

Charting the Course to End HIV Transmission in the United States

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During the past few decades, the human immunodeficiency virus (HIV) epidemic has evolved from one of fear to one of hope. One of the key drivers of this change has been compassion from caregivers, supported by scientific knowledge. Very early in my career, while working as a hospital nurse, I witnessed firsthand the stigma and discrimination that some people living with HIV endured. I recall one time when a hospital employee slid a tray of food across the floor to a feverish, bedridden man, avoiding coming near to him because he had HIV. This kind of reaction to people living with HIV was not unusual in those early days. I knew other health care workers who believed that touching a patient with HIV would cause them to contract the infection, and I remember how this fear hampered the care they provided to patients.

As a nurse, I never lost sight of the important role that health care providers play in the lives of the people they encounter. I knew I had an obligation to embrace the communities I served and that there was no room for fear or judgment. One day, the same bedridden man, who never had many words to say, pulled me aside to thank me for treating him like a human being. That day is one I will never forget. It underscored a truth that I have always carried with me—all human beings deserve compassion.

I am pleased that HIV no longer holds the same fear over our medical community. This progress is due in part to the advent of antiretroviral therapy (ART). Advances in HIV awareness, prevention, treatment, and care have greatly increased the number of people living longer with HIV infection. Now, improvements in prevention, care, and treatment have put us within reach of achieving an end to HIV in the United States.¹ But, we still have a distance to travel. According to the latest estimates from the Centers for Disease Control and Prevention, 1.1 million people in the United States were living with HIV as of December 31, 2014.² After all these years, some people living with HIV still face stigma, discrimination, and other barriers that prevent them from receiving adequate care and treatment.

So much has changed since those early years, thanks to investments in research and systems of care. Since the



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beginning of the HIV epidemic in 1981, fewer people in the United States are contracting HIV infection. In 1985, an estimated 130 000 new HIV infections were reported; by 2014, this had fallen to an estimated 37 600 new infections.³ People with HIV also are living longer, and fewer are dying. The annual death rate per 1000 people diagnosed with HIV fell from 19.9 in 2010 to 16.9 in 2014.⁴

To move toward the goal of ending HIV transmission in the United States, we need the necessary tools. Perhaps the greatest tool is ART. It is known that early and continuous ART facilitates viral suppression and benefits the long-term health of people living with HIV.^{5,6} The landmark HIV Prevention Trials Network 052 trial showed that starting and sustaining ART early not only improved health outcomes

for people living with HIV but also decreased the likelihood of sexual transmission of HIV by 93%, compared with delayed ART initiation.⁷ The study's final results, published in 2016, electrified the HIV community: the transmission from HIV-positive study participants to their sexual partners was not observed when viral replication in the treated individual was stably suppressed by ART.⁸ Additionally, in the PARTNERS (Partners of People on ART—A New Evaluation of the Risks) study, which included people who at entry to the study were known to be virologically suppressed and who remained suppressed during the study, no HIV infections were observed among heterosexual couples in which one partner was suppressed.⁹ Together, these 2 studies provide strong evidence that treatment can offer a potent prevention benefit.

Implementation of ART by direct HIV care service organizations such as the Ryan White HIV/AIDS Program, the largest program providing HIV primary care and support services to people living with HIV in the United States, shows how effective ART can be for viral suppression. Clients receiving HIV care through the Ryan White HIV/AIDS Program achieve high rates of viral suppression (85% in 2015, the most recent rate available), and the percentage of clients with viral suppression has increased over time.¹⁰ The Ryan White HIV/AIDS Program model of care and treatment also illustrates the benefits of using treatment as prevention;

treating a person living with HIV using ART leads to viral suppression, which prevents transmission of HIV to others.

Another key tool is HIV screening.¹¹ We must ensure that people who do not know their HIV status are diagnosed and linked to care and treatment as early as possible. According to the Centers for Disease Control and Prevention, in 2014, of the 1.1 million people living with HIV in the United States, an estimated 166 000 (15%) people did not know their status.³ According to the *United Nations AIDS Gap Summary Report of 2016*, an estimated 40% of people living with HIV worldwide did not know their status and 62% were not virally suppressed.¹¹ Both of these groups pose a challenge to decreasing the spread of HIV.

To achieve viral suppression and prevent the spread of HIV, we must continue to focus our efforts on routine screening to identify those who do not know their HIV status, engage them in care, and ensure their adherence to care and treatment regimens. Additionally, using innovative treatment approaches such as preexposure prophylaxis, a highly effective prevention tool, can aid in reducing the spread of HIV among those most at risk for infection.¹²

Important work is ahead. Our collective experience since the 1980s in public health, in scientific research, and in developing systems of care has equipped us with the knowledge and tools needed to prevent new infections, decrease HIV-related deaths, and realize a future in which new HIV transmissions are rare. To achieve our goal of ending HIV, we must use a multifaceted approach:

- **We must sustain the efforts that have gotten us to where we are.** Our nation's progress on HIV could slow down or reverse if we fail to invest sufficient time and resources in HIV prevention, care, capacity, and infrastructure. Until we have a cure, all people with HIV will need ongoing HIV care and treatment to achieve and maintain viral suppression, which will improve their health outcomes and reduce the likelihood of transmitting the virus to others. Without this care and treatment, people living with HIV will be in danger of developing HIV-related illnesses and transmitting the virus, leading to more HIV infections, increased health care costs, lost productivity, and more HIV-related deaths.
- **We must engage people living with HIV who are not in care.** Despite recent progress, a substantial percentage of people with HIV are still not engaged in regular care and, thus, are at risk of transmitting the infection to others. If we are to end the spread of HIV, we must sharpen our focus on the efforts to diagnose and link HIV-infected people to care and treatment.
- **We must address HIV disparities.** If we are to end HIV transmission, we must address HIV-related disparities, especially among gay men, African Americans, Latinos, transgender women, and people living in geographic locations with limited resources.¹³⁻¹⁵ Addressing disparities will require facing the issues of criminalization, stigma, and discrimination, as well as the social determinants of

health that affect vulnerable populations' ability to access and adhere to effective prevention, care, and treatment.

- **We must guard against other factors that can facilitate the spread of HIV.** The nation's opioid epidemic could erode the progress we have achieved. An example is the reported HIV outbreak in Scott County, Indiana, where a local opioid epidemic fueled an outbreak of HIV transmission.¹⁶ This 2015 outbreak demonstrated what can happen when prevention and health care services are not readily available. The Centers for Disease Control and Prevention has identified 220 US counties with characteristics that may put them at high risk for HIV and hepatitis C outbreaks among people who inject drugs such as heroin and other opioids. Preventing these outbreaks will require action on many fronts, including tackling the opioid epidemic, which has been a priority of the Office of the US Surgeon General since 2016, when it launched the Turn the Tide Rx campaign (<http://turnthetiderx.org>), a call to action for health care professionals to address the opioid crisis.¹⁷

The US Department of Health and Human Services, in partnership with other federal departments, is working to better understand and respond to the challenges of people living with, or at risk for, HIV infection. The US Department of Health and Human Services is combining knowledge gained from recent breakthroughs in HIV science with knowledge gained from more than 35 years of experience in HIV prevention, care, and treatment. Treatment alone will not be sufficient to eliminate HIV transmission in the United States. This goal may be achieved only by sustaining and expanding HIV services and addressing the socioeconomic factors that prevent vulnerable and at-risk populations from accessing preventive services, care, and treatment.

The days when HIV patients had few treatment options are long behind us, and we are headed toward a place where every person living with HIV can hope for a longer life. We can chart a course to end HIV. I encourage everyone to talk about HIV, to promote HIV testing and awareness of one's status, to help those with HIV access care and treatment, to identify and remove barriers to care and treatment, and to support the efforts that can prevent the spread of the infection. Having worked in the HIV field since the early days and seeing how far we have come, I am optimistic that together we will see an HIV/AIDS-free generation.

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