

SEPTEMBER 2019

# The Changing Face of HIV

*Addressing Health Needs  
Across the Life Course*

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Katherine E. Bliss

A Report of the CSIS GLOBAL HEALTH POLICY CENTER

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# Contents

Executive Summary	IV
Introduction	1
The Aging Face of HIV	4
Prioritizing Funding to Support the Needs of Aging PLHIV	7
Innovative Approaches to Integrated Service Delivery	9
The Potential of the UHC Model	11
Looking Ahead	13
About the Author	16

# Executive Summary

Thanks to sustained political leadership, unprecedented funding from bilateral and multilateral sources, and the adoption of innovative service delivery approaches in the face of a humanitarian crisis, the world has made considerable progress since the early-2000s in arresting the global HIV/AIDS pandemic. The annual rate of new infections has decreased by 16 percent since 2010, and mortality from AIDS-related complications has decreased by 33 percent. As of 2018, there were 37.9 million people worldwide living with HIV, with more than 23 million of them on lifesaving antiretroviral therapy (ART).

But even taking these considerable achievements into account, there is still much more to be done if the Sustainable Development Goal (SDG) of ending the AIDS epidemic by 2030 is to be met. And with overall funding decreasing for global health in general, and for HIV/AIDS in particular, the HIV community faces difficult questions: In a context of reduced resources, what measures can be taken to accelerate progress on lowering the rate of new infections and, at the same time, initiate on ART the nearly 15 million people living with HIV (PLHIV) who are not currently receiving therapy? Moreover, how can this be done while sustaining the provision of ART to those already receiving it?

To complicate matters, the profile of PLHIV is changing. Successful treatment regimens have extended life for millions, and an estimated 7.5 million of PLHIV are over the age of 50. As this population lives into its sixth and seventh decades and becomes more susceptible to other health challenges associated with aging, particularly non-communicable diseases (NCDs), initiating and maintaining patients on ART while addressing their health needs beyond HIV has become a critical challenge. As planning for the next program phases of PEPFAR, the Global Fund, and the UNAIDS Fast Track Goals moves forward, it will be important to sharpen focus on the needs of the growing cohort of PLHIV over 50 while accelerating the prevention of new infections. Not doing so would risk undermining the considerable success of global HIV programs altogether.

# Introduction

Thanks to sustained political leadership, unprecedented funding from bilateral and multilateral sources, and the adoption of innovative service delivery approaches in the face of a humanitarian crisis, the world has made considerable progress in arresting the global HIV/AIDS pandemic since the early-2000s.<sup>1</sup> The annual rate of new infections has decreased by 16 percent since 2010, and mortality from AIDS-related complications has decreased by 33 percent. As of 2018, there were 37.9 million people worldwide living with HIV, with more than 23 million of them on lifesaving antiretroviral therapy (ART).<sup>2</sup>

But even taking these considerable achievements into account, there is still much more to be done if the Sustainable Development Goal (SDG) of ending the AIDS epidemic by 2030 is to be met. Unless the global community can dramatically decrease the rate of new infections from the current number of 1.7 million per year to just 200,000 over the course of a decade, there could be a reversal of progress, with large cohorts of youth in sub-Saharan Africa at particular risk.<sup>3</sup>

But as the global response to the HIV/AIDS pandemic extends into the next decade, the face of HIV is also changing. Fifteen years ago, AIDS was seen primarily as a condition affecting the young, with health initiatives focused on men and women in their prime years of education, family formation, and work productivity. Younger adults still comprise the majority of new infections worldwide, with programs focused on early diagnosis and treatment initiation to achieve viral suppression. But successful treatment regimens now promise to extend life for millions, and an estimated 7.5 million of PLHIV are over the age of 50. As the global population of PLHIV lives into its sixth and seventh decades and becomes more susceptible to other health challenges associated with aging, particularly non-communicable diseases (NCDs), initiating and maintaining patients on ART while addressing their health needs beyond HIV has become a critical challenge.<sup>4</sup> And should

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1. Linda-Gail Bekker et al., “Advancing global health and strengthening the HIV response in the era of the Sustainable Development Goals: the International AIDS Society – Lancet Commission,” *The Lancet* 392, no. 10144 (July 2018): 312-358, [http://dx.doi.org/10.1016/s0140-6736\(18\)31070-5](http://dx.doi.org/10.1016/s0140-6736(18)31070-5).

2. “Trend of new HIV infections,” UNAIDS, <http://aidsinfo.unaids.org/>; “HIV & AIDS,” The Global Fund, <https://www.theglobalfund.org/en/hiv/AIDS/>.

3. UNAIDS, *Fast-Track: Ending the AIDS Epidemic by 2030* (Geneva: 2014), [https://www.unaids.org/sites/default/files/media\\_asset/JC2686\\_WAD2014report\\_en.pdf](https://www.unaids.org/sites/default/files/media_asset/JC2686_WAD2014report_en.pdf).

4. Pragna Patel et al., “Noncommunicable diseases among HIV-infected persons in low-income and middle-income countries: a systematic review and meta-analysis,” *AIDS* 32 (July 2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952786>. See also Susan Vorkoper et al., “Building on the HIV chronic care platform to address non-

prevention efforts fail to continue to slow the rate of new infections among adolescents and young adults, it can be expected there will be many more PLHIV requiring long-term ART in the future. In the decades to come, health systems in high-, middle-, and lower-income countries alike will need to adapt to better address patients' medical concerns over the life course and beyond HIV, or they may risk undermining the considerable success of HIV programs altogether.<sup>5</sup>

The confluence of several events makes it an opportune moment to consider how best to expand the global response to HIV/AIDS and address the broader health needs of PLHIV. The 2018 UN High-Level Meeting on NCDs sought to build political will to accelerate prevention activities and access to treatment for such NCDs as cardiovascular disease, cancers, and metabolic disorders, with the World Health Organization (WHO) arguing that the cost-effectiveness of addressing NCDs makes introducing and scaling up interventions for chronic diseases a global health "best buy."<sup>6</sup> At the September 2019 UN High-Level Meeting on UHC, government representatives met to discuss how best to integrate health services across multiple subfields and specialties in order to facilitate patient access to quality care and reduce expenditures.<sup>7</sup> The Global Fund to Fight AIDS, Tuberculosis and Malaria's October 2019 replenishment conference comes midway through its 2017-2022 strategic period and initiates a planning process for the next period. And the first phase of the UNAIDS Fast Track goals and the PEPFAR strategy for Accelerating HIV/AIDS Epidemic Control conclude in 2020, creating openings for more explicitly addressing the health needs of HIV patients across the life course into the next phases of programmatic activity.<sup>8</sup>

*In the decades to come, health systems in high-, middle-, and lower-income countries alike will need to adapt to better address patients' medical concerns over the life course and beyond HIV, or they may risk undermining the considerable success of HIV programs altogether.*

As the global health community—and the HIV/AIDS community in particular—mobilizes in response to these opportunities, it must also contend with the challenge of decreasing donor support for global health programs, including HIV prevention and treatment.<sup>9</sup> And

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communicable diseases in sub-Saharan Africa: a research agenda," *AIDS* 32 (July 2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952796>; and Wafaa M. El-Sadr and Eric Goosby, "Building on the HIV platform: tackling the challenge of noncommunicable diseases among persons living with HIV," *AIDS* 32 (July 2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952785/>.

5. Linda-Gail Bekker, et al., "Advancing global health."

6. WHO, *Saving lives, spending less: A strategic response to noncommunicable diseases* (Geneva: 2018), <https://apps.who.int/iris/bitstream/handle/10665/272534/WHO-NMH-NVI-18.8-eng.pdf?ua=1>.

7. On some of the challenges of integrating often stand-alone HIV programs with other initiatives, see Kent Buse, Jonathan Jay, and Morolake Odetoyinbo, "AIDS and universal health coverage – stronger together," *The Lancet Comment* 4, no. 1, [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(15\)00273-9/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(15)00273-9/fulltext).

8. UNAIDS, *Fast-Track Commitments to End AIDS by 2030*; PEPFAR, *Strategy for Accelerating HIV/AIDS Epidemic Control (2017-2020)* (Washington, DC: September 2017), <https://www.pepfar.gov/documents/organization/274400.pdf>; WHO, *Global Health Sector Strategy on HIV 2016-2021, Towards Ending AIDS* (Geneva: WHO, 2016), <https://www.who.int/hiv/strategy2016-2021/ghss-hiv/en/>.

9. Jen Kates, Adam Wexler, and Eric Lief, *Donor Government Funding for HIV in Low- and Middle-Income Countries in 2018* (San Francisco: Kaiser Family Foundation, July 2019), <http://files.kff.org/attachment/Report-Donor-Govern->

even where there is a will to address the links between HIV and NCDs, funding guidelines for bilateral and multilateral response to the global HIV challenge can restrict support for health activities not directly related to HIV.<sup>10</sup>

If funding levels continue to trend downward, as they have since 2016, it will be important for policymakers to find ways to reach ambitious new goals while enhancing efficiencies to lower overall program costs. It is in this context that several key questions should be considered:

- What factors are driving the increase in the proportion of PLHIV over age 50? How does this trend influence the design and delivery of effective HIV services?
- What health conditions are likely to pose the greatest risk to the health of HIV patients as they undergo treatment for extended periods and can expect to live into their sixth and seventh decades?
- Are existing models of HIV care adequate to meet the needs of PLHIV with NCDs? What are the most promising approaches suggested by new research? How can funders and policymakers support the adoption of new data management systems, health workforce training programs, reformed supply chains, and integrated service delivery models to ensure HIV patient care across the life course?
- To what extent can enhancing attention to the broader health needs of PLHIV, particularly NCDs, lead to higher quality and more cost-effective health care for PLHIV and NCD patients, alike?

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ment-Funding-for-HIV-in-Low-and-Middle-Income-Countries-in-2018.

10. The PEPFAR-NCD Project, launched in 2016, was a U.S. interagency program engaging the NIH, CDC, and USAID, as well as universities and ministries of health in lower-middle income countries. In 2016 PEPFAR issued a request for proposals to undertake research regarding the burden of cardiovascular disease, type 2 diabetes, depression, and cervical cancer in several priority countries and to provide “data to enable policymakers and implementers to make evidence-informed decisions about the integration of HIV/NCD chronic care platforms and assess the progress of future interventions and research.” But the total amount of the award, including indirect costs, was just \$250,000. “PEPFAR-NCD Call for Modeling Proposals,” CDRFGlobal, September 7, 2016, <https://www.crdfglobal.org/funding-opportunities/pepfar-ncd-call-modeling-proposals>.

# The Aging Face of HIV

According to the most recent UNAIDS report, there were an estimated 7.5 million people over the age of 50 living with HIV (19.7 percent) in 2018, compared to 3.9 million PLHIV over 50 in 2010 (12.9 percent).<sup>11</sup> The number and proportion of PLHIV over the age of 50 is increasing for several reasons. Innovative approaches to service delivery, including the creation of specialized clinics focused on HIV care and training programs enabling nurses and community health workers to test and initiate patients on ART, have allowed providers to prioritize the needs of HIV patients and identify opportunities for reinforcing prevention and treatment efforts. In this context, the number of new pediatric infections has decreased due to successful efforts to prevent mother to child transmission during pregnancy and breastfeeding. In 2018 the number of new HIV infections worldwide among children ages 0-14 was 160,000, down from 280,000 in 2010.<sup>12</sup>

Programs targeting adolescent girls and young women, who represent 74 percent of new HIV infections in sub-Saharan Africa, have also been introduced to slow the rate of new HIV infections among this vulnerable population.<sup>13</sup> With projections that the population of youth (ages 0-24) in the region will grow to 945 million by the year 2050, slowing the rate of new HIV infections among this cohort is critically important.<sup>14</sup> Recent initiatives focusing on girls and young women include DREAMS (Determined. Resilient. Empowered, AIDS-free. Mentored. And Safe.). The public-private partnership is led by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and seeks to address "the structural drivers that directly and indirectly increase girls' HIV risk, including poverty, gender inequality, sexual violence, and a lack of education," in 10 African countries.<sup>15</sup> Reflecting the importance of sustaining prevention efforts focused on adolescent girls and young women, the Global Fund has adopted a specific measurement framework for this critical age group.<sup>16</sup>

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11. "Trend of new HIV infections," UNAIDS.

12. "Progress made in reducing new HIV infections among children isn't fast enough," UNICEF, July 2018, <https://data.unicef.org/topic/hivaids/emtct/>. "New HIV infections (all ages)," UNAIDS, <http://aidsinfo.unaids.org/>.

13. "Trends of new HIV infections," UNAIDS.

14. Janet Fleischman, "Demographic Trends and Youth Empowerment in Africa: Opportunities for U.S. Engagement," CSIS, June 2019, [https://csis-prod.s3.amazonaws.com/s3fs-public/publication/Fleischman\\_Demographic-TrendsYouthEmpowerment\\_WEB.pdf](https://csis-prod.s3.amazonaws.com/s3fs-public/publication/Fleischman_Demographic-TrendsYouthEmpowerment_WEB.pdf).

15. "Working Together for an AIDS-Free Future for Girls and Women," PEPFAR, <https://www.pepfar.gov/partnerships/ppp/dreams/>.

16. The Global Fund, *The Global Fund Measurement Framework for Adolescents Girls and Young Women Programs* (Geneva: September 2018), [https://www.theglobalfund.org/media/8076/me\\_adolescentgirlsandyoungwomen-programs\\_frameworkmeasurement\\_en.pdf?u=637001819130000000](https://www.theglobalfund.org/media/8076/me_adolescentgirlsandyoungwomen-programs_frameworkmeasurement_en.pdf?u=637001819130000000).

With fewer new infections among younger populations, and effective treatments reducing overall mortality associated with HIV infection, the proportion of PLHIV over age 50 has naturally increased. While there are certainly new HIV infections diagnosed every year among this cohort, many PLHIV over 50 have been on ART for several years. The proportion of PLHIV over 50 is greatest in Europe and North America, where treatment was more widely available in the late-1990s and early-2000s, before the launch of the Global Fund, PEPFAR, and other programs made ART more accessible and affordable in lower- and middle-income countries. In the United States, the Centers for Disease Prevention and Control (CDC) reports that “nearly half of people in the United States living with diagnosed HIV are aged 50 and older.”<sup>17</sup> And a study in the Netherlands projected that the mean age of PLHIV on combination ART would rise from 43.9 in 2010 to 56.6 by 2020.<sup>18</sup> Given that the majority of new infections, and the highest number of people living with HIV, are concentrated in eastern and southern Africa, countries in those regions will need to accelerate planning for a changing epidemic as the proportion of PLHIV over 50 increases.<sup>19</sup> In 2018, several regions, including Eastern Europe and Central Asia, the Middle East and North Africa, and Latin America, reported a slight uptick in new infections, signaling that those countries will need to redouble prevention efforts while addressing the needs of aging HIV patients as well.<sup>20</sup>

*The proportion of PLHIV over 50 is greatest in Europe and North America, where treatment was more widely available in the late-1990s and early 2000s, before the launch of the Global Fund, PEPFAR, and other programs made ART more accessible and affordable in lower- and middle-income countries.*

The health issues faced by older patients on long-term HIV treatment differ in some important ways from those of children or adolescents on ART. While ensuring immunizations against vaccine-preventable diseases and addressing patients’ sexual and reproductive health needs (an issue often overlooked in older populations) are relevant at all ages, attention to NCDs, including Type II diabetes, cardiovascular disease, cancers, and mental health disorders (e.g., depression) is increasingly urgent for older PLHIV.<sup>21</sup> This is because people become more susceptible to NCDs as they age; because the burden of NCDs as a cause of death and disability is growing worldwide; and because patients on long-term ART may be more vulnerable than those who are not to some chronic

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17. “HIV Among People Aged 50 and Older,” CDC, <https://www.cdc.gov/hiv/group/age/olderamericans/index.html>.  
18. Mikaela Smit et al., “Future challenges for clinical care of an ageing population infected with HIV: a modelling study,” *The Lancet: Infectious Diseases* 15, no. 7 (July 2015): 810-818, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4528076/>.  
19. “Trend of New HIV Infections,” UNAIDS, <http://aidsinfo.unaids.org/>.  
20. UNAIDS, *Communities at the Centre: Defending Rights, Breaking Barriers, Reaching People with HIV Services* (Geneva: 2019), [https://www.unaids.org/sites/default/files/media\\_asset/2019-global-AIDS-update\\_en.pdf](https://www.unaids.org/sites/default/files/media_asset/2019-global-AIDS-update_en.pdf).  
21. Bergen Cooper and Cailin Crockett, “Gender-based violence and HIV across the life course: adopting a sexual rights framework to include older women,” *Reproductive Health Matters* 23, no. 46 (November 2015), <https://www.sciencedirect.com/science/article/pii/S0968808015000786>.

conditions.<sup>22</sup> There is some evidence, for example, that the people who were ill and in a state of weakened immunity at the time of ART initiation, as well as patients who were initiated on some of the more toxic drug regimens common in the early years of ART, experience an elevated risk of high blood pressure, Type II diabetes, and cardiovascular disease.<sup>23</sup> The study regarding aging HIV patients in the Netherlands projected that by 2030, 84 percent of PLHIV there will have been diagnosed with at least one NCD, and 20 percent will be taking three or more medicines, along with ART, signaling the importance of considering ways to mitigate potential negative drug interactions as well.<sup>24</sup>

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22. Pragna Patel et al., “Noncommunicable diseases among HIV-infected persons in low-income and middle-income countries”; Judith S. Currier and Diane V. Havlir, “CROI 2017: Complications and Comorbidities of HIV Disease and Its Treatment,” *Topics in Antiviral Medicine* 25, no. 2, (May/June 2017), <https://www.iasusa.org/wp-content/uploads/2017/05/25-2-77.pdf>.

23. Estéban Martínez, “Addressing co-morbidities to improve long-term care of PLHIV,” IAS Conference, July 24, 2019, Mexico City.

24. Mikaela Smit, “Future challenges for clinical care of an ageing population infected with HIV”; See the list of drug-drug interactions noted for patients taking protease inhibitors and other drugs to treat HIV: “Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents with HIV,” U.S. Department of Health and Human Services, <https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/284/pi-drug-interactions>; and “HIV Drug Interactions,” University of Liverpool, <https://www.hiv-druginteractions.org/checker>.

# Prioritizing Funding to Support the Needs of Aging PLHIV

While the success of the global AIDS response over the past two decades can be attributed, in large part, to its emphasis on equity, inclusion, and ensuring health services for the most vulnerable populations, the principal multilateral agencies and funding organizations have not made the health needs of PLHIV over 50 an explicit priority. Nevertheless, some activities do reflect growing recognition of the importance of the issue. UNAIDS acknowledges the importance of addressing the co-morbidities of NCDs in the Fast Track Goals and organized a panel on “synergies across HIV, NCDs and other chronic conditions” at the 2012 International AIDS Society conference in Washington, D.C.<sup>25</sup> The organization subsequently convened a special meeting of its Programme Coordinating Board (PCB) in 2016 to discuss the special needs of the growing proportion of PLHIV over 50.<sup>26</sup> The same year, the U.S. National Institutes of Health Fogarty International Center launched the HIV/NCD Integration Project (also referred to as the PEPFAR-NCD Project) to generate research regarding the burden of NCDs among HIV patients in priority countries and to assess the integration of HIV/NCD chronic care platforms.<sup>27</sup> However, the total amount of the award, including indirect costs, was just \$250,000.<sup>28</sup>

Funding for initiatives related to HIV and cervical cancer has been a notable exception to the trend of limited global support for the links between HIV and NCDs. Women living with HIV are four to five times more likely to develop invasive cervical cancer, but access to effective screening and treatment has remained elusive in many parts of the world with a significant HIV burden; 9 of 10 women who die from cervical cancer live in low- and middle-income countries. In 2011, the Pink Ribbon Red Ribbon initiative brought together pharmaceutical companies, research centers, foundations, PEPFAR,

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25. Celeste Sandoval, “HIV and noncommunicable diseases integration,” Second meeting of the WHO Global Coordination Mechanism Working Group on the inclusion of NCDs in other program areas, <https://www.who.int/global-coordination-mechanism/working-groups/STKH-2HIV-UNAIDS-Sandoval.pdf>.

26. “Update: UNAIDS PCB session on ageing and HVI reaffirms that an ageing population of people living with HIV is a measure of success,” UNAIDS, [https://www.unaids.org/en/resources/presscentre/featurestories/2016/december/20161208\\_HIV-and-ageing](https://www.unaids.org/en/resources/presscentre/featurestories/2016/december/20161208_HIV-and-ageing).

27. Linda Kupfer and Pragna Patel, “Enhancing HIV Care Delivery Systems to Address Noncommunicable Diseases,” CDC Global Health – Stories, Centers for Disease Control and Prevention, [https://www.cdc.gov/globalhealth/stories/enhancing\\_hiv\\_care\\_ncd.htm](https://www.cdc.gov/globalhealth/stories/enhancing_hiv_care_ncd.htm).

28. “PEPFAR-NCD Call for Modeling Proposals,” CDRFGlobal, September 7, 2016, <https://www.crdfglobal.org/funding-opportunities/pepfar-ncd-call-modeling-proposals>.

non-government organizations, and implementing countries to scale up programs focused on breast and cervical cancer. Building on the initial work of Pink Ribbon Red Ribbon, in May 2018 UNAIDS, PEPFAR, and the George W. Bush Institute launched the \$30 million Renewed Partnership to Help End AIDS and Cervical Cancer to accelerate efforts in eight sub-Saharan African countries and raise awareness about the link between HIV infection and cervical cancer among women.<sup>29</sup> In June of 2019, at the Women Deliver conference in Canada, Merck joined the partnership, committing to provide Gardasil—Merck’s vaccine against human papilloma virus (HPV), the major cause of cervical cancer—to a cohort of HIV-positive women in Namibia and Eswatini (Swaziland).<sup>30</sup>

With funding and programs focused on HIV and NCDs weak at the global level, multilateral and bilateral donor support for addressing the growing burden of NCDs worldwide has been similarly lackluster.<sup>31</sup> The Sustainable Development Goals (SDGs) and 2018 High-Level Meeting have sharpened focus on the challenges posed by the increasing NCD burden in high-, middle-, and lower- income countries, but fundraising to help countries address the growing burden of NCDs has failed to keep pace. At the 2018 UN High-Level Meeting on NCDs, member countries committed to improved financing for, and scaling up of, prevention and control activities to address NCDs. Yet many political leaders have acknowledged the challenges lower- and middle-income countries will face in adding work on NCDs to already overburdened clinic staff.<sup>32</sup> The economic costs of NCDs—alone estimated to be close to \$50 trillion between 2010 and 2017—have prompted calls for action. Yet, to date, many NCD activities have focused on prevention, including tobacco cessation programs, reducing the harmful use of alcohol, or sugar taxes to create incentives for more nutritious food choices.<sup>33</sup> Testing for and accessing drugs and other interventions to treat cardiovascular disease, cancer, diabetes, and mental health remain the nearly exclusive privilege of populations in higher-income countries and those with access to private health care.<sup>34</sup> HIV patients in lower- and middle-income countries, where the majority reside, do not generally have access to NCD services on par with their high-income country counterparts. And even when diagnostic and treatment tools, such as external beam radiotherapy for cancer, are available, there may be a limited number of machines located in national or provincial capitals, with few surgical or chemotherapy alternatives for patients if the equipment breaks down.<sup>35</sup>

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29. “Renewed Partnership to Help End AIDS and Cervical Cancer in Africa,” PEPFAR, May 11, 2018, <https://www.pepfar.gov/press/releases/281984.htm>.

30. “PEPFAR and the George W. Bush Institute Welcome Merck to the Partnership to End AIDS and Cervical Cancer Among HIV-Positive Women in Africa,” PEPFAR, June 5, 2019, <https://www.pepfar.gov/press/releases/291646.htm>.

31. See “The U.S. Government and Global Non-Communicable Disease Efforts,” Henry J. Kaiser Family Foundation, January 2019, <https://www.kff.org/global-health-policy/fact-sheet/the-u-s-government-and-global-non-communicable-diseases/>.

32. Amitava Banerjee, “Tracking global funding for the prevention and control of noncommunicable diseases,” *Bulletin of the World Health Organization* 90, no. 479 (July 2012), <https://www.who.int/bulletin/volumes/90/7/12-108795/en/>.

33. “Global Coordination Mechanism on the Prevention and Control of NCDs,” WHO, <https://www.who.int/global-coordination-mechanism/ncd-themes/ncd-financing/en/>.

34. The Spanish research initiative, Grupo de Estudio del SIDA-SEIMC (GeSIDA), has published guidelines regarding NCD testing and treatment for patients on ART in cooperation with Spain’s Ministerio de Sanidad: GeSIDA, *Documento de Consenso de GeSIDA/Plan Nacional Sobre el SIDA respecto al tratamiento antiretroviral en adultos infectados por el virus de la inmunodeficiencia humana* (January 2019), [http://gesida-seimc.org/wp-content/uploads/2019/02/Guia\\_Tar\\_Gesida\\_Ene\\_2019.pdf](http://gesida-seimc.org/wp-content/uploads/2019/02/Guia_Tar_Gesida_Ene_2019.pdf).

35. Lilian Namagembe, “Patients stranded as cancer machine breaks down again,” Daily Monitor, August 31, 2018, <https://www.monitor.co.ug/News/National/Patients-stranded-cancer-machine-breaks-down-again/688334-4736900-579eww/index.html>. See also Clement A. Adebamowo et al., “Challenges in the Detection, Prevention and Treatment of HIV-Associated Malignancies in Low- and Middle-Income Countries in Africa,” *Journal of Acquired*

# Innovative Approaches to Integrated Service Delivery

Recognizing the importance of addressing the broad range of health needs of HIV patients on long-term ART, recent research has focused on how best to integrate HIV care with approaches for hypertension, diabetes, cancers, and other NCDs. Results from MICs and LICs shedding light on promising paths forward for improving HIV care over the life course.

Considerable work has already focused on middle-income countries, where NCDs are a leading cause of death. In South Africa, for example, a high prevalence of HIV is complicated by growing rates of hypertension (29.3-48 percent) and Type II diabetes (1-16 percent). To assess the most effective way to meet patient needs for HIV and NCD services, researchers in Cape Town added testing services for diabetes, hypertension, and tuberculosis to a mobile unit that already offered diagnostic testing for HIV. Being able to access a number of different health services proved attractive to residents and led to new HIV and TB diagnoses, as well as a 58.1 percent increase in new diagnoses of hypertension.<sup>36</sup> In Brazil, the percentage of PLHIV who were diagnosed with two or more unique NCDs increased 8 percent over a 10-year period.<sup>37</sup> Metabolic diseases accounted for the largest increase in NCD diagnoses in Brazil, but increased rates of high-grade hyperlipidemia (HLD) and osteoporosis, perhaps related to long-term use of some of the more toxic ARTs, were also notable. In Latin America, where cardiovascular disease is the leading cause of death in most places, patients on long-term ART have been reported to have even higher rates of hypertension and other cardiovascular disorders than the general population, underscoring the importance of focusing attention on this issue in a region of middle-income countries.<sup>38</sup> Researchers in Asia report that HIV patients in upper- and middle-income countries alike experience higher rates of diabetes and

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Immune Deficiency Syndrome 67, S17-S26 (2014), <https://www.ncbi.nlm.nih.gov/pubmed/25117957>.

36. Darshini Govindasamy et al., "Linkage to HIV, TB and Non-Communicable Disease Care from a Mobile Testing Unit in Cape Town, South Africa," *PLoS ONE* 8, no. 11 (November 2013), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0080017>.

37. "Age increases multimorbidity risk in people with HIV in Brazil," *Avert*, February 14, 2019, <https://www.avert.org/news/age-increases-multimorbidity-risk-people-hiv-brazil>.

38. Brenda Crabtree-Ramirez et al., "HIV and Noncommunicable Diseases (NCDs) in Latin America: A Call for an Integrated and Comprehensive Response," *Journal of Acquired Immune Deficiency Syndrome* 67, supplement 1 (September 2014), [https://journals.lww.com/jaids/Fulltext/2014/09011/HIV\\_and\\_Noncommunicable\\_Diseases\\_NCDs\\_in\\_Latin.11.aspx](https://journals.lww.com/jaids/Fulltext/2014/09011/HIV_and_Noncommunicable_Diseases_NCDs_in_Latin.11.aspx).

kidney failure, as well as hepatocellular carcinoma associated with co-infection with the Hepatitis B virus.<sup>39</sup>

The question of how to best integrate HIV and NCD services in LICs has motivated research in sub-Saharan Africa as well. In Uganda, the Sustainable East Africa Research in Community Health (SEARCH) randomized control trial asked what might be gained through the use of mobile clinics to provide cost-effective, integrated HIV and NCD care.<sup>40</sup> In one pilot program, for example, researchers offered multi-disease services, involving field laboratory and mobile clinic units, at no cost to patients over a five-day period. Staff provided tests for HIV and conducted pre-ART counseling and ART initiation at the patient's first clinic visit, at which time they also screened patients for hypertension and diabetes. Combining the two sets of services proved to be marginally more expensive per patient (\$11) than providing HIV services alone, yet the option of seeking multiple health services appealed to people who visited the clinics. The study found that male patients, perhaps concerned over the stigma associated with being diagnosed with HIV, preferred visiting a site that provided several different kinds of health services so that it was not obvious to onlookers what kind of care they were seeking.<sup>41</sup> Another finding from an assessment of integrated HIV and hypertension care in 10 communities was that patients were more likely to achieve normal blood pressure when hypertension management was integrated into routine HIV care.<sup>42</sup> A study in Kenya revealed that combining HIV testing and malaria testing and treatment saved money and lives in Western Province.<sup>43</sup>

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39. Jintanat Ananworanich and Anchalee Avihingsanon, "HIV and Noncommunicable Diseases: The Asian Perspective," *Journal of Acquired Immune Deficiency Syndrome* 67: S99-S103 (September 2014), <https://www.ncbi.nlm.nih.gov/pubmed/25117967>.

40. Wei Chang et al., "Cost and Efficiency of a Hybrid Mobile Multidisease Testing Approach With HIGH HIV Testing Coverage in East Africa," *Journal of Acquired Immune Deficiency Syndrome*, vol. 73, no. 3 (November 2016), [https://journals.lww.com/jaids/Fulltext/2016/11010/Implementation\\_and\\_Operational\\_Research\\_\\_Cost\\_and.18.aspx](https://journals.lww.com/jaids/Fulltext/2016/11010/Implementation_and_Operational_Research__Cost_and.18.aspx).

41. Gabriel Chamie et al., "Leveraging Rapid Community-based HIV Testing Campaigns for Non-Communicable Diseases in Rural Uganda," *PLoS ONE* 7, no. 8 (August 2012), <https://www.ncbi.nlm.nih.gov/pubmed/22916256>.

42. Dalsone Kwarisiima et al., "Hypertension control in integrated HIV and chronic disease clinics in Uganda in the SEARCH study," *BMC Public Health* 19, no. 511 (2019), <https://doi.org/10.1186/s12889-019-6838-6>. See also Gabriel Chamie et al., "A hybrid mobile HIV testing approach for population-wide HIV testing in rural East Africa: an observational study," *Lancet HIV* 3, no. 3 (March 2016), <https://www.ncbi.nlm.nih.gov/pubmed/26939734>.

43. James G. Kahn et al., "Integrated HIV Testing, Malaria, and Diarrhea Prevention Campaign in Kenya: Modeled Health Impact and Cost-Effectiveness," *PLoS ONE* 7, no. 2 (February 2012), <https://doi.org/10.1371/journal.pone.0031316>.

# The Potential of the UHC Model

The global community's commitment to advancing progress toward UHC by 2030 at the September 23, 2019 high-level meeting creates an opportunity to consider the extent to which the UHC concept can help address HIV care over the life course, particularly the health needs of PLHIV over 50, including NCDs. According to the WHO, UHC means "all people have access to the health services they need (prevention, promotion, treatment, rehabilitation, and palliative care) without the risk of financial hardship when paying for them."<sup>44</sup>

The global commitment to UHC is explicit within the Sustainable Development Goals (SDGs), with SDG 3.8 emphasizing the importance of "financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all."<sup>45</sup> The percentage of PLHIV on ART is an integral component of the essential services that comprise UHC, and the UHC Service Coverage Index (SCI), developed to help countries assess progress toward UHC.<sup>46</sup>

There are several arguments in favor of using the UHC umbrella as a way of integrating HIV and NCD care for patients who need it. For example, the UHC focus on generating domestic resources for health and strengthening health systems could help close the projected HIV funding gap, either by financing AIDS services directly within routine health programs or financing cross-cutting projects, such as infrastructure improvements and health workforce development.<sup>47</sup> At the same time, UHC's emphasis on service integration could enhance the ability of HIV patients on long-term treatment to seek care for other needs, including NCDs, sexual and reproductive health services, and care for hepatitis, drug dependence, nutrition, or mental health issues.<sup>48</sup>

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44. "Questions and Answers on Universal Health Coverage," WHO, [https://www.who.int/healthsystems/topics/financing/uhc\\_qa/en/](https://www.who.int/healthsystems/topics/financing/uhc_qa/en/).

45. "Sustainable Development Goals: Goal 3: Ensure Healthy Lives and Promote Well-Being for All at All Ages," United Nations, <https://www.un.org/sustainabledevelopment/health/>.

46. World Health Organization and The World Bank, *Tracking Universal Health Coverage: 2017 Global Monitoring Report* (Geneva: 2017), p. 3, 6-9, 10, <http://documents.worldbank.org/curated/en/640121513095868125/pdf/122029-WP-REVISED-PUBLIC.pdf>.

47. Buse, Jay, and Odetoynbo, "AIDS and universal health coverage - stronger together."

48. Beatrice L. Matanje Mwangomba et al., "Opportunities and challenges for evidence-informed HIV-noncommunicable disease integrated care policies and programs: lessons from Malawi, South Africa, Swaziland and Kenya," *AIDS* 32, supplement 1 (2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952787>; Benson Njunga et al., "Models of integration of HIV and noncommunicable disease care in sub-Saharan Africa: Lessons learned and evidence gaps," *AIDS* 32, supplement 1 (2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952788>.

Up until now, the exceptional nature of the global HIV response has, in many places, created unique career pathways, training opportunities, and incentives for health workers engaged in HIV services. Training the next generation of health providers at all levels to deliver quality HIV and NCD care under the UHC concept could prove costly and challenging. If managed carefully, integrating HIV and NCD services under the UHC umbrella could lead to cost savings and improved quality of care for all, using a people-centered rather than disease centered approach.<sup>49</sup> Indeed, calls for expanding the mandate of the Global Fund to support UHC initiatives have been met favorably in some quarters.<sup>50</sup>

*UHC's emphasis on service integration could enhance the ability of HIV patients on long-term treatment to seek care for other needs, including NCDs, sexual and reproductive health services, and care for hepatitis, drug dependence, nutrition, or mental health issues.*

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49. Miriam Rabkin et al., "Strengthening the health workforce to support integration of HIV and noncommunicable disease services in sub-Saharan Africa," *AIDS* 32, supplement 1 (2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952790>.

50. Sjoerd Postma, "The Global Fund as an ATM plus," *The Lancet* 392 (October 2018), <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2818%2931879-8>.

## Looking Ahead

With the success of the global AIDS prevention and treatment efforts leading to a growing proportion of PLHIV over the age of 50, there are multiple opportunities over the next few years to ensure this cohort's health needs, including NCD services, are met. As planning for the next Global Fund strategy, the next phase of the UNAIDS Fast Track Goals, and a new PEPFAR strategic period all get underway, policymakers, researchers, advocates, health care providers can pay attention to the following issues:

*Make collecting data about, and training providers to address, the health needs of PLHIV over 50 an explicit priority within multilateral and bilateral programs.*

- **Data:** Considerable multilateral, bilateral, and foundation support has already led the way in digitizing HIV data, linking clinical and lab networks, and uploading regional HIV data to national databases in priority LICs and MICs. This includes ongoing efforts to accelerate the use of mobile formats so that field data can be viewed and assessed in a timely manner. Supporting efforts to integrate information about NCDs with the HIV patient data captured at the clinic level could also improve analysis of the links between HIV and NCDs and pave the way for identifying future program needs.<sup>51</sup>
- **Workforce Training:** Some of the most innovative aspects of the global HIV response has been the creation of specialized, stand-alone HIV programs and the training of nurses and community health workers to provide HIV services, often in rural or remote settings. To effectively address the NCD needs of aging HIV patients, it will be important to train health workers already focused on HIV to address their patients' NCD concerns.<sup>52</sup>

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51. Michael Johnson et al., "Global partnerships to support noncommunicable disease care in low and middle-income countries: lessons from HIV/AIDS," *AIDS* 32, supplement 1 (2018), <https://www.ncbi.nlm.nih.gov/pubmed/29952793>.

52. "Goals and the Future of the Program," AIDS Education & Training Center Program, October 2016, <https://hab.hrsa.gov/global-hiv-aids-program/goals-and-future-program>. See also Rabkin et al., "Strengthening the health workforce."

## *Support a research agenda focused on the health needs of PLHIV across the life course in high-, middle-, and lower-income contexts.*

- **Research:** More research is needed on the negative health effects of long-term exposure to ARTs. At the same time, a more nuanced understanding of how ART affects people as they age would be helpful.
  - Are there aging differences between those who have been on ART since birth versus those who initiate treatment later in life?
  - How does the kind of ART initially prescribed shape long-term health prospects, including susceptibility to NCDs?
  - Are there other considerations for those who started ART while very sick compared to those who started close to time of infection?

The effects of intermittent use of Pre-Exposure Prophylaxis (PrEP) and ART on NCDs and other non-AIDS-related health issues should be explored. This will be especially important to assess for otherwise healthy women with HIV who were advised to take ART primarily during pregnancy and breastfeeding before 2015, when global recommendations for universal ART were put into place.<sup>53</sup>

At the same time, in an era of decreasing international funding for HIV, it is essential to: understand the potential costs associated with expanding access to drugs to treat NCDs; prioritize the development of new HIV and NCD therapies that do not have negative interactions; and consider the potential savings that can be realized through integrated approaches to HIV and NCD care.

## *Support New Models of Advocacy and Outreach.*

- **Advocate for greater program flexibilities to focus on the needs of older PLHIV:** if current technical guidelines within bilateral programs, such as PEPFAR, and multilateral partnerships, such as the Global Fund, are too restrictive, then it will be important to advocate for expanded programmatic approaches in the next strategic phases.
- **Prioritize integrated advocacy approaches:** There has recently been a call within the advocacy community to return to a focus on global health rather than emphasize specific disease programs. It will be important to encourage the HIV, NCD, and UHC advocacy communities to better understand the cross-cutting nature of the issues and identify how they can work together to secure the best outcomes for people on long-term ART care.
  - Are there lessons from previous efforts to integrate HIV services with maternal and child health activities, as well as family planning programs, that could be useful?
  - How can advocates work in partnership with civil society organizations and professional associations to encourage policy changes to support more integrated approaches?

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53. Amy L. Slogrove, Polly Clayden, and Elaine J. Abrams, "Towards a Universal Antiretroviral Regimen: Special Considerations of Pregnancy and Breastfeeding," *Current Opinion in HIV and AIDS* 12, no. 4 (2017): 359-368, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5584561/>.

- What messages about the importance of linking HIV and NCD care and addressing the broader health needs of older PLHIV will resonate with different groups?
- **Ensure the voices of PLHIV over 50 are heard:** One option would be to feature PLHIV over 50 as keynote speakers at the 2020 International AIDS Society (IAS) meeting in San Francisco/Oakland. This would raise awareness about the health needs and experiences of this growing population and ensure their voices are heard within the largest gathering of global health researchers, advocates, and practitioners.

As the global population of PLHIV lives into its sixth and seventh decades and becomes more susceptible to other health challenges associated with aging, particularly NCDs, initiating and maintaining patients on ART while addressing their health needs beyond HIV has become a critical challenge. At the same time, it is imperative that efforts to prevent new HIV infections scale up. Should prevention efforts fail to slow the rate of new infections among adolescents and young adults, it can be expected that there will be many more PLHIV requiring long-term ART in the future, and likely NCD care as well. In the decades to come, health systems in high-, middle-, and lower-income countries alike will need to adapt to better address patients' medical concerns over the life course and beyond HIV, or they may risk undermining the considerable success of HIV programs altogether. In this context, new strategies articulating future bilateral and multilateral support for global AIDS programs should make the needs of PLHIV over 50 an explicit priority and identify the most promising approaches to enhance the health of PLHIV and those living with NCDs.

## About the Author

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