



A CLOSER LOOK: Deep South Has the Highest HIV-related Death Rates in the United States

November 2015

<http://southernaidsstrategy.org>

Susan R. Reif – susan.reif@duke.edu

Donna Safley – donna.safley@duke.edu

Carolyn McAllaster – mcallaster@law.duke.edu



With support from:



DEEP SOUTH HAS THE HIGHEST DEATH RATES IN THE US FROM HIV AS AN UNDERLYING CAUSE

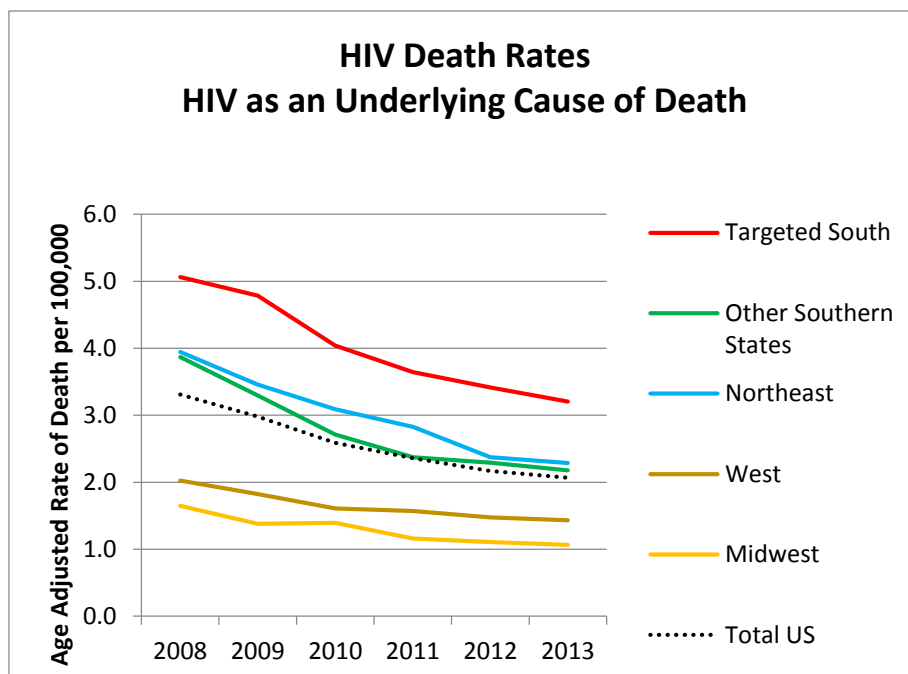
Background |

The Southern region of the USⁱ had the highest HIV and AIDS diagnosis rates of any US region from 2008-2013.¹⁻⁶ The South also had the highest death rates among people living with HIV from 2008-2012. A 9 state region of the South located in the Deep South (including AL, FL, GA, LA, MS, NC, SC, TN, TX) has particularly high HIV diagnosis and death rates. This Deep South region, also referred to in previous publications as the targeted Southern states, had the highest death rates among individuals diagnosed with HIV in 2010.^{7,8} However, it is unclear from this death data whether deaths were related to HIV infection or whether the South and the Deep South have higher death rates among individuals diagnosed with HIV because of higher death rates from other comorbidities. The South and Deep South states have some of the highest rates of death from other causes including heart disease, cancer, and diabetes in the US.⁹⁻¹¹

A recent analysis of data from the CDC Wonder database¹² examined deaths where HIV was the underlying cause in 2008-2013 in order to more specifically study deaths among individuals diagnosed with HIV. The CDC Wonder database provides information about the underlying cause of death (as reported on the death certificate) for states and regions using ICD-10 codes. For HIV deaths, this included the HIV-related ICD-10 codes, B20-24.¹² Death rates from HIV were calculated as age adjusted deaths from HIV per 100,000 population in a state or region.

Rates of death from HIV as an underlying cause. |

Examination of the data regarding underlying cause of death from the CDC Wonder database indicated that in 2013, the Southern region of the US had the highest age adjusted death rate from HIV per 100,000



ⁱ The Census Bureau defines the Southern US as consisting of Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Kentucky, Maryland, Mississippi, Oklahoma, North Carolina, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia

population (3.0 per 100,000 population). The Northeast had the second highest death rate from HIV (2.3 per 100,000) followed by the West at 1.4 per 100,000 population. When the 9 state Deep South region was examined, this region had the highest death rate from HIV of any region at 3.2 per 100,000 in comparison to 2.2 for the remaining Southern states. The Deep South also had the highest death rate from HIV from 2008-2012 of any US region consistent with the finding from 2013. **Further, from 2008-2013, 21,308 individuals in the targeted states died of HIV as the underlying cause of death, representing 43% of deaths in the US where HIV was the underlying cause.**¹³ In addition, each of the 9 Deep South states had higher death rates from HIV than the US average from 2008-2013.

Conclusions |

Analysis findings indicate that in addition to having the highest death rates among individuals diagnosed with HIV (which could be from any cause), the Deep South consistently had the highest death rates where HIV was the underlying cause of death.

These findings suggest that there are factors in the Deep South region that contribute to greater HIV-related mortality, which may include later testing, lack of availability of HIV medical care, and barriers to receiving the HIV care that is available. Previous research has identified some evidence of testing late in the course of HIV disease and less availability of HIV care in the South, particularly in rural areas.¹³⁻¹⁸ Barriers to care that have been identified in the South in previous studies include lack of transportation, financial barriers, and HIV-related stigma and discrimination.¹⁹⁻²⁶ HIV-related stigma has been particularly implicated as a barrier in participating in HIV testing and care and is highly prevalent in the Deep South.^{21,22,27} Additional study is needed to understand the role of these barriers in contributing to the higher rates of death from HIV in the Deep South and to identify effective interventions and federal, state and local strategies to address barriers to care and improve HIV outcomes in the region.

Recent SASI research also highlights the need for HIV prevention funding to be distributed consistent with the geographic distribution of the epidemic.²⁸ Funders should factor in HIV-related death rates in assessing the need for and allocation of prevention and care funding in the US.

References |

1. Centers for Disease Control and Prevention. HIV Surveillance Report 2013, Vol 25. 2015; http://www.cdc.gov/hiv/library/reports/surveillance/2013/surveillance_report_vol_25.html.
2. Centers for Disease Control and Prevention. HIV Surveillance Report 2012, Vol 24. 2014; http://www.cdc.gov/hiv/pdf/statistics_2012_HIV_Surveillance_Report_vol_24.pdf.
3. Centers for Disease Control and Prevention. HIV Surveillance Report 2011, vol 23. 2013; <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/>. Accessed March, 2013.

4. Centers for Disease Control and Prevention. HIV Surveillance Report 2010, vol 22,. 2012; http://www.cdc.gov/hiv/pdf/statistics_surveillance_report_vol_22.pdf.
5. Centers for Disease Control and Prevention. HIV Surveillance Report 2009, vol 21. 2011; <http://www.cdc.gov/hiv/surveillance/resources/reports/2009report/>.
6. Centers for Disease Control and Prevention. HIV Surveillance Report 2008, vol 20. 2010; <http://www.cdc.gov/hiv/surveillance/resources/reports/2008report/pdf/2008SurveillanceReport.pdf>.
7. Reif S, Pence BW, Hall I, Hu X, Whetten K, Wilson E. HIV Diagnosis, Prevalence and Outcomes in Nine Southern States. *Journal of Community Health*. 2015;40(4):642-651. <https://southernaids.files.wordpress.com/2015/01/hiv-diagnoses-prevalence-and-outcomes-in-nine-southern-states-final.pdf>.
8. Reif S, Whetten K, Wilson E, et al. HIV/AIDS in Southern USA: A disproportionate epidemic. *AIDS Care*. 2013(epub).
9. Kaiser Family Foundation. Number of cancer deaths per 100,000 population. 2015; <http://kff.org/other/state-indicator/cancer-death-rate-per-100000/>.
10. Kaiser Family Foundation. Number of Deaths Due to Diseases of the Heart per 100,000 Population. 2015; <http://kff.org/other/state-indicator/number-of-deaths-due-to-diseases-of-the-heart-per-100000-population/>.
11. Kaiser Family Foundation. Number of Diabetes Deaths per 100,000 Population. 2015; <http://kff.org/other/state-indicator/diabetes-death-rate-per-100000/>.
12. Centers for Disease Control and Prevention NCFHS. Underlying Cause of Death 1999-2013 on CDC Wonder Online Database, released 2015. 2015.
13. CDC Wonder. Underlying Cause of Death, 1999-2013. In: Prevention CfDCa, ed2015.
14. Krawczyk C, Funkhouser E, Kilby M, Vermund S. Delayed access to HIV diagnosis and care: Special concerns for the Southern United States. *AIDS Care*. 2006;18(supp 1):35-44.
15. Mugavero M, Castellano C, Edelman D, Hicks C. Late Diagnosis of HIV Infection: The Role of Age and Sex. *American Journal of Medicine*. 2007;120(4):370-373.
16. Golin C, Isasi F, Bontempi J, Eng E. Secret pills: HIV-positive patients' experiences taking antiretroviral medications in North Carolina. *AIDS Education and Prevention*. 2002;14:318-329.
17. Adimora AA, Ramirez C, Schoenbach VJ, Cohen MS. Policies and politics that promote HIV infection in the Southern United States. *AIDS* Jun 19 2014;28(10):1393-1397.
18. Sutton M, Anthony MN, Vila C, McLellan-Lemal E, Weidle PJ. HIV testing and HIV/AIDS treatment services in rural counties in 10 southern states: service provider perspectives. *The Journal of rural health : official journal of the American Rural Health Association and the National Rural Health Care Association*. Summer 2010;26(3):240-247.
19. Weissman S, Duffus WA, Iyer M, Chakraborty H, Samantapudi AV, Albrecht H. Rural-urban differences in HIV viral loads and progression to AIDS among new HIV cases. *Southern medical journal*. Mar 2015;108(3):180-188.
20. Alsentzer D, Chang P, Kelly C. *South Carolina State Report: An Analysis of the Successes, Challenges, and Opportunities for Improving Healthcare Access (State Summary)*. Boston: Health Law and Policy Clinic of Harvard Law School;2010.

21. Whetten R, Whetten K, Pence B, Reif S. Does Distance Affect Utilization of Substance Abuse and Mental Health Services in the Presence of Transportation Services. *AIDS Care*. 2006;18(2):27-34.
22. Reif S, Wilson E, McAllaster C, Berger M. HIV Infrastructure Study: Jackson. 2015; <https://southernaids.files.wordpress.com/2015/05/hiv-infrastructure-study-jackson-mississippi-7-27-15.pdf>.
23. Reif S, Wilson E, McAllaster C, Sherger C. HIV Infrastructure Study: Baton Rouge. 2014; <https://southernaids.files.wordpress.com/2011/10/sasi-hiv-infrastructure-study-baton-rouge.pdf>.
24. Kempf MC, McLeod J, Boehme AK, et al. A qualitative study of the barriers and facilitators to retention-in-care among HIV-positive women in the rural southeastern United States: implications for targeted interventions. *AIDS patient care and STDs*. Aug 2010;24(8):515-520.
25. Konkle-Parker DJ, Amico KR, Henderson HM. Barriers and facilitators to engagement in HIV clinical care in the Deep South: results from semi-structured patient interviews. *The Journal of the Association of Nurses in AIDS Care : JANAC*. Mar-Apr 2011;22(2):90-99.
26. Messer LC, Quinlivan EB, Parnell H, et al. Barriers and facilitators to testing, treatment entry, and engagement in care by HIV-positive women of color. *AIDS patient care and STDs*. 2013;27(7):398-407.
27. Sprague C, Simon SE. Understanding HIV care delays in the US South and the role of the social-level in HIV care engagement/retention: a qualitative study. *International Journal for Equity in Health*. 2014;13:28-28.
28. National Alliance of State and Territorial AIDS Directors. Stigma and the Impact on Public Health. Ryan White HIV/AIDS Program Grantee Meeting; 2012; Washington DC.
23. Kempf MC, McLeod J, Boehme AK, et al. A qualitative study of the barriers and facilitators to retention-in-care among HIV-positive women in the rural southeastern United States: implications for targeted interventions. *AIDS patient care and STDs*. Aug 2010;24(8):515-520.
24. Konkle-Parker DJ, Amico KR, Henderson HM. Barriers and facilitators to engagement in HIV clinical care in the Deep South: results from semi-structured patient interviews. *The Journal of the Association of Nurses in AIDS Care : JANAC*. Mar-Apr 2011;22(2):90-99.
25. Messer LC, Quinlivan EB, Parnell H, et al. Barriers and facilitators to testing, treatment entry, and engagement in care by HIV-positive women of color. *AIDS patient care and STDs*. 2013;27(7):398-407.
26. Sprague C, Simon SE. Understanding HIV care delays in the US South and the role of the social-level in HIV care engagement/retention: a qualitative study. *International Journal for Equity in Health*. 2014;13:28-28.
27. National Alliance of State and Territorial AIDS Directors. Stigma and the Impact on Public Health. Ryan White HIV/AIDS Program Grantee Meeting; 2012; Washington DC.
28. McAllaster C, Fang, J. ONE SIZE DOES NOT FIT ALL: What Does High Impact Prevention Funding Mean for Community-Based Organizations in the Deep South?, updated 2015. <https://southernaids.files.wordpress.com/2015/04/cdc-cbo-funding-paper-one-size-does-not-fit-all-3-final.pdf>.

