



The Promise and Limitations of Ending the HIV Epidemic in the U.S.

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Research



Disclosures

- amfAR receives funding from Viiv for global HIV work with Key Populations. This funding has no bearing on the content of this domestic HIV presentation.
- No other disclosures.
- This program is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U10HA30535 as part of an award totaling \$4.2m. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov.
- "Funding for this presentation was made possible by cooperative agreement U1OHA30535 from the Health Resources and Services Administration HIV/AIDS Bureau. The views expressed do not necessarily reflect the official policies of the Department of Health and Human Services nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government. Any trade/brand names for products mentioned during this presentation are for training and identification purposes only."





Objectives

Upon completion of this educational activity, you will be able to:

- Review the Ending the HIV Epidemic Plan
- Describe threats to successfully ending the HIV epidemic in the United States



Presentation Outline

Threats to ending HIV in the United States:

- Failure to address the social determinants of health
- Inability to address overlapping epidemics
- Inability of scientific advances to be directed to those where need is greatest
- Political ideology vs science
- Mistrust
- Funding & commitment to end the HIV epidemic over time





Having the necessary scientific tools are not always enough to end an epidemic



Eric Topol 📀 @EricTopol · 22h

The US has now fallen to #45 on the list of countries fully vaccinated and is in rapid further descent

ig.ft.com/coronavirus-va...

Canada	146.3	76.2	70.1	55m	Sep 18
Ireland	143.8	75.9	72.7	7.1m	Sep 17
Puerto Rico	143.2	78.2	68.5	4.6m	Sep 18
Belgium	143.2	74.2	72.3	16.4m	Sep 16
Norway	141.9	75.7	66.2	7.6m	Sep 1
UK	139.1	72.7	66.4	92.9m	Sep 17
Bhutan	137.1	74.3	62.8	1m	Sep 12
France	136.8	74.1	64.2	91.7m	Sep 1
Italy	136.5	73.3	65.5	82.3m	Sep 18
Maldives	135.7	73.6	62.2	0.7m	Sep 1
Mongolia	135.5	69.7	65.8	4.4m	Sep 1
Finland	133.3	74.3	59.0	7.4m	Sep 18
Cambodia	131.1	70.4	61.4	21.6m	Sep 17
Sweden	130.3	68.7	61.6	13.4m	Sep 1
Cyprus	129.0	67.3	61.7	1.1m	Sep 16





1. PREVENTION AND CARE EFFORTS WILL NOT HAVE A LASTING IMPACT WITHOUT ADDRESSING THE SOCIAL DETERMINANTS OF HEALTH





PROCEEDINGS OF A WORKSHOP

INVESTING IN INTERVENTIONS THAT ADDRESS NON-MEDICAL, HEALTH-RELATED SOCIAL NEEDS

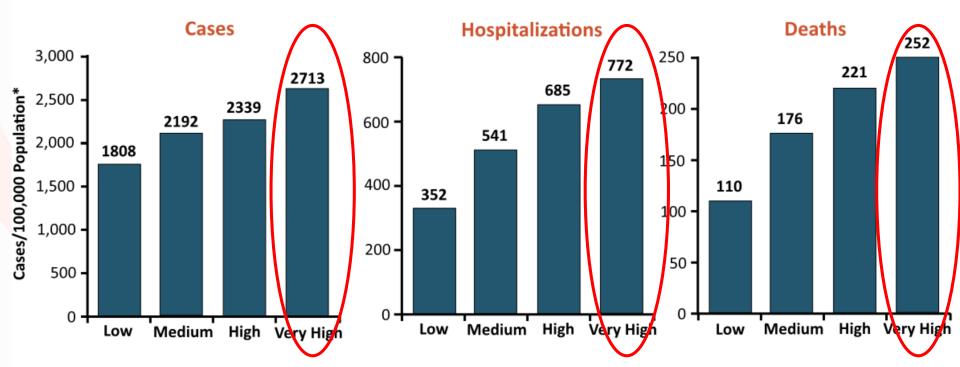
The National Academies of SCIENCES • ENGINEERING • MEDICINE

"....while health care accounts for some 10 to 20 percent of the determinants of health, socioeconomic factors and factors related to the physical environment are estimated to account for up to 50 percent of the determinants of health"





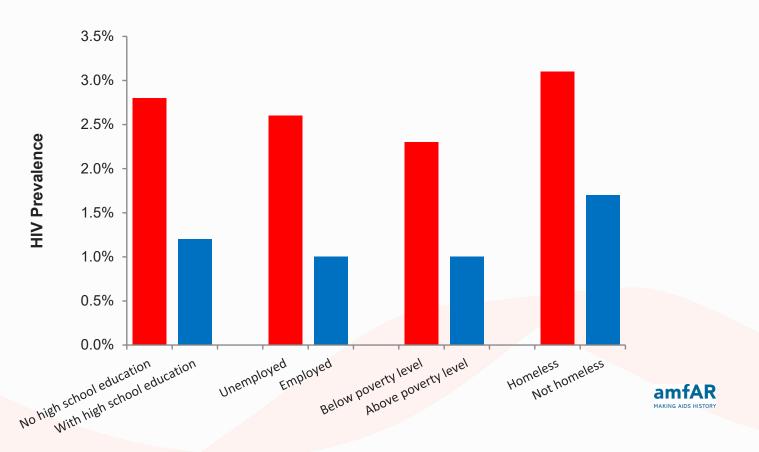
COVID-19 Cases, Hospitalizations, and Deaths by Poverty Level in NYC



^{*}Age-adjusted. Last updated June 16, 2020. Neighborhood poverty is based on the percent of a ZIP code's population living below the Federal Poverty Level. Low poverty: < 10%; Medium poverty: 10% to 19.9%; High poverty: 20% to 29.9%; Very high poverty: 30% or more.



HIV Infection Among Heterosexuals in Urban Areas, by Socio-Economic Indicators, 2006-2007, N=14,837

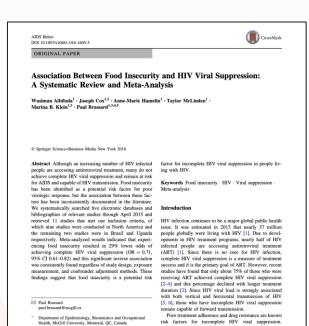


*CDC. Characteristics Associated with HIV Infection Among Heterosexuals in Urban Areas with High AIDS Prevalence --- 24 Cities, United States, 2006--2007 MMWR 2011;60:1045-1049.



Associations between food insecurity and viral suppression

Food insecurity — 29% lower viral suppression (OR=0.71, 95%CI 0.61-0.82)



risk factors for incomplete HIV viral suppression. Recently, food insecurity has been identified as a potential

risk factor for poor virologic responses among people living with HIV [7, 8]. Food insecurity, defined as having

"limited or uncertain access to nutritionally adequate and safe foods or limited or uncertain availability to acquire

such foods in socially acceptable ways" [9], can be ascertained using validated scales [10-12]. Although

statistics about the prevalence of food insecurity among HIV infected people is limited, several studies in North

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		Threshold for			
Author	Publication	HIV viral			
[Reference No.]	Year	suppression			OR (95% CI)
Weiser SD [8]	2009	50	\		0.23 (0.06, 0.85)
Kalichman SC [17]	2014	400		•	0.34 (0.12, 0.94)
Kalichman SC [37]	2015	200		-	0.53 (0.34, 0.82)
Kalichman SC [36]	2010	NS			0.62 (0.40, 0.96)
Feldman MB [38]	2015	200		-	0.63 (0.42, 0.95)
Anema A [27]	2014	50		-	0.64 (0.37, 1.10)
Shannon K [39]	2011	500		-	0.68 (0.45, 1.03)
Charão AP [35]	2012	500		•	0.70 (0.31, 1.59)
Wang EA [7]	2011	500		-	0.76 (0.60, 0.96)
Weiser SD [28]	2013	100		-	0.81 (0.65, 1.01)
Weiser SD [18]	2014	400		-	1.04 (0.74, 1.47)
Overall (I-squared =)	26.6%, p = 0.190)		\Diamond	0.71 (0.61, 0.82)
			.1	.5 1	1.6
			Odds Ratio		am

MAKING AIDS HISTORY



Published online: 11 November 2016

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Associations between distance to HIV care and insurance/ viral suppression

AIDS Behav

DOI 10.1007/s10461-013-0597-7

ORIGINAL PAPER

Travel Distance to HIV Medical Care: A Geographic Analysis of Weighted Survey Data from the Medical Monitoring Project in Philadelphia, PA

M. G. Eberhart · C. D. Voytek · A. Hillier · D. S. Metzger · M. B. Blank · K. A. Brady

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Abstract Decisions regarding where patients access HIV care are not well understood. The purpose of this analysis was to examine differences in travel distance to care among persons receiving care in Philadelphia. A multi-stage sampling design was utilized to identify 400 potential participants. 65 % (260/400) agreed to be interviewed. Participants were asked questions about medical care, supportive services, and geographic location. Distances were calculated between residence and care location. 46.3 % travelled more than three miles beyond the nearest facility. Uninsured travelled further (6.9 miles, 95 % C 3.9-9.8) than persons with public insurance (3.3 miles, 2.9-3.6). In multivariate analyses, no insurance (20/260) was associated with increased distance (p = 0.0005) and Hispanic ethnicity was associated with decreased distance (p = 0.0462). Persons without insurance travel further but insurance status alone does not explain the variability in distance travelled to care. In Philadelphia, Hispanic

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School of Social Policy and Practice, University of Pennsylvania, Philadelphia, PA, USA

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Center for Mental Health Policy and Services Research,
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populations, and providers that may be most accessible to

Being uninsured was associated with traveling a greater distance for HIV care

these studies varied by geographic location [6, 9], study population [1, 4, 6-8], and methodology [5, 10, 11], the general consensus is that distance is often a barrier to care [12]. More specifically, persons living in rural areas tend to travel greater distances than persons in urban areas [3, 10], and straight-line distances have been shown to be a reliable measure of actual distance travelled [10]. Geographic analyses have also been utilized to assess access to care by focusing on the distribution of medical care sites within a given jurisdiction or catchment area [2, 9, 11-17]. As a result, strategies that address equitable access to care often emphasize location in effort to reduce physical barriers [2, 14-181, when other factors may also impact where persons access care. Two factors commonly identified as influencing decisions regarding where to access medical care include race/ethnicity and socioeconomic status [1, 3, 5]. However, other factors which may be more difficult to measure and quantify, such as access to ancillary services, facility reputation, fear of unwanted disclosure, and geographic relationship to non-medical services, have also been identified [4, 6, 7].



HHS Public Access

Author manuscript

AIDS Behav. Author manuscript; available in PMC 2019 September 01

Published in final edited form as:

AIDS Behav. 2018 September; 22(9): 3009-3023. doi:10.1007/s10461-018-2103-8.

Identifying spatial variation along the HIV care continuum: The role of distance to care on retention and viral suppression

Terzian AS¹, Younes N¹, Greenberg AE¹, Opoku J², Hubbard J¹, Happ LP¹, Kumar P³, Jones RR⁴, and Castel AD¹ DC Cohort Executive Committee

¹Department of Epidemiology and Biostatistics George Washington University, Washington, Df HIV/AIDS, Hepatitis, STD, and TB Administratic Georgetown University, Washington, DC ⁴Occu Division of Cancer Epidemiology & Genetics, N Health, Bethesda, Maryland

Abstract

Background—Distance to HIV care may be a suppression (VS) in Washington, DC.

Methods—RIC (≥ 2 HIV visits or labs ≥90 da VS (<200 copies/mL at last visit) and distance participants receiving HIV care in outpatient cl geospatial statistics were computed.

- DC cohort of 3,623 HIV+ participants receiving care.
- Those traveling ≥5 miles had 30% lower retention in care (aOR=0.71, 95% CI: 0.58, 0.86) and lower viral suppression

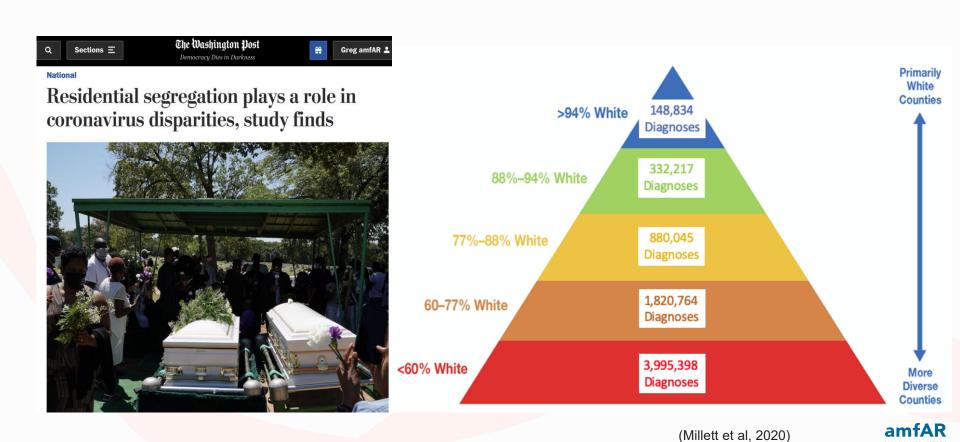
Results—RIC was 73%; 97% were on ART, among whom 77% achieved VS. ZIP code-level clusters of low RIC and high VS were observed in the Northwest; low VS in the Southeast. Those traveling ≥5 miles had 30% lower RIC (aOR=0.71, 95% CI: 0.58, 0.86) and lower VS (aOR=0.70, 95% CI: 0.52, 0.94).

Conclusions — Longer distances were associated with lower RIC and VS. Geospatial clustering of RIC



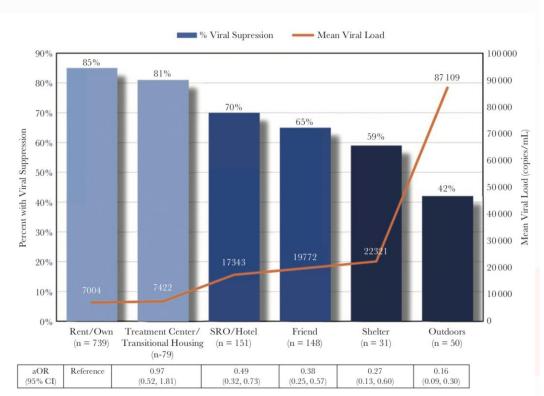


COVID-19 and Residential Segregation





Homelessness is Associated with Higher Viral Load and Higher Mortality Rates



(Clemenzi-Allen, 2019)

CONCISE COMMUNICATION

Homelessness at diagnosis is associated with death among people with HIV in a population-based study of a US city

Matthew A. Spinelli^a, Nancy A. Hessol^b, Sandy Schwarcz^c, Ling Hsu^c, Maree-Kay Parisi^c, Sharon Pipkin^c, Susan Scheer^c, Diane Havlir^a and Susan P. Buchbinder^c

Objective: San Francisco, California, has experienced a 44% reduction in new HIV diagnoses since 2013 supported by its 'Getting to Zero' initiative; however, the age-adjusted mortality rate in people with HIV (PWH) has not decreased. We sought to identify factors associated with death among PWH in San Francisco.

Design: Population-based incidence-density case-control study.

Methods: Among PWH in the San Francisco HIV surveillance registry, a random sample of 48 decedents from 1 July 2016 to 31 May 2017 were each matched to two to three controls who were alive at the date of death (108 controls matched on age and time since diagnosis). Covariates included demographics, substance use, housing status, medical conditions, and care indicators from the study population. We used matched-pair conditional logistic regression to examine factors associated with mortality.

Results: Of the 156 PWH in the study, 14% were African-American, 14% Latino, and 8% female sex. In adjusted analysis, factors associated with higher odds of death included: homelessness at HIV diagnosis [adjusted odds ratio (AOR)=27.4; 95% confidence interval (Cl)=3.0−552.11, prior-year IDU (AOR=10.2; 95% Cl=1.7−128.5), prior-year tobacco use (AOR=-2.2)95% Cl=1.7−4.69, being off antiretroviral therapy at any point in the prior year (AOR=-6.8; 95% Cl=1.1−71.4), and being unpartnered vs. married/bartnered (AOR=4.7; 95% Cl=1.3−22.0).

Conclusion: People homeless at HIV diagnosis had 27-fold higher odds of death compared with those with housing: substance use and retention on antiretroviral therapy in the prior year are other important intervenable factors. New strategies to address these barriers, and continued investment in supportive housing and substance use treatment, are needed. Copyright © 2019 Wolhers Kluwer Health, Inc. All rights reserved.

AIDS 2019, 33:1789-1794

Keywords: antiretroviral therapy, HIV, homelessness, mortality, preventable mortality, substance use





Non-English Speakers and HIV/COVID-19 risk

PLOS ONE

RESEARCH ARTICLE

County-level factors affecting Latino HIV disparities in the United States

Nanette D. Benbow 1*, David A. Aaby2, Eli S. Rosenberg3, C. Hendricks Brown

1 Department of Psychiatry and Behavioral Sciences, Feinberg School of Medicine, Northwestern University Chicago, Illinois, United States of America, 2 Department of Preventive Medicine, Feinberg School of Medicine, Northwestern University, Chicago, Illinois, University and India States of America, 3 Department of Epidemiclogy and Biostatistics, University at Albarry School of Public Health, State University of New York, Pensselaer, New York, University at Albarry School of Public Health, State University of New York,



OPEN ACCESS

Abstract

Objective

To determine which co to care factors are asso nosed HIV infection.

Methods and find

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found that significantl

We used 2016 county
Receive: April 14, 2020 branched: ITALY
Receive: April 14, 2020 cond or of conserved HIV preva
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homogeneous effects: Writes.

Peer Review History: PLOS recognizes the benefits of transparency in the peer review process; therefore, we enable the publication of all of the content of peer review and author responses alongside final, published articles. The editorial history of this article is available here:

Citation: Benbow ND, Aaby DA, Rosenberg ES,

Brown CH (2020) County-level factors affecting Latino HIV disparities in the United States. PLoS

ONE 15(8): e0237269. https://doi.org/10.1371/

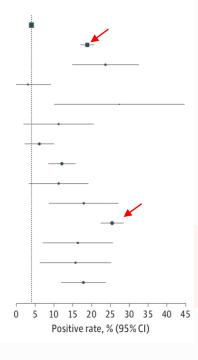
Copyright: © 2020 Benbow et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All data in this study are publicly available and can be found here: Factors that increased inequities with higher compared to lower values included proportion of HIV diagnoses due to injection drug use, percent Latino living in poverty, percent not English proficient

compared to lower validation and control of the con

igure 2. Proportion of Patients Testing Positive for Severe Acute Respiratory Syndrome Coronavirus 2 SARS-CoV-2) by Language

Language	No. tested	Positive rate, % (95% CI)
English	1154	4 (3.8-4.2)
Non-English	347	18.6 (16.8-20.3)
Amharic	21	23.3 (14.6-32.1)
Arabic	1	3.1 (0-9.2)
Cambodian/Khmer	7	26.9 (9.9-44)
Korean	5	11.1 (1.9-20.3)
Mandarin/Cantonese	9	6.1 (2.2-9.9)
Other	38	11.9 (8.4-15.5)
Russian	7	11.1 (3.4-18.9)
Somali	12	17.6 (8.6-26.7)
Spanish	199	25.1 (22-28.1)
Tagalog	10	16.1 (7-25.3)
Tigrinya	9	15.5 (6.2-24.8)
Vietnamese	29	17.6 (11.8-23.4)







2. WE IGNORE MULTIPLE OVERLAPPING EPIDEMICS AT OUR PERIL





World Health Organization Model of Noncommunicable vs. Infectious Diseases

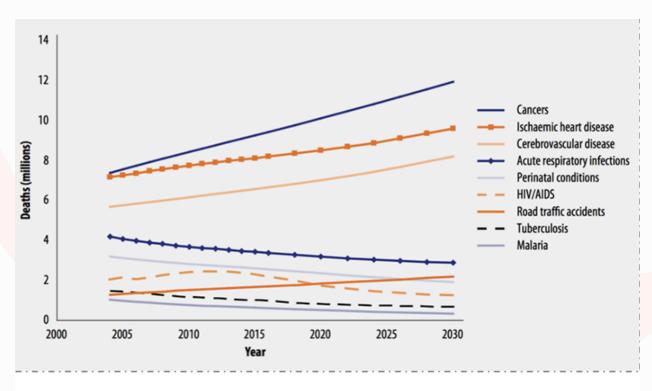


Figure 2. Projected global deaths for selected causes, 2004-2030. Global Burden of Disease: 2004 Update. World Health Organization. Source: http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf?ua=1 Accessed June 30, 2016.

"The beginnings of public health were rooted in preventing infectious disease and promoting sanitation. Now that we have largely eradicated many of these infectious conditions in the United States and in other highresource countries, humans are living long enough to die from noncommunicable diseases, or NCDs."



Overlapping Infectious Disease Threats







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year as a result

t of Health





COVID-19 Lockdown & HIV Viral Suppression

Viral suppression rates in a safety-net HIV clinic in San Francisco destabilized during COVID-19

Matthew A. Spinelli^a, Matthew D. Hickey^a, David V. Glidden^b, Janet Q. Nguyen^a, Jon J. Oskarsson^a, Diane Havlir^a and Monica Gandhi^b

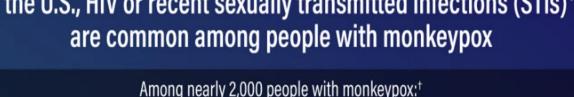
Table 1. Factors associated with unsuppressed viral load and no-show visits before and after shelter-in-place/COVID-19^a.

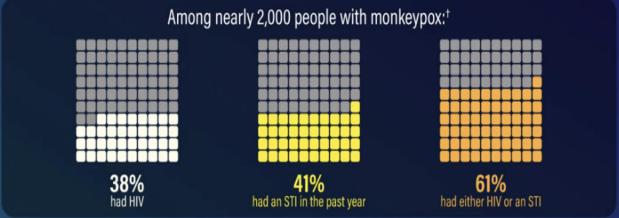
Factor	Unsuppressed viral load adjusted odds ratio; 95% Confidence Interval	No-show visit Adjusted odds ratio; 95% confidence interval
Post-COVID-19 vs. pre-COVID-19	1.31; 1.08–1.53	0.91; 0.77–1.09
Age under 35 ^a	1.29; 1.11–1.51	1.57; 1.28-1.93 (Pre-COVID-19)
O .	,	1.11; 0.82–1.51 (Post-COVID-19)
Female vs. male birth sex	0.94; 0.77-1.15	0.99; 0.80–1.21
Race/ethnicity vs. white	'	'
Black	1.60: 1.33–1.91	1.14; 0.94–1.38
Latin	1.04; 0.63-1.34	1.06; 0.88–1.27
Asian	0.92; 0.63-1.34	1.16; 0.82–1.64
Other	0.96: 0.78_1.19	0.97; 0.77–1.24
Homeless housing status ^a	2.27; 1.91–2.71 (Pre-COVID-19)	1.15; 0.95–1.32 (Pre-COVID-19)
O	3.36; 2.74–4.12 (Post-COVID-19)	0.64; 0.48-0.85 (Post-COVID-19)
Telephone vs. in-person visits (post-COVID-19 only)	<u>-</u>	0.56; 0.36–0.86

^aEach factor was tested for an interaction with the pre/post COVID-19 time interval indicator. Adjusted odds ratios and 95% confidence intervals are presented separately for before and during COVID-19 time intervals if the test of interaction *P*-value was <0.1 [6].



In the U.S., HIV or recent sexually transmitted infections (STIs)* are common among people with monkeypox





It is important to

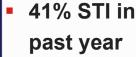
Prioritize people with HIV and STIs for monkeypox vaccination

Offer HIV and STI screening for people evaluated for monkeypox

*Diagnosed with an STI other than HIV in the past year People diagnosed with monkeypox in eight jurisdictions during May 17-July 22, 2022

bit.ly/mm7136a1

SEPTEMBER 9, 2022



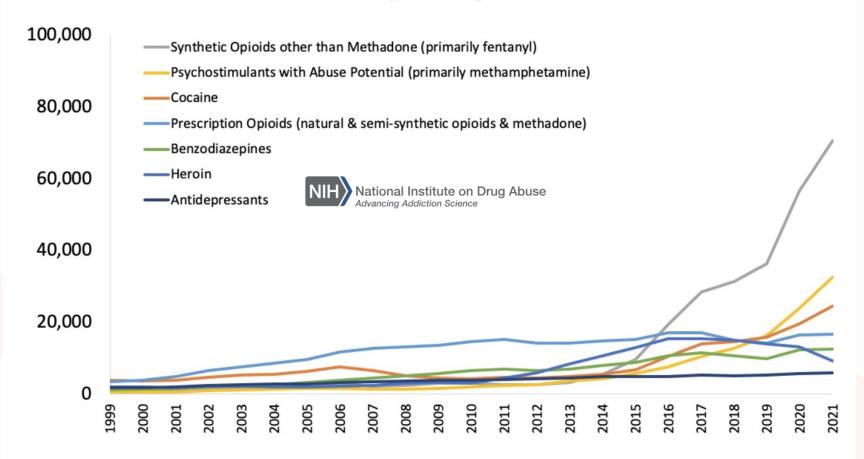
 (x)

- 61% had STI or HIV
- 38% HIV+





Figure 2. National Drug-Involved Overdose Deaths*, Number Among All Ages, 1999-2021



^{*}Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.



Association between Opioid Mortality Rate and COVID-19 Mortality at the County-Level

Qeadan et al. Archives of Public Health (2021) 79:101 https://doi.org/10.1186/s13690-021-00626-z

Archives of Public Health

RESEARCH

The association between opioids, environmental, demographic, and socioeconomic indicators and COVID-19 mortality rates in the United States: an ecological study at the county level

Fares Qeadan 10, Nana Akofua Mensah Benjamin Tingey, Rona Bern, Tracy Rees, Erin Fanning Madden, Christina A. Porucznik¹, Kevin English³ and Trenton Honda¹

Background: The spread of the COVID-19 pandemic throughout the world presents an unprecedented challenge to public health inequities. People who use opioids may be a vulnerable group disproportionately impacted by the current pandemic, however, the limited prior research in this area makes it unclear whether COVID-19 and opioid use outcomes may be related, and whether other environmental and socioeconomic factors might play a role in explaining COVID-19 mortality. The objective of this study is to evaluate the association between opioid-related mortality and COVID-19 mortality across U.S. counties.

Methods: Data from 3142 counties across the U.S. were used to model the cumulative count of deaths due to COVID-19 up to June 2, 2020, A multivariable negative-binomial regression model was employed to evaluate the adjusted COVID-19 mortality rate ratios (aMRR)

Results: After controlling for covariates, counties with higher rates of opioid-related mortality per 100,000 persons were found to be significantly associated with higher rates of COVID-19 mortality (aMRR: 1.0134; 95% CI [1.0054, 1.0214]; P = 0.001). Counties with higher average daily Particulate Matter (PM2.5) exposure also saw significantly higher rates of COVID-19 mortality. Analyses revealed rural counties, counties with higher percentages of non-Hispanic whites, and counties with increased average maximum temperatures are significantly associated with lower mortality rates from COVID-19.

Conclusions: This study indicates need for public health efforts in hard hit COVID-19 regions to also focus prevention efforts on overdose risk among people who use opioids. Future studies using individual-level data are needed to allow for detailed inferences

Keywords: Opioids, COVID-19, Health inequities, Ecological study, Pandemic, Air pollution, Temperature, Mortality rate ratio

ent of Family and Preventive Medicine, University of Utah, Salt Lake



Table 2	Adjusted	estimates	Of	variables	impact	on	COVID-1	9	mortality	

Variables	Adjusted MRR ^b (95% CI)	<i>P</i> -value
- piold Mortality Rate per 100,000 persons	1.0134 (1.0054, 1.0214)	0.001
Opioid Prescribing Rate per 100 persons	1.0005 (0.9979, 1.0031)	0.69
Ratio of ≥65 years old to < 25 years old	1.0564 (0.8082, 1.3809)	0.69
→n black	1.0323 (1.0255, 1.0390)	< 0.001
% Non-Hispanic White	0.9828 (0.9767, 0.9889)	< 0.001
% Rural	0.9951 (0.9917, 0.9986)	0.01
log (Median Household Income)	6.2034 (3.5170, 10.9419)	< 0.001
log (Median Home Value)	0.7907 (0.6062, 1.0332)	0.09
Population Density (persons/100 mile ²)	1.0050 (1.0019, 1.0082)	0.002
% Unemployed	1.0591 (1.0008, 1.1208)	0.047
% Diabetic	1.0414 (0.9948, 1.0904)	0.08
Hypertension Hospitalizations Rate	1.0095 (0.9834, 1.0362)	0.48
% Smokers	1.0030 (0.9708, 1.0363)	0.85
% Excessive Drinking	1.0136 (0.9832, 1.0450)	0.38
% With access to place of physical activity	0.9986 (0.9942, 1.0030)	0.53
% Health practitioners	1.0249 (0.9808, 1.0709)	0.27
% Sales/office workers	1.0083 (0.9797, 1.0379)	0.57
% Transportation/trucking workers	1.0178 (0.9996, 1.0363)	0.055
% Education workers	0.9933 (0.9608, 1.0269)	0.69
Average maximum temperature (°F)	0.9784 (0.9682, 0.9889)	< 0.001
Average Daily PM _{2.5} (µg/m3)	1.0695 (1.0194, 1.220)	0.01

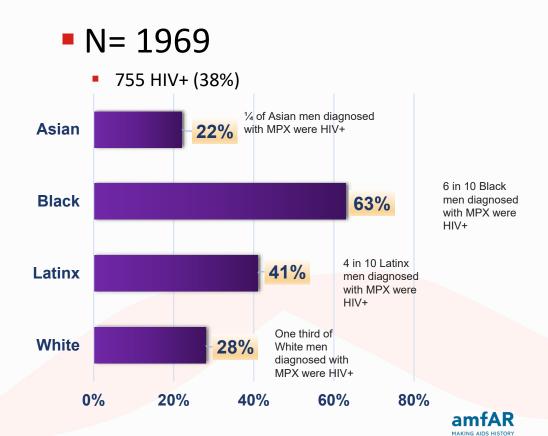
a Negative binomial regression model, R²: 0.79. Chi-squared Goodness of Fit p-value: 0.70: b Mortality rate ratio





Overlapping Epidemics: HIV+ MSM diagnosed with MPX by race/ethnicity







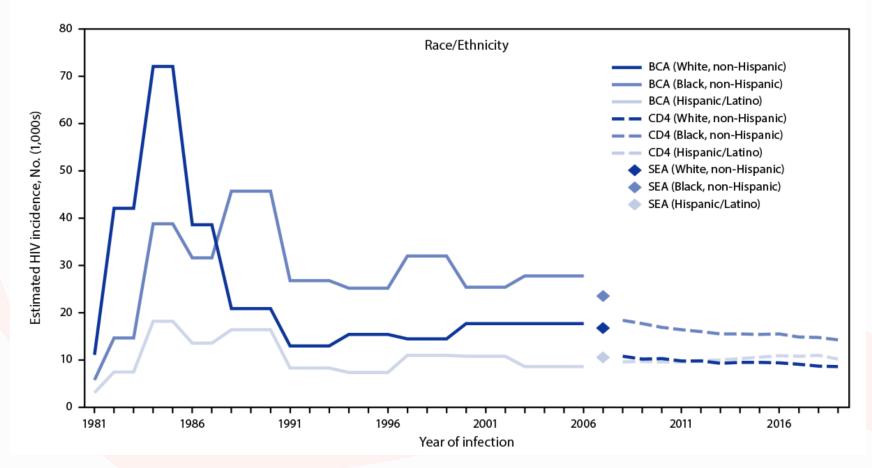
3. SCIENTIFIC ADVANCES ARE NOT IMPACTFUL IF THEY FAIL TO REACH THE MOST AFFECTED POPULATIONS





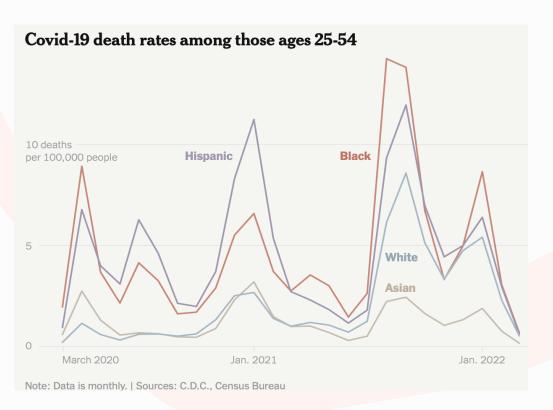
FIGURE 2. Estimated HIV incidence* among persons aged ≥13 years, by selected race/ethnicity† and transmission category§ — United States, 1981–2019

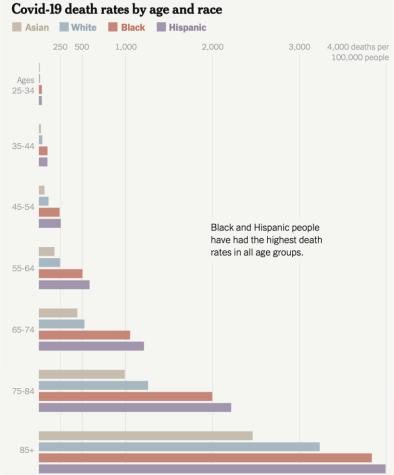






One Million COVID Deaths by Race/ Ethnicity



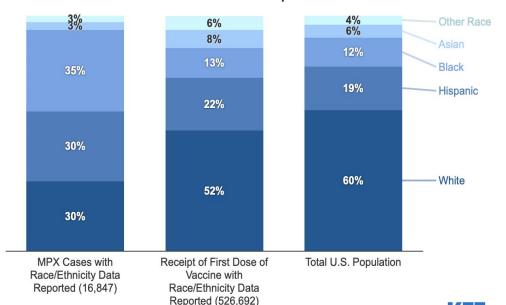


Note: Rates for White, Black and Asian people exclude Hispanics. Rates for Native Americans and Pacific Islanders were less reliable because of low total counts and are not shown. | Source: C.D.C.



Black and Latinx MSM less likely to access MPOX vaccines despite greater risk of infection

Racial/Ethnic Distribution of MPX (Monkeypox) Cases and Vaccinations in the U.S. as of September 2022



Bloomberg

Subscribe

Equality Prognosis

White People Get Bigger Share of Monkeypox Shots, Early Data Show

While most cases are concentrated among people of color, White people are getting most of the shots.









Access to New Technologies: **COVID-19 Testing**

THE CORONAVIRUS CRISIS

The Coronavirus Doesn't Discriminate. But U.S. Health Care Showing Familiar Biases

April 2, 2020 · 12:37 PM ET

BLAKE FARMER









Coronavirus Philadelphia: Positive Tests Higher In Poorer Neighborhoods Despite Six Times More Testing In Higher-Income Neighborhoods, **Researcher Says**





In Large Texas Cities, Access To Coronavirus Testing May Depend On Where You Live

May 27, 2020 · 5:00 AM ET

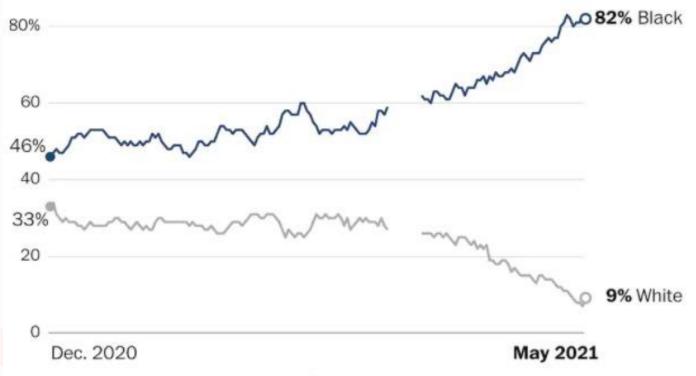






Racial gap in D.C. coronavirus infections widens

With vaccination rates higher among White residents, the share of infections among Whites has plummeted while rising sharply for Black people. This chart reflects a rolling 10-day average on the share of cases by race.



Note: Daily new-case counts not available in March.

Source: D.C. government data

DAN KEATING/THE WASHINGTON POST

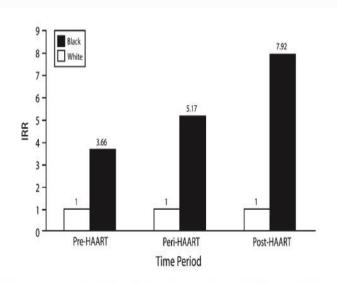




New Technology & Access: HIV Antiretroviral Treatment and HIV Prevention

Mortality incident rate-ratios between blacks and whites have **increased** since availability of ART

Reason: Less access to healthcare in racial minority communities



Note. HAART = highly active antiretroviral therapy; IRR = incident rate ratio. For each period, the results from the model were adjusted for age, gender, and urbanicity. Whites were the reference group. (Levine et al, 2007)





Disparities have worsened in the past 40 years of the HIV pandemic



Morbidity and Mortality Weekly Report

Estimated Annual Number of HIV Infections — United States, 1981-2019

Karin A. Bosh, PhD1; H. Irene Hall, PhD1; Laura Eastham, MPH1; Demetre C. Daskalakis, MD1; Jonathan H. Mermin, MD2

The first cases of Pneumocystis carinii (jirovecii) pneumonia among young men, which were subsequently linked to HIV infection, were reported in the MMWR on June 5, 1981 (1). At year-end 2019, an estimated 1.2 million persons in the United States were living with HIV infection (2). Using data reported to the National HIV Surveillance System, CDC estimated the annual number of new HIV infections (incidence) among persons aged ≥13 years in the United States during 1981-2019. Estimated annual HIV incidence increased from 20,000 infections in 1981 to a peak of 130,400 infections in 1984 and 1985. Incidence was relatively stable during 1991-2007, with approximately 50,000-58,000 infections annually, and then decreased in recent years to 34,800 infections in 2019. The majority of infections continue to be attributable to male-to-male sexual contact (63% in 1981 and 66% in 2019). Over time, the proportion of HIV infections has increased among Black/African American (Black) persons (from 29% in 1981 to 41% in 2019) and among Hispanic/Latino persons (from 16% in 1981 to 29% in 2019). Despite the lack of a cure or a vaccine, today's HIV prevention tools, including HIV testing, prompt and sustained treatment, preexposure prophylaxis, and comprehensive syringe service programs, provide an opportunity to substantially decrease new HIV infections. Intensifying efforts to implement these strategies equitably could accelerate declines in HIV transmission, morbidity, and mortality and reduce disparities.

To estimate annual HIV incidence among persons aged ≥13 years in the United States during 1981–2019, CDC applied mathematical modelling to data reported to the National HIV Surveillance System. Three eras of HIV incidence estimates were used based on changes in methodology and available data (3.4).* The cumulative number of HIV

*HIV incidence entinates for 1981-2006 were derived from the extended backclutation appears applied to HIV surveillance data approach to OCC through June 2007. HIV Incidence in 2007 was estimated using the stratified extrapolation approach applied to HIV surveillance data reported to CDC through June 2011 (https://www.cdc.go/n/hiv/pfd/fibasy/report/surveillancedich-iv-surveillance-supplemental-report-vol-174-pdf). IVI incidence entinates during 2008-2019 were derived from the CD4 model applied to HIV surveillance data reported to CDC through December 2014. infections over the period was estimated by summing annual incidence estimates. The distributions of HIV incidence were compared overall and by sex at birth, race/ethnicity, and transmission category for the period examined at the beginning (1981), at the peak number of annual infections (1984–1985), and at the end of the study period (2019). Trends in the annual number of HIV infections over the entire period were assessed for selected racial/ethnic groups and transmission categories. The For racial/ethnic groups, only trends among Black, Hispanie/Latino, and White persons were described. Increases or decreases in the numbers and proportions are reported for relative changes of £5%.

†Transmission categories were assigned on the basis of sex at birth, regardless of gender identity.

gender userusy.

Firends were not assessed for racial/ethnic groups other than White, Black, and
Hispanic/Latino because of changes in data collection that were required in
2003 to align with revised standards for classification of federal data on race
and ethnicity for other racial categories, as well as the small number of infections.

INSIDE

- 807 COVID-19 Severity and COVID-19-Associated Deaths Among Hospitalized Patients with HIV Infection — Zambia, March–December 2020
 811 Impact of Policy and Funding Decisions on
- COVID-19 Surveillance Operations and Case Reports — South Sudan, April 2020–February 2021 818 Patterns in COVID-19 Vaccination Coverage, by Social Vulnerability and Urbanicity — United States, December 14, 2020–May 1, 2021
- 825 Excess Death Estimates in Patients with End-Stage Renal Disease — United States, February-August
- 830 QuickStats

Continuing Education examination available at tps://www.cdc.gov/mmwr/mmwr_continuingEducation.htm



U.S. Department of Health and Human Services Centers for Disease Control and Prevention

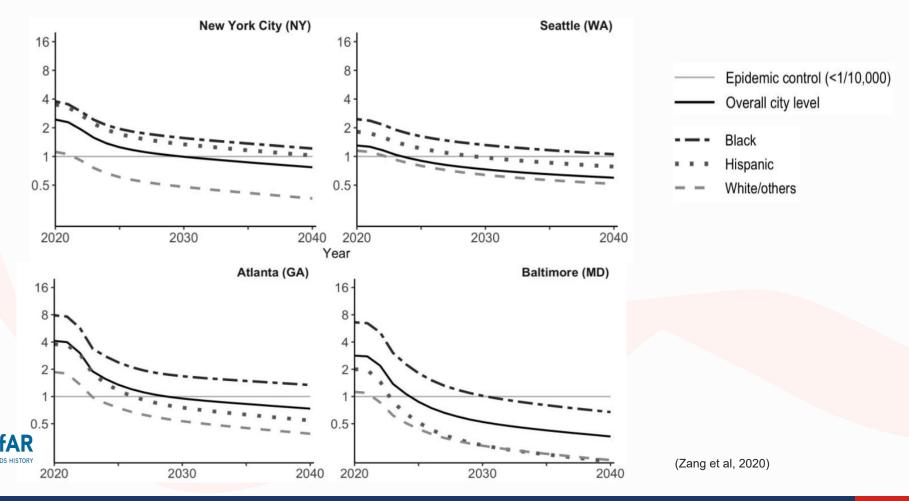
TABLE. Estimated HIV incidence among persons aged ≥13 years, by selected characteristics — United States, 1981, 1984–1985, and 2019

	No. (%)						
Characteristic	1981*	1984–1985*	2019 [†]				
Sex at birth			_				
Male	18,600 (93)	115,500 (89)	28,400 (82)				
Female	1,500 (8)	15,100 (12)	6,400 (18)				
Race/Ethnicity							
American Indian/	0 (—)	400 (0)	230 [§] (1 [§])				
Alaska Native							
Asian [¶]	N/A	N/A	550 (2)				
Asian/Pacific Islander¶	0 (—)	900 (1)	N/A				
Black/African American	5,800 (29)	38,800 (30)	14,300 (41)				
Hispanic/Latino**	3,100 (16)	18,200 (14)	10,200 (29)				
Native Hawaiian/	N/A	N/A	++				
White	11 100 (56)	72 100 (55)	0.600 (25)				
	11,100 (56)	72,100 (55)	8,600 (25)				
Multiple races¶	N/A	N/A	900 (3)				
Transmission category ^{§§}							
Male-to-male sexual	12,500 (63)	75,800 (58)	23,100 (66)				
contact			(-)				
Injection drug use	4,400 (22)	32,000 (25)	2,500 (7)				
Male-to-male sexual	2,400 (12)	11,400 (9)	1,400 (4)				
contact and injection drug use							
Heterosexual contact ^{¶¶}	400 (2)	8,000 (6)	7,800 (22)				
Total	20,000 (100)	130,400 (100)	34,800 (100)				





We are on track to end the HIV epidemic... with White Americans



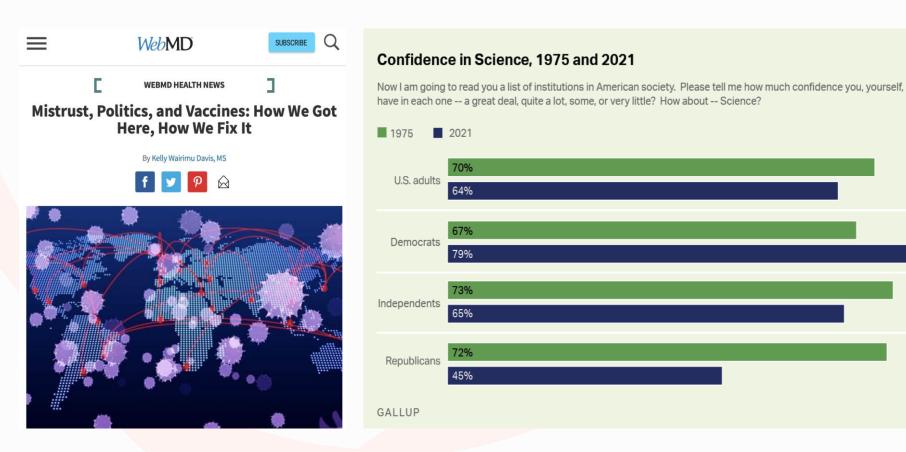


4. DIMINISHING TRUST IN SCIENCE/PUBLIC HEALTH WITH GREATER CREDENCE PAID TO IDEOLOGY VS. FACTS





Confidence in Science has Decreased





The Politization of Science and Healthcare





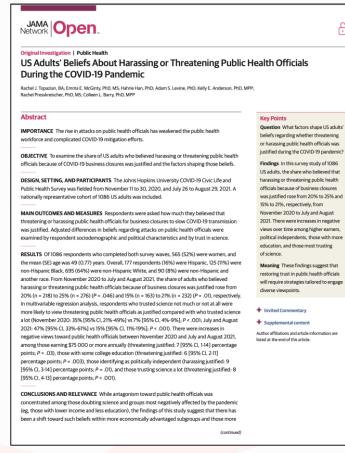




Harassment and Threats Directed at Health Officials







Anti-mask hysterics at Tennessee school board meeting show how basic public health is now polarizing

Viral clips show anti-maskers melting down as a school board implemented a commonsense mask mandate.

By Aaron Rupar | @atrupar | Aug 11, 2021, 4:30pm EDT





The parking lot after a school board meeting last night in Franklin, the wealthiest place in Tennessee. Parents harassed medical professionals who had spoken in favor of masks in schools. "We know who you are. You can leave freely, but we will find you."

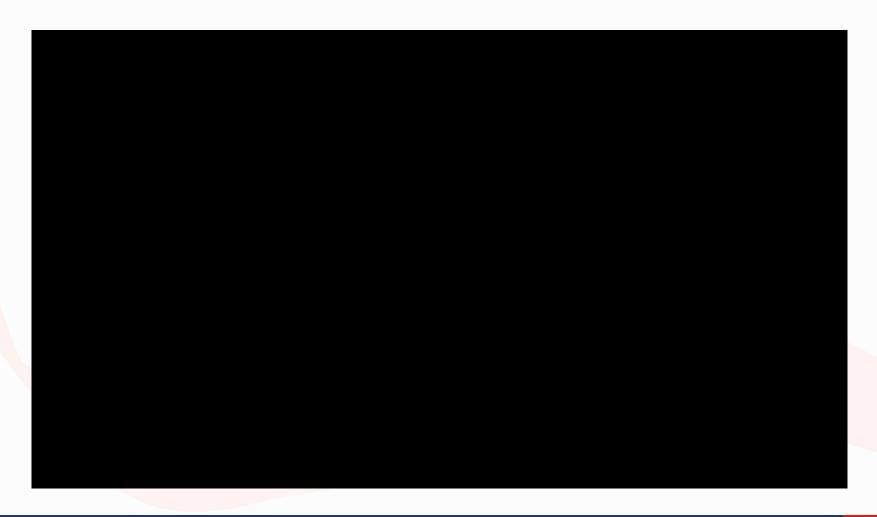


From Matt Masters

9:30 AM · Aug 11, 2021

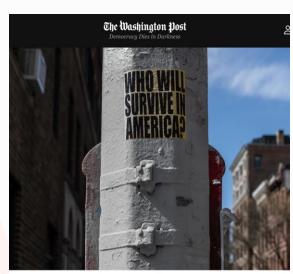


Harassment of Health Officials in TN





Political Affiliation and COVID-19 Vaccination/ Mortality Impact



An ominous sign hangs near Washington Square Park in New York on March 24, 2020, at the beginning of pandemic lockdowns seeking to stop the spread of the coronavirus.

The virus spread anyway. (Jeenah Moon/For The Washington Post)

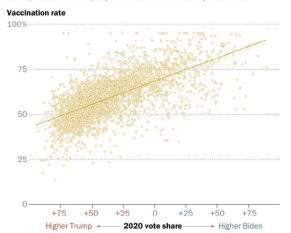
HEALTH

Whites now more likely to die from covid than Blacks: Why the pandemic shifted

By Akilah Johnson and Dan Keating October 19, 2022 at 6:00 a.m. EDT

Counties that Biden won in 2020 have higher vaccination rates than counties Trump won

Share of adults who are fully vaccinated in each county in the U.S.



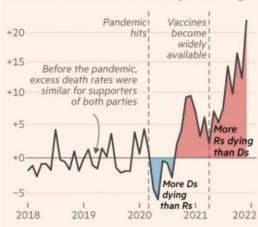
Notes: 165 counties (about 4% of the U.S. population) are excluded because they have reported fewer than 80% of the vaccinations within their jurisdiction to the CDC. Excludes Alaska, where election results are not reported at the county level. The fitted line shows the relationship between the vaccination rate in each county and the shares of the two-party vote that went to Trump vs. Biden in that county.

Source: Pew Research Center analysis of Centers for Disease Control and Prevention vaccination data as of Feb. 28, 2022. See methodology for details.

PEW RESEARCH CENTER

Republicans have been dying at much higher rates than Democrats ever since Covid vaccines became available

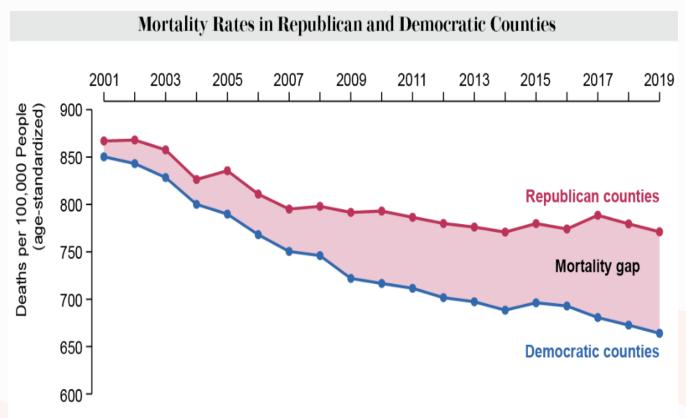
Percentage-point difference between excess death rates among registered Republicans and Democrats in Florida and Ohio, adjusted for age



Sources: Excess death rates for Republicans and Democrats during the covid-19 pandemic Wallace et al., 2022) FT graphic: John Burn-Murdoch / @jburnmurdoch © FT



Consequences of the ideological gap predates COVID-19



Credit: Amanda Montañez; Source: "Political Environment and Mortality Rates in the United States, 2001-19: Population Based Cross Sectional Analysis," by Haider J. Warraich et al., in *BMJ*, Vol. 377. Published online June 7, 2022



Ideology, policies, and mortality, 1999-2019

PLOS ONE

RESEARCH ARTICLE

U.S. state policy contexts and mortality of working-age adults

Jennifer Karas Monteze¹⁶, Nader Mehri²⁶, Shannon M. Monnat¹⁶, Jason Beckfield²⁸, Derek Chapman⁴, Jacob M. Grumbach²⁸, Mark D. Haywarde⁴⁸, Steven H. Woolf²⁸, Anna Zajacova⁴⁵

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- These authors contributed equally to this work.
- ‡ JB, DC, JMG, MDH, SHW and AZ also contributed equally to this work.
- imontez@syr.edu



Citation: Montez JK, Mehri N, Monnat SM, Beckfield J, Chapman D, Grumbach JM, et al. (2022) U.S. state policy contexts and mortality of working-age adults. PLoS ONE 17(10): e0275466. https://doi.org/10.1371/journal.pone.10275466

Editor: Miguel A. Andrade-Navarro, Johannes Gutenberg Universitat Mainz, GERMANY

Received: May 9, 2022

Accepted: September 16, 2022

Published: October 26, 2022

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Data Availability Statement: The policy data is publicly available on the Harvard Dataverse at https://dataverse harvard.edu/datasct.oit.nr/? persistentid-ode-10.7910/CVW1ZTW14. Mortality data are available through an approved data-use agreement with the U.S. National Center for Health Statistics. To another for the data used in this study.

contact ryssrestricteddata@cdc.gov

Funding: This article was supported by a grant from the National Institute on Aging to JKM (grant R01AG05581), www.nih.nia.gov. The funder had no role in study design, data collection and

Abstract The rise in wo stalled decline

alcohol-induce some U.S. sta

mortality rates

2019 National

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- Changing all policy
 domains in all states to a
 fully conservative
 orientation might have
 cost 217,635 lives in
 2019
- A fully liberal orientation might have saved 171,030 lives

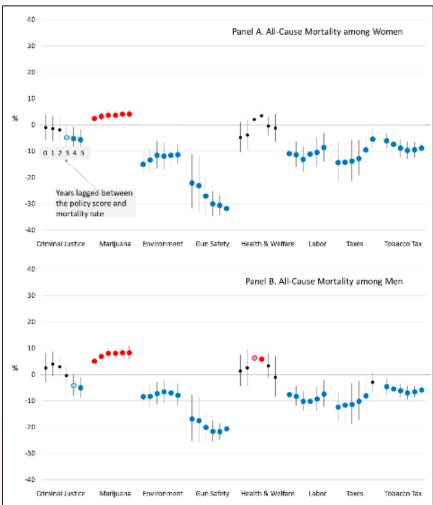


Fig 2. Estimated percent difference in all-cause mortality rates when a U.S. State's policy liberalism score is 1 versus 0, for various lag times between the policies and mortality. Notes: Blue dots mean a more liberal version of the policy is associated with lower mortality and red dots mean a more conservative version is associated with lower mortality. Dark blue and red dots indicate that the association is significant at α <0.05, while light blue and red dots indicate that it is significant at α <0.10.



5. KEEPING HIV 'ENDED' WILL REQUIRE PERSISTENCE AND FUNDING





HIV Priorities Change from Administration to Administration



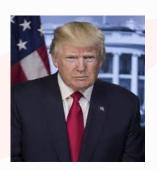
Priority: First domestic
HIV plan; increase in
domestic HIV prevention;
establishes ONAP;
Minority AIDS Initiative
launched; implements
Americans with Disabilities
Act



- Priority: Global HIV (Introduces PEPFAR program)
- De-prioritized: Domestic HIV programs/ research; ONAP left unstaffed for period of presidency



- Priority: Domestic HIV:
 National HIV/AIDS Strategy
 and Affordable Care Act;
- De-prioritized: PEPFAR (flat funded/ established Global Health Initiative)



- Priority: Domestic HIV: EHE initiative
- De-prioritized: National HIV/AIDS Strategy to a HHS 'Plan'; ONAP defunct; Affordable Care Act (dismantling); PEPFAR (gutted in WH budgets)



The State of the Economy can affect Federal HIV Funding

N/A

2023

FALLING FURTHER BEHIND ENDING THE HIV EPIDEMIC INITIATIVE FUNDING: REQUESTED VERSUS APPROPRIATED (US\$ MILLIONS) PRESIDENT'S BUDGET REQUEST APPROPRIATED 725 404.75 473.25

SOURCE: Ending the HIV Epidemic (EHE) Funding Tracker, Kaiser Family Found. tbl. 1 (Nov. 12, 2021); Domestic HIV Funding in the White House FY 2023 Budget Request, Kaiser Family Found. tbl.2 (Mar. 30, 2022). Note: FY 2019 funding was re-allocated funds to launch the Initiative, but not appropriated for this purpose. Congress has not yet appropriated funding for FY 2023.

2021

FUNDING YEAR

2022

FINANCE

U.S. inflation hit a new 40-year high last month of 8.6 percent

America's rampant inflation is imposing severe pressures on families, forcing them to pay much more for food, gas and rent.









2020

2019

State-specific Factors that Affect Efforts to End HIV

HEALTH NEWS

NEWS

Tennessee says it's cutting federal HIV funding. Will other states follow?

The Tennessee Department of Health says it will no longer accept federal grant money to prevent or treat HIV. Experts worry the state has set itself up for a major outbreak.

EXCLUSIVE



UT NEWS

How Tennessee axed millions in HIV funds amid scrutiny from far-right provocateurs

Tennessee decided to scrap \$8.3 million in federal grants to combat HIV after right-wing personalities targeted gender dysphoria treatment for minors in the state.

<u>=</u>Q

The Washington Post

Democracy Dies in Darkness

HIV at center of latest culture war after Tennessee rejects federal funds

The red-state pushback reflects growing tensions over federal priorities over public health issues



A Dangerous Precedent: Tennessee Rejects Federal Funds for HIV Prevention

On January 17, 2023, health officials in Tennessee announced their intention to reject federal funding for HIV services including testing kits, condoms, medication to prevent acquisition of the virus, and all HIV surveillance in the state. Last year, these funds totaled \$8.3 million. State officials have indicated that they aim to maintain the same level of funding, but shift the priorities of the program to prevent HIV among first responders, mothers and children, and victims of human trafficking. These populations do not align with those most vulnerable to HIV infection in Tennessee.



Cases amono

transgender

By limiting HIV prevention activities to only 2% of those "at risk," the missed prevention opportunities in the Tennessee state officials' plan could end up adding \$255 million in HIV treatment costs per year for the state.*

At most, narrowly focusing HIV prevention efforts on the priority populations identified by state officials could prevent an estimated 9 HIV cases per year:



among those populations most at risk in Tennessee could prevent an estimated 509 cases of HIV per year:

360

Cases among

people who

inject drugs

Cases among

In contrast, preventing new HIV cases

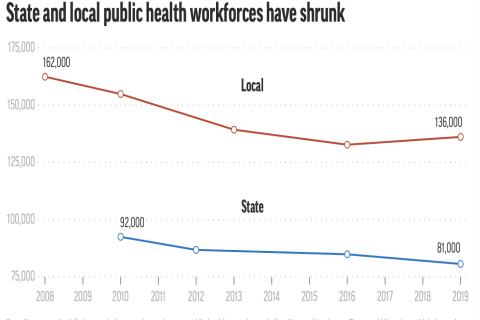


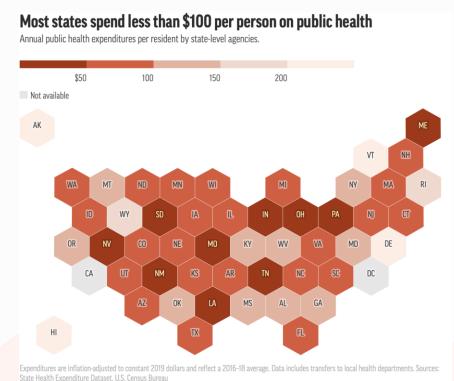
men who

have sex with

^{*}Calculated as the lifetime treatment costs of failure to prevent 500 net HIV cases [509 cases - 9 cases] each year under the Tennessee state officials' plan [$\$510,000 \times 500 = \255 million in additional treatment costs].

Public Health workforce attrition/ nominal state spending





Map data: Tilegrams/NPR / Graphic: Hannah Recht/KHN, Francois Duckett/AP



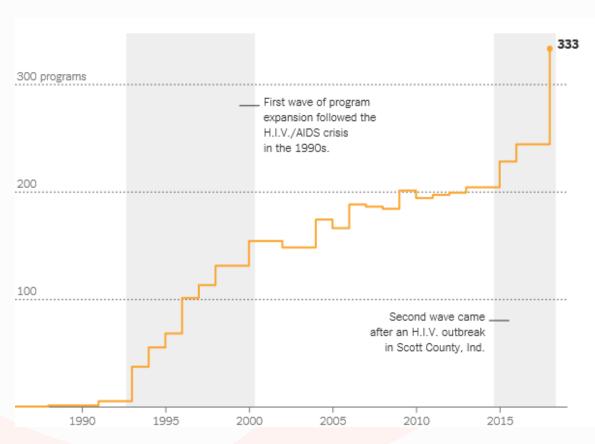
Source: Association of State and Territorial Health Officials, National Association of County and City Health Officials / Graphic: Hannah Recht/KHN, Francois Duckett/AP







Increase in SSPs in the United States after Scott County Outbreak



Sources: Centers for Disease Control and Prevention, Harm Reduction International, North American Syringe Exchange Network. Figure created by New York Times, April 27, 2018.

Syringe Services Programs Rolled Back in Indiana and West Virginia Despite HIV/ HCV Outbreaks

An Indiana county just halted a lifesaving needle exchange program, citing the Bible

The program has overwhelming evidence behind it. But that wasn't enough to save it.

By German Lopez | @germanrlopez | german.lopez@vox.com | Oct 20, 2017, 1:00pm EDT



The New Hork Times

Why a City at the Center of the Opioid Crisis Gave Up a Tool to Fight It

By JOSH KATZ APRIL 27, 2018





West Virginia health data reveals surge in hepatitis C cases

West Virginia Health Department data reveals chronic hepatitis C cases in the state's largest county have soared to the highest levels in five years, months after a public syringe exchange was closed

By The Associated Press

October 1, 2019, 10:55 AM • 1 min read

CHARLESTON, W.Va. -- West Virginia Health Department data reveals hepatitis C cases in the state's largest county have soared to the highest numbers in years, months after a program offering clean needles was suspended.

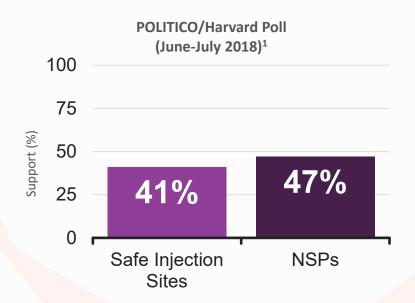
The Charleston Gazette-Mail reported Monday that more than 1,100 new chronic cases of the disease were recorded in Kanawha County in 2018.

Local clinic director Letitia Tierney says the area is nearing a hepatitis C outbreak and a potential HIV outbreak due to needle sharing. Officials didn't immediately release HIV numbers.

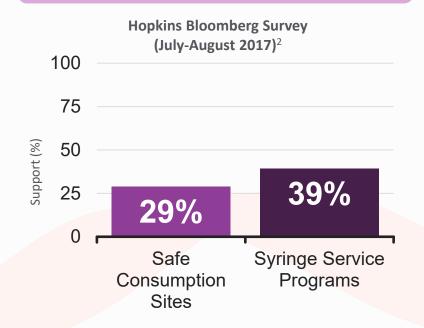


National Polls and Harm Reduction Interventions

Do you support legalizing safe injection sites and NSPs?



Do you support legalizing safe consumption sites and syringe service programs in your community?



NSP=needle-and-syringe exchange program.

1. POLITICO/Harvard T.H. Chan School of Public Health. https://static.politico.com/50/19/6924fa8d4f238f1b9fc155a275a3/drug-pricing-poll.pdf.

2. McGinty EE, et al. *Prev Med*. 2018;111:73-77.



Inflexible Dedicated Funding Streams



A Surge In Meth Use In Colorado Complicates Opioid Recovery

By EDITOR • JUL 14, 2018



POLITICO

HEALTH CARE

Meth and cocaine complicate Trump's war on drugs





Federal Grants Restricted To Fighting Opioids Miss The Mark, States Say

June 13, 2019 · 5:00 AM ET

Crowe says his organization has received just over \$327,300 from key federal grants designed to curb the opioid epidemic. While the money was a godsend for his county, he says methamphetamine remains a major problem.

And here's the hitch: Crawford County, which lies south of Lake Erie, on the Ohio state line, can't use the federal opioid grants to treat meth addiction.

"Now I'm looking for something different," Crowe says. "I don't need more opiate money. I need money that will not be used exclusively for opioids."

The federal government has doled out at least \$2.4 billion in state grants since 2017, in hopes of

David Crowe, executive director of Crawford County Drug and Alcohol Executive Commission

I don't need more

opiate money. I need money that

will not be used exclusively for

opioids.





6. REGIONAL DIFFERENCES WILL CREATE A PATCHWORK OF LOCATIONS WHERE HIV IS EXPANDING VS CONTROLLED

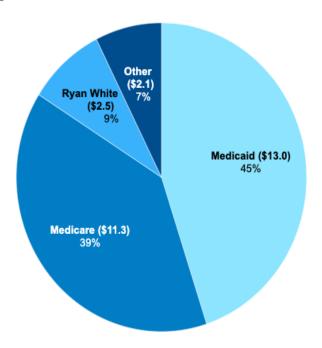




The Increasing Centrality of Medicaid Expansion

in Combatting HIV

Total Federal Funding = \$29 billion



NOTE: Total Medicaid funding includes only federal spending. A small amount of VA prevention funding is included in "other" as it was not possible disaggregate care and prevention funding for that account (possibly around \$18m). Several accounts in "other" are amounts that have been carried forward from FY17.

SOURCE: Calculation based on KFF review of Congressional Budget Justifications, other budget documents, and personal agency correspondence • PNG

Several research studies have shown that HIV-related health outcomes or health services improved because of the ACA and Medicaid expansion.



Increase in HIV testing in Medicaid expansion states, 2010–2017

(Gai et al, AJPH, 2019)



ACA insurance enrollment associated with undetectable viral load

(Furl et al, BMC Infect Dis, 2018)



Greater access to opioid addiction medications in Medicaid expansion states, 2011–2016

(Sharp et al, AJPH, 2018)



Ten-year decrease in HIV diagnoses after Medicaid expansion in Louisiana, 2016–2018

(Louisiana Dept of Health, 2019)



Greater sustained viral supression among PLWH in Medicaid expansion states, 2015

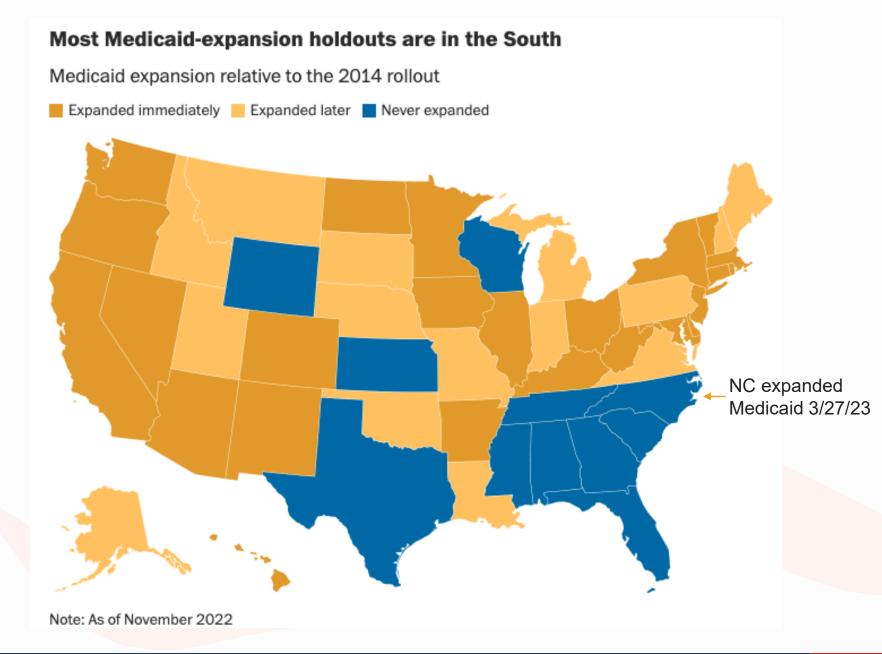
(Crepaz et al, CDC HIV Prevention Conf, 2019)



Fourfold increase in PrEP uptake among Medicaid recipients, 2012–2015

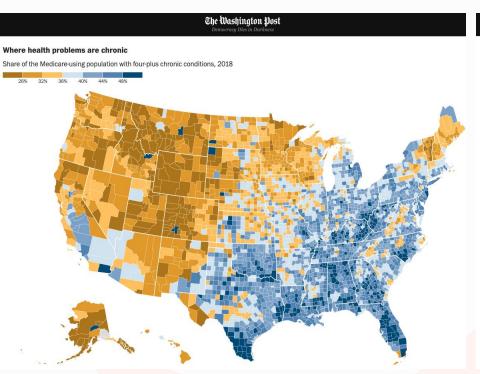
(Laufer et al. MMWR, 2015)

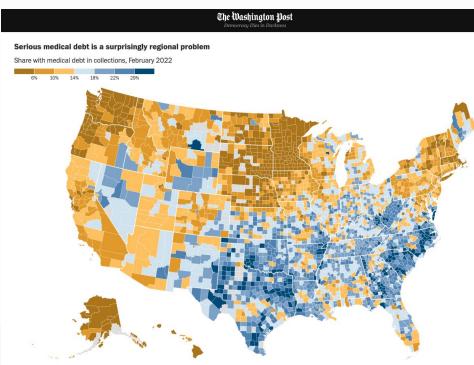






Chronic Health Problems & Medical Debt Concentrated in Certain Regions



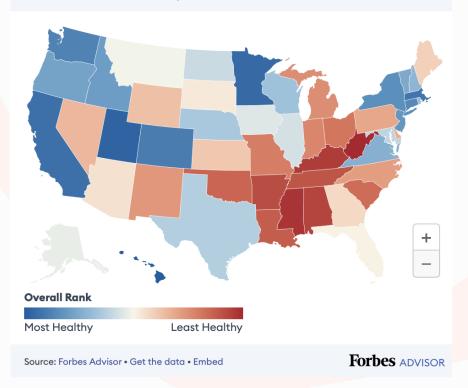




Regional differences in overall health likely indicators of where we end (or do not end) HIV

States With the Least Healthy Populations

A Forbes Advisor analysis found that West Virginia residents are the least healthy in the nation. To see each state's overall ranking and two of the metrics considered, hover over each state.



States With the Least Healthy Populations Q Search in table Page 1 of 5 Disease **Prevalence** Lifestyle **Habits & Mortality Substance** Health Rank Rate **Abuse** Outlook Score¹ Score² Score³ State West 100.00 75.31 98.31 Virginia 2 Mississippi 94.66 48.15 100.00 3 Kentucky 78.44 51.85 97.19 80.34 24.69 94.38 Alabama 5 Arkansas 89.69 40.74 92.13 6 **Tennessee** 76.15 54.32 86.52 7 Louisiana 65.08 70.99 91.57 8 Oklahoma 68.89 50.62 87.64 South 69.66 40.74 78.09 Carolina 10 Ohio 75.00 61.11 80.34









Thank You!

Gregorio Millett

amfAR

Greg.Millett@amfAR.org 202 331 8600



AETC Program National Centers and National HIV Curriculum

- National Coordinating Resource Center serves as the central web based
- repository for AETC Program training and capacity building resources; its
- website includes a free virtual library with training and technical assistance
- materials, a program directory, and a calendar of trainings and other events.
- Learn more: https://aidsetc.org
- National Clinician Consultation Center provides free, peer to peer,
- expert advice for health professionals on HIV prevention, care, and treatment
- and related topics. Learn more: https://nccc.ucsf.edu
- National HIV Curriculum provides ongoing, up to date HIV training and
- information for health professionals through a free, web based curriculum;
- also provides free CME credits, CNE contact hours, CE contact hours, and
- maintenance of certification credits. Learn more: www.hiv.uw.edu

