disease. Smart, coordinated state and federal policy choices will be needed to reach what some evidence indicates is an achievable goal—a generation of Americans free of HIV.

As Schaeffer Center Director Dana P. Goldman said at a recent *Health Affairs* briefing highlighting the new HIV/AIDS research findings, "The prospect that we could eliminate this disease needs to be taken seriously." ■