

# AGING & HIV: A LITERATURE REVIEW

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## Abstract

Advancements in treatment, both medical and interpersonal, have drastically lengthened life expectancy for people living with HIV. The advent of antiretroviral therapy, early and accessible medical and social interventions, and societal efforts to destigmatize HIV and AIDS together paint a holistic portrait of the supports enabling people to live longer, healthier lives post-diagnosis. And the population is growing, with the Centers for Disease Control and Prevention writing that 51% of people in the United States living with HIV are 50 years old or over. However, while they exemplify the advancements made in HIV care, the barriers faced by those aging with HIV are distinct compared to those uninfected and over 50. This review sets out to collect and evaluate the existing research on those experiences, looking into the particulars of the health outcomes of people aging with HIV, how they might differ from those without HIV, and what might be necessary to ensure a healthy, equitable aging process in the United States. Collecting from medical and science journals, social science journals, and current epidemiological reports, this review highlights the common issues researchers note people aging with HIV face and possible ways to address them.

## Introduction

The Centers for Disease Control and Prevention's (CDC) *HIV Surveillance Report, 2018 (Updated)* found that "over half (51%) of people in the United States (U.S.) and dependent areas with diagnosed HIV were aged 50 and older."<sup>1</sup> New HIV diagnoses in people 50 and over decreased between 2014 and 2018; however, it is still an average of 1 in 6 (17%) of new diagnoses.<sup>2</sup> In recent memory, society viewed HIV/AIDS as primarily affecting the young, so the change in demographics demonstrates a stark shift. This perception undoubtedly influenced the kinds of health initiatives that were, and to some extent still are, prioritized.

Access to quality medical care and social services in the U.S. varies substantially by age, economic status, race, and other demographic factors.<sup>3</sup> People living with HIV (PLWH) over 50 face challenges that pose particular barriers to prevention and treatment. Despite being more likely to visit medical providers frequently, "older people and their providers are less likely to discuss sexual or drug use behaviors."<sup>4</sup> They face an increased risk of immune system damage, as they are more likely to have a late-stage HIV infection.<sup>5</sup> Moreover, they are more likely to experience co- and multi-morbidity.<sup>6</sup>

The initial goal of this review was to examine research comparing the experiences of PLWH over 50 to the population aging without HIV. Most of the articles discussed focus on risk factors associated with PLWH over 50, the implications of co- and multi- morbidities, and HIV-specific care interventions, thus signifying the need for further research.

With this in mind, the review question became a need to examine the common themes present in current HIV and aging research. With an expansive look into medical and science journals, social science journals, conference topics and presentations, and national epidemiological reports, this review examines the key issues researchers are interested in addressing regarding HIV and aging.

This literature review focuses on the experiences of people already living with HIV. While

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<sup>1</sup> Centers for Disease Control and Prevention, "HIV Surveillance Report," 2018 (Updated); vol. 31, <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>, Published May 2020.


<sup>2</sup> Ibid.

<sup>3</sup> Kathryn Ann Fisher et al., "Effect of Socio-Demographic and Health Factors on the Association between Multimorbidity and Acute Care Service Use: Population-Based Survey Linked to Administrative Data," *BMC Health Services Research* 21, no. 62 (January 13, 2021), <https://doi.org/10.21203/rs.3.rs-39223/v3>.

<sup>4</sup> Centers for Disease Control and Prevention, "HIV Surveillance Report," 2018 (Updated).

<sup>5</sup> Ibid.

<sup>6</sup> Kristine M. Erlandson and Maile Y. Karris, "HIV and Aging," *Infectious Disease Clinics of North America* 33, no. 3 (2019): pp. 769-786, <https://doi.org/10.1016/j.idc.2019.04.005>.



prevention of HIV transmission in older adults presents its own set of challenges, that more expansive focus would detract from the goal of this review. Herein, the discussion of the research is limited to the needs of those already diagnosed with HIV.

Starting with a look into how life expectancy for PLWH has changed, this review looks into what life expectancy means for PLWH and current research on risk factors that may increase mortality rates, despite advancements in HIV care. With this comes the need to acknowledge the particular barriers PLWH face to accessing care. Then there is a look into co- and multi- morbidities, a significant area of focus in the HIV medical community. Related to that area, next comes a dive into the idea of accelerated aging and whether or not it is experienced by those living with HIV. Finally, there is an overview of current discussions around specialized care needs for those living with HIV, where they exist, and where improvements are necessary.

## Aging and HIV

### *Lengthening Lifetimes*

Life expectancy is defined generally as “the average number of years that a person would be expected to survive beyond a given age” and is a health indicator often used to track trends and allocate resources.<sup>7,8</sup> When it comes to HIV, researchers looking into the life expectancy of PLWH have previously reported it as “the potential years of life lost due to that infection.”<sup>9</sup> However, the introduction and adoption of antiretroviral therapy (ART) has drastically lengthened life expectancy for PLWH, as discussed in “Changes in the Risk of Death After HIV Seroconversion Compared With Mortality in the General Population.” In that article, researchers identified and measured the changing mortality gap in PLWH and the general uninfected population. Before ART (pre-1996), the excess mortality rate (per 1000 person-years) was around 40.8%, but it has “decreased...to 6.1%.”<sup>10</sup> A 2014 study titled “Impact on life expectancy of HIV-1 positive individuals of CD4+ cell count and viral load response to antiretroviral therapy” found that “successfully treated HIV-positive individuals have a normal life expectancy.”<sup>11</sup> This dramatic shift in life expectancy means that, rather than focusing on the mortality of an individual with HIV, HIV symptom and comorbidity management have become the priority.

It is important to note that, due to other risk factors, the life expectancy of PLWH remains lower than those not living with HIV, even for PLWH who are adherent to treatment protocols.<sup>12</sup> While the rates are going down, PLWH are more likely to engage in behaviors such as smoking than their peers without HIV.<sup>13</sup> A 2016 review titled “Smoking, alcohol and illicit drug use effects

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<sup>7</sup> Caroline A Sabin, “Do People with HIV Infection Have a Normal Life Expectancy in the Era of Combination Antiretroviral Therapy?,” *BMC Medicine* 11, no. 1 (2013), <https://doi.org/10.1186/1741-7015-11-251>.

<sup>8</sup> Margaret T. May and Suzanne M. Ingle, “Life Expectancy of HIV-Positive Adults: a Review,” *Sexual Health* 8, no. 4 (2011): p. 526, <https://doi.org/10.1071/sh11046>.

<sup>9</sup> Caroline A Sabin, “Do People with HIV Infection Have a Normal Life Expectancy in the Era of Combination Antiretroviral Therapy?.”

<sup>10</sup> Krishnan Bhaskaran, “Changes in the Risk of Death After HIV Seroconversion Compared With Mortality in the General Population,” *JAMA: The Journal of the American Medical Association* 300, no. 1 (February 2008): p. 51, <https://doi.org/10.1001/jama.300.1.51>.

<sup>11</sup> Margaret T. May et al., “Impact on Life Expectancy of HIV-1 Positive Individuals of CD4+ Cell Count and Viral Load Response to Antiretroviral Therapy,” *AIDS* 28, no. 8 (2014): pp. 1193-1202, <https://doi.org/10.1097/qad.0000000000000243>.

<sup>12</sup> Rebecca A. Legarth et al., “Long-Term Mortality in HIV-Infected Individuals 50 Years or Older,” *Journal of Acquired Immune Deficiency Syndromes* 71, no. 2 (January 2016): pp. 213-218, <https://doi.org/10.1097/qai.0000000000000825>.

<sup>13</sup> Emma L. Frazier et al., “Trends in Cigarette Smoking among Adults with HIV Compared with the General Adult Population, United States - 2009–2014,” *Preventive Medicine* 111 (2018): pp. 231-234, <https://doi.org/10.1016/j.ypmed.2018.03.007>.

on survival in HIV-positive persons” found that “life expectancy is reduced among HIV-positive smokers by at least 16 years and further reduced for people who have a history of excessive alcohol and drug use.”<sup>14</sup> It compiled findings of multiple global cohort studies looking into how PLWH’s participation in behaviors shown to increase mortality is disproportionate to the general population, noting the need for “these factors...to be in continued focus for the management and care of HIV-positive people.”<sup>15</sup> An examination of the increased burden of comorbidities for PLWH showed that, after age 60, life-threatening conditions including hypertension, stroke, type 2 diabetes, chronic kidney disease, and some cancers are more than twice as likely to afflict PLWH than HIV-negative individuals.<sup>16</sup>

A report of life expectancy among people living with HIV in the United States and Canada found that individuals have comparable life expectancies, although it was lower for those with a history of injection drug use, those with baseline CD4 counts under 350 cells/mm, and people who are not white. “Differences in life expectancy by race were also evident...As with persons with a history of IDU, these differences in life expectancy may be reflective of underlying differences in socioeconomic conditions, access to care, and health insurance coverage.”<sup>17</sup>

It is essential to acknowledge the critical lens one must adopt while reading such studies. These findings can lead to a singular view, assuming cause and effect; however, noting the role having a lower socioeconomic status (or SES) can play in mortality rates is necessary for understanding how best to tackle such health outcomes for PLWH. Social determinants of health, including “race/ethnicity, education, income, poverty, area deprivation, unemployment, housing, rural-urban residence, and geographic location,” prove the effects a vastly stratified society has on people’s ability to live long, healthy lives.<sup>18</sup> A 2019 study titled “Poverty stigma is associated with suboptimal HIV care and treatment outcomes among women living with HIV in the U.S.” found that “experienced poverty stigma was associated with lower adjusted odds of

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<sup>14</sup> Kathy Petoumenos and Matthew G. Law, “Smoking, Alcohol and Illicit Drug Use Effects on Survival in HIV-Positive Persons,” *Current Opinion in HIV and AIDS* 11, no. 5 (2016): pp. 514-520, <https://doi.org/10.1097/coh.0000000000000306>.

<sup>15</sup> Ibid.

<sup>16</sup> Kathleen Fitch, “Models of Care for an Aging Population Living with HIV,” *Graying of HIV Conference*, March 7, 2018.

<sup>17</sup> Hasina Samji et al., “Closing the Gap: Increases in Life Expectancy among Treated HIV-Positive Individuals in the United States and Canada,” *PLoS ONE* 8, no. 12 (2013), <https://doi.org/10.1371/journal.pone.0081355>.

<sup>18</sup> Gopal Singh et al., “Social Determinants of Health in the United States: Addressing Major Health Inequality Trends for the Nation, 1935-2016,” *International Journal of MCH and AIDS (IJMA)* 6, no. 2 (2017), <https://doi.org/10.21106/ijma.236>.

viral suppression.”<sup>19</sup> This demonstrates that the intersecting issues explained by social determinants of health play an outsized role in people’s ability to age well with HIV.

## Barriers to Care

There are common barriers to care for most PLWH in the U.S., but the ones that stand in the way of older PLWH present particular challenges. On the CDC’s website dedicated to HIV, the section titled “HIV and Older Americans” names five prevention challenges, but each carries equal relevance for those already living with HIV. First, the CDC reports that “although they visit their doctors more frequently, older people and their providers are less likely to discuss sexual or drug use behaviors.”<sup>20</sup> This relates to another barrier mentioned by the CDC: stigma. The CDC writes that stigma may mean that older adults “may avoid getting the care they need or disclosing their HIV status because they may already face isolation due to illness or loss of family, friends, or community support.”<sup>21</sup> Social isolation presents a significant barrier for older PLWH. A 2013 overview titled “Growing Older With HIV/AIDS: New Public Health Challenges” discusses that, unlike illnesses that often accompany age, the stigma around disclosing HIV status among older generations prevents many PLWH over 50 from reaching out to friends and family for care. They go on to write that this social stigma “can also limit caregivers’ ability to access traditional social support networks and institutions of support.”<sup>22</sup>

Retention to care is integral for PLWH, particularly as they age. Inadequate care retention can put someone at risk for further complications, such as the development of “AIDS-defining illnesses, increased odds of mortality, and poorer viral suppression.”<sup>23,24,25</sup> A 2020 study titled “Is Social Isolation Related to Emotion Dysregulation and Retention in Care

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<sup>19</sup> Anna M. Leddy et al., “Poverty Stigma Is Associated with Suboptimal HIV Care and Treatment Outcomes among Women Living with HIV in the United States,” *AIDS* 33, no. 8 (January 2019): pp. 1379-1384, <https://doi.org/10.1097/qad.0000000000002189>

<sup>20</sup> Centers for Disease Control and Prevention, “HIV Among People Aged 50 and Over,” September 14, 2020. [https://www.cdc.gov/hiv/group/age/olderamericans/index.html#:~:text=In%202018%2C%20over%20half%20\(51,2018%20were%20in%20this%20group.](https://www.cdc.gov/hiv/group/age/olderamericans/index.html#:~:text=In%202018%2C%20over%20half%20(51,2018%20were%20in%20this%20group.)

<sup>21</sup> Ibid.

<sup>22</sup> Sean Cahill and Robert Valadéz, “Growing Older With HIV/AIDS: New Public Health Challenges,” *American Journal of Public Health* 103, no. 3 (2013), <https://doi.org/10.2105/ajph.2012.301161>.

<sup>23</sup> Moka Yoo-Jeong et al., “Is Social Isolation Related to Emotion Dysregulation and Retention in Care Among Older Persons Living with HIV?,” *AIDS and Behavior* 25, no. 1 (2020): pp. 171-181, <https://doi.org/10.1007/s10461-020-02957-4>.

<sup>24</sup> T. P. Giordano et al., “Retention in Care: A Challenge to Survival with HIV Infection,” *Clinical Infectious Diseases* 44, no. 11 (January 2007): pp. 1493-1499, <https://doi.org/10.1086/516778>.

<sup>25</sup> Michael J. Mugavero et al., “Missed Visits and Mortality among Patients Establishing Initial Outpatient HIV Treatment,” *Clinical Infectious Diseases* 48, no. 2 (2009): pp. 248-256, <https://doi.org/10.1086/595705>.

Among Older Persons Living with HIV?” surveyed participants who access a Ryan White-funded HIV care clinic in Atlanta, collecting baseline data and periodic surveys assessing the patient’s “retention in care, health care utilization...data, and baseline HIV biomarkers.”<sup>26</sup> The surveys collected self-identified responses on participant’s sociodemographic characteristics, covariates/cofounders (i.e. drug and alcohol use, attitudes the patient has towards their HIV care team, and depressive symptoms), retention in care, emotion dysregulation, social network size, and loneliness. They found that, “of 144 participants, 81 had optimal and 63 had suboptimal visit adherence,” noting that “higher levels of loneliness and smaller social network sizes were related to greater emotion dysregulation.”<sup>27</sup> While more than half their sample was optimally retained in care, they “found that participants were more likely to be sub-optimally retained in care if they had an income lower than the federal poverty level, had an AIDS-defining CD4 + T cell count, and reported problematic drug use,” emphasizing the importance of social determinants of health markers as predictors of care outcomes.<sup>28</sup>

Provider perceptions may also contribute to difficulties obtaining proper, complete care while aging with HIV. In a 2020 study titled “‘Undetectable, Now what?’ HIV Provider Opinions on Barriers to Healthy Aging for Older People Living with HIV in North America,” researchers surveying HIV clinicians, clinical researchers, and geriatricians with expertise in HIV and aging found that, while multimorbidity was seen as a significant barrier to healthy aging, “syndromes such as frailty and cognitive difficulties were deemed less important.” This, despite sizable bodies of evidence noting otherwise, suggests that some providers “tend not to perceive the impact of geriatric conditions on older PLWH nor to value geriatricians.”<sup>29</sup>

When assessing which barriers to care to address for PLWH over 50, the research suggests that taking all the social determinants of health into account is necessary. Though this is a monumental task, attempting to parse out which factors pose the greatest risk to care retention fails to understand how these intersecting issues build on one another, either carving out pathways or building up barriers. Also key is making sure providers are in contact with care teams addressing the effects of co- and multi- morbidities, which will be discussed in the next section.

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<sup>26</sup> Moka Yoo-Jeong et al., “Is Social Isolation Related to Emotion Dysregulation and Retention in Care Among Older Persons Living with HIV?”

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

<sup>29</sup> Maile Young Karris et al., “‘Undetectable, Now What?’ HIV Provider Opinions on Barriers to Healthy Aging for Older People Living with HIV in North America,” *Gerontology and Geriatric Research*, 2020, pp. 1-6, <https://doi.org/10.31487/j.ggr.2020.01.01>.



## Co- and Multi- Morbidities

One of the most significant challenges facing PLWH over 50 is the management of co- and multimorbidities.<sup>30</sup> It's been found that PLWH “experience age-associated health conditions earlier than their HIV-uninfected peers and have higher rates of co-occurring conditions that impact aging.”<sup>31</sup> A 2018 study conducted a cross-sectional analysis of recruited geriatric patients, some with HIV and some without, “to compare prevalence and risk factors of individual non-communicable diseases, multimorbidity, and polypharmacy amongst HIV positive and HIV negative controls at enrollment into the Geriatric Patients Living with HIV/AIDS cohort.”<sup>32</sup> It concluded that multimorbidity and polypharmacy “are related to longer duration of HIV infection rather than older age per se,” but noted that “probability of multimorbidity was higher in HIV positive patients aging with HIV for more than 10 years when compared to HIV negative controls.”<sup>33</sup> A 2018 cohort study from Brazil looked into PLWH and their uninfected peers, assessing the multimorbidity in aging. It found that “the prevalence of multimorbidity was higher in HIV-positive subjects than in HIV-negative controls, and the median number of comorbidities was 2, compared to 1 in controls.,” again noting that the duration someone has been living with HIV is also associated with greater multimorbidity.<sup>34</sup>

As is to be expected, managing co- or multi-morbidities poses a far greater challenge to PLWH and their care teams than people have managing a single condition.<sup>35</sup> A 2020 cross-sectional analysis of six European cohort studies examined three different factors for addressing comorbidities: “...how comorbidities have changed over time; how they compromise HIV management; and how much of a financial burden they impart.”<sup>36</sup> They found that there is a “disproportionately higher burden of comorbidities in ageing HIV-positive populations relative to

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<sup>30</sup> Davide De Francesco, Caroline A. Sabin, and Peter Reiss, “Multimorbidity Patterns in People with HIV,” *Current Opinion in HIV and AIDS* 15, no. 2 (2020): pp. 110-117, <https://doi.org/10.1097/coh.0000000000000595>.

<sup>31</sup> Maile Young Karris et al., “‘Undetectable, Now What?’ HIV Provider Opinions on Barriers to Healthy Aging for Older People Living with HIV in North America.”

<sup>32</sup> G. Guaraldi et al., “The Increasing Burden and Complexity of Multi-Morbidity and Polypharmacy in Geriatric HIV Patients: a Cross Sectional Study of People Aged 65 – 74 Years and More than 75 Years,” *BMC Geriatrics* 18, no. 1 (2018), <https://doi.org/10.1186/s12877-018-0789-0>.

<sup>33</sup> Ibid.

<sup>34</sup> Rafael Aguiar Maciel et al., “Comorbidity Is More Common and Occurs Earlier in Persons Living with HIV than in HIV-Uninfected Matched Controls, Aged 50 Years and Older: A Cross-Sectional Study,” *International Journal of Infectious Diseases* 70 (2018): pp. 30-35, <https://doi.org/10.1016/j.ijid.2018.02.009>.

<sup>35</sup> Paolo Maggi et al., “Clusterization of Co-Morbidities and Multi-Morbidities among Persons Living with HIV: a Cross-Sectional Study,” *BMC Infectious Diseases* 19, no. 1 (2019), <https://doi.org/10.1186/s12879-019-4184-z>.

<sup>36</sup> A. d'Arminio Monforte et al., “What Do the Changing Patterns of Comorbidity Burden in People Living with HIV Mean for Long-Term Management? Perspectives from European HIV Cohorts,” *HIV Medicine* 21, no. S2 (2020): pp. 3-16, <https://doi.org/10.1111/hiv.12935>.

ageing HIV-negative individuals,” and noted the considerable costs associated with such risks.<sup>37</sup> The study calls for the need for more data on long-term outcomes for PLWH, and recommends researchers and care teams “consider a holistic approach...to include more integrated and personalized care” to keep people linked to multiple forms of care, so as to drive down risks associated with co- and multi- morbidities.<sup>38</sup> It is clear from the research that there is a paramount need for such care, as these compounding health issues disproportionately and detrimentally affect PLWH.

## Accelerated Aging

Whether HIV itself accelerates the aging process has been a controversial topic among scientists and the medical community. There are recent studies supporting the correlation. While life expectancy among PLWH has increased dramatically due to the availability of antiretrovirals, it falls short of life expectancies among individuals who are HIV-negative. Chronic inflammation, or inflammaging, has long been acknowledged as a key feature of this more rapid aging.<sup>39</sup>

But even with viral loads suppressed and CD4 counts stable, elevated rates of inflammation often plague patients with HIV, putting them at greater risk for cardiovascular, renal, neurocognitive, oncological, and osteoporotic diseases.<sup>40</sup> Geriatric syndromes including frailty are also more common in PLWH at a younger age than in the general population.<sup>41</sup> Presented at the International Workshop on HIV & Aging 2020, “Acceleration of Multiple Measures of Aging-Related Epigenetics During HIV Seroconversion” drew a clear line between acute HIV infection and “significant acceleration of epigenetic aging in multiple clocks over a relatively short time frame.”<sup>42</sup> While there exists some disagreement over whether HIV or the inevitable effects of aging on the body are most at play, recent research indicates a stronger link between the effect CD4 in the earlier onset of age-associated diseases than exists with viral load or cART.<sup>43</sup>

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<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Fumihiko Sanada et al., “Source of Chronic Inflammation in Aging,” *Frontiers in Cardiovascular Medicine* 5 (2018), <https://doi.org/10.3389/fcvm.2018.00012>.

<sup>40</sup> Erin E. Sundermann et al., “Inflammation-Related Genes Are Associated with Epigenetic Aging in HIV,” *Journal of NeuroVirology* 25, no. 6 (August 2019): pp. 853-865, <https://doi.org/10.1007/s13365-019-00777-4>.

<sup>41</sup> Edward J. Wing, “HIV and Aging,” *International Journal of Infectious Diseases* 53 (2016): pp. 61-68, <https://doi.org/10.1016/j.ijid.2016.10.004>.

<sup>42</sup> B. Jamieson et al., “Acceleration of Multiple Measures of Aging-Related Epigenetic' During HIV Seroconversion,” Presented at the International Workshop on HIV & Aging 2020, *Antiviral Therapy & Infectious Diseases* 5 (2020).

<sup>43</sup> Keren Meir-Shafir and Shimon Pollack, “Accelerated Aging in HIV Patients,” *Rambam Maimonides Medical Journal* 3, no. 4 (2012), <https://doi.org/10.5041/rmmj.10089>.

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Debate also continues over whether the neurocognitive changes seen in PLWH occur at an increased rate vis-a-vis seronegative adults of the same age, and current data shows some abilities are more impacted by HIV than others. A study in the *Journal of NeuroVirology* found data supporting a model of accelerated neurocognitive aging in PLWH in auditory verbal attention, but not where memory, language, or speeded executive functions were studied.<sup>44</sup> In a cross-sectional study of patients with HIV, when compared to younger people living with HIV, older PLWH are at a higher risk of exhibiting cognitive impairment, despite having increased adherence to antiretroviral therapy.<sup>45</sup>

Caution over drawing to solid a correlation should be exercised given that full representation of those living with HIV is lacking and that controls for HIV-negative populations are difficult to specify. Controlling for such disparate variables such as lifestyle, socio-economic status, nutrition, inherited disease, social isolation, ethnicity, and chronic infections make clear causality difficult to establish.<sup>46</sup> And, as has been stated, PLWH experience higher rates of other risk factors that may contribute to accelerated aging, so research must address it holistically.

## Specialized Care

The specialized care needed for a population aging with HIV and where care can best be provided is a crucial concern among researchers. A 1993 paper in the *Journal of Community Health Nursing* suggests that predominance of home and community-based care may not be optimal “to meet the cyclical needs of HIV patients.”<sup>47</sup>

Nearly 30 years later, facing predictions that by 2030 more than 70 percent of people living with HIV will be over 50 years old, the issue of whether home health care providers can adequately meet the needs of these patients in the U.S. is coming to the fore. Key concerns include the need for caregivers who understand the ramifications of living with HIV long-term,

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<sup>44</sup> David P. Sheppard et al., “Accelerated and Accentuated Neurocognitive Aging in HIV Infection,” *Journal of NeuroVirology* 23, no. 3 (2017): pp. 492-500, <https://doi.org/10.1007/s13365-017-0523-2>.

<sup>45</sup> Cezar Arthur Pinheiro et al., “Aging, Neurocognitive Impairment and Adherence to Antiretroviral Therapy in Human Immunodeficiency Virus-Infected Individuals,” *The Brazilian Journal of Infectious Diseases* 20, no. 6 (2016): pp. 599-604, <https://doi.org/10.1016/j.bjid.2016.09.006>.

<sup>46</sup> Edward J. Wing, “HIV and Aging.”

<sup>47</sup> Pamela J. Salsberry et al., “Home Health Care Services for AIDS Patients: One Community's Response,” *Journal of Community Health Nursing* 10, no. 1 (1993): pp. 39-51, [https://doi.org/10.1207/s15327655jchn1001\\_5](https://doi.org/10.1207/s15327655jchn1001_5).

including the side effects of medication, co- and multi-morbidities, and impacts on physical and mental health.<sup>48,49,50</sup>

Further bolstering the call for dedicated care, a review of common changes in ability level among persons with HIV/AIDS attributed to chronic immune activation cautioned that, without a range of supports and interventions, premature disablement is a more likely outcome.<sup>51</sup> Challenges for home health care providers are compounded by cognitive decline of their patients given that HIV (particularly un- or under-treated HIV) and progressing age can have marked effects on the brain and are both predictors of neurological impairments.<sup>52</sup> At the International Workshop on HIV & Aging 2020, issues of including chronic pain, frailty, sleep disorders, isolation, the benefits of physiotherapy, and cardiopulmonary fitness point to the benefits of accessible, dedicated care and care facilities at best, and well coordinated care programs at least.<sup>53,54</sup> One presentation abstract, “Establishing and Reviewing a New Clinical Service for Managing Frailty in People Living With HIV: A Perspective From the United Kingdom,” noted that “HIV services must either adapt with the expectations of managing frailty or conversely Geriatricians must become more familiar with HIV care.”<sup>55</sup>

The need for more specialized care is echoed throughout the community of HIV caregivers.<sup>56</sup> A 2015 report found that, out of 138 US academic faculty practices asked to participate, “few participants had existing procedures (9%) or policies (4%) to identify LGBT-competent physicians.”<sup>57</sup> One companion paper notes that LGBT patients struggle to find

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<sup>48</sup> Sandra Wagner Cardoso et al., “Aging with HIV: a Practical Review,” *The Brazilian Journal of Infectious Diseases* 17, no. 4 (2013): pp. 464-479, <https://doi.org/10.1016/j.bjid.2012.11.007>.

<sup>49</sup> Kelly A Gebo, “HIV and Aging,” *Drugs & Aging* 23, no. 11 (September 1, 2012): pp. 897-913, <https://doi.org/10.2165/00002512-200623110-00005>.

<sup>50</sup> Brandon Brown et al., “Community-Driven Health Priorities for Healthy Aging With HIV,” *Journal of the Association of Nurses in AIDS Care* 30, no. 1 (2019): pp. 119-128, <https://doi.org/10.1097/jnc.0000000000000042>.

<sup>51</sup> Suzanne G. Leveille and Saurja Thapa, “Disability among Persons Aging with HIV/AIDS,” *Interdisciplinary Topics in Gerontology and Geriatrics*, 2016, pp. 101-118, <https://doi.org/10.1159/000448547>.

<sup>52</sup> R. S. Janssen et al., “Epidemiology of Human Immunodeficiency Virus Encephalopathy in the United States,” *Neurology* 42, no. 8 (January 1992): pp. 1472-1472, <https://doi.org/10.1212/wnl.42.8.1472>.

<sup>53</sup> H. Jones et al., “Establishing and Reviewing a New Clinical Service for Managing Frailty in People Living With HIV: A Perspective From the United Kingdom,” Presented at the International Workshop on HIV & Aging 2020, *Antiviral Therapy & Infectious Diseases* 5 (2020).

<sup>54</sup> Elvis Mbu Bisong et al., “Predictors of Sleep Disorders among HIV Out-Patients in a Tertiary Hospital,” *Recent Advances in Biology and Medicine* 03 (2017): p. 103, <https://doi.org/10.18639/rabm.2017.03.509325>.

<sup>55</sup> H. Jones et al., “Establishing and Reviewing a New Clinical Service for Managing Frailty in People Living With HIV: A Perspective From the United Kingdom.”

<sup>56</sup> Kelly A Gebo, “HIV and Aging.”

<sup>57</sup> Joshua Khalili, Lucinda B. Leung, and Allison L. Diamant, “Finding the Perfect Doctor: Identifying Lesbian, Gay, Bisexual, and Transgender-Competent Physicians,” *American Journal of Public Health* 105, no. 6 (2015): pp. 1114-1119, <https://doi.org/10.2105/ajph.2014.302448>.

healthcare providers whom they feel are competent in addressing their health needs.<sup>58</sup> Focusing on a smaller demographic, the study “Cultural competency and microaggressions in the provision of care to LGBT patients in rural and appalachian Tennessee” found that “lack of provider training in lesbian, gay, bisexual, and transgender (LGBT) cultural competence may diminish healthcare access.” They found that, despite a provider’s personal view of their own conduct, they may engage in behaviors that make those patients feel uncomfortable or unsafe.<sup>59</sup>

Shortages of well-trained HIV providers and board-certified geriatricians present further challenges.<sup>60</sup> An examination of incorporating geriatric care with HIV care noted that while “finding a geriatrician who has time, interest, and salary support to work in an HIV practice” is a major hurdle, time constraints and a lack of training in geriatric assessment make the need for a partnership between HIV care providers and geriatricians increasing important and the patient population.<sup>61</sup>

## Conclusion

Undoubtedly, the strides made in the past 40 years of battling the HIV/AIDS epidemic have been hard-won but substantial. What was once perceived as a death sentence is now a manageable diagnosis, lowering mortality and transmission. Still, these advances seem bound by the same issues that hold health equality in the U.S. back overall. Social determinants of health illustrate the compounding barriers present to ensuring equitable access and outcomes, particularly when it comes to HIV. Intersecting issues of race/ethnicity, poverty, age, and more stand in the way of otherwise promising health outcomes for many.

While compiling studies and articles on HIV and aging, it became clear that the current research focuses more on mortality than it does on the living experiences of PLWH over 50. The research predominantly centers on the difficulties in diagnosing and managing co- and multi-morbidities, frailty, and other health factors disproportionately experienced by PLWH. This is all necessary knowledge, particularly for healthcare professionals. However, when it comes to


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<sup>58</sup> Jamieson T. Jann, E. Kale Edmiston, and Jesse M. Ehrenfeld, “Important Considerations for Addressing LGBT Health Care Competency,” *American Journal of Public Health* 105, no. 11 (2015), <https://doi.org/10.2105/ajph.2015.302864>.

<sup>59</sup> Joanne G. Patterson, Jennifer M. Jabson Tree, and Charles Kamen, “Cultural Competency and Microaggressions in the Provision of Care to LGBT Patients in Rural and Appalachian Tennessee,” *Patient Education and Counseling* 102, no. 11 (2019): pp. 2081-2090, <https://doi.org/10.1016/j.pec.2019.06.003>.

<sup>60</sup> Bob Gatty, “A Looming Crisis: Searching for Solutions to Solve the Growing Shortage of HIV Physicians,” *HIV Specialist: Patient Care, Practice Management & Professional Development Information for HIV CARE Providers* 8, no. 1 (March 2016).

<sup>61</sup> Harjot Singh et al., “From One Syndrome to Many: Incorporating Geriatric Consultation Into HIV Care,” *Clinical Infectious Diseases* 65, no. 3 (June 2017): pp. 501-506, <https://doi.org/10.1093/cid/cix311>.



their experiences accessing healthcare, not health outcomes themselves, few articles compared the experiences of PLWH over 50 to their uninfected counterparts. Understanding how an HIV diagnosis influences one's experience with the healthcare system in the U.S. while aging is necessary to understand the barriers present for care retention.

PLWH over 50 make up over half of those clients accessing Ryan White HIV/AIDS Programs.<sup>62</sup> Dedicating time to understanding their unique needs through an intersectional lens can help guide funding decisions to create necessary interventions so people can live long, healthy lives with HIV.

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<sup>62</sup> Centers for Disease Control and Prevention, “HIV Surveillance Report,” 2018 (Updated).

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