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RIC-COEXIST

RIC-COEXIST

Project Overview

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Project Information

What is RIC-COEXIST?

The Co-Exist initiative is funded by the RI Executive Office of Health and Human Services in conjunction with its Ryan White HIV/AIDS Program. This initiative seeks to positively impact the HIV care continuum for consumers and to support workforce development. The RIC-COEXIST Intensive Case Management Team project addresses both these aims.

RIC-COEXIST supports capacity building for quality HIV care and partnerships with specific emphasis on (1) workforce development; (2) augmentation of the HIV care continuum; and (3) Early Intervention Services. The RIC-COEXIST sub-projects include:

Sub-Project #	Sub-Project Focus
1. Workforce Development	Building Capacity for the Future and current HIV Workforce <ul style="list-style-type: none"> ○ Workforce development through higher education courses, certificate programs and professional development opportunities
2. Augmentation of the HIV Care Continuum	Augmentation of the HIV Care Continuum through Integrated Intensive Case Management & Peer Education Teams <ul style="list-style-type: none"> ○ Creation of interdisciplinary teams co-located across ASOs and related settings in RI
3. Early Intervention Services	Early Intervention Services (EIS) related to HIV/AIDS Risk Reduction <ul style="list-style-type: none"> ○ Ongoing assessment of Higher Ed Health Service Centers' efforts to increase awareness and reduce risk of HIV FY19 ○ Explore survey tools to capture College Student knowledge of HIV and feasibility of piloting the survey on the RIC Campus in FY20 ○ Continue to mobilize the RIC Peer Education Team to promote intervention/prevention support on campus

Student Teams' Roles & Functions

RIC-COEXIST has five specialized teams, one Peer Education Team and four Intensive Case Management Teams. Teams include students from RI College and Brown University Medical School and a floating Community Health Worker (CHW). Each team will become a support at their respective site. The five teams will participate in four days of intensive training, bi-weekly individual team supervision, and monthly large group supervision with all the teams.

Each team has an Onsite Team Supervisor-Leader who serves as the liaison between RIC-COEXIST and the Team's community site. Team Supervisors provide support to the Teams, engage in weekly communication between and facilitate relationships across consumer, organizational, student and COEXIST constituencies.

RIC-COEXIST Teams:

Peer Education Team

Our Peer Education Team are sexual health and advocacy leaders on the RIC Campus. They support student access to health information, sex positivity, and provide opportunities for the RIC community to join together in inclusive and informed practice. This team also provides academic programming in the surrounding communities and has existing relationships with Mt. Pleasant and Central Falls High Schools.

Team members come from diverse backgrounds and lend the expertise and passion to planning and implementing educational events, speaker panels, movie discussion events, as well as hosting World AIDS Week Activities. This Team coordinates directly with the Women's Center and Health Services to provide multiple points of engagement for RIC students and the broader campus.

Intensive Case Management Teams

This year we want to operationalize the concept of integrated health/behavioral health teams in the work of the ICM teams at their sites. This effort will be supported by an intensive orientation training that is supported by strength based and restorative approaches to engaging and retaining consumers in care. ICM Teams will use their individual areas of expertise in partnership with consumers and sites to deliver quality HIV prevention/intervention services that include behavioral health. This approach allows the students to be a team supporting assessment, education, and intervention via training/programming, support for physical and behavioral health care, discharge planning and matriculation back to the community.

Suggested ICM Roles

- **Graduate student from RIC's Social Work or the Counseling/Educational Psychology** – 16 hours/week – assist with HIV testing, bio-psycho-social/intake assessments; assess for behavioral health needs, create care plans and provide referral support, provide individual/group counseling services as appropriate

- **Undergraduate senior year nursing student** – 8 hours/week – assist with HIV testing, conduct preliminary physical health assessments and support medical examination as needed, inform medical needs on the care plan, provide individual/group health education
- **Medical Student** – 8 hours/week - provide support/conduct health assessment, explore health issues associated with HIV and other STIs, substance use/abuse, etc., assist with HIV testing, support medical staff/examinations on site, provide guidance and recommendations for care, support and deliver health education for individuals/groups
- **Health Care Administration Grad Student** - 8 hours/week – provide support to the organization with attention to financing and management of care, the delivery of health care services, quality measures related policies, protocols, care delivery/client satisfaction, and service outcomes
- **Community Health & Wellness (CHW-HPE) Undergrad/Grad Student** - 8 hours/week – provide assistance to the team and consumers through the delivery of health education, wellness interventions, and support for assist with HIV testing and care referrals
- **Community Health Workers (CHW)** - ICM teams will be supported by two floating CHWs, where there is a requirement that the individual have lived experience in HIV. The CHW will assist with system navigation, support for transition to and retention in care (all levels), and serve as a bridge between the client, the team, and service delivery systems.

Higher Education Courses and Certificate Programs

RIC-COEXIST Student Orientation

Day 1- 6.5 hours

Welcome & Refreshments

Project Document Completion - (Consent forms, Student pre/post-data collection)

HIV 101 - Dr. Phil Chan

Break

RIC-COEXIST: Practice Model & Tools - the RIC-COEXIST Team

Lunch

RIC-COEXIST ICM Team: Function & Roles - the RIC-COEXIST Team

Check-Out

Day 2 – 9 Hours

Team Check-In

Breakfast with the Consumer Advisory Board

Consumer Advisory Board Panel Discussion - Ryan White CAB & Community Members

Break

Building Culturally Responsive & Humble Practice Skills - The RIC-COEXIST Team

Lunch

Social Determinants of Health - Kyle Penrod

Break

Practice Application: Role Play - The Ellen Silverman Therapist-Theater Team

Check-Out

Day 3 – 6 Hours

Team Check-In

Behavioral Health - Tonya Glantz

Break

Screening, Brief Intervention, Referral for Treatment, Harm Reduction - Chris Dorval,

Lunch

Trauma Informed HIV Care - Tonya Glantz

Check-Out

Day 4 – 9 Hours

Team Check-In

Circles of Sexuality - Lisa Hoopis & Colby Zongol

Practice Application - the Ellen Silverman Therapist-Theater Team

Lunch

Data Collection Review - the RIC-COEXIST Team

Break

Individual Team Meetings & Team Circle - the RIC-COEXIST Team

Training Evaluation

HCA 350/450: HIV Course

Exploring HIV Health Issues & Career Opportunities through Service Learning

This course engages students from different academic backgrounds in exploring HIV and AIDS with attention to issues of quality care, advocacy, and career opportunities. The course offers opportunities to learn from rich experiences and team work, where the focus is on vulnerable populations and opportunities for prevention and intervention. Student learning is enhanced by dynamic guest speakers from consumer and provider groups, community outreach, and project based learning.

Universal Goals:

1. To explore current issues related to HIV/AIDS and the care of persons infected and affected by HIV/AIDS
2. To raise awareness around HIV/AIDS among vulnerable populations, including but not limited to men who have sex with men, people who use intravenous drugs, communities of color, and people affected by addiction, mental health and homelessness.
3. To develop a social justice lens through experiential learning that addresses inequities related to people infected and affected by HIV/AIDS
4. To assist with promoting participant self-efficacy in response to the needs of organizations serving this population and persons impacted by HIV/AIDS with attention to prevention, care/treatment, social determinants of health, and policy/advocacy needs
5. To increase awareness of career paths within the field of HIV/AIDS

A. Building the Team , HIV, & Consumer Voices

B. HIV & Social Determinants of Health,

1. HIV 101
2. HIV & Social Determinants of Health

C. Practice Model

1. SBIRT & Trauma
2. Core Practice Components

D. Cultural Responsiveness & Humility

E. Sex Positivity

F. Consumer Voices

G. Site Presentation/Visit Rotation & Project Identification

H. Project Assessment, Documentation & Planning

I. Project Presentations

HIV Certificate Program for Case managers & Direct Care Staff

Curriculum Outline

- Understanding HIV
- HIV Medications
- Medical Terminology
 - Medical Terms for Resources
- Engagement & Strength Based Care
 - Motivational Interviewing
 - Stages of Change
 - Strength Based Perspective
- Social Determinants of Health – Risk Assessment
- Cultural Responsiveness/Diversity -LGBTQ
- Self-Care Time Management
- Trauma Informed Care
- Ethics
 - Boundaries
 - Empowerment Vs Enabling
- Housing
 - Applying to HUD
 - Transition vs Sober vs Residential TX vs Housing
 - Affordable Housing
 - Shelter Rules
 - Poverty Levels
 - Section - 8 Housing
- Behavioral Health (MH/SUD)
 - Working Knowledge of Diagnoses
 - Concept of Recovery
 - Recognizing Cognitive Impairment (Dementia)
 - Co-Occurring Disorders
 - Suicidal Assessment
- Documentation
 - Basic Process Notes
 - Intake
 - Assessment
 - Care Plans
 - Practice & Intervention
- Community Resources
 - How to Make An Appropriate Referral
 - Lists of Resources
 - Working with Interpreters
- Financial/Entitlement Programs
- Nutrition – Healthy Eating
- Aging & HIV

RIC-COEXIST Data Collection and Tools

Workforce Development – Impact Data

(*Future Workforce; **Existing Workforce)

Tool	Target	Type
*RIC-COEXIST Experience Pre- & Post Narrative	ICM Peer Ed Students enrolled in HCA 350/450	Scales & Narrative
*HIV Attitude Scale	ICM Peer Ed Students enrolled in HCA 350/450	Scale
*Orientation training	ICM Peer Ed	Scales & Narrative
*Triannual Check-In Survey	ICM Peer Ed Community Partners	Scales & Narrative
*HIV Community Project	Students enrolled in HCA 350/450	Scales & Narrative
*HCA 350/450 Course Evaluations	Students enrolled in HCA 350/450	Scales & Narrative
Student Employment	ICM Peer Ed Students enrolled in HCA 350/450	Number of Students working in HIV positions
**Professional Development Evaluations	ASO Partners	Scales & Narrative
**Conference Evaluation	March 12 COEXIST Conference	Scales & Narrative

Care Continuum Augmentation Data Collection

Tool	Target	Type
Triannual Check In Survey	ICM Peer Ed Community Partners	Scales & Narrative
RIC-COEXIST Acuity Tool (page #)	Consumers	Scales & Narrative
Client Interaction Sheet (page #)	Consumers	Scales & Narrative
Satisfaction Survey	Consumers Organization	Scales & Narrative
Consumer Ed evaluations	Consumers	Scales & Narrative

EIS Data Collections

Tool	Target	Type/Need
College Health Center Survey	Higher Ed	Scales & Narrative
HIV Attitude & Knowledge Survey	Sophomores at RIC	Scales & Narrative

RIC-COEXIST Acuity Scale for Strengths & Needs

RIC-COEXIST Acuity Scale Work Sheet

Social Determinant of Health Life Domains		For each Life Domain place and X in the Level Box that best reflects the Client's current situation:				Row Score (place score for each row here; use as a guide potential areas for intervention)
		Level #0 Major Strength	Level #1 Needs Some Help	Level #2 Needs Much Help	Level #3 Major Need	
BASIC NEEDS						
1.	Food & Clothing	0	1	2	3	
2.	Living Situation/Physical Environment	0	1	2	3	
3.	Nutritional Health	0	1	2	3	
4.	Transportation	0	1	2	3	
BEHAVIORAL HEALTH						
5.	Cognitive Awareness	0	1	2	3	
6.	Mental Health	0	1	2	3	
7.	Substance Use/ Addiction	0	1	2	3	
CULTURE & LANGUAGE						
8.	Culture & Language	0	1	2	3	
FINANCIAL & LEGAL						
9.	Financial Independence	0	1	2	3	
10.	Legal	0	1	2	3	
PHYSICAL HEALTH (NON-HIV MEDICAL)						
11.	Health/Medical Insurance	0	1	2	3	
12.	Medical/Physical Health Needs	0	1	2	3	
13.	Oral Health	0	1	2	3	
SAFETY						
14.	Domestic Abuse/Violence	0	1	2	3	
SOCIAL SUPPORTS						
15.	Support System (to include emotional, spiritual, and other)	0	1	2	3	
16.	Dependents/Partners	0	1	2	3	
HIV CARE						
17.	Knowledge of HIV disease	0	1	2	3	
18.	Knowledge of HIV Transmission	0	1	2	3	
19.	Medication Adherence	0	1	2	3	
20.	Retention in Care	0	1	2	3	
21.	HIV Medical Needs	0	1	2	3	
22.	Pregnancy	0	1	2	3	
23.	Post- Partum	0	1	2	3	
Each X is 1 point; add number of checks in each Column to create a continuum of strengths and needs						
TOTAL COLUMN SCORE						

Excerpts from RIC-COEXIST Client Contact Form

Demographic Data

Type of Contact Today

Community Outreach Face to Face ☐ Agency Face to face ☐ Home Visit ☐
 Telephone ☐ Online ☐ Other Click or tap here to enter text.

What was the purpose of today's interaction?

High Risk Negative Outreach ☐ Re-Engagement in Care Outreach ☐ Drop in Center ☐
 Testing ☐ Education/Training ☐ Intake ☐
 Assessment (including DOC's TCU) ☐ Case Management ☐ Clinical Care (Behavioral Health) ☐
 Clinical Care (Physical Health) ☐ Discharge ☐ Other Click or tap here to enter text.

Based on today's interaction, what tools/activities did you use (check all that apply)?

New Acuity Scale (RIC-COEXIST) ☐ Review/Update Existing Acuity Scale ☐ Restorative Practice ☐
 Motivational Interviewing ☐ Eco-Maps ☐ Education/Training ☐
 Other (explain) ☐ Click here to enter text.

OUTREACH TO IMPROVE LINKAGES TO CARE

Based on today's interaction have you helped to support any of the following (check all that apply):

Psycho-Social Support to improve daily functioning & well-being - Basic Needs & Behavioral Health sections with check boxes and narrative field

Psycho-Social Support to improve daily functioning & well-being (continued) – Education, Group Training & Physical Health sections with check boxes and narrative field

Enter additional comments regarding Psycho-Social Supports here:

Based on today's interaction have you helped to support any of the following outcomes (check all that apply): Decreased Isolation & Increased Daily Functioning sections with check boxes and narrative field

TEAM D.A.P. Note - (Be sure to link the Acuity Data Sheet to interactions and goal setting) – Students document their interaction with a traditional DAP note.

Examples of Impact

HIV & Aging: Master's Thesis

Abstract

In conjunction with Rhode Island's rapidly aging population, biomedical intervention innovations have dramatically shifted the realities of a HIV/AIDS diagnosis. Only thirty years ago, an HIV seropositive status was ostensibly considered a death sentence. Now, individuals living with HIV/AIDS can expect to (and do) live long, healthy lives not dissimilar to their seronegative peers. With this increased life expectancy comes implications of long-term antiretroviral medication use; enhanced presence and exacerbation of co-morbidities, such as cardiovascular disease, psychiatric illness, and cancer; and pervasive compounded stigmatization. Currently, adults age 50 or older account for roughly half of all individuals living with HIV and are projected to balloon to 70% by 2030. Thus, assessing the preparedness of the State's long-term care service delivery system to address the unique needs of adults aging with HIV/AIDS is imperative. To assess this literature gap, this study aims to evaluate the knowledge and attitudes of providers towards HIV/AIDS in long-term care settings in conjunction with garnering consumer feedback through focus groups regarding their experiences, desires and preferences as it relates to provision of care.

Key words: Aging, HIV/AIDS, Older adults, Long-term care services and supports (LTSS)

Ryan White Part B Quality Measures & RIC-COEEXIST

The RIC-COEEXIST project serves as resources to support and augment resources within select ASOs and Early Intervention settings through training/curriculum, assessment, and student led Intensive Case Management Teams. These resources, when paired with ASOs, can provide additional support for select performance measures associated with servicing persons living with and/or at risk for HIV/AIDS. The table the follows provides insight in those performance measure areas where the RIC-COEEXIST project seeks to or has the potential to positively impact and/or support current practice efforts within the field.

Ryan White Part B Quality Performance Measures	Building Provider Training	Capacity Consumer Training	E.I.S. Higher Ed Assess.	Intensive Case Management Teams				
				ACOS	ACAPE	DOC	RIC	
AIDS Drug Assistance Program (A DAP)								
Emergency Financial Assistance								
Early Intervention Services	X	X		X 01,	X 01, 02, 07	X 01, 02, 07	X 01, 02,	
Health Insurance Premium Assistance				X 05,	X 05,	X 05,		
Home and Community-Based Health Services								
Home-Delivered Meals								
Housing				X 04,	X 04,	X 04,		
Linguistics				X 03	X 03	X 03		
Minority AIDS Initiative (MAI)				X 06, 07, 08	X 06, 07, 08	X 06, 07, 08		
Medical Case Management								
Medical Transportation								
Mental Health Services				X 01, 05, 06	X 01, 05, 06	X 01, 05, 06		
Medical Nutrition Therapy								
Non-Medical Case Management	X	X		X 01, 03, 04, 05, 06, 07, 08,	X 01, 03, 04, 05, 06, 07, 08,	X 01, 03, 04, 05, 06, 07, 08,	X 01, 03, 04, 05, 06, 07, 08,	
Oral Health								
Psychosocial Support Services	X	X		X 01,	X 01, 03,	X 01, 03,	X 01,	
Substance Abuse Outpatient								
Substance Abuse Residential								
Other Professional Services (Legal)								
Health Education/Risk Reduction	X	X	01	X 01, 03, 04,	X 01, 03, 04,	X 01, 03, 04,	X 01, 03, 04,	
Outreach				X 01, 02,	X 01, 02,	X 01, 02,	X 01,	

Presenter Information

Tonya Glantz, MSW, PhD, is the Director of the Institute for Education in Healthcare at Rhode Island College. She has more than 25 years of experience working with social service, higher education, correctional, and community-based organizations. Her professional and research interests revolve around exploring and implementing empowering interventions that promote understanding and productive relationships between vulnerable populations and service organizations. She is the lead Project Investigator for the RIC-COEXIST grant, a funding initiative addressing HIV/AIDS awareness and prevention through workforce development and care continuum expansion. Dr. Glantz has presented at local and national conferences and has published her research. She is member of the faculty at Providence College's Department of Social Work, Rhode Island College's Elementary Education Department, and Johnson & Wales Doctoral Program for Education. She is the current President of the NASW RI Chapter.
tglantz@ric.edu

Norma V. Hardy, M.Ed. CHES-- is a Certified Health Education Specialist who joined RIC COEXIST as the Onsite Project Director for the Intensive/ Integrated Case Management Team. She works closely with the Principal Investigator to provide oversight to the Integrated Case Management Onsite Supervisors and teams.

Norma has over twenty five years of community-based research experience in program planning and development for low income and /or minority populations. She is a Motivational Interviewer for individuals seeking to make behavior change related to smoking, weight management and others. Ms. Hardy has mentored women in transition from prison back to their communities and has conducted numerous safety net parties with groups of individuals infected with HIV or at risk for contracting HIV as well as other sexually transmitted infections. Norma's research experience started at Memorial Hospital of RI where she worked as an HIV Health Educator with New England Behavioral Health Study (NEBHS) that researched the heterosexual spread of HIV in the early years of the disease. She offered pre and post- test counseling to individuals entering CODAC11, St Joseph's STD Clinic, New England Behavioral Health Study and other community based organizations. nhardy@ric.edu

Kyle Penrod, B.S., is a Master's candidate in Rhode Island College's Health Care Administration program. He has spent his graduate career engaged in social justice work – assuming roles at the Rhode Island School of Design, Rhode Island College, and Aids Project Rhode Island. Last year he served as a Graduate Assistant at Rhode Island Colleges' Institute for Education in Healthcare assisting to build workforce capacity for HIV/AIDS care management through engaging students in a cross disciplinary curriculum under the COEXIST grant. Initially drawn to this work due to health disparities and pervasive discrimination impacting PLWHA, he is excited to continue working on this project, now in the capacity of Site Supervisor for the Project Weber/RENEW team/ kpenrod_4244@email.ric.edu

In Crisis: The HIV Workforce

Bob Gatty

Searching for solutions to solve the growing shortage of HIV physicians

SEVEN YEARS AGO in its inaugural issue, HIV Specialist warned that a critical shortage of practitioners who treat HIV/AIDS patients in the United States was looming, predicting that more than 32% of today's HIV clinicians would stop providing that care over the next 10 years.

That report was based on a survey by the American Academy of HIV Medicine (AAHIVM) of its members and suggested this would happen as the HIV workforce ages and increasing numbers of clinicians reach retirement age. Although the survey showed that specializing in HIV has been professionally rewarding by the majority of HIV clinicians, that sense of satisfaction apparently has not resulted in enough medical students (and residents) planning to pursue a career in HIV medicine to replace those who are retiring.

In fact, only about one-third of students who decided to join AAHIVM said they planned to pursue a career in HIV medicine, with two of three saying that medical school debt would influence their ultimate choice of careers, prompting them to choose specialties that would pay a higher annual salary than working in HIV medicine.

Sadly, it appears not much has changed and, in fact, the warnings issued by AAHIVM seven years ago are beginning to materialize. In April 2011, the Institute of Medicine (IOM) report HIV Screening and Access to Care said projections of the U.S. HIV care workforce, as well as the primary care workforce generally, indicate there will be a shortage of providers needed to handle the number of people in the U.S. who need to be tested and treated.

The report noted that many among the "first generation" of HIV providers are reducing their practices or retiring, and that relatively few new health professionals are choosing to specialize in HIV care.

"The majority of providers receive little training or practical experience in HIV care, especially in outpatient clinics where most HIV care now occurs," the report's summary stated. "Thus many of them may be uncomfortable with taking sexual histories and providing HIV tests to patients."

The report went on to say that to meet workforce demands, health professionals need to be increasingly exposed to outpatient HIV care during their training and that continuing

education needs to be provided throughout their careers.

"There also is a need to reach beyond the primary care physicians (Family Medicine or Internal Medicine) and Infectious Disease specialists who provide HIV care and to utilize advance practice registered nurses and physician assistants to the full extent of their training abilities," the report added. "Registered nurses, dentists, pharmacists, and social workers are among the large number of providers necessary to provide quality HIV care in a variety of settings. It also may be desirable to provide better financial and other incentives to encourage more health professionals to enter and remain in HIV care."

That report was published in 2011. Another workforce study by the Health Resources and Services Administration (HRSA) has been underway for some time and is expected to be released soon.

'Alarming Reality'

There are no indications that the shortages predicted in the IOM report have been overcome, and it can be assumed unless remedial steps are taken, they can only be expected to worsen.

As an example, the Los Angeles Times reported in January that since last May, Dr. Robert Bolan, medical director at the Los Angeles LGBT Center, has been trying to hire a physician to treat HIV patients, as one of the physicians on his staff moved away last year.

"I just haven't been able to land somebody and put them in a clinic," Dr. Bolan told Times reporter Soumya Karlamangla, noting a shortage of primary care physicians—particularly primary care physicians who want to provide HIV care as part of their clinical practices.

Dr. Mitchell Katz, director of the Los Angeles County Department of Health Services, noted that L.A. County has more than 60,000 people infected with HIV. The Times story said Dr. Katz trained as a physician at the height of the AIDS crisis, but now new physicians are looking to enter better paying specialties.

"I didn't set out to be an HIV doctor either, but the emergence of the epidemic is what led us to do what we do," Dr. Katz told the Times reporter. "My concern is what does that look like into the future."

The Times article went on to report that the Los Angeles County Department of Health Services is launching a two-year fellowship to train physicians in HIV medicine, a step consistent with the recommendations of the IOM report. Funded by a \$7.5 million grant from pharmaceutical company ViiV Healthcare, the program will train physicians how to care for HIV patients at L.A. county facilities. The five-year grant will train 10 to 18 physicians who already have completed a Primary Care residency. The expected start date is July 2016.

The grant funding, Dr. Katz explained, also will help fellows pay off loans. Upon completing

the program, if they work in underserved areas anywhere in the U.S., they can get up to \$50,000 a year toward reducing their medical school debt.

Dr. Andrew Zolopa, ViiV Healthcare's global medical director, said the program is the first of its kind and that he hopes it will become a national model, benefiting the county, doctors, and patients.

In a news release announcing the grant, ViiV Healthcare warned that "this impending physician shortage will have an impact on communities across the country, including major cities like Los Angeles."

"The growing deficit of physicians specializing in HIV is an alarming reality, as it will impede efforts to improve community-based care for people living with HIV," said Dr. Katz. "The program will offer real-life training to emerging primary care providers specializing in HIV, to help improve the health of people in Los Angeles and other areas across the country for many years to come." Additional information on this program is available at <http://www.lachivphfellowship.com/>

National HIV/AIDS Strategy

The shortage of healthcare providers focused on HIV also was highlighted as a key issue in the White House's National HIV/AIDS Strategy for the United States: Updated to 2020. This report calls for "deliberate steps to increase the capacity of systems as well as the number and diversity of available providers of clinical care and related services for people living with HIV."

The White House strategy establishes these goals:

- Reducing new HIV infections
- Increasing access to care and improving health outcomes for people living with HIV
- Reducing HIV-related disparities and health inequities
- Achieving a more coordinated national response to the HIV epidemic

A study presented by CDC researchers at the recent Conference on Retroviruses and Opportunistic Infections (CROI) in Boston stated that reaching the National HIV/ AIDS Strategy targets for HIV testing and treatment and expanding the use of daily Pre-Exposure Prophylaxis (PrEP) could prevent an estimated 185,000 new HIV infections in the U.S. by 2020—a 70% reduction in new infections. (CROI 2016, abstract # 1051). But how can those goals be realized without a sufficient and well-trained HIV workforce?

Are Family Physicians the Answer?

The National HIV/AIDS Strategy also calls for increasing engagement of Family Medicine physicians in the care and treatment of HIV-infected patients, integrating HIV care into primary care services as a way to improve overall access to and quality of HIV care.

But, cautioned Dr. Jeffrey T. Kirchner, medical director of Penn Medicine/LGHP Comprehensive Care at Lancaster General Hospital, a Ryan White funded clinical program in Lancaster, PA, in order for this shift to occur effectively, family physicians need greater exposure and better training in HIV medicine.

That need was highlighted by research published last year in *Clinical Infectious Diseases*, which found that physician experience is associated with the quality of care provided to HIV+ patients. Investigators from this study done in New York State noted, "Our findings suggest that the quality of care associated with providers who prescribe ART for <20 patients is lower than that provided by more experienced providers. Access to experienced providers as defined by patient volume is an important determinant of delivering high-quality care and should guide HIV workforce policy decisions . . . we found that the majority of LVPs (low volume providers) practiced in primary care settings and were not infectious diseases (ID) specialists or identified as HIV specialists," commented the authors. "Our study highlights the need to monitor data and trends in the HIV workforce. Ongoing research is needed to examine strategies to guarantee a capable provider workforce for delivering effective care to HIV-positive patients over time and identify best practices." (O'Neil M et al. The HIV workforce in New York State: does patient volume correlate with quality? *Clin Infect Dis.* (2015) 61 (12): 1871-1877)

AAHIVM sought to address this need by launching their Clinical Consult Program, which allows providers seeing fewer than 20 HIV patients to be eligible to earn their HIV Specialist credential by agreeing to be "paired" with a highly experienced, credentialed Academy member during the exam session and for the 3-year life of the earned credential. The program is an initiative to foster larger numbers of medical providers to meet a minimum standard of knowledge in advanced HIV care, particularly in rural or underserved settings, or regions where providers see relatively few HIV patients.

Timing Issues

Yet another barrier for training is the amount of time necessary to stay current on therapies.

"Primary care physicians are already expected to acquire and maintain an extensive knowledge-base, so that many see HIV/AIDS as another major area of medicine that they do not have time keep up with," said Dr. Kirchner. "I believe many of my Family Medicine colleagues would like to provide care for their HIV-infected patients, but don't have the time to obtain the additional CME needed in this field that historically has changed quite rapidly with the development of new therapies. In addition, most work under a 15-minute per-patient schedule—yet another barrier to providing the complete care patients with HIV require,

including prevention counseling."

Consequently these physicians are sending these patients to other clinicians to manage the HIV disease," Dr. Kirchner pointed out.

"As a Family Medicine physician who has been doing HIV care since I finished my training in 1989, I truly understand this," he said. "There is an ever-growing number of curriculum requirements for Family Medicine residents that we must cover within a three-year period of time. This ranges from prenatal care and pediatrics to palliative care and pain management."

With today's medical advances and the ability to treat most patients with one or two pills a day, one might assume that for the Family Physician providing this additional care should not be a significant burden.

"I think from the physicians' perspective, unless you are doing this on a day-to-day basis, prescribing ART is not something that you feel comfortable with," Dr. Kirchner observed.

He pointed out that the American Academy of Family Physicians has an HIV/AIDS curriculum guideline that he helped author and update. However, he said, there are no specific requirements as to how this information is incorporated into the training of Family Medicine Residents.

"The degree of exposure residents get to HIV care is extremely varied— from extensive to very little or perhaps even none—depending on where they do their post-graduate training," he observed.

Training Opportunities

Dr. Kirchner pointed out that Family Medicine graduates are not eligible for ID fellowships. "This limits post-graduate training options in HIV medicine" he observed.

However, he noted, there are existing and evolving models for training Family Medicine graduates in HIV care, such as the new Fellowship noted above in California, as well as several others around the country. For example, the Family Medicine Residency of Idaho (FMRI) HIV Primary Care Fellowship is a 12-month post-residency training opportunity that provides training for the Family Medicine physician to gain experience in providing comprehensive care to persons living with HIV/AIDS.

Last year, AAHIVM partnered with the California Academy of Family Physicians (CAFP), and Medscape Education to develop a customized educational curriculum, Expanding the HIV Provider Base: Preparing Clinicians for HIV Care, directed at Primary Care and Family Medicine physicians to help them identify, evaluate and manage patients with HIV. The program comprised a curriculum of four educational activities tailored for clinicians practicing in the areas of infectious diseases and primary care, who are positioned to identify and treat

individuals at risk for or living with HIV infection. The Academy hopes to continue adding training modules like this one to reach a greater number of family medicine practitioners.

The IDSA/HIVMA Clinical Fellowship program supports newly trained physicians with gaining HIV clinical experience working with medically underserved patient populations. The program's goal is to boost the population of HIV physicians and strengthen the commitment to provide clinical care to HIV-infected patients in minority communities. HIVMA awards grants to support one-year of HIV clinical training to up to two fellows per year. Like the new program in Los Angeles County, the HIVMA fellowship historically has been funded by pharmaceutical grants.

Lancaster General Health and several other Residency programs, including University of California, San Francisco (UCSF) and Wooster, MA offer HIV clinical tracks or "Area of Concentration" (AOC) for third year residents who wish to gain additional experience in HIV care. Dr. Kirchner's AOC program at LGH has trained 11 residents to date, all of whom have become certified as HIV specialists by AAHIVM.

"If there was funding for an additional fourth year of training in primary care for physicians who want to focus on HIV care, that could make a significant difference in addressing some of the shortages," Dr. Kirchner said. "However, you would also need to have curricula in place and faculty who are HIV specialists to provide this training."

Dr. Kirchner stressed that for most patients, HIV is a chronic disease that can be well-managed in an outpatient ambulatory setting. In his opinion, Family Physicians and General Internal Medicine physicians are best trained to work in those settings, although many ID/HIV physicians, as well, have elected to spend less time in the hospital and provide both HIV and primary care to their patients. This is particularly true for those who are part of the aging patient population.

"If we can develop effective HIV training programs, I believe it will be from these two areas of primary care that most of the future HIV providers will come from," he said. "We need to be training these physicians whether it is during residency or with post-graduate fellowships-as a solution to HIV physician shortage. We must also convince third party and other federal payers that if there are good systems in place with fair reimbursement we can provide excellent long-term, cost-effective care of HIV-patients. There is extensive data from the medical literature and Ryan White Programs that offer proof of this."

About the Money

Another major factor that plays into the growing shortage of HIV physicians is the disparity in financial compensation, Dr. Kirchner pointed out, noting that ID physicians typically tend to be at the "lower end of the pay scale compared to other medical specialist."

Cardiology, oncology, and gastroenterology tend to be much more lucrative areas of practice in most cases making twice the salary of ID and Primary Care. In the face of significant

financial debt from medical school, many students increasingly go into areas of medicine where they are paid more. This has been supported by numerous surveys of medical students and practicing physicians over the past few years. (See Medscape figure)

The National Resident Matching Program (NRMP) numbers announced last December bear that out, as 117 of the 335 ID fellowship positions went unfilled, many at highly prestigious institutions.

According to Wendy Armstrong, MD, FIDSA, FACP, professor of medicine at the Emory University School of Medicine and vice chair of education and integration, the root cause has to do with the money future specialists can expect to be paid. "There are fewer ID clinicians acting as attendings on medical services," she said. "It's the money."

"We are all concerned," said Dr. Armstrong, who chairs the Infectious Diseases Society of America's Task Force for Recruitment to ID. "In the specialty, this is a significant topic of conversation. We are concerned that this could become a crisis."

"Historically in the U.S. health system, physicians have been paid much more for doing procedures rather than cognitive skills and the education and counseling patients, and those are key components of office-based medical care," Dr. Kirchner pointed out. Still, for him and many others who have specialized in treating HIV patients over the years, many other factors influence what they do.

"Taking care of HIV patients is never going to be about the money," said Dr. Kirchner. It has remained intellectually challenging and a very satisfying part of my work over the past 25 years."

ABOUT THE AUTHOR:

Bob Gatty is editor of HIV Specialist

The HIV Clinician Workforce in the United States

Supply and Demand Projections
 from 2010 to 2015

IN THE UNITED STATES, APPROXIMATELY 1.1 MILLION ADULTS AND ADOLESCENTS ARE LIVING WITH HIV, and each year another estimated 50,000 become infected.¹ Because of advances in HIV care, people are living longer with the disease than they previously did.¹ Moreover, at the end of 2008, an estimated 20% of the people living with HIV were undiagnosed.¹ Only 77% of HIV-diagnosed people are linked to care within four months after diagnosis, and only about 51% of those with an HIV diagnosis are engaged in long-term care.¹ Should universal routine HIV testing for people ages 13 through 64 be adopted, as is recommended by the Centers for Disease Control and Prevention (CDC), and improvements in linkages with and engagement in care be achieved, the demand for HIV care will increase rapidly and create significant new challenges for the health care system.² The 2010 Patient Protection and Affordable Care Act should also result in increased access to care for people with HIV who have not previously seen a provider. Under the law, people who are living with HIV but not diagnosed or who are at increased risk for HIV will be more likely to be screened for HIV infection and, among those newly diagnosed, to receive services that strengthen their ability to adhere to treatment.

Evidence suggests that the supply of HIV clinicians might not be keeping pace with the growth in the demand for HIV health care services. In a 2008 survey, the American Academy of HIV Medicine (AAHIVM) found that one third of its members plan to retire within the next 10 years.³ Another study found that nearly 70% of all practices funded for early intervention services under the Ryan White HIV/AIDS Program have a difficult or very difficult time recruiting primary care providers.⁴ A recent qualitative assessment of the HIV workforce conducted by the federal government concluded that "the Nation faces severe workforce capacity challenges to effectively treat people living with HIV/AIDS (PLWHA). The demand for HIV and primary health care services, in particular, continues to increase as treating PLWHA becomes more complicated and new cases arise. Exacerbating workforce demands are the many experienced health professionals retiring from practice while young providers choose medical fields outside of HIV and primary health care."⁵ Reflecting this view, the two medical societies for HIV care and treatment in the United States—AAHIVM and the HIV Medicine Association—released a joint statement: "With the growing number of people living with HIV, a failure to promptly address HIV medical workforce issues could lead to the collapse of the HIV care system—risking lives and the public health of communities across the country."⁶

In September 2010, amid growing concern about the potential shortage of HIV clinicians, the Health Resources and Services Administration within the U.S. Department of Health and Human Services (HHS) sponsored the first national study to quantify the number of clinicians providing HIV medical care in the United States and to forecast the magnitude of the HIV clinician shortage or surplus.⁷ HHS initiated the study to assess whether there were sufficient providers available to address the goals of the National HIV/AIDS Strategy, launched by the

White House Office of National AIDS Policy in 2010 to reduce new HIV infections, increase access to care and improve health outcomes for people with HIV, and reduce disparities in access to care among individuals living with HIV.⁸ The results from that national HIV clinician workforce study are summarized in this article.

The health profession workforce issues addressed in this study are unique and require special attention for several reasons. First, HIV is a communicable disease and, unlike most chronic conditions, failure to deal with shortages in care will have long term adverse consequences for public health in this country. Second, the expansion of health care coverage under the Affordable Care Act has the potential to bring a large proportion of the population currently living with HIV but not yet diagnosed, or those diagnosed but not yet linked to care, into the health care system. In 2012, over 62% of individuals diagnosed with HIV received medical and support services funded by the Ryan White HIV/AIDS Program⁹ and 78% of these clients had income below 200% of the federal poverty level, making them potentially eligible for subsidized coverage under the Affordable Care Act.¹⁰ Efforts must be made now to prepare for the opportunity that health reform brings to identify and engage in care those who are currently not receiving optimal treatment or not effectively managing their HIV disease. Finally, unlike other chronic conditions, HIV care in this country has historically been managed by clinicians from multiple health care professions and medical specialties, many of whom spend only a part of their clinical time treating patients with HIV. The diversity of the HIV workforce means that the administrative records of medical specialty societies cannot be used to identify HIV clinicians. Instead, we used medical and prescription drug claims to create the first national census of providers who manage HIV care in the United States today and conducted a survey to characterize their HIV practice behavior

METHODS AND DATA

Defining and Characterizing the HIV Clinician Workforce

Given the lack of an established credentialing requirement for physicians and nonphysician clinicians providing HIV services, we identified (in consultation with a technical expert panel of HIV clinicians and practice administrators) potential HIV clinicians based on the services they provided as reported in a national pharmacy and medical claims database obtained from SDI Health containing claims from all payers (including managed care plans), billing providers, and geographic regions. We pulled the data in October 2011 and identified HIV clinicians based on claims from 2010. We identified 572,952 patients with at least one HIV-related claim, representing two thirds of all diagnosed cases, and an even higher proportion of those in care. Clinicians with HIV-related visits or prescription claims for 10 or more patients who were physicians, nurse practitioners, and physician assistants in internal or family medicine, general practice, and infectious disease were deemed potential HIV clinicians. We excluded clinicians who treated fewer than 10 patients with HIV because these clinicians are less likely to manage HIV care on an ongoing basis. Based on these parameters, we identified 9,145 potential high-volume HIV clinicians in the claims database.

To obtain more information about the HIV care provided by these clinicians and to develop

supply-side inputs that reflect the behavior of HIV clinicians, in 2012 we surveyed a nationally representative probability sample of 5,000 of these potential HIV clinicians. Only 55.1% of the original sample was eligible for the survey. Most of those deemed ineligible indicated that they did not provide HIV treatment to 10 or more patients diagnosed with HIV. Among those eligible for the survey, 42.9% responded. The number of completed eligibles enabled us to estimate national supply-side input parameters for selected age, gender, and health profession groups with statistical precision. We weighted the analyses to adjust for survey sampling and for differential nonresponse patterns.¹¹

Calculating the Demand for HIV-Related Medical Care

We defined demand as the total number of HIV-related medical visits provided under market conditions in 2008. We calculated the total number of visits provided based on (1) the number of individuals diagnosed and living with HIV/AIDS as identified in CDC and state and local surveillance data and (2) the number of HIV-related medical visits per diagnosed person. We calculated visit rates per diagnosed person in the base year as the ratio between the total number of HIV-related visits used and the total number of diagnosed persons in each age and gender group. We identified HIV-related visits and inpatient stays from various sources, including two National Center for Health Statistics (NCHS) provider surveys and the Health Care Cost and Utilization Project's National Inpatient Sample (HCUP-NIS).¹² We excluded visits related to HIV testing and counseling because our analysis focused on clinicians who manage HIV care longitudinally. We included visits for which HIV was a secondary diagnosis because the presence of HIV as a secondary diagnosis can complicate treatment, implying that optimal treatment of the primary diagnosis might require the knowledge of an HIV specialist.

Forecasting the Supply and Demand of HIV Clinicians

We projected the supply and demand of HIV clinicians from 2011 to 2015 using a Markov model. We calculated the number of HIV clinicians in each year as the number of HIV clinicians in the prior year plus entrants into the HIV workforce and minus losses from retirement and mortality. We estimated entry into and retirement from the HIV clinician workforce from survey responses. To estimate the total number of visits supplied by the workforce, we multiplied the supply of HIV clinicians in each year by survey-based estimates of the average number of hours worked per year, the proportion of time spent in HIV care, and the number of visits provided per hour. We assumed these parameters remained constant for each age, gender, and health profession category throughout the projection period.

We calculated the number of individuals diagnosed with HIV in each projection year as the number of individuals diagnosed with HIV in the prior year plus newly diagnosed cases minus mortality, based on CDC and state and local surveillance data. We assumed utilization rates per diagnosed person by age, gender, and race remained constant throughout the projection period. We multiplied the average utilization rates per diagnosed person by the forecasted number of diagnosed cases in each age and gender category to obtain the total number of

HIV visits demanded in each forecasted year. We converted forecasted visits supplied and demanded to full-time equivalent (FTE) clinician values based on the average number of HIV-related visits supplied per full-time clinician in the base year.

RESULTS

Table 1 shows the distribution of the estimated 4,937 HIV clinicians practicing in 2010 identified in this study. Of these, an estimated 54.5% were primary care physicians, 37.2% were infectious disease specialists, and 8.3% were nurse practitioners or physician assistants. An estimated 65.8% of the HIV clinicians were male and 16.5% were age 65 and older. The majority of the HIV clinicians were white non-Hispanic (68.0%), and the largest share (39.7%) practiced in the South. Overall, 13.2% of the HIV physicians were trained outside of the United States.

Table 1. Number and Percentage of High-Volume HIV Clinicians, by Clinician Type, Demographic Group, and Region		
	Number of HIV Clinicians	Percentage of HIV Clinicians
Number of Clinicians	4,937	100.0
Clinician Type		
Primary care physicians	2,691	54.5
Infectious disease specialists	1,836	37.2
Nurse practitioners and physician assistants	410	8.3
Gender		
Male	3,249	65.8
Female	1,688	34.2
Age Group		
Younger than 45 years	1,570	31.8
45 to 64 years	2,552	51.7
65 years and older	815	16.5
Race/Ethnicity		
White, non-Hispanic	3,362	68.0
Black, non-Hispanic	410	8.3
Hispanic	360	7.3
Other/multiple race, non-Hispanic	805	16.3
Census Region		
Northeast	1,387	28.1
South	1,960	39.7
Midwest	746	15.0
West	844	17.1
Country of Highest Clinical Degree		
United States	4,285	86.8
International	652	13.2

Source: HIV Clinician Workforce Survey 2012.

Note: The results are weighted to account for the probability of selection and for differential survey nonresponse patterns. Percentages might not sum to 100% because of rounding. High-volume providers are those who treated 10 or more patients with HIV in 2010.

Table 2 provides an estimate of the number of HIV-related medical visits supplied in 2010. Primary care physicians reported spending on average 1,872 hours per year in patient care, with 30.4% of their clinical care time spent treating patients with HIV. Infectious disease specialists reported spending a similar amount of time in patient care (1,871 hours per year) but devoted nearly 30% more of their time to treating patients with HIV (39.3%) than did primary care physicians. Nonphysician clinicians reported spending more time in clinical care (1,993 hours) and a higher share of their time treating patients with HIV (66.9%) than their physician counterparts. Physicians reported conducting on average 1.5 HIV-related clinician visits per hour, compared with 1.4 visits per hour for nonphysician clinicians. In total, we estimate that the HIV clinicians identified in this study provided 5.1 million HIV-related medical visits nationally in 2010.

Table 2. Number of HIV Clinician Visits Supplied in 2010, by Clinician Type

Type of Clinician	(Column A) Number of HIV Clinicians	(Column B) Number of Hours Worked per Year	(Column C) Proportion of Time Spent in HIV Care (%)	(Column D) Number of HIV Visits per Hour	(Column E) Total Number of HIV Visits Supplied
PCP	2,693	1,872	30.4	1.5	2,297,165
IDS	1,836	1,871	39.3	1.5	2,023,814
NP/PA	408	1,993	66.9	1.4	762,238
All Clinicians	4,937	1,882	36.7	1.5	5,083,217

IDS = infectious disease specialist; NP = nurse practitioner; PA = physician assistant; PCP = primary care physician.

Source: HIV Clinician Workforce Survey 2012.

Notes: The results shown in Columns B, C, and D were derived from the model using statistically significant subgroup means only. The results are weighted to account for the probability of selection and for differential survey nonresponse patterns.

Table 3 displays the total number of HIV-related visits demanded and received in 2008. This total includes visits in ambulatory settings (on average, 5.1 visits per diagnosed person annually), as well as visits provided to hospital inpatients (on average, 0.92 visits per diagnosed person annually). These averages include people with HIV who were engaged in care, as well as those who received treatment sporadically. Overall, we estimate 5.1 million HIV-related medical visits were demanded in 2008. An estimated 62.8% of all HIV-related visits demanded were for individuals ages 35 to 54. A total of 15.4 percent of all visits in 2008 were for people 55 and older, a proportion that is likely to increase as the HIV population ages. Approximately two thirds of total visits were for males (67.1%) and one third for females (32.9%). Black non-Hispanics accounted for the highest share of visits (45.0%), followed by white non-Hispanics (34.1%). Hispanic individuals represented 18.2% of all visits demanded. The South represented the highest proportion of visits (42.5%), followed by the Northeast (28.4%).

Table 3. Number and Percentage of HIV Visits Demanded, by Demographic Group and Region, 2008

Demographic Group	Number of Visits Demanded (in thousands)	Percentage of Visits Demanded
Total	5,148	100.0
Age Group		
Younger than 13 years	28	0.5
13 to 24 years	293	5.7
25 to 34 years	800	15.5
35 to 44 years	1,623	31.5
45 to 54 years	1,614	31.3
55 to 64 years	658	12.8
65 years or older	132	2.6
Gender		
Male	3,455	67.1
Female	1,693	32.9
Race/Ethnicity		
White, non-Hispanic	1,758	34.1
Black, non-Hispanic	2,317	45.0
Other/multiple race, non-Hispanic	138	2.7
Hispanic only	935	18.2
Region		
Northeast	1,463	28.4
South	2,190	42.5
Midwest	604	11.7
West	891	17.3

Source: National Ambulatory Medical Care Survey (NAMCS) (2009) and National Hospital Ambulatory Medical Care Survey (NHAMCS) (2008), HCUP-NIS data (2002–2009), and federal and state HIV surveillance data (2008).

Note: Percentages might not sum to 100% because of rounding.

Table 4 shows the forecasted number of HIV clinicians and visits supplied from 2010 to 2015. Our model forecasts a decline in the number of primary care and infectious disease physicians managing HIV care by 2015 of about 400 and 200 clinicians, respectively. The number of nurse practitioners and physician assistants supplying HIV care is expected to increase from 408 clinicians in 2010 to 511 clinicians in 2015. The total number of visits supplied is expected to decline 6.1%, from 5.1 million in 2010 to 4.8 million in 2015, with nonphysician clinicians providing an increasing share of HIV care. The decline in visits supplied is largely because the number of clinicians entering the HIV workforce over the next few years is not sufficient to fill the gap left by clinicians leaving the HIV workforce because of retirement and mortality. The decline in supply is also due to the demographic shift in the HIV workforce toward female clinicians. A disproportionate number of new entrants is female and, on average, female clinicians in HIV medicine work 11.2% fewer hours per week than their male counterparts (40.3 hours for women versus 45.4 hours for men).

Table 4. Forecasted Supply and Demand of HIV Visits, 2010–2015						
	2010	2011	2012	2013	2014	2015
HIV Clinicians						
PCP	2,693	2,602	2,524	2,445	2,369	2,292
IDS	1,836	1,789	1,748	1,707	1,666	1,625
NP/PA	408	431	453	473	493	511
Total	4,937	4,823	4,724	4,625	4,527	4,429
HIV Visits Supplied						
PCP	2,297,165	2,237,539	2,179,493	2,120,860	2,061,589	2,000,908
IDS	2,023,814	1,978,503	1,936,158	1,893,450	1,849,754	1,806,565
NP/PA	762,238	805,993	848,868	889,285	927,861	964,288
Total	5,083,217	5,022,035	4,964,519	4,903,595	4,839,204	4,771,762
HIV Cases						
Male	678,556	700,272	722,026	743,841	765,683	787,529
Female	231,122	237,799	244,474	251,156	257,832	264,505
Total	909,678	938,071	966,500	994,997	1,023,515	1,052,034
HIV Visits Demanded						
Gender						
Male	3,666,900	3,772,103	3,877,386	3,982,853	4,088,411	4,193,953
Female	1,784,157	1,829,765	1,875,314	1,920,866	1,966,349	2,011,784
Age Group						
Younger than 35 years	1,322,415	1,422,861	1,523,329	1,623,921	1,724,197	1,824,070
35 to 44 years	1,713,726	1,757,475	1,800,314	1,842,454	1,884,195	1,925,491
5 to 54 years	1,638,418	1,650,483	1,662,237	1,673,572	1,684,499	1,695,083
55 years or older	776,498	771,050	766,820	763,771	761,869	761,094
Total	5,451,057	5,601,868	5,752,700	5,903,719	6,054,760	6,205,738

IDS = infectious disease specialist; NP = nurse practitioners; PA = physician assistant; PCP = primary care physicians.

Sources: HIV clinician workforce survey, 2012.

Table 4 also shows forecasts of the number of HIV patients and visits demanded and received from 2010 to 2015. The number of diagnosed cases is expected to increase by about 140,000 (from 0.9 million in 2010 to slightly more than 1.0 million by 2015) and the total number of visits demanded is expected to increase 13.8% (from 5.4 million in 2010 to 6.2 million in 2015). The growth in the number of visits demanded is due primarily to the continued number of newly diagnosed cases each year and the low mortality rate among the currently diagnosed population. The increase in demand is also due to the aging of the diagnosed population and the higher rate of HIV-related visits among individuals ages 45 to 54.

Figure 1 expresses demand and supply projections in FTE HIV clinicians per year over the five-year forecasting period, adjusted to reflect that high-volume HIV clinicians spend, on average, less than 40% of their time treating patients with HIV. The total number of FTE HIV clinicians supplied in the United States is expected to decline 5.5% over this period, from 1,812 FTE HIV clinicians in 2010 to 1,713 in 2015. During the same period, the total number of FTE HIV clinicians demanded in the United States is expected to increase 13.9%, from the base-year value of 1,945 to 2,215 by 2015. The net result is an estimated shortage of 133 FTE clinicians in 2010, growing to a shortage of 502 FTE HIV clinicians in 2015. Because few clinicians work full time in HIV care, the number of providers needed to fill this gap will be substantially higher than the number of FTEs required.

If expanded HIV testing efforts are successful in identifying and linking to care 5% of the estimated 240,000 living but undiagnosed cases of HIV annually over the forecasted period, the shortfall of FTE clinicians will increase to 36% of supply. A 5% increase in the proportion of time clinicians spend treating patients with HIV would reduce the deficit to 24.8% of supply, while a 10% increase in the number of visits per hour would reduce the shortage to 17.6% of supply.

Physicians providing a low-volume of services are not included in the estimate of HIV physicians in this model. Low-volume providers can address some of this excess demand. However, the projections reflect a real and growing shortage of HIV clinicians as current providers reach retirement age and the number of people living with HIV continues to grow.

DISCUSSION

The study offers several important insights into the HIV clinician workforce. HIV clinicians represent a range of medical specialties and health professions. Nurse practitioners and physician assistants are likely to become an increasingly important component of the HIV workforce. Effective workforce strategies will need to be tailored to differences in training and scope of practice across the range of HIV practitioners. Another important feature of the HIV workforce is that most HIV clinicians spend only a portion of their time treating patients with HIV. The capacity of the HIV clinician workforce might be expanded by increasing the proportion of time that clinicians currently treating patients with HIV spend in HIV care. Our analysis also identified many clinicians who treat a low volume of HIV patients and who do not manage the HIV treatment of these patients on an ongoing basis. The HIV workforce might be expanded by providing training or professional support, such as comanaging care with HIV specialists, to low-volume clinicians.

The study has several limitations. First, there are gaps in the data sources supporting our supply and demand estimates. The supply estimates include only providers identified on claims, which likely results in an undercount of HIV clinicians who treat a large proportion of uninsured patients, federally employed providers, and nurse practitioners and physician assistants who do not bill under their own name. Our demand estimates also underestimate services provided by nurse practitioners and physician assistants because these providers are underrepresented on the NCHS ambulatory medical care survey. Second, the HIV clinician survey's response rate was below the desired level. Although the nonresponse bias analysis showed that respondents differed from nonrespondents in several observable characteristics, our weighting procedures were effective at mitigating that bias, assuming the characteristics we used in the weighting process are correlated with the survey outcome measures. Finally, the findings reflect current market-based supply and demand. They do not take into account unmet needs, such as people living with HIV but not yet diagnosed, people diagnosed with HIV but not yet in care, and people in care but not yet receiving the optimal level of care. Nor do they take into account potential changes in market conditions, such as expanded health insurance coverage likely to occur after the full implementation of the Affordable Care Act in 2014.

Overall, the study shows a small but rapidly expanding shortage of HIV providers. Our forecasting model predicts that by 2015 the supply of HIV clinicians will be sufficient to meet only three quarters of total demand for HIV-related medical services under current market-based assumptions. Expanded HIV testing and diagnosis and improvements in linkages, engagement, and adherence to care—without an increase in the number of health care providers willing to treat people with HIV or improvements in the productivity of the HIV workforce—will only make the forecasted deficit of HIV providers worse.

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Supply and Demand Projections from 2010 to 2015

Boyd Gilman, Ph.D.

(corresponding author) Mathematica Policy Research

Ellen Bouchery, M.S.

Mathematica Policy Research

Paul Hogan, M.S.

The Lewin Group

Sebastian Negrusa, Ph.D.

The Lewin Group

Sylvia Trent-Adams, Ph.D.

Office of the Surgeon General U.S. Department of Health and Human Services

Laura Cheever, M.D.

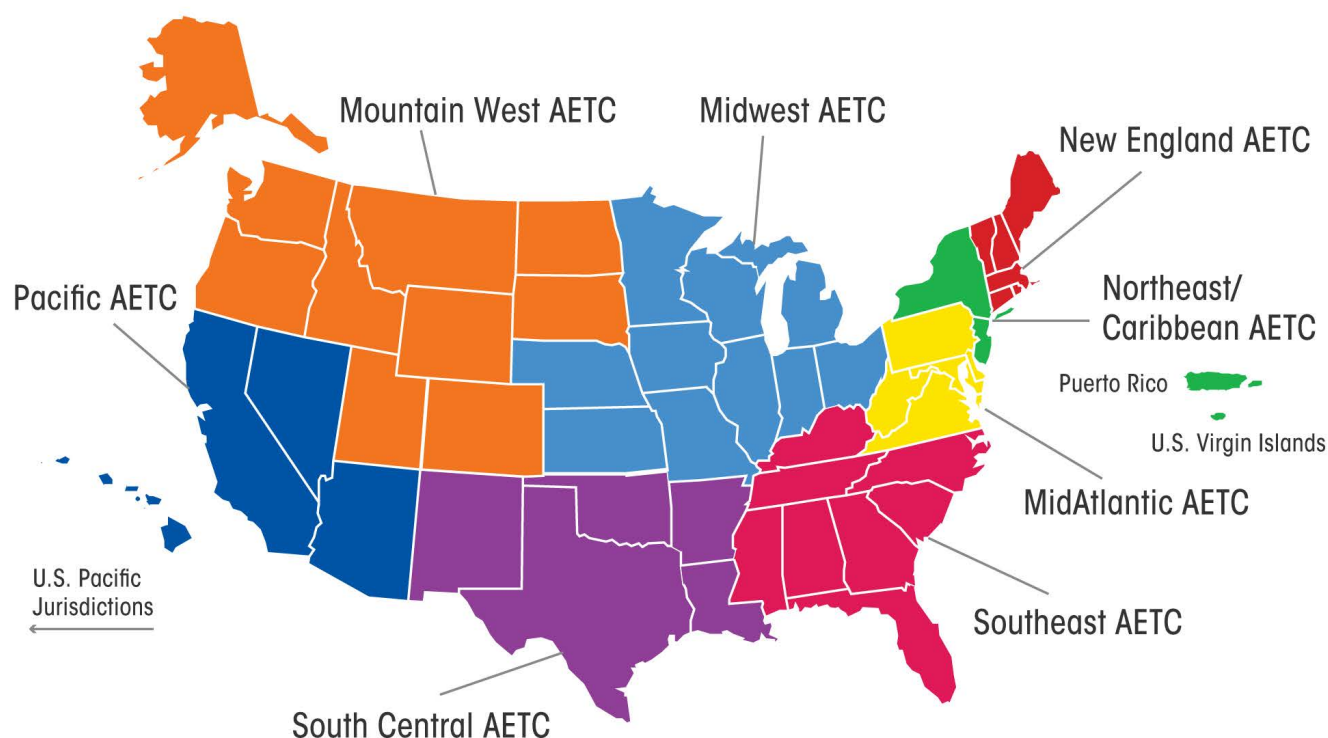
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Strengthening the HIV Workforce

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Prepared by Sara Eccleston B.A., Heather Ewing B.A., Carol Nixon Ph.D, Mary Bayham M.P.H., Kathleen Rall M.Ed., Jeff Henley Ed.S., Sharon Shields Ph.D., & Hasina Moyhuddin M.B.A.



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Strengthening the HIV Workforce

Executive Summary

Over the past few decades, shifts in healthcare in general as well as in the nature of HIV care have put substantial stress on the HIV workforce. The workforce is strained at every level from pre-novice to expert. Insufficient numbers of students are entering STEM fields in college and persisting through graduation. A plethora of factors have been documented to impact practicing professionals. The expert workforce, particularly trained in infectious diseases, is shrinking. These influences are exacerbated in some areas of the U.S., especially in the Southeast where risk factors for HIV are highest. Complicating care in the Southeast include persistence of stigma, high rates of poverty, poor health infrastructure, magnified health disparities, and insufficient numbers of primary care providers.

In light of those issues, the Health Resources and Services Administration (HRSA) has highlighted the need for comprehensive strategies to ensure a healthy pipeline bringing sufficient human resources into the system as well as maintaining those who enter, across disciplines, to address the plethora of healthcare needs of persons living with HIV (PLWH). Regional AIDS Education and Training Centers (AETCs), funded by HRSA as a component of the Ryan White HIV/AIDS Program, are in a unique position to play a major role in addressing the HIV workforce issue as they are charged with training pre-novice to expert HIV healthcare professionals across disciplines to counsel, diagnose, treat, and medically manage PLWH, and to help prevent high-risk behaviors that lead to HIV transmission.

The purpose of this report is to synthesize current literature, provide examples of model programs and practices, and offer recommendations related to strengthening the HIV workforce, particularly in the Southeast region. Using a multidisciplinary lens, we explore workforce capacity issues, from novice to expert, related to

Building the Pipeline, Capacitation, Collaboration, and Retention.

Building the Pipeline

Attracting and hiring new professionals will require comprehensive and multidisciplinary approaches. We explore issues related to marketing, recruitment, mentoring, and research exposure, and then consider pre-college, college, and post-graduate phases of education and training. A cross-cutting issue is the difficulty engaging underrepresented minority students and professions to health and HIV-related health professions. The workforce does not mirror the population of PLWH, regarding many issues including race/ethnicity, and economic status, among other characteristics, particularly in urban areas. While this is influenced by multiple reasons, particular attention to attracting underrepresented minority persons to the workforce is critical as is developing cultural competency skills across the entire workforce. We offer recommendations that include creating a position dedicated to workforce development, nurturing partnerships between schools/colleges, and providing opportunities for mentorship at numerous points in school and early career.

Capacitation

The general healthcare as well as HIV workforce stressors mentioned previously impact training of the current HIV workforce. Moreover, as the nature of HIV care has and continues to shift so dramatically, the implementation of best practices in HIV care among practitioners currently in the workforce has not kept pace with the research. In a recent study, providers in the Southeast showed greater deficiencies relative to practitioners in other regions of the U.S. Increased focus is needed on issues related to shifts in HIV care to primary care settings, complexity related to patient comorbidities, cultural competency in healthcare delivery, and men-

-torship opportunities. We offer recommendations that include providing access to a variety of training programs, promoting instructional best practices among trainers and facilitators, and supporting experts in the field as mentors to novice professionals.

Collaboration

In order to deliver high quality healthcare to PLWH, collaboration across medical and allied healthcare practitioners is essential. In addition to disease management, professionals are needed to provide social, financial, mental health, and logistical support for PLWH. Personal characteristics, comorbidities, and contextual factors can complicate HIV care. Further, identifiable subpopulations of PLWH are more difficult to engage in prevention, screening, referral, and treatment. We offer recommendations that include training testing providers to offer more active referrals following an HIV diagnosis, establishing dedicated case management professionals who have responsibilities for establishing linkages across systems and providers, and cultivating and recruiting PLWH as peer mentors for others within their community.

Retention

Developing and maintaining a strong workforce requires careful attention to the factors that impact job satisfaction. Given that the satisfaction, morale, and stress-levels of healthcare providers have been shown to have an impact on patient reported quality of care, attention to job satisfaction is warranted although research on this topic in HIV care specific contexts is limited. Personal factors such as burnout and organization factors such as culture and climate are important. We offer recommendations that include creating more intentional opportunities for career development, professional networking, and mentorship; fostering a workplace culture of self-care to prevent burnout; and ensuring there are mechanisms for employee feedback and organizational quality improvement.

Strengthening the HIV Workforce

Introduction

Introduction

The mission of the AETC Program is to increase the number of healthcare professionals who are educated to counsel, diagnose, treat, and medically manage people living with HIV (PLWH), and to help prevent high-risk behaviors that lead to HIV transmission.¹ Funded by the Health Resources and Services Administration (HRSA) within the U.S. Department of Health and Human Services, the AETC program is an essential component of the Ryan White HIV/AIDS Program which, since 1990, has supported a comprehensive system of care for PLWH who are uninsured or underinsured. The program supports a network of eight regional centers and three national centers to provide education and training. The Southeast AIDS Education and Training Center (SE AETC) serves the HIV/AIDS educational needs of health care providers in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. The SE AETC is based at Vanderbilt University Medical Center and works in coordination with the Vanderbilt Comprehensive Care Clinic.

In order to accomplish the goal of increasing the size and skills of the HIV clinical workforce, HRSA has highlighted the complexity of issues and thus the need to address intentionally pre-novice to expert learners who may in the future or currently comprise the workforce. Comprehensive strategies are needed to create a pipeline to bring sufficient human resources into the system, across disciplines, to address the plethora of healthcare needs of PLWH who are served across healthcare settings. There has been national attention to the shortage of STEM professionals in general, stimulating an abundance of educational initiatives designed to increase secondary and college students' persistence in science disciplines. In addition, there is considerable need to continue to develop providers with stronger skills and particularly expert providers who can support practice transformation efforts to improve patient outcomes along the HIV care continuum by integrating principles

of the patient-centered medical home model and integrated HIV care and behavioral health services.

Trends in Healthcare

Shifts in healthcare in general have major implications for HIV care. Population growth, aging across the population, and greater racial/ethnic diversity place greater stress and burden on the HIV workforce.¹⁸ Further, financial disincentives have challenged primary care broadly, and particularly HIV care.¹⁸ Yet, in general, for more than a decade, provider reimbursement rates have declined. The current system tends to reward providers for procedures rather than primary care.⁹ Relatively speaking, reimbursement rates for HIV treatment are very low and often do not cover the full cost of providing HIV services. In fact, low reimbursement rates have been cited by providers as one of the biggest challenges in recruiting and retaining HIV clinicians.¹³⁻¹⁵ In addition, there are indirect costs associated with HIV care (e.g. administrative and data reporting requirements), which have increased in recent years. This administrative burden contributes not only to concerns of financial sustainability for clinics and health organizations but also reduced job satisfaction for providers.¹⁶

Over the last few decades, the nature of HIV care has changed dramatically. Highly active antiretroviral therapy (HAART) introduced in the late 1990s has fundamentally shifted HIV from a terminal illness to a chronic condition. In addition, HIV prevalence and incidence continues to climb with 30,000 newly diagnosed PLWH annually.¹¹ Because PLWH are now often diagnosed younger and earlier and living longer, the complexity of their healthcare needs has grown. A wider range of services is now needed to address comorbidities (e.g., mental illness and substance abuse) and aging (e.g., diabetes, heart disease).

As a result of these shifts, primary care settings have become more integral to the HIV system of care.⁶⁻⁷ Now

more than half of HIV care is provided by generalists, most often internal medicine and family practice physicians.⁹ Three-quarters of PLWH receive care from Ryan White funded healthcare providers.

Impact on the HIV Workforce

A growing body of literature over the past decade has identified a growing crisis in the HIV workforce. A study from 2013-2014 predicted that the “projected workforce growth by 2019 will not accommodate the increased number of HIV-infected persons requiring care.”¹¹ A number of factors contribute to this crisis, including: the impending retirement of large numbers of practitioners;⁴ decreasing engagement in HIV care on the part of pre-novice and novice practitioners;² and large scale shifts in the U.S. healthcare system and medical insurance.⁸ For example, the Infection Disease Society of America (IDSA) Education and Research Foundation Annual Report for 2015 noted that “the ratio of applicants per ID fellowship positions decreased from 1.2 in 2008 to 0.7 in 2015.”¹² Data from a large study by the American Academy of HIV Medicine (AAHIVM) in 2009 suggested that nearly one-third of currently practicing HIV practitioners will stop practicing in the next ten years.⁸ Practicing providers cite issues such as “increasing non-patient care responsibilities, decreased support staff, and increasing administrative burden”¹ as regular barriers to care provision. Numerous studies suggest that low rates of reimbursement and low pay-scales are primary deterrents for new providers, especially for students with school debt.^{9, 10} In light of these intersecting issues, clinics, particularly in the Southeast, are finding it difficult to recruit and retain practitioners.

The Southeast

The Southeast U.S. is disproportionately impacted by HIV, and in fact, the geographic disparities in HIV outcomes (e.g., mortality) are widening.¹⁹ The Southeast has the highest rates of HIV diagnosis, lowest survival rates, and greatest numbers of PLWH relative to any region in the U.S.²⁰ The Southeast region contains about one third (37%) of the U.S. population but about half (49%) of the individuals diagnosed with HIV.²¹ These healthcare disparities are not limited to HIV and include the highest rates of STD infection, obesity, heart disease, and diabetes, among others.²²

The South has high rates of poverty and disability and greater numbers of individuals without a high school degree.²³ It also has the highest number of persons with-

out insurance.²⁴ Further, the South has higher proportions of race/ethnic minorities than other regions and the highest proportion of African Americans.²³ While there have been remarkable declines in HIV mortality over the past decade, gaps in health outcomes are actually widening for minority and economically disadvantaged populations, particularly for African American PLWH.¹⁹ The Southeast also faces a greater burden related to other known social determinants of health (i.e., characteristics of the social environment that influence individual/community health). The Southeast includes a vast geographical area with many rural areas and transportation issues. Further, HIV-related stigma is a major concern in the region.

In addition, the health care infrastructure in the Southeast is significantly challenged. There is great variation across the region's healthcare delivery systems with many areas being under-resourced. The South suffers from a lack of qualified health providers^{3,5} including the fewest numbers of primary care practitioners nationwide.²⁵ These challenges impact the provision of care to PLWH as well as the recruitment and retention of providers.

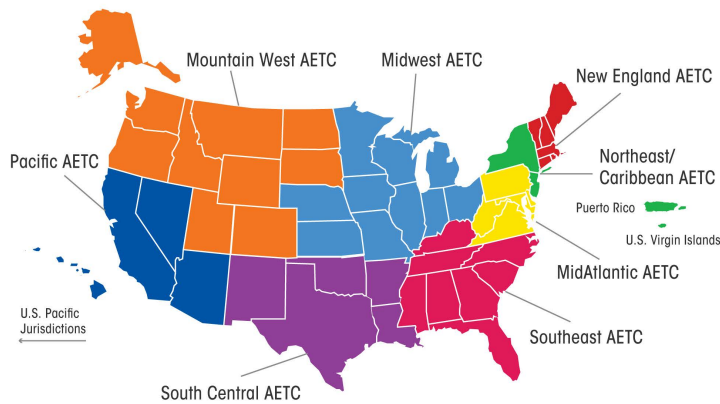
Overview of this Report

This report emerges from a collaboration between the SE AETC and Peabody College at Vanderbilt University. The purpose of this report is to synthesize current literature on issues impacting the HIV workforce in the United States, with special attention to strategies for application in the Southeast region.

Using a multidisciplinary lens, this report explores opportunities to increase workforce capacity of pre-novice to expert providers in four segments: Building the Pipeline, Capacitation, Collaboration, and Retention. Each section includes an introduction, a review of recommendations and strategies, and model programs and practices. We utilize principles of talent management which emphasize a strategic commitment to hire, manage, and retain a talented workforce. The principles and practices are situated within the particular context of the HIV workforce.

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Building the Pipeline for the HIV Workforce

KEY POINTS

Introduction to Building the Pipeline

The focus of this section is impacting pre-novice entry into the HIV workforce. We suggest that attracting and hiring new professionals will require comprehensive and multidisciplinary approaches in four areas: marketing, recruitment, mentoring, and research exposure. Additionally, we suggest that these topics should be addressed during multiple stages of career decision-making; thus, we focus on pre-college, college, and post-graduate education. This section provides targeted recommendations for each. Finally, because literature emphasizes the need for more professionals from underrepresented minority (URM) backgrounds, we focus on strategies to attract and support URM students into the HIV workforce.

Practitioners from Underrepresented Minority Groups

Although PLWH come from many racial and ethnic backgrounds, the makeup of the workforce currently does not mirror their diversity, particularly in large urban areas. According to data from 2013-2014,* 63% of the workforce is white, 11% black, 11% Hispanic, and 16% other races.²⁵ Research demonstrates that patients are much more likely to evaluate the care they receive as excellent when the provider shares their racial background.¹⁶ Further, research has demonstrated that bilingual care (where applicable) helps Hispanic patients stay in care and generates favorable treatment outcomes including suppressed viral loads.¹⁵ Therefore, it is essential to increase the diversity of the workforce. However, URM students and professionals face unique barriers to entering the workforce. For example, studies have shown that students of color face significant barriers, including limited knowledge of training options, lack of early research socialization processes, late engagement with grant writing, lack of mentoring experiences, and direct/indirect experiences of racism.¹²

*Based on a probability sample of HIV care providers, defined as physicians, physician assistants, and nurse practitioners who had completed training and provide HIV care.

The U.S. is facing a severe shortage in the HIV workforce.

The current HIV-care workforce is predominantly white.

Strategic steps to improving the workforce pipeline include:

- marketing the need for more HIV-care professionals;
- recruiting underrepresented minority (URM) students;
- establishing structures of mentorship; and
- exposing student to research opportunities.

Recommendations include:

- create a position dedicated to workforce development;
- nurture partnerships between K-12 education system and institutions of higher education; and
- provide opportunities for mentorship at numerous points in school and early career.

Truly addressing the workforce shortage will require targeted support for URM students and professionals in overcoming these systemic barriers.

Marketing

Increasing awareness about HIV care is a critical step in developing the talent pipeline. Raising awareness should include stronger articulation of the epidemic in the U.S., especially in the Southeast and other places with provider shortages; clear statements of available opportunities; and emphasis of the rewards of HIV care for providers. Increasing awareness of the HIV workforce shortage at pre-college, college, and post-graduate levels is imperative. Opportunities for educational programming include partnerships with public high schools to expose young students to new careers that impact their futures, research opportunities during college propel students into further education and trainings in professional settings support career transitions and new skill building.

Recruitment

A strategic recruitment plan first identifies available positions, then communicates the vision, mission and opportunities to potential employees. To be effective, a recruitment strategy will likely require a career center dedicated to identifying employment needs and sourcing appropriate candidates. This recruiting strategy should target students in the college and post-graduate stages. An effective college recruiter will “build, develop, manage and maintain campus relationships.”¹² In the professional sphere, recruitment strategies should focus on “preparation, execution and a clear understanding of hiring objectives.”¹⁸

Mentoring

Studies have shown that mentoring during education and early career is a key predictor of entering the HIV field.²⁻⁶ Mentoring is particularly important for persons from URM backgrounds who face unique challenges, such as systemic barriers to funding, isolation, and racism.³ The importance of mentoring has been noted at various levels of education and career, emphasizing that both students and early professionals are more successful with mentorship opportunities. Mentoring can also be used as a recruitment incentive, emphasized as a reward of the work.

Research Exposure

Early exposure to research increases an individual's

likelihood of pursuing a career in HIV care.⁵ These experiences impact both education and employment decisions, as well as skill building and professional capacitation. These programs, during pre-college, college, and post-graduate settings, may include academic enhancement and apprenticeships,⁸ often leading to supportive relationships and mentoring. This is especially important for pre-college students who face structural barriers to matriculate to collegiate health science programs.

Marketing, recruitment, mentorship and research exposure work in tandem to strengthen the workforce pipeline, reinforcing each other through significant relationships and experiences. The remainder of this section provides recommendations for strengthening pre-college, college, and practicing professional educational opportunities.

Pre-College

Research has shown that “the leaky STEM pipeline” extends as far back as elementary school. The middle grades in particular are crucial for instilling a positive perception of STEM coursework and careers and supporting students' self-efficacy in STEM.³³ Once students shy away from STEM subjects as they progress through school, it is unlikely that they will pursue STEM majors or careers in the future given the demands of STEM coursework. There has been increased efforts nationally to strengthen K-12 science standards and STEM literacy. Partnerships among schools, business, community organizations, and higher education institutions have been a popular strategy to bolster the pipeline of students entering STEM majors in college.³⁴

Strategies/Recommendations

Increase the number of partnerships with public school districts and community-based organizations to bolster enrollment in pipeline programs, especially for URM students. These partnerships can also provide creative ways to introduce students to a variety of industries and increase their awareness of future career opportunities. School career centers and school counselors play a pivotal role in this process, as they help students envision and navigate school decisions about their future. Connecting with guidance counselors to recruit particular students spreads awareness about the field and provides opportunities to explore the field during this early

stage of career development.

Expose pre-college students to STEM earlier in their academic career. This can happen as part of their school course load or as extra-curricular opportunities. It is important to build partnerships with practicing professionals to increase mentorship opportunities for pre-college students to support their matriculation into higher education and ultimately the HIV workforce. This is an important piece of marketing, as it increases awareness at an early age and encourages participation in the field. These partnerships should seek to include professionals from URM backgrounds.

Example Programs

The Stanford Medical Youth Science Program (SMYSP) is a five-week residential pre-college pipeline program for low-income and URM high school students in California to bolster and diversify high school students' interest in and engagement with the medical profession. Of the 405 students who have completed the SMYSP, 99% have been admitted to college and 81% have earned a 4-year degree. Among the college graduates, 52% are attending or have graduated from medical or graduate school.⁸

The California SEM (science, engineering, medicine) high school study follows high school students and their likelihood to persist in science aspirations. Those who found solid support for science through mentorship, exposure, research opportunity, and other means, were most likely to persist. The persisters actively participated in extracurricular hands-on activities in their communities, and were able to interact with professionals in the field. Ultimately, students' sense of self-efficacy in science was raised as they discovered passions and abilities in the STEM fields.⁷

The School for Science and Math at Vanderbilt (SSMV) is a joint venture between Vanderbilt University and Metropolitan Nashville Public Schools that offers high school students research-centered learning experiences in the hopes of connecting a STEM curriculum with hands-on experiences to raise awareness and interest about pursuing STEM majors in college and ultimately in their careers. Partnering with local businesses, non-profit agencies, and higher education institutions, the SSMV prepares its participants to engage in a collegiate curriculum and establish a solid foundation for career success. This program is free for qualified students who maintain certain levels of excellence in their high

schools as well as the SSMV courses.¹⁰

College

During college and professional school, individuals choose careers and join professional organizations. This is a highly formative time in which life-long relationships are formed and the career trajectory is begun. Research shows that the STEM pipeline is impacted by many factors that contribute to individuals entering STEM fields (e.g., college readiness, access to higher education opportunities, choice of STEM major, academic success and persistence, and graduation). Several strategies have been shown to address these factors thus contributing towards strengthening the pipeline especially for minority students. These include mentoring, research experience, tutoring, career counseling, and financial support.²⁹ Research experiences in particular are effective and have been shown to increase the odds of students pursuing post-graduate degrees.^{30,31}

Strategies/Recommendations

Connect college students to research opportunities and mentors in order to expose them to the field of HIV. These experiences are pivotal moments in students' career decision-making process. Research opportunities, which also provide access to mentoring, can happen through coursework, extra-curricular activities, and collaborations among multiple institutions. Ensure students are aware of these opportunities and utilize recruiting strategies suggested by the Collegiate Employment Research Institute.²³⁻²⁴ Provide funding as needed to make sure students have access to these opportunities and are not limited by resources.

Example Programs

A number of college-based research and mentoring programs exist, such as **Summer Research Opportunity Program (SROP)**,⁶ the **Summer HIV/AIDS Research Program (SHARP)**,⁵ **Research Initiative for Scientific Enhancement Program**,¹² and **Initiative for Maximizing Student Diversity Program**.¹² The programs have supported student development in building professional networks, securing funds for research, influencing career aspirations, and developing relationships with professionals of their same racial/ethnic group,⁶ as well as increasing self-efficacy and identity formation, fulfilling professional expectations such as manuscript writing

and presentation, and increasing intentions to pursue further education.⁵ The SHARP program also implements a team-based approach to mentoring that may be replicated at other institutions.⁵

Innovative research collaborations exist between historically Black colleges and universities (HBCUs) and large medical schools and provide research opportunities for students of color.¹⁴ These partnerships provide additional opportunities to URM students, as well as influence and inform research conducted at predominantly white institutions. These collaborations also support multiple kinds of mentorship, as URM students form connections at their HBCUs and at medical schools.

Post-Graduate

Recent graduates, often carrying a heavy load of education debt, are embarking on their career trajectory. This stage is another key opportunity to strengthen the pipeline through recruiting practices and strategic career placements. Effective mentoring programs are particularly helpful in facilitating progression through the pipeline, especially for minority graduates entering the workforce. Mentoring programs need to be better designed and integrated into the sociocultural context as well as enhanced by involving communities in research.³²

Strategies/Recommendations

Focus on recruiting new graduates into HIV care in under-served areas. Develop active talent management and recruiting strategies that include targeted job descriptions, employee referrals, social media promotion and recruitment, and connections to professional organizations. Incentivize new graduates to high need areas and support their transition. Paying adequate attention to these important issues of recruitment-- geographical location and financial compensation-- is important for strengthening the pipeline.

Develop a mentoring structure that connects novice professionals with experts in their field. Studies show that mentoring connections made early are most effective.¹⁹ Given that many professionals from URM backgrounds are provided with less opportunities for mentoring, a formal mentoring structure is critical to career success.

Ensure that mentors are trained in cultural competency and can be supportive to their mentees. Mentoring structures are explained further in Section 2: Capacity.

Example Programs

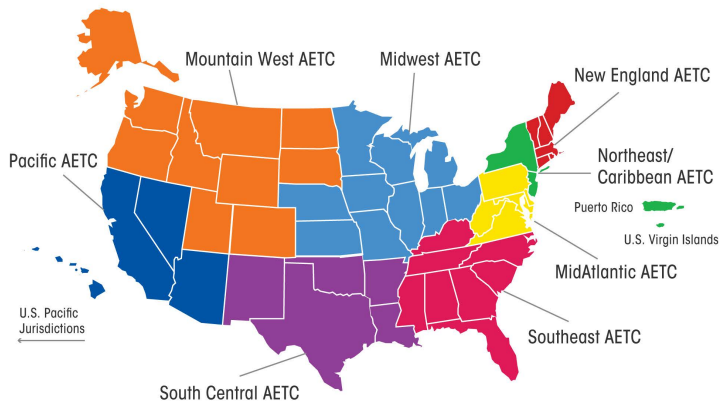
Recruiting programs designed to strategically incentivize and place new graduates in under-served areas, help place providers where needs are the greatest. The **Teach for America (TFA)** model, successful in the field of education, has been replicated in the medical field to recruit healthcare professionals to HIVCorps (recruiting HIV providers internationally)¹³ and Health Leads (recruiting professionals for public health).²⁶ Health Leads relies on competitive recruitment and cohort teams to build their workforce.²⁷ “Just as TFA has created a cohort of current and former teachers committed to public education and social change,” foundation executive Samberg noted, “Health Leads imbues its advocates with a clear sense of the relationship between poverty and health and with the skills to tackle obstacles standing in the way of solutions.”²⁶

The **National Service Health Corps Loan Repayment Program** provides medical students with up to \$120,000 to repay their loans in exchange for a three-year commitment in approved Health Professional Shortage areas. Numerous studies have suggested that financial burdens, such as high loans or low salaries, disincentivize students from entering the field of HIV.²⁶

The **HIVMA Clinical Fellowship Program** seeks to increase the number of providers practicing HIV medicine with underserved populations. The one-year mentor-based program is designed as an in-depth training program for new physicians, providing a year of dedicated learning to strengthen their clinical experience. The award includes a \$60,000 stipend.²²

End Notes: Building the Pipeline

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Capacitating the HIV Workforce

KEY POINTS

Introduction to Capacitation

This section examines the primary components of capacitating (training, equipping, and resourcing) the HIV workforce. Studies have shown that much of the workforce is underprepared to adequately care for PLWH. The Black AIDS Institute reported that practitioners currently in the HIV workforce lack adequate, up-to-date scientific knowledge. When surveyed, only 63% of respondents accurately responded to general HIV-related scientific knowledge. Practitioners in the South scored on average two points less than the national average.⁷ Georgia and North Carolina had the second (59%) and third (57%) lowest scores overall.⁷ In 2016, a convergence of factors create a unique set of challenges for the HIV healthcare workforce.

Recent shifts of HIV management to primary care settings means that general practice physicians need training and resources to equip them to care for this new patient group.^{2,9} Advances in drug technology mean that PLWH are living longer than ever before, which makes them more likely to experience comorbidities.¹⁰ Training and support is required to help providers manage these complex conditions and deliver expert care. While the population of PLWH is incredibly diverse, that diversity is often not mirrored in providers, creating a lack of cultural competency, which negatively impacts patient care.¹¹ Additionally, many of the HIV specialists who joined the workforce in the early years of the epidemic are now retiring. As they retire, there will be a vacuum of expert providers in the HIV care workforce who can serve as mentors. Therefore, new mentorship structures must be established to ensure that general practice professionals receive support as they navigate the complexities of HIV care.

Given these realities, cultivation of a well-trained and culturally competent HIV provider workforce* is critical to the care

* This section is primarily focused on equipping the workforce within the primary care context, however training the different fields of the HIV workforce are explored further in Section 3: Collaboration.

HIV care is shifting to a primary care context and requires new skills from the workforce.

Strategic steps to capacitate the workforce include:

- supporting primary care providers to care for PLWH;
- equipping the workforce to treat the comorbidities of PLWH;
- improving cultural competency of current providers;
- developing a formal mentorship structure; and
- ensuring that training programs incorporate educational best practices.

Recommendations include:

- provide access to a variety of training programs and promote instructional best practices among trainers and facilitators;
- equip training facilitators to lead interactive modules on how to deliver culturally competent care; and
- train experts in the field to become mentors to novice professionals.*

of PLWH. Increasingly, training needs of the medical workforce include capacitating primary care providers, comorbidity management, cultural competency, and mentorship through effective training programs.¹

Shifts to Primary Care

The expansion of insurance benefits brought on by the Affordable Care Act (ACA) increases the likelihood that federally-qualified health centers and primary care doctors will be called on to treat PLWH. From counseling to testing, diagnosis to care, managing the HIV epidemic in 2016 requires support from healthcare professionals who have much less experience providing HIV care. In order to train new HIV care providers to deliver high quality, comprehensive HIV testing and care, it is essential that they receive frequent and effective training on best practices in care and gain the support of seasoned HIV specialists through mentorship programs.⁸⁻⁹

Comorbidities

As the science of HAART and HIV treatment improves, the average lifespan of PLWH increases and the size of the PLWH population in the United States grows. The current population of PLWH in the United States is larger than it has ever been. Longer life expectancies for PLWH mean that patients are more likely to experience comorbidities. In order for primary care, HIV specialists and other physicians to gain knowledge on how to treat PLWH over the life course, it is essential that training and a suite of resources for comorbidity management be made available.¹⁰

Cultural Competency

Culturally competent care occurs when a provider carries out his or her function in a way that respects the cultural and individual identity of the patient.²⁸ Although culturally competent care is critical to the overall efficacy of HIV care, it is especially important when providers deal with patients from historically disenfranchised groups.²⁸ A large body of research demonstrates that favorable clinical outcomes are closely linked to provider trust, cultural competence, and ability to deliver bilingual care when needed.¹⁶ The absence of cultural competency in HIV care has been noted as a barrier to patient retention, among other barriers.¹⁶ In light of the racial and ethnic differences between PLWH and their providers,²⁴ training in cultural competency is especially important for providers along the continuum of care.¹¹

Mentorship Training

In spite of the clearly documented value of mentoring, a number of challenges prevent a robust mentoring structure, including time conflicts, funding limitations, geographical distance, communication struggles, and lack of training for potential mentors.¹²⁻¹⁴ For investigators and faculty of color, unique challenges to mentoring create difficult and exhausting decisions. For example, faculty of color are often called on to fill numerous committee roles, promoted less than their white counterparts, expected to be the cultural experts in their department, poorly compensated for their service, and forced to choose between completing tenure requirements and mentoring students.¹⁵ Further, most mentoring relationships are developed in an ad hoc manner, without the support or accountability of a formal mentoring structure.¹⁴ According to Forsyth et al. (2009), a strong mentoring structure, supported by institutional administration, should include consistent funding for meetings, training and research, well-funded collaborations between research institutions and minority-serving institutions, data collection for assessing the success of mentoring programs, a prioritization of mentoring time by advanced faculty, and the development of a mentoring-friendly culture, which provides both opportunity and support to mentors and mentees, especially to those from underrepresented backgrounds.¹²

Effective Training Programs

Effective, accessible, and targeted training programs across the continuum of care are key to capacitating the workforce. According to Boehler et al. (2015), "Provider education and training has been shown to improve clinicians' HIV knowledge, skills, and practices" and "interactive and mixed-method education programming and mentoring over time" have the best results.¹⁶ Studies have also shown that longitudinal, on-site training programs can be effective in changing self-reported practices of providers, when facilitators are able to orient training sessions to the unique needs of individual centers and utilize active learning theories.¹⁷

Strategies/ Recommendations

Increase the capacity of all providers, in specialty and primary care settings, to deliver high quality, culturally competent HIV care. Leverage training opportunities to include cultural competency modules and increase the number of providers able to deliver bilingual care when needed. Consider innovative ways to infuse experiential and reflective practices drawing on the prin-

ciples of adult education to strengthen practitioners' cultural competency skills.

Utilize distance learning and in person training to ensure the HIV workforce receive up to date information on regulations and best practices for care.

Create opportunities for mentoring and collaboration between novice professionals and experts in the field to facilitate critical knowledge sharing; ensure that mentors are trained and equipped to provide effective mentorship.

Develop platforms for sharing tools for management of comorbidities to deepen HIV care provider understanding of managing the complex conditions.

Strengthen training materials and delivery to ensure content is provided using instructional best practices. Learning outcomes are improved when training supports (1) active learning, (2) instructional tailored to the learner, (3) scaffolding to move the learner from novice to expert, (4) social interaction and communities of practice, and (5) formal opportunities for introspection and reflective practice.^{24,29}

Example Programs

The University of Washington and the AETC National Coordinating Resource Center are currently developing an **online curriculum for training a broad range of HIV healthcare professionals**, to be launched in early 2017. The curriculum will include information on up to date federal care guidelines, expert opinion information, and cultural competency content. The format of the online curriculum is being designed based on theories of adult learning. As a self-guided learning platform, the resource will track provider progress and give opportunities for feedback. The content of the National HIV Curriculum will include: (a) screening and diagnosis, (b) basic HIV primary care (c) antiretroviral therapy, (d) management of co-occurring conditions, (e) prevention of HIV and (f) special populations.⁹

The International Association of Providers of AIDS Care (IAPAC) created an **online learning platform for HIV specialists and for physicians in primary care settings to gain valuable information about handling HIV comorbidities**. MyHIVclinic.org is a “virtual learning clinic,” with a steering committee of faculty and practicing clinicians from around the world. From cognitive impairment to thyroid disease, the website offers up to date guidelines and recommendations for clinicians providing care to a diverse population of PLWH.¹⁹

The Midwest AIDS Training and Education Center (MATEC) developed the **MATEC Clinician Scholars Program (CSP)**, which was designed to build HIV-care competency in minority or minority service practitioners (physicians, nurse practitioners, advanced practice nurses, physician assistants, registered nurses, oral health providers, and pharmacists) through a yearlong mentoring and training experience. The program develops practitioner skills around 11 core competencies and 33 learning objectives, with the goal that all program graduates leave able to provide intermediate level HIV care to patients. The scholar-learning framework includes 20 hours of HIV care training, 12 hours of clinical preceptorship care, and participation in evaluation activities. Program participants engage in distance learning and in-person trainings and receive support and guidance from CSP Mentors, who are experienced HIV clinicians over the course of the training. Because mentors and mentees work in locations close to one another, the MATEC allows for program participants to learn strategies and approaches to HIV care that are locally appropriate, allowing for the maximum benefit for the provider and the patients.¹⁶

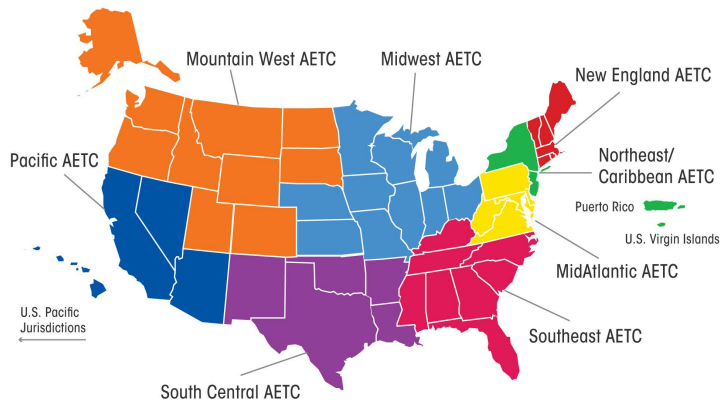
The University of California San Francisco implemented a collaborative mentoring project with the Gladstone Institute and the Center for AIDS Research (CFAR) for

mentor training. The **Mentoring the Mentors** program provides mid-career and senior investigators with mentoring tools and techniques to support early-stage investigators of diversity, with special attention to unconscious bias and micro-aggressions. The workshops, which are hosted in San Francisco, have been developed into curricula and best practices that can be implemented by other institutions. Analyses of these workshops showed statistically significant improvements in participant self-reports of all domains evaluated (maintaining effective communication, aligning expectations, assessing understanding, addressing diversity, fostering independence, and promoting professional development).^{14, 22} A similar curriculum, **Entering Mentoring**, is facilitated by the University of Wisconsin Madison over four 2-hour sessions.¹⁴ Another program, **Mentoring Programs to Diversify the Mental Health and Substance Abuse HIV/AIDS Research Workforce Through Innovative Educational Initiatives** has led to a large network of effective mentors.¹⁵

The **Center for Teaching (CFT)** at Peabody College at Vanderbilt University employs a number of programs to train teachers in best practice methods. For example, the Junior Teaching Fellows Program is a cohort model of eight junior faculty. Fellows discuss topics that are relevant (course design), have dinners with senior faculty to discuss teaching and build a community of practice, observe senior faculty teaching, and observe each other teaching. The program promotes thinking about pedagogical choices and provides a community building experience. Other programs include a graduate student training program (Certificate of College Teaching), informal themed discussion groups (Learning Communities), and individual consultations and observations by experienced staff (CFT Observations). Each of these programs could be adapted and implemented in the SE AETC to strengthen current training programs.²⁶

End Notes: Capacitation

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Collaborating within the HIV Workforce

KEY POINTS

Introduction to Collaboration

In order to deliver high quality healthcare to PLWH, collaboration across medical and allied healthcare practitioners is essential.³ Aside from the provision of care within the clinical setting, professionals are needed outside of the clinic to provide social, financial, emotional, and logistical support for PLWH.

Many PLWH experience significant challenges aside from their HIV or AIDS diagnosis. Factors such as age, gender, race, income, education, mental health status, and health insurance can impact a person's ability to be retained in care. Some people experience challenges that are compounded by living in rural areas, where geographical access to care can serve as yet another barrier. Statistically, youth, minorities, and persons with low-literacy levels are most at risk for disengagement from HIV care. While these populations may experience disproportionately more issues with continued engagement in HIV care, it is critical that support outside of the clinical structure is available to help all PLWH access healthcare.¹

From the first contact with a healthcare provider at an HIV testing facility, the quality of the interaction between a newly diagnosed patient and providers is critical. A significant body of research demonstrates that patient dissatisfaction in the counseling, testing, and referral process can make follow up for treatment less likely. For example, patients who report lack of empathy from their diagnosing provider or who receive passive or inaccurate referrals often do not return to find the care they need.¹ Therefore, it is essential that standards be developed and followed so that newly diagnosed patients receive supportive counseling, testing, and referral experiences and are subsequently quickly engaged in clinical care with the support of a linkages to care (LTC) professional.⁴

Aside from initiation of care, retention in HIV, dental, mental health, and general healthcare is a challenge for PLWH, under-

High quality HIV care requires the collaboration of professionals from across many healthcare fields.

Strong connections between the workforce is critical to providing appropriate care.

Strategic steps to foster collaboration among the workforce include:

- addressing the varied needs of different populations of PLWH; and
- establishing respect, communication, and teamwork among the various service providers;

Recommendations include:

- train testing providers to deliver active referrals following an HIV diagnosis;
- establish protocols for linkage to care (LTC) for healthcare professionals along the continuum of care; and
- cultivate the leadership potential of PLWH who are well suited to serve as peer mentors for others within their community.

scoring how critical supportive allied health professionals are for the population.² From social workers to medical case managers, insurance benefit counselors to peer supporters, different approaches are required to meet the varied needs of PLWH. In order to make sure that patients do not fall through the cracks, collaboration and communication between different groups of providers is absolutely essential. Collaboration within the HIV workforce means different groups of providers learn from each other and work together to continually improve systems for referral and support for PLWH.¹

Strategies/Recommendations

Train testing providers in active rather than passive referrals after a positive HIV diagnosis. In an active referral process, providers contact LTC professionals (available 24/7 in many cases), schedule treatment appointments for patients, and in some cases accompany the patient to the appointment.¹

Train dedicated LTC professionals to provide client-centered case management to newly diagnosed patients. These professionals should serve as the single points of contact for patients, connecting with other providers as necessary. LTC professionals should be trained in motivational interviewing and be prepared to help patients navigate their initial diagnosis and the accompanying challenges of denial, stigma, and fear of losing familial support, among others.⁴

Prioritize recruiting LTC professionals that are culturally and linguistically concordant with the popula-

tions they serve. Establish protocol for transitioning clients from LTC professionals to long-term medical case managers who serve as the single person point of contact for patients after they complete their first care appointment.⁴

Prioritize collaboration for LTC programs between local public health departments, HIV testing and referral organizations, and medical care provider organizations.⁴

Prioritize interprofessional education programs (IPE) to encourage dialogue and learning among teams of physicians, social workers, nurses, mental health counselors, and other providers. The SE AETC currently has a strong IPE program operating in four project sites.⁹ The SE AETC should identify the most effective elements associated with IPE and seek to promote best practices and expand to new sites.

Train PLWH to be peer mentors and navigators so they can help others within their community find HIV education, counseling, testing and care.^{3,5}

Develop electronic medical record (EMR) or other tracking mechanisms that can be accessed in a privacy-sensitive way by a diverse care team, ensuring that patients are not lost to follow up.

Example Programs

STYLE (Strength through Livin' Empowered), funded by HRSA, is an evidence-based intervention to keep African American and Hispanic young men who have sex with men (YMSM) in care for HIV. The program is designed specifically for newly diagnosed patients or patients who are lost to care. The program includes three main strategies including a marketing campaign to promote testing, the integration of education and testing into youth congregation areas and a collaborative framework for providers working with newly diagnosed YMSM. Newly diagnosed or referred patients have appointments scheduled with a physician within 72 hours.

HIV-positive YMSM are simultaneously connected with support group meetings as well as substance abuse and mental health counseling. Medical case managers, who are available by phone and text, provide additional support.⁵

Care And Prevention in the United States (CAPUS) is an online web platform funded by HRSA, SAMHSA and the CDC. The goal of the website is to help HIV-positive people navigate care and get answers to their questions. With a section of the website focused on providers, and another including an updated resources directory for a variety of providers, this tool can help LTC and medical

case managers access the services they need as their clients' needs shift.⁶

Anti-Retroviral Treatment and Access to Services (ARTAS) is a training program for healthcare workers funded by the CDC. The goal is to prepare providers of various backgrounds to quickly link newly diagnosed PLWH to care. The training is specifically designed for LTC coordinators, medical case managers, and HIV testing counselors. The format of the training is mixed and includes modules to be completed online as well as modules presented in an in-person classroom setting. At the end of the training, participants are expected to have concrete tools to help newly diagnosed PLWH access care and be equipped to institute those practices in their employment environments so that a range of providers can work together to deliver supportive HIV care.⁷

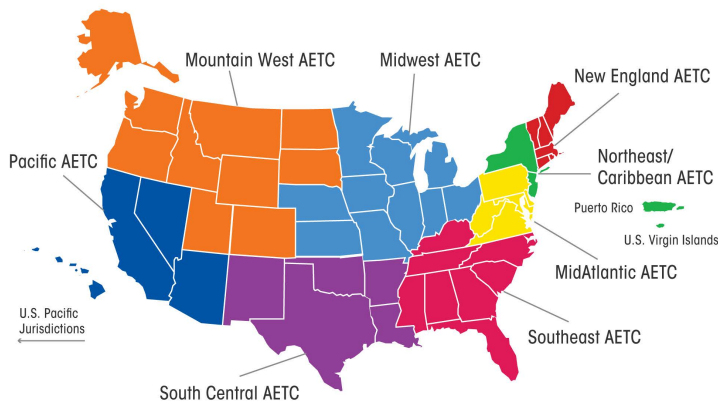
Programs for Positives (P4P) Peer Educator Certification Program began in 2015 with partial funding from the Georgia Department of Public Health. The goal of the program is to train PLWH to serve as peer educators in their communities. While completing continuing education credits (CEUs), PLWH are trained in the areas of leadership, health literacy, and facilitation. Upon completing the training, peer educators help members of their community learn about HIV, gain access to testing, and when applicable, connect with resources to receive care covered by their insurance or the payer of last

resort.⁸

Facilities funded by the WK Kellogg Foundation's Community Voices Initiative in Washington, Minnesota and New York co-locate medical, dental, behavioral and social care services in one facility (or within a mobile clinic) to help ensure continuity across different types of care. Research demonstrates that this model was successful at reaching PLWH who were from minority groups, were experiencing poverty, or were active drug users.²

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Retaining the HIV Workforce

KEY POINTS

Introduction to Retention

Developing and maintaining a strong workforce requires careful attention to the factors that impact job satisfaction, such as career development, employee relationships with management, compensation and benefits, and work environment. Given the rapid shifts in HIV care, the providers, clinics, and allied health professionals who care for PLWH encounter unique workplace and professional challenges.⁶ Given that the satisfaction, morale, and stress-levels of healthcare providers have been shown to have an impact on patient reported quality of care, supporting job satisfaction is critical for both retention of the workforce as well as their provision of services.^{1-2, 17} Unfortunately, there is a dearth of HIV-focused research in the U.S. on this topic. However, strategies from across disciplines and industries can inform retention practices within the field. This section examines the key factors of retaining the HIV workforce.

Burnout in HIV

Burnout is broadly defined as psychological, emotional, and professional exhaustion from prolonged exposure to occupational stress, often resulting in depersonalization (feelings of callousness toward others and low sense of accomplishment).³ Providers who care for PLWH, both medical and allied health professionals, are more likely to experience burnout than other providers due to their unique experiences of social isolation, associative stigma, the nature of chronic illness work, feelings of helplessness/grief, attributions of blame toward the patient for their disease, and perceived threat of contagion.³⁻⁸ Issues of burnout and occupational health risks have also been noted among pathologists.⁹ Moderate to high rates of burnout have recently been found among HIV service providers in North Carolina; results also showed that length of time working in the field was associated with high rates of burnout.⁷

Broadly speaking, HIV-specific studies have shown that both individual factors (empathy, coping, communication style, stress,

There is limited research on retention factors for the HIV workforce in the U.S.

Burnout is a key issue for retention, as are workplace factors, compensation, and career development.

Strategic steps to improving the workforce pipeline include:

- supporting workforce self care;
- investing in career development and professional networking;
- offering incentives and compensation to retain the workforce; and
- gathering employee feedback through ongoing and regular institutional surveys.

Recommendations include:

- create opportunities for career development, professional networking, and mentorship;
- foster a workplace culture of self-care to interrupt burnout; and
- develop mechanisms for employee feedback and prioritize quality improvement mechanisms to address feedback.

satisfaction, job involvement, role, and attitude) and organizational-level factors (teamwork, involvement in organizational decision-making, and social undermining) are correlated with burnout.³ The widespread experiences of burnout within HIV care have been well-documented and indicate the need for changes at the policy level (i.e., greater provision of funding and services) and at the organizational level (i.e., fostering a culture of self-care).

Job Satisfaction Factors

A number of studies have shown that environmental workplace factors impact job satisfaction. International studies of nurses have shown that workload, social capital (accessible and beneficial social resources, such as trust or reciprocity), and decision latitude (clinical autonomy) are significant predictors of job satisfaction.¹⁰ Similar results have been found regarding the job satisfaction of allied health providers, who included supervision, competency, recognition, advancement, autonomy, sense of accomplishment, and supervisor support as primary factors for satisfaction.¹¹ Perceived colleague stress and ability to separate personal and professional spheres of life have been shown as significant factors for attrition of human service providers.⁵ Mentoring has also been shown to increase job satisfaction, productivity, and quality of life.^{22, 23}

Studies outside of the healthcare industry confirm that these factors are part of job satisfaction; the Society for Human Resource Management's national survey found the top five "very important" factors of job satisfaction from 2002-2012 included: (1) compensation/pay, (2) job security and opportunities to use skills/abilities (tied in second), (3) relationships with immediate supervisor, (4) benefits and organizations financial stability (tied in fourth), and (5) the work itself.¹²

HIV-Specific Job Satisfaction Factors

Research on employee satisfaction in the HIV field, while limited, has shown important findings for both retention and attrition. Issues of salary/reimbursement are increasingly cited as sources of dissatisfaction. For example, the 2009 HIV Medicine Association report found that medical residents avoid ID fields because of low salary.²⁸ More recently, a 2016 study found that physicians, physician assistants, and nurse practitioners in HIV care were generally dissatisfied with their salaries/reimbursement.²⁹ Factors found to positively influence job satisfaction among nurses in HIV care included in-

terdisciplinary teamwork, developing relationships, proximity to material and human resources, chances for knowledge and skill development, sense of accomplishment, and participating in capacity-building of HIV nurses.¹³ International studies have shown similar results. An Australian study found that themes associated with retention included interest and inspiration, community calling, right place and right time, challenge and change, making a difference, and enhanced professional identity.¹⁴ Factors for Vietnamese HIV service providers included training opportunities, intrinsic motivation, meaningful tasks, and social recognition.¹⁵ Finally, international studies of health workers in HIV care also have shown a correlation between stigma and job satisfaction, suggesting that providers in contexts of high HIV stigma may experience less job satisfaction.¹⁶

Strategies/Recommendations

Further investigation of the institutional factors that impact retention should be a top priority. These studies should include evaluation of programs and interventions designed to improve job satisfaction and organizational culture. Studies should also consider burnout rates of providers in the U.S.

Provide the HIV workforce with access and opportunity for training and continuing education. These opportunities should emphasize professional collaborations and foster teamwork.

Connect novice employees with experts in their field for mentoring. As stated in previous sections, a mentorship structure that includes mentor training for cultural competency is critical to supporting the HIV workforce. Equally important is assessing the mentoring program for success.²¹ Building mechanisms for feedback and improvement are significant components of retaining providers. See the Example Programs for a possible measurement tool.²¹

Articulate explicitly the rewards of HIV work. Benefits of the work are wide-ranging and include intellectual (engaging the intellectual challenge of a rapidly-changing field), social (contributing to a social justice agenda to care for often marginalized people), and professional (networking relationships and collaboration) rewards.¹⁴

Implement workplace structures to foster self care and address mental health issues, including the develop-

ment of individual coping strategies. These structures should include workplace training to recognize and intervene with burnout, as well as a culture of praising employees for self care habits.¹⁷

Provide opportunities for regular supervision and workplace trainings to openly discuss attribution blaming by providers, the impact of world views on quality of care, and stigma-reduction interventions. These trainings and discussions can help alleviate tension and burnout in the workplace.⁶ Additionally, rapport between employees and managers is a top factor for job satisfaction; opportunities for supervision foster these relationships.

Finally, times of supervision and training should include mechanisms to gather employee feedback, such as regular supervision and anonymous surveys. Take concerns

seriously, develop strategies to address workplace issues, and communicate the plan to the workplace.¹⁸

Example Programs

Several groups, including the Minnesota Hospital Association and the American Hospital Association have published guides for fostering career growth, positive workplace culture and strong employee retention.^{19,18}

Topics included in the resources are wide-ranging and include Human Resources, training, and workplace design. The report includes local examples for each component.¹⁹

The nursing program at Florida Atlantic University prioritizes student emotional health by offering a course designed to build self-care skills. The course trains students in self-care activities such as yoga, music therapy, and mindfulness. Based on Adult Learning Theory, this course could be adapted to workplaces to support the holistic health of employees.²⁴

The “Mentorship in Clinical Training Scale” was developed in 2016 to measure satisfaction of mentorship in four domains: clinical skills training, research skills development, professional socialization and networking, and psychosocial support. This scale, while designed for family therapists, may be a useful tool for a variety of institutions seeking to assess and strengthen their mentorship program. Initial tests of the scale suggested that the amount of time spent being mentored, a mentorship-friendly culture, and having access to mentors

outside of the program are predictors of mentorship satisfaction.²¹

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The HIV Workforce in the Southeast

Synthesis of Key Issues

The Southeast region of the U.S. has some of the most significant health challenges in the nation. Rates of HIV infection are of epidemic proportions,⁸ and the region has the highest rates of new HIV diagnoses as well as the highest rates of HIV fatalities.⁵ A competent, diverse, and strategically located workforce is critical to address the needs of the more than 228,000 PLWH in the region.¹ Attracting, hiring, training, and retaining this workforce requires careful attention to the context of the workforce and the challenges they face. This report has outlined the major themes impacting the HIV workforce. This section applies these trends to the Southeast by describing the unique characteristics of the Southeast, offering targeted recommendations based on this context, and outlining a strategic plan for next steps.

Context of the Southeast

Intersecting Inequalities

As mentioned throughout this report, the Southeast is marked by complex and intersecting issues of health disparities, poverty, and racial inequality. These issues compound to create difficult contexts for both patients and workforce. The region has the highest rates of HIV in the nation, as well as disproportionately high rates of other health needs, including sexually transmitted diseases, kidney and heart disease, and diabetes.^{2,5} The burden of the HIV epidemic is concentrated amongst minorities. In Alabama, Louisiana, Georgia, and Mississippi, for instance, African Americans make up 30% of the population but account for 65-75% of the cases of HIV.² African Americans in the South are twice as likely as whites to experience poverty, more likely to experience unstable housing, and are more frequently incarcerated, all of which create additional health vulnerability.² Additionally, the states where new cases of HIV

among Latinos are most concentrated are in the South; Latinos make up 17% of the U.S. population, but 21% of the PLWH.² Furthermore, the Southeast has high rates of poverty, impacting both the services that can be offered at local clinics and the ability of patients to access services.² The health infrastructure in the region is less developed than other regions and geographically dispersed, further limiting accessibility for patients and opportunities for the workforce.⁶

Comorbidities

In the region where many health indicators are the worst in the nation, it is imperative that the HIV workforce be prepared to handle the comorbidities of their patients.⁹ As PLWH live longer lives, it is essential that the healthcare workforce be equipped to support them through a range of challenges that may arise over their lifespans. In the Southeast, where minorities experience health challenges greater than nonminority groups, the workforce must develop the capacity to support those groups.³ The physical, mental, and emotional health needs in the region require a workforce that is trained to manage a variety of diagnoses, prepared to link patients to other providers, and able to ensure their patients have access to other service sites. These demands on the workforce, heightened in an area with limited health infrastructure and high poverty rates, are substantial.

Stigma

In addition to sharing high rates of poverty, health, and racial inequality, the states in the Southeast also experience elevated rates of stigma around HIV. Stigma is a pervasive challenge in the control of the HIV epidemic in the Southeast. From education to testing to care, stig-

ma negatively impacts patients and providers across the care continuum. Research demonstrates that stigma around HIV is most pervasive in rural areas, and the South has the highest number of people living with HIV in rural areas, making the issue a significant challenge for care.³ The HIV workforce in the region is burdened with combatting stigma, supporting their patients, and managing their own experiences of associative stigma.

Geographic Isolation

All of these factors lead to significant challenges in both recruiting and retaining providers in the Southeast. Factors associated with job satisfaction, such as compensation and career development, may be less accessible in the Southeast. Studies show that providers are less likely to relocate to areas with low numbers of service providers, whether rural or non-rural.⁴ Lack of health infrastructure may provide less opportunity for promotion and increase care burden on providers, as well as create more difficult working conditions. These settings

may also require professionals to be on-call more often and/or provide lower compensation. Rural areas may provide less opportunity for spousal and family members, which have been shown to be an increasing consideration for younger providers.⁷

Summary

These issues lead to a context of extremely high need, both in terms of number of patients and severity of diagnosis, as well as an infrastructure ill-prepared to provide the care and support the workforce. The impact of burnout in this context, where large-scale social issues limit patient access to care, is likely to be even more heightened. The communal and cultural issues outside of the care infrastructure-- such as geography and stigma-- further impact the ability and desire of providers to choose the Southeast as a working location. The resultant shortage in the HIV workforce is seen today, and predicted to only increase.

Strategies/Recommendations: A Summary

The intersecting and multi-level components of the HIV workforce shortage require that the SE AETC simultaneously address three separate, but connected, components: (1) recruiting more people into the workforce, immediately; (2) capacitating current professionals in the workforce to adequately care for the needs of PLWH; and (3) investing in long-term recruitment, training, and retention of professionals who are both URM and local to the region. The following recommendations, mentioned throughout this report, are summarized below.

Building the Pipeline

Develop a dedicated position for recruitment. This strategy should focus on increasing awareness about the high need in the Southeast, as well as actively recruiting URM professionals. Additionally, marketing and recruitment strategies should articulate the rewards of working in HIV care, especially the value of meaningful and altruistic work. This position could utilize programs mentioned in Section 1: Recruitment, such as the Teach for America model, to focus on getting professionals to the Southeast.

Focus on investing in local talent from the Southeast region. Given that the geographical isolation of the Southeast is a primary recruitment factor for many new professionals, we suggest that the SE AETC invest in recruiting, supporting, and training residents already in the region. While investing in local residents is a long term strategy, it may have a significant impact in the provision of service, influencing stigma, and generating new solutions. Investing in educational collaborations within the region may be a useful method, and many models already exist, such as those listed on page eight.

Continue to coordinate with federal funders and macro-level policy-makers to ensure that the HIV workforce is adequately compensated for their work. This includes advocating for issues of reimbursement to providers and loan repayment for recent graduates. These components of recruitment are critical to strengthening the workforce pipeline.

Capacitation

The literature overwhelmingly suggests that cultural competency and comorbidity training are vital needs

among the current HIV workforce. This is even more pertinent for providers in the Southeast, whose patients are disproportionately people of color and face significantly more health needs than other regions in the U.S. Therefore, we suggest that the SE AETC focus on strengthening the Minority AIDS initiative, and broadly focus on comorbidity workshops. Other regional workshops and trainings should include cultural competency training, as well-structured opportunities for mentoring.

Develop a multi-tiered model to strengthen the training services of the SE AETC, based on best practices from the Vanderbilt University Center for Teaching. These tiers should include the following: (1) large-scale methods to reach across the regions, such as virtual training opportunities; (2) medium-scale trainings and workshops for practitioners and program coordinators, such as summer institutes, fellows programs, or learning communities; and (3) small-scale opportunities for observation and consultation with key professionals in the region, such as individuals consultations, observation, and video assessments. The purpose of this model is to ensure that trainers and facilitators are effectively using best practices of teaching to ensure that the workforce is fully equipped to care for PLWH.

Collaboration

Focus on strengthening wrap-around services for patients, to mitigate the impact of losing a staff person. Wrap-around services should focus on ensuring that more than one professional is connected to each patient, utilize active referrals to link patients to services, and carefully document for sustainability. These strategies will ensure that new providers can pick up where others left off.

Expand the IPE program, which provides unique opportunities for professionals from diverse fields to collaborate together. These collaborations create avenues for future teamwork, build professional connections and respect across disciplines, and may lead to generative problem solving among the care team, such as ideas for transportation needs of patients and combatting stigma. The SE AETC model has the potential to become a model disseminated nationally.

Retention

Invest in new research on job satisfaction in the HIV workforce. These studies should examine the top factors

of retention and attrition and how these vary across different fields. This research should also examine the primary factors that impact where professionals choose to locate, in order to develop targeted recruitment for the region. Regular measurement of organizational climate, discussed earlier in this report, sets the stage for this research.

Secondly, we suggest that the SE AETC develop a formal mentoring structure. This structure should include training for mentors, mechanisms for mentee/mentor feedback of the program, and regular mechanisms for evaluation. Particularly as HIV care continues to shift to a primary care context, connections between novice and expert professionals is critically important. Additionally, a structured mentoring program may provide important support to the rural workforce and help recruit more professionals to the region.

Finally, we suggest that the SE AETC continue to invest in training practitioners throughout the region and focus on reaching isolated providers. Opportunities for career development and professional networking are important factors of job satisfaction. In light of the geographic isolation of the Southeast, access to training opportunities may be important ways to connect providers with a professional support group, encourage their practice, and discuss ways to improve their skills. The SE AETC has noted that some regional areas with the highest rates of HIV have less than 20 providers who have received training.

Strategic Next Steps

The Southeast is a large, diverse region, and while there are common trends throughout the area, each city, state, and county are unique. As a first step in developing a plan for moving research into practice, it is recommended that these important contextual factors be identified and developed as a companion document.

We suggest that a series of focus groups and key informant interviews be undertaken to gather pertinent follow-up data to this report. In order to gain a holistic view of the region, we suggest using a maximum variation purposive sampling – that is, choosing participants that represent a variety of different states, clinical settings (academic/community), geographic locations (urban/rural), patient populations (MSM, minority, women, youth), and occupations (MD, nurse, dentist, pharmacist, case managers). Given the scope and timeframe of the project, the goal would be to have 2-3 focus groups of 6-8 participants. We anticipate these focus groups would be conducted in locations convenient to the participants and last for about two hours each. To include participants who may not be able to attend the focus group, such as those in extremely remote areas, we suggest that phone interviews with a sample of key informants be conducted. Once the focus groups and interview data are collected, the data will be analyzed in relation to this report's final recommendations. However, the data may also be useful for future needs assessments or SE AETC reports and can serve dual purposes. Below are possible questions for the focus groups or key informant interviews.

Building the Pipeline

1. What strategies currently exist to recruit professionals from among local community residents?
2. What barriers exist for recruiting professionals from among local community talent?
3. What two steps do you feel could be taken to increase the diversity of those coming into the HIV care workforce in your local area?
4. What community resources/organizations could you partner with to build capacity for recruiting individuals to various professional positions?
5. Are there post secondary institutions in your area that you could partner with to create a "pipeline" approach to recruiting talent into the workforce?

6. How could current professionals create a plan for mentoring new professionals into the workforce? What are some ideas that might work in your location?

Capacitation

1. As you think about your own professional development, what 2-3 new training programs would you like to see offered that would enhance your continuing education in the field?
2. What areas of professional development need to be addressed to increase your abilities to understand and meet the needs of your clients (culturally, socially, economically, etc.)?
3. What type of ongoing training and educational follow-up support would be of value to you in your everyday working experience?
4. What do you see as benefits and barriers to a professional mentoring program where more experienced professionals in the workplace mentor new/novice employees?
5. What do you perceive as training needs for others where you work?

Collaboration

1. Do you believe that there is an effective collaboration among your local providers that makes referrals to services after HIV diagnosis efficient and beneficial to your clients? Why or why not?
2. Describe protocols that are in place for linkage to care (LTC) for healthcare professionals along the continuum of care for clients in your community.
3. What strategies would you recommend to establish/improve upon the referral services in your area?

Retention

1. In what ways have you been able to engage in career development activities in your workplace?
2. Do you find networking with other professionals to be beneficial to your overall passion and commitment to this field? What types of opportunities would you like to see made available to engage you in more networking experiences?
3. What strategies do you currently engage in to ensure your own self-care? How could the work environment be improved to avoid burnout?

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BRIEF REPORT



Building HIV Workforce Capacity Through a Residency Pathway: Outcomes and Challenges

Jehan Z. Budak,¹ Kathleen Volkman,² Brian R. Wood,^{2,3,4} and Shireesha Dhanireddy^{2,3}

¹Division of Infectious Diseases, University of California, San Francisco, California; ²Department of Medicine and ³Division of Allergy and Infectious Diseases, University of Washington, Seattle, Washington; ⁴Mountain West AIDS Education and Training Center, Seattle, Washington

To help address the impending HIV physician shortage, we launched an HIV Medicine Pathway within our Internal Medicine Residency in 2008. Between 2015 and 2017, surveys showed a decrease in the number of graduates providing primary care for people living with HIV. We suggest evaluation of long-term outcomes from similar training programs and stronger support for HIV primary care career development.

The need for high-quality primary care for people living with HIV (PLWH) is a pressing public health issue in the United States. Despite an increasing prevalence of PLWH, providers are leaving the workforce, and there are limited HIV-specific training opportunities for physicians and advanced practitioners [1–4]. Inadequate exposure to HIV primary care during medical training results in few qualified providers entering this workforce. Most postgraduate training programs provide little exposure to outpatient HIV care. In 1 survey of internal medicine (IM) residents, 92% had provided inpatient HIV care for more than 10 PLWH, but only 13% had provided outpatient care for more than 10 PLWH [5]. In another survey, IM program directors reported HIV education to be a priority; however, only 47% of programs offered an HIV rotation [6].

In 2008, we created an HIV Medicine Pathway within the University of Washington (UW) IM Residency program with the goal of training IM residents to provide comprehensive care for PLWH. We are aware of only 9 other HIV primary care training opportunities, of varying structure, within US IM residency programs. There are limited data on graduate outcomes and the quality of general IM training for residents in these tracks [7].

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Correspondence: J. Z. Budak, MD, 513 Parnassus Avenue, S-380, Box 0654, San Francisco, CA 94143 (jehan.budak@ucsf.edu).

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The purpose of this report is to assess pathway graduate satisfaction with training in both HIV medicine and general IM and to evaluate retention in the HIV workforce over time.

PROGRAM DESCRIPTION

The HIV Medicine Pathway at UW, an option for both categorical and primary care residents, is part of the 3-year, Accreditation Council of Graduate Medical Education (ACGME)–accredited IM Residency program. On average, 2–4 residents apply during postgraduate year (PGY) 1, and 2–3 selected residents participate in the pathway during their PGY2 and PGY3 years. The track is tailored to individuals who have expressed an interest in HIV primary care, particularly in resource-limited settings. The structure of the pathway is outlined in Figure 1. Residents in the pathway fulfill their ACGME continuity clinic requirement at the Madison Clinic, an academic, Ryan White–funded HIV primary care clinic at Harborview Medical Center in Seattle, Washington (a UW-affiliated county hospital). The clinic serves as the medical home for approximately 2800 PLWH, the majority of whom are from underserved populations. The pathway has minimal cost, as it utilizes preexisting clinical and educational resources. Graduating residents are eligible to complete the American Academy of HIV Medicine (AAHIVM) certification examination.

PROGRAM EVALUATION

Twelve trainees completed the pathway between 2008 and 2017. In May 2015, we administered an anonymous electronic survey to pathway residents and graduates regarding practice habits and attitudes toward the pathway. All residents (5) and graduates (7) responded to the survey. Among the graduates surveyed in 2015, 5/7 (71%) were providing care for ≥20 PLWH (the eligibility cutoff to take the AAHIVM certificate exam). Five of 7 (71%) replied that they had attained AAHIVM certification, and 1/7 (14%) had completed fellowship training and obtained board certification in infectious diseases (ID). All respondents (12/12) reported that they would choose to participate in the HIV pathway again and that they anticipated care for PLWH to be part of their future careers.

In March 2017, we administered an anonymous electronic survey to the same 12 individuals surveyed in May 2015. In the follow-up survey, 12 of 12 respondents were pathway graduates. Again, 100% responded, and all felt the HIV pathway was adequate training to provide longitudinal HIV care. Ten of 12 graduates (83%) felt the HIV pathway was adequate training to provide general outpatient IM care to HIV-seronegative adults. Two of 12 (17%) respondents felt the pathway did not provide adequate training in general IM due to deficiencies in women's

PGY1	PGY2	PGY3	Post Graduation
Application & Selection	HIV Primary Care Continuity Clinic		AAHIVM Certificate Exam
	Capstone Scholarly Project		
	Meet with pathway director Present at Journal club Didactic immersion month	Meet with pathway director Present at Journal club Present at resident HIV conference Optional Kenya rotation	

Figure 1. Curricular map for HIV medicine pathway residents. Abbreviations: AAHIVM, American Academy of HIV Medicine; PGY, postgraduate year.

health and geriatric medicine. At the time of the 2017 survey, 8/12 (60%) graduates had attained AAHIVM certification.

At the time of the 2017 survey, 2/12 (17%) graduates were providing care to ≥ 20 PLWH. Those who provided care for < 20 PLWH were asked to comment on barriers to finding or sustaining jobs as primary care HIV internists. Reported barriers varied, but several trends emerged. First, working in low-prevalence areas or settings was a theme. Two respondents worked at the Veterans Administration (VA) Puget Sound Medical Center, where there is a relatively low number of PLWH. One respondent worked in a rural setting where disease burden was low, and another pathway graduate was in a general IM practice recruiting PLWH. Second, the majority of pathway graduates felt that additional fellowship training was necessary, as available jobs in urban areas were filled by and/or perceived to be seeking only ID-trained providers. At the time of the survey, 2 graduates not providing care to ≥ 20 PLWH reported that they planned to enter an ID fellowship. Finally, geography may have been a barrier, as 83% of pathway graduates surveyed remained in the Pacific Northwest region and were potentially competing for the same positions.

DISCUSSION

Specialized training pathways or tracks within residency programs might mitigate expected workforce shortages and offer residents an opportunity to focus on areas of clinical interest, but there are few HIV-focused pathways within residency programs, and little is known about their outcomes. The purpose of this analysis was to assess UW HIV Medicine pathway graduate outcomes in mitigating expected shortages in the HIV provider workforce.

Between 2015 and 2017, among those who graduated from the pathway, we found that the number providing HIV primary care to ≥ 20 PLWH decreased from 71% (5/7) to 17% (2/12). We

found this decrease in workforce to be concerning. Data from other graduate medical education (GME) pathways show high satisfaction with such training programs and favorable graduate outcomes regarding longitudinal care for PLWH, findings that are similar to our 2015 survey [7, 8]. The decrease noted in the UW cohort, however, suggests that early graduate outcomes data may not be predictive of long-term outcomes and that such surveys should be repeated over time.

We asked pathway graduates no longer caring for > 20 PLWH to comment on perceived barriers to finding or sustaining jobs in HIV primary care. The most cited reason was the perception that fellowship training was a necessary credential or that graduates felt they had to compete with ID-trained physicians. We anticipate that the 2 graduates currently in an ID fellowship will re-enter this workforce and increase the percentage caring for ≥ 20 PLWH from 17% to 30%, yet this still represents attrition from 71% in the IM-trained provider workforce. Given the provider workforce shortages that already exist in the fields of IM primary care and ID, we must address practice barriers for primary care providers trained in HIV medicine and support the career development of residency pathway graduates.

Future Directions

Although we found that graduates of the program perceived themselves as well prepared for general IM after residency, future directions could involve comparison of pathway with nonpathway participants using quantitative information (eg, in-service training exams, board examination scores, etc.). In the meantime, survey responses provide valuable feedback that can be used to modify pathway curricula for participants in this and similar programs, such as increasing the availability of training in outpatient women's health and geriatric medicine.

The next step in addressing the HIV provider workforce shortage will be to assess the level of postgraduation attrition in other HIV pathway programs. We invite colleagues in other HIV pathways, both IM and family medicine, to investigate whether GME HIV pathway graduates continue to provide care to PLWH following the completion of residency training. We suggest more robust career development programs and better linkage of HIV primary care physicians to HIV-related jobs, particularly in high-prevalence locations. In addition, continuing medical education, including use of existing resources such as through the National HIV Curriculum or Project ECHO, may contribute to retention in the workforce [9–11]. If other studies confirm that graduates are likely to settle in practice where they are trained, then we should locate HIV primary care training tracks in the areas of greatest need, and programs may need to assess applicants for their willingness to practice in high-prevalence areas. If graduates are unable to find appropriate employment or recruit patients without subspecialty certification, key stakeholders may need to help health systems develop models to despecialize HIV primary care or incentivize

the hiring of graduates with alternate credentials, such as AAHIVM certification.

CONCLUSIONS

A dedicated HIV pathway during IM residency offers a cost-effective, high-impact curriculum that trains providers to be proficient in HIV care. We found that UW HIV Medicine Pathway graduates enjoyed their experience and felt adequately prepared to provide HIV primary care, and most felt sufficiently trained to provide primary care for HIV-seronegative adults. Despite this, we found attrition in the number of UW HIV Medicine Pathway graduates providing HIV primary care over a 2-year period, mostly due to perceptions that an ID fellowship is necessary to find jobs in HIV primary care.

Limitations to this analysis include a small single-center sample group and potential selection bias. However, this analysis is unique in that it presents survey results examining pathway participant perceptions of a GME pathway at 2 different time points and explores perceived barriers to obtaining work in HIV primary care for internists. The results demonstrate that residency HIV training tracks offer a viable method to train competent HIV primary care providers, though the results also indicate that more robust career development following graduation is needed to ensure retention within this workforce.

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When We Know Better, We Do Better

**The State of HIV/AIDS Science
and Treatment Literacy
in the HIV/AIDS Workforce**

Black AIDS Institute
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in the HIV/AIDS Workforce
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Black AIDS Institute
1833 West Eighth Street
Los Angeles, California 90057-4257
213-353-3610, 213-989-0181 fax
info@BlackAIDS.org
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in the HIV/AIDS Workforce
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The Spanish language augmentation was not included in the original study. The Spanish language augmentation data is included in the city, state, and national fact sheets.

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Introduction: Biomedical Tools Alone Can't End the AIDS Epidemic

THE LATE DR. MAYA ANGELOU SAID, “DO THE BEST YOU CAN UNTIL YOU KNOW BETTER. THEN, WHEN YOU KNOW BETTER, DO BETTER!”



I can't think of a more appropriate quote or a more fitting messenger when I think of this moment in

time in the trajectory of the HIV/AIDS epidemic in America.

Nearly 35 years have passed since the HIV/AIDS epidemic was first recognized, and nearly two decades have gone by since Highly Active Antiretroviral Therapy (HAART) emerged. Only two years ago, at the International AIDS Conference in Washington, D.C., scientists and activists, including myself, hailed the potential for ending the epidemic once and for all.

Yet despite the passage of time and the emergence of powerfully effective tools to fight HIV, prevention efforts in the United States remain stalled. Every year, about 50,000 people are newly infected with HIV—nearly half

of them Black, almost two-thirds of them gay and bisexual men, and an increasing number of them women.

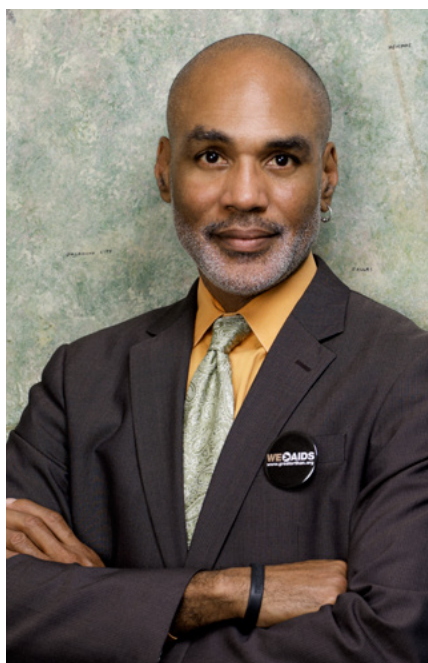
The scientific evidence is now clear. We have the tools we need to end the epidemic in America. Never before have our prevention and treatment tools been this effective. As a result of steady advances in diagnostic science, it has never been easier or cheaper to learn your HIV status. The treatment regimens available today are highly effective, simple to take, and easy to tolerate, and they not only improve health and prevent death but can also stop HIV transmission in its tracks. With new bio-medical prevention tools we can even interrupt acquisition of the virus as well. When properly used, Pre-Exposure Prophylaxis (PrEP) can reduce acquisition of HIV by 96%. Even our surveillance tools have improved. With geo-mapping increasingly used to identify HIV/AIDS hotspots, we can identify where the epidemic is down to the census tract or zip code.

Yet all these advances—all these extraordinary biomedical

breakthroughs—may not be enough to bring AIDS to its knees. All the tools in the world will not end the AIDS epidemic unless those responsible for using those tools understand them, believe in them, and know how to use them.

This report highlights perhaps the most important missing element in our quest to end the epidemic in America. As has been true for every advance recorded in our long national struggle with this epidemic, the HIV/AIDS workforce has a vital role to play if these powerful treatment and prevention tools are to be effectively mobilized. To ensure rapid and effective use of these biomedical tools, the HIV/AIDS workforce needs to possess a strong understanding of HIV science and treatment and a passionate belief in the effectiveness of the HIV/AIDS toolkit.

In this report, we describe the results of the largest-ever survey of the HIV/AIDS workforce in the United States (over 3,600 respondents from 44 states, the District of Columbia and U.S. territories), and the first survey ever of the knowledge and attitudes of that workforce. The Black AIDS Institute undertook this study in collaboration with the CDC, the Latino Commission on AIDS, the National Alliance of State and Territorial Health Directors, Johns Hopkins Bloomberg



School of Public Health, and Janssen Therapeutics.

This survey yields some disturbing findings. Overall, the HIV science and treatment knowledge of the HIV/AIDS workforce is far too low. In many cases, people working in HIV/AIDS appear to doubt the science behind breakthrough biomedical tools for HIV prevention, and far too many members of the workforce are not familiar with many of the bio-medical interventions that will play a critical role in ending the epidemic.

It's vital that these findings spur us

to action, and the report closes with a series of priority recommendations to build strong HIV science and treatment knowledge in the HIV/AIDS workforce. But it's also important that we don't misinterpret the results of this survey. For nearly 35 years, we in the HIV/AIDS field have built an infrastructure and that investment has been a wise one. Those working and volunteering in the HIV/AIDS field and people living with HIV/AIDS are the ones who have gotten us to this point. Let's not get it twisted. Every advancement in HIV/AIDS over the last 34 years, including the scientific ones, have been driven by the HIV/AIDS community. We are the reasons we can contemplate ending this epidemic. The HIV/AIDS workforce developed the first HIV prevention programs, successfully fought for research investments that have yielded these historic biomedical breakthroughs, and used the knowledge of the communities we serve to develop effective methods of reaching people neglected by medical institutions and policy makers.

Having worked in the HIV/AIDS field since the epidemic's early years, I know that the HIV/AIDS workforce can help take us to the finish line. But we won't get there unless we raise HIV science and treatment literacy among people living with HIV, those working

in the HIV/AIDS field, and those most at risk of infection. The Black AIDS Institute has already developed a demonstrated model that shows that the HIV/AIDS workforce can learn this stuff, retain this stuff, teach others, and develop programs that link People Living With HIV/AIDS (PLWHA) to care, help them stay in care, and help high risk negatives access PrEP and other high-impact prevention tools.

We have a lot of work to do to close the HIV/AIDS knowledge gap in the workforce. But the dividends that this knowledge will pay should inspire us. We really can be the generation that ends the HIV/AIDS epidemic.

Maya Angelou also said, "Whoever you are, where ever you are. Start there!" We can know better, and we will do better. Let's now get busy ensuring that our HIV/AIDS workforce is prepared to lead that fight.

Yours in the Struggle

Phill Wilson
President and CEO
Black AIDS Institute

Executive Summary

**THE SCIENTIFIC EVIDENCE IS CLEAR.
AS A RESULT OF EXTRAORDINARY ADVANCES
IN BIOMEDICAL RESEARCH, WE NOW HAVE THE
TOOLS WE NEED TO END THE HIV EPIDEMIC IN
THE UNITED STATES.**

However, biomedical tools, even the most powerful ones, are only effective if they are used by those who need them. The HIV/AIDS workforce—which for more than three decades has provided essential guidance and support for people living with HIV and those most at risk of HIV infection—has a pivotal role to play in maximizing the use and impact of these powerful treatment and prevention tools now at our disposal.

New data summarized in this report suggest that the HIV/AIDS workforce does not have the science and treatment knowledge it needs to respond to the challenges and opportunities presented by these new scientific developments.

Fully leveraging the potential of new HIV/AIDS biomedical tools demands that HIV/AIDS workers have strong knowledge of HIV science and

treatment issues. To assess the level of HIV science and treatment literacy in the HIV/AIDS workforce, the Black AIDS Institute collaborated with the CDC, the Latino Commission on AIDS, the National Alliance of State and Territorial AIDS Directors, Johns Hopkins Bloomberg School of Public Health, and Janssen Therapeutics to conduct the largest-ever survey of the HIV science and treatment literacy of the HIV/AIDS workforce.

More than 3,600 HIV/AIDS respondents from 48 states, the District of Columbia, and U.S. territories completed a 62-question web-based survey. The survey was broadly representative of the HIV/AIDS workforce. Men accounted for 54% of respondents, while people of color represented 57% of survey participants. Forty-one percent of the respondents work in the South.

Low HIV Science and Treatment Literacy in the HIV/AIDS Workforce

Survey results were concerning; on average respondents answered only 63% of survey questions correctly—essentially getting a “D” grade on HIV science and treatment issues. Participants were more likely to answer basic science questions correctly (76%) than questions pertaining to HIV treatment. The average score on treatment-related questions was 56%, or an “F.”

Respondents appear especially ill-prepared to assist PLWHA and those at high risk for HIV infection (HRN) in using antiretroviral-based biomedical prevention tools, such as PrEP and Treatment as Prevention (TasP). The average score on clinical/biomedical interventions was 46%, and the survey found considerable questions among respondents regarding the effectiveness of biomedical interventions.

Disparities in HIV Science and Treatment Knowledge among HIV/AIDS Workers

Black and Latino respondents scored notably lower than their white colleagues. This is true even after controlling for education, region of residence, time working in the AIDS field, or any other variable taken into account in the survey. By contrast, LGBT and HIV-positive respondents scored higher than the workforce as a whole.

The smaller the organization, the less likely the staff were to exhibit strong HIV science and treatment knowledge. Participants working at community-based organizations (CBOs) had generally lower scores than staff at AIDS service organizations. No major differences were observed between workers in health departments and those working at AIDS service organizations (ASOs).

Among all variables studied, the educational attainment of the participant was most closely correlated with higher scores on the survey. The longer a worker remains in the AIDS field, the higher on average is his or her knowledge level, with especially pronounced knowledge advantages

among people who have worked at least 15 years in the HIV/AIDS field.

Respondents from the deep South scored lower, on average, than workers from other regions—a distinction that persists even after controlling for educational level and other variables. However, within regions of the country, there were considerable differences between and within states in participants' scores.

Closing the HIV Science and Treatment Knowledge Gap: An Urgent National Priority

Although biomedical tools are largely prescribed in clinic settings, physicians and nurses typically lack the time, expertise, and grounding in the community to address all the many factors that influence an individual's ability to use biomedical treatment and prevention technologies. By contrast, the HIV/AIDS workforce has, over nearly 35 years, specifically been designed to understand and address the needs of those most affected by HIV. If the individuals who need to use these biomedical tools are to be fully informed, engaged, and empowered consumers who can successfully

adhere to prescribed regimens, it will be the HIV/AIDS workforce that will provide the critical assistance to make this happen.

An urgent national initiative is needed to build the HIV science and treatment literacy of the HIV/AIDS workforce. Specific attention will be needed in the groups of HIV/AIDS workers who appear to have especially sub-optimal understanding of biomedical issues, although the initiative will need to be comprehensive and nationwide in scope, as scores are unacceptably low across the HIV/AIDS workforce. Continuing education opportunities will be needed, as the evidence base for HIV science and treatment will continue to evolve. HIV/AIDS organizations will need to prioritize professional development on HIV science and treatment issues, and particular steps will need to be taken to deploy people living with HIV as unmatched peer educators and patient navigators.

The Findings

**THE JURY IS IN. THE AIDS EPIDEMIC—
WHICH HAS CLAIMED THE LIVES OF MORE
THAN 650,000 AMERICANS AND DEVASTATED
COUNTLESS COMMUNITIES—CAN BE BROUGHT
TO AN END—IN OUR LIFETIME!**

Advances in biomedical science have turned the corner on what was once thought by most to be an automatic death sentence into a problem that can now potentially be solved—once and for all. Antiretroviral drugs, it turns out, not only largely halt the effects of HIV infection within the body, but also have an extraordinary ability to prevent transmission and acquisition of HIV.

Globally, recent modeling by UNAIDS confirms that bringing available tools to the right scale in the next five years would reduce the number of new HIV infections by 89% and the number of AIDS-related deaths by 81% by 2030, effectively ending the epidemic as a public health threat over the next 15 years.¹ Biomedical tools are now at the center of the HIV toolkit, with UNAIDS modeling finding that achievement of these ambitious aims

is largely dependent on rapid scale-up of antiretroviral therapy and other antiretroviral-based prevention methods such as PrEP.

Here in the U.S., biomedical strategies represent the cornerstone for the CDC’s High Impact Prevention (HIP) approach, which aims to maximize the number of new HIV infections averted with existing tools and resources.²

However, the *availability* of high-impact biomedical prevention tools is only the first part of the equation toward ending the epidemic. These tools need to be understood, effectively used, and sustained by those who need them.

So, the question is: Is the HIV/AIDS field prepared to translate these breakthrough scientific findings into concrete results for affected communities?

Since the early years of the epidemic, when members of congress

worked to squelch safer sex programs and to withhold funding for life-saving AIDS research, the AIDS field has insisted that the nation’s response to the epidemic should be based on scientific evidence. But in 2015—34 years after the epidemic was first identified—is the HIV workforce still committed to a science-based approach? And, if so, are we sure that workers in the AIDS field are sufficiently aware of and confident in these new treatment and prevention approaches?

“We have talked a lot about getting to zero, and we’ve also repeatedly said that we have the tools to make that happen,” said Leisha McKinley-Beach, HIV program administrator for the Fulton County Department of Health and Wellness in Atlanta. “But we might not have the workforce to get us to zero.”

Moises Agosto, head of the Treatment Education, Adherence and Mobilization Team at the National Minority AIDS Council, has similar concerns. “In all my years doing treatment literacy and health literacy, I’ve found that people working in the AIDS field are least prone to educate themselves about the clinical aspects of HIV.”

The HIV Knowledge Continuum and the HIV/AIDS Workforce

Although everyone in the HIV/AIDS workforce requires basic scientific and treatment knowledge, the level of knowledge needed varies depending on the activity.

Promoting and delivering HIV testing: Comprehensive, detailed knowledge isn't needed to encourage someone to learn their HIV status. However, testing workers need to be prepared to explain why an HIV test is beneficial, including the benefits of early therapy. Workers need to be prepared to address misconceptions about HIV treatment, such as lingering, mistaken perceptions that HIV regimens are complex and highly toxic.

Linking people to care: Encouraging an individual who has tested HIV-positive to enter care requires somewhat more knowledge. The basic components of the HIV clinical process may need to be explained, and assistance may be required to help individuals understand their health care options. HIV workers will also need to understand the early diagnostic tests that will be performed and be prepared to help the individual understand how these tests will be interpreted and how they will inform decisions about treatment.

Promoting treatment retention and adherence: Even greater knowledge is needed to help individuals successfully navigate the HIV treatment continuum. A comprehensive understanding of the HIV clinical process is required, as well as an in-depth understanding of side effects and co-morbidities, including how to detect them and how they can best be managed.

Promoting antiretroviral-based prevention among HIV-uninfected people: This line of work may require the greatest degree of knowledge, as PrEP and other antiretroviral-based tools remain poorly understood in the community. Individuals considering PrEP may have questions about how the intervention works biologically, be skeptical that it works, or have concerns that they might become resistant to antiretroviral drugs if they ultimately seroconvert.

A Pioneering Survey of the HIV/AIDS Workforce

To determine whether the HIV workforce has the knowledge and skills needed to help AIDS-affected communities use these transformative tools, the Black AIDS Institute partnered with the Centers for Disease Control, the Latino Commission on AIDS, the National Alliance of State and Territorial AIDS Directors, and Janssen Therapeutics to sponsor the largest-ever survey of the HIV workforce. To ensure the scientific validity and rigor of the survey tool, experts at the CDC and at Johns Hopkins Bloomberg School of Public Health reviewed and commented on the survey instrument.

A 62-question web-based survey was completed by 2,166 workers in the HIV field between 2012 and 2013. The first wave was administered by the Institute to 643 attendees at the 2012 U.S. Conference on AIDS (USCA), the largest HIV-related meeting in the U.S., attended by case managers, public health workers and advocates, policy makers, and people living with HIV. Survey participants at USCA used iPads to complete the survey, either at a special exhibition booth or when contacted by survey staff throughout the venue.

The second wave involved a national rollout to an additional 1,523 employees, contractors, and volunteers working in AIDS service organizations, state and local health departments, and other community-based organizations. The Institute and local volunteers went to local community organizations or clinics in 12 major cities (Atlanta, Ga.; Baton Rouge, La.; Chicago, Ill.; Ft. Lauderdale, Fla.; Houston, Tex.; Jackson, Miss.; Los Angeles, Calif.; Miami, Fla.; New Orleans, La.; New York, N.Y.; San Francisco, Calif.; and Washington, D.C.), promoting and administering the survey in both English and Spanish from

March to May 2013. Survey partners collaborated to identify non-medical HIV workers nationwide, who were invited to participate through various awareness measures.

Research activities were reviewed by an institutional review board and granted an exemption under 45 CFR § 46.101(b)(2) as a de-identified survey activity. Small incentives were provided to participants—\$15 for the first wave, and \$5 for online completion during the second and third waves. No incentive was provided in the fourth wave. E-mail addresses of participants were collected in order to avoid duplicate participation. On average, completion of the survey required 15 minutes.

As this report describes, the survey yielded results that are cause for deep concern. Overall, basic HIV-related scientific knowledge is much lower than it ought to be, with particular deficits on key factual matters relating to the biomedical strategies that have the potential to end the epidemic. And not only is knowledge low in the HIV workforce, but survey findings also suggest that many HIV workers are not familiar with and don't have faith in the research results that have transformed the national approach to preventing new infections.

Although knowledge scores are low across the HIV/AIDS workforce, there are also particular knowledge patterns that demand attention. HIV/AIDS workers who have been in the field longest, are better educated, and are gay or bisexual are more likely to be knowledgeable about HIV science and treatment issues. By contrast, lower knowledge scores are reported among workers who are Black or Latino, work in a small organization, and/or work in the South.

The low levels of HIV scientific literacy identified by the survey—more than 15 years since the emergence of antiretroviral therapy—suggest that concerted national action is needed to ensure that the HIV workforce is prepared to play its role in ending the epidemic.

But the survey also offers a way forward. The robust findings across a range of HIV-related scientific and biomedical questions highlight the specific areas where training and capacity-building are needed. Similarly, demographic differences in documented knowledge levels also highlight where educational measures are most needed.

Who Is the HIV/AIDS Workforce?

This extensive survey provides a representative snapshot of the HIV workforce. The breadth of survey participants is striking, with HIV workers from 44 states, the District of Columbia, and U.S. territories participating. The survey represents the largest known effort ever undertaken to assess the scientific and treatment knowledge of the HIV workforce.

Men accounted for 54% of survey participants, with people of color accounting for 57% of those participating. LGBT participants accounted for roughly one-third of people who completed the survey. Educational levels varied considerably, with 39% of participants reporting at least some post-graduate education and 27% reporting educational attainment of an associates degree or lower. People living with HIV accounted for 16% of survey participants.

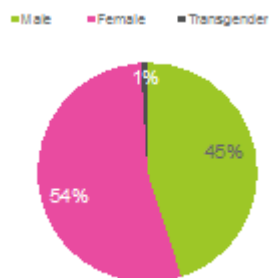
Consistent with the national HIV epidemic, the largest share of survey participants (40%) live in the South. Compared with its share of AIDS cases (29%), the Northeast was somewhat under-represented in the survey, accounting for 17% of participants. The West and Midwest accounted for 17% and 12% of participants, respectively, with the remainder from Puerto Rico, Guam, and the U.S. Virgin Islands.

As would be expected in a survey of the HIV/AIDS workforce, employees, contractors, or volunteers of ASOs made up the largest share (46%) of participants by organizational type. CBOs and state/local health departments accounted for 38% and 16% of participants, respectively. The size of participants' organizations varied substantially, with a majority working in agencies with 20 or fewer employees and 9% working in organizations with more than 100 staff. Most organizations represented in the survey provide prevention

1. Gender Identification

Sample size: 3,363

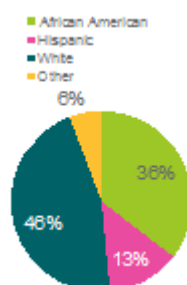
Statistically significant differences between comparison groups marked with a letter (95% significance)



2. Race/Ethnicity

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197

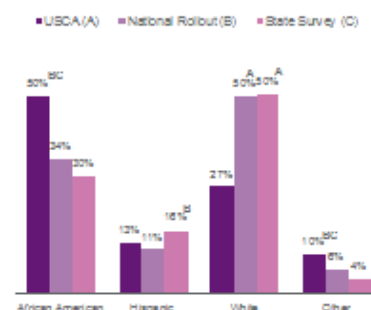
Statistically significant differences between comparison groups marked with a letter (95% significance)



3. Race/Ethnicity by Wave

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197

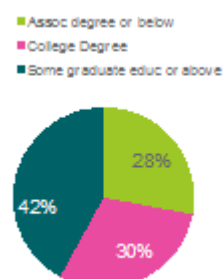
Statistically significant differences between comparison groups marked with a letter (95% significance)



4. Education

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197

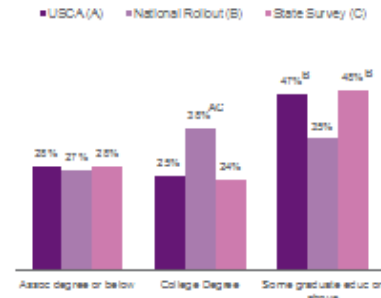
Statistically significant differences between comparison groups marked with a letter (95% significance)



5. Education by Wave

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197

Statistically significant differences between comparison groups marked with a letter (95% significance)

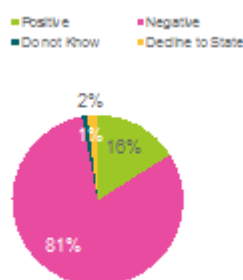


services (72%) and treatment and prevention education (62%), with roughly half (49%) providing HIV treatment and care. Black-serving organizations represented the majority (56%) of organizations represented in the survey, with nearly one in three organizations serving people living with HIV (35%) and men who have sex with men (32%). Seventy-five percent of participants were employees, 12% were consultants, and 13% were volunteers.

People with less than two years' experience in the HIV/AIDS workforce accounted for 22% of participants, while 17% had worked in the AIDS field 16 years or more. Prevention and outreach workers represented the largest share of participants by job type (27%), followed by case managers and social workers (23%), and managers (16%). On average, participants had worked in the AIDS field almost nine years.

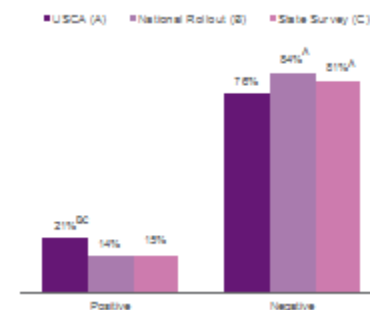
6. HIV Status

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



7. HIV Status by Wave

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



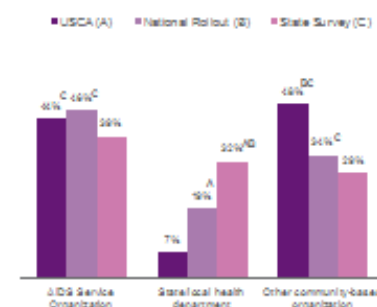
8. Type of Organization

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



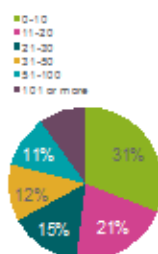
9. Type of Organization by Wave

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



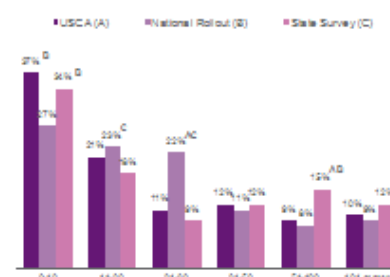
10. Size of Organization

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



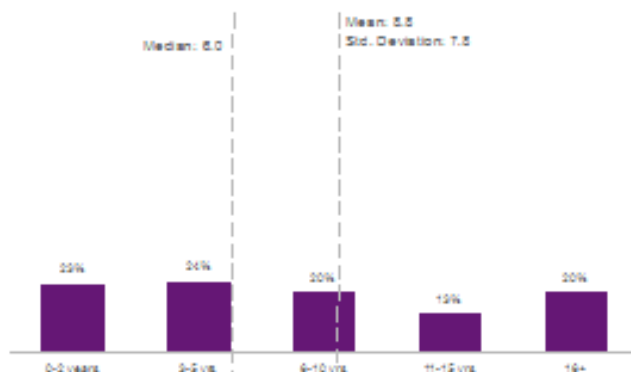
11. Size of Organization by Wave

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



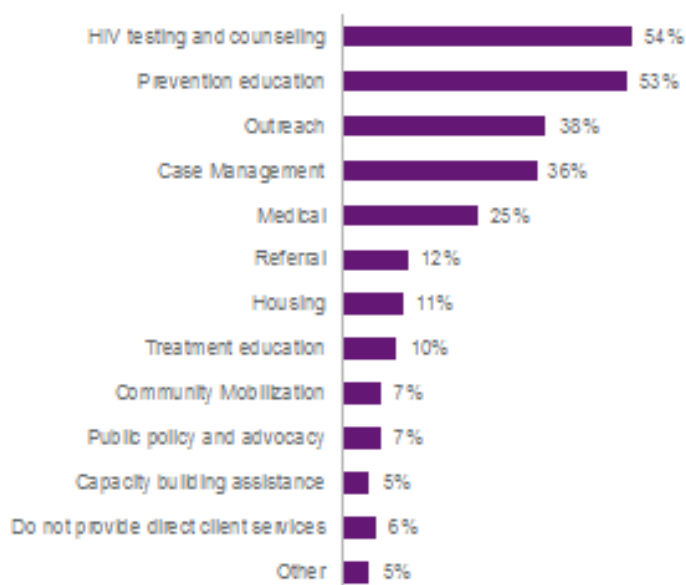
12. Tenure in HIV Field

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



13. Services Provided

Sample size: 3,363; USCA wave: 643; National Rollout: 1,523; State Survey: 1,197
Statistically significant differences between comparison groups marked with a letter (95% significance)



Assessing HIV Knowledge and Attitudes Among the HIV/AIDS Workforce

A basic knowledge of the science of HIV is essential if HIV workers are to educate and counsel people at risk about the disease, dispel myths about HIV transmission, provide compelling encouragement for people at risk to get tested, help people living with HIV to be linked and retained in care, and help people at risk of infection negotiate and access HIV, including PrEP and non-occupational post-exposure prophylaxis (NPEP).

To tease out the level of the HIV/AIDS workforce's knowledge about HIV and to identify specific gaps, the U.S. HIV/AIDS Workforce Survey asked a series of basic questions about HIV infection: Which body fluids are capable of transmitting HIV? What is an opportunistic infection? What is the difference between HIV and AIDS? How is HIV diagnosed? Who is at highest risk of acquiring HIV?

The survey also asked about basic aspects of HIV treatment, such as the causes of drug resistance, the relationship between adherence and drug resistance, and the typical trajectory of CD4 and viral load when an individual's HIV infection is left untreated. The survey also asked participants basic questions about the meaning of viral load, federal recommendations for viral load testing, and the effect of antiretroviral therapy on viral load. Participants were asked about common HIV opportunistic infections and co-morbidities and about the process for evaluating new antiretroviral drugs.

The survey posed questions regarding biomedical HIV prevention tools, asking participants to differentiate recommended biomedical strategies from others that are not recommended. Participants were also asked about experimental prevention tools, such as vaginal microbicides.

In addition to assessing the basic knowledge of HIV workers, the survey also sought to obtain a glimpse of workers' familiarity with and attitudes about biomedical tools. For example, participants were asked to agree or disagree with the statement, "Suppressing HIV viral load with antiretroviral treatment reduces the risk of transmitting HIV." Similar questions were posed regarding PrEP, with participants given multiple options to assess the degree to which they agreed or disagreed with the statement. The survey also inquired about workers' interest in obtaining additional learning regarding biomedical HIV prevention tools.

HIV/AIDS Science and Treatment Literacy Among the HIV/AIDS Workforce Is Low

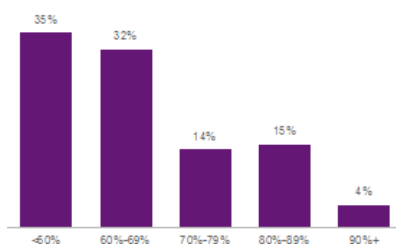
Overall, the HIV workforce has a low level of HIV-related scientific knowledge. The average score on the survey was 63%, roughly the same as the median (64%). Seventy percent of HIV workers surveyed received a "D" score (i.e., below 70%), while only 4% received an "A" (i.e., 90% or above). More than one-third of participants (35%) received a failing score (i.e., below 60%).

HIV workers scored highest on basic science and terminology questions, at 76%. This suggests that most HIV workers understand some basic facts about HIV—how it is transmitted and how it is diagnosed. Yet even the brightest spot in the survey findings offers cause for concern, as the HIV workforce gets only a grade of "C" for the most basic facts about the disease they are working to address.

Nearly two decades after the emergence of HAART, the HIV/AIDS workforce lacks knowledge about the

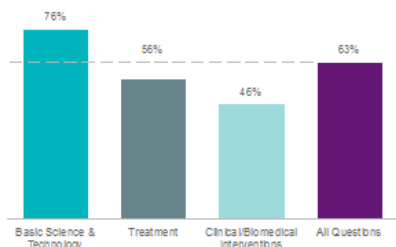
14. % Correct Answers

Sample size: 3,363



16. Average Score by Category

Sample size: 3,363



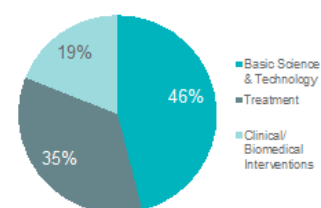
15. Statistics

Sample size: 3,363

Mean	63.1
Median	63.8
Cumulative Percent	
F (<60%)	35
D (60-69%)	67
C (70-79%)	81
B (80-89%)	96
A (90%+)	100

17. Proportion of Questions per Category

Sample size: 3,363



basics of HIV treatment. Even as CDC funding shifts to prioritize continuum-of-care interventions for people living with HIV, the HIV/AIDS workforce gets an “F” on treatment-related issues, with an average score of only 56. One positive side to the otherwise bleak research findings has to do with results from participants who work with people living with HIV, who score 5.2 points higher on average than respondents as a whole.

Survey findings also suggest that the HIV/AIDS workforce is even less prepared to accelerate uptake of PrEP, TasP, and other biomedical prevention tools. Indeed, the HIV workforce scores lowest (46%) on questions related to clinical and biomedical interventions.

Mark Harrington, executive director of Treatment Action Group, says that the way PrEP was developed and approved may help explain the low scores on biomedical HIV prevention. Early studies on PrEP generated ambiguous results before larger studies provided more definitive evidence of efficacy. When Truvada was approved for PrEP in 2012, the drug’s maker refrained from promoting it for HIV prevention, meaning that this paradigm-busting prevention tool was launched without advertisements or public health campaigns.

Harrington wonders whether results on PrEP-related questions might be somewhat higher were the survey administered in 2015 rather than in 2012-2013. With a robust national debate playing out on the safety and efficacy of PrEP in 2014—and with the CDC issuing formal guidance endorsing PrEP in the midst of this debate—Harrington views last year as an inflection point in the AIDS field’s understanding of this biomedical intervention, with science-based activists making the case for PrEP in response to misreading of the scientific evidence. “A whole lot of changes happened in 2014 that may have made the answers to these questions a lot different,” he says.

Race Matters: Highest Risk, Lowest HIV Science and Treatment Knowledge Among Communities of Color

Black and Latino people account for 14% and 16% of the U.S. population, respectively, but they make up 44% and 21% of new HIV infections.³ With Black and Latino communities facing disproportionate risks for HIV infection, they need biomedical treatment and prevention technologies the most. By extension, they need an HIV workforce that is fully prepared to seize new opportunities to lay the foundation to end the epidemic.

However, Black and Latino workers in the AIDS field were significantly less likely than white respondents or those from other races/ethnicities to exhibit robust HIV science and treatment knowledge. Importantly, these differences remained statistically significant after controlling for education, region of residence, time working in the AIDS field, or any other variable taken into account in the survey. On average, Black respondents scored about six points lower than white survey participants, while Latino workers scored eight points lower.

By contrast, LGBT and HIV-positive survey participants scored about three points higher than other survey participants. Unlike Black and Latino communities, where treatment education programs have traditionally been weak or non-existent, LGBT staff belong to a community that has prioritized grassroots treatment education since the epidemic’s early years. People living with HIV obviously have a personal interest in learning about HIV-related science and treatment issues. In addition, a host of resources (e.g., magazines, websites, blogs) are available for people living with HIV to learn about treatment

issues, but these have not always been targeted to Blacks and Latinos living with HIV.

Other demographic patterns emerge from the findings. The mean score for male respondents is significantly higher than for women, although women who participated in the survey were more likely than their male counterparts to score in the top quartile. Women were also more likely than men to score in the bottom quartile.

As a general rule, age did not directly correlate with HIV knowledge. However, the youngest respondents (ages 18-24) scored by far the lowest of all age groups.

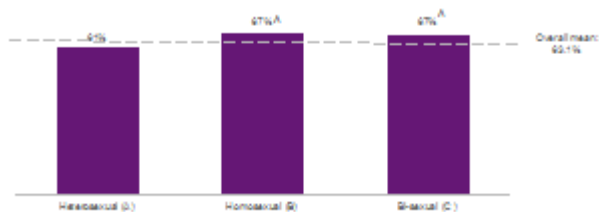
18. % Correct Answers by Race/Ethnicity

Sample size: 3,363; African American: 1,188; Hispanic: 441; White: 1,538; Other: 196
Statistically significant differences between comparison groups marked with a letter (95% significance)



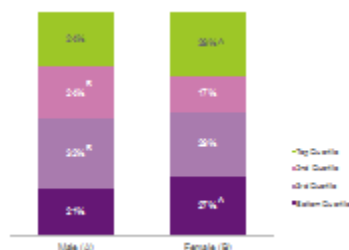
19. % Correct Answers by Sexual Orientation

Sample size: 3,363; Heterosexual: 2,268; Homosexual: 861; Bisexual: 234
Statistically significant differences between comparison groups marked with a letter (95% significance)



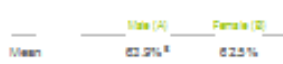
20. % Correct Answers by Gender

Sample size: 3,363; Male: 1,536; Female: 1,827
Statistically significant differences between comparison groups marked with a letter (95% significance)



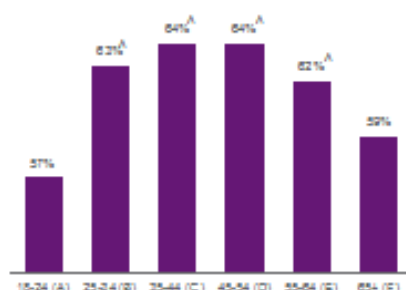
21. % Correct Answers by Gender

Sample size: 3,363; Male: 1,536; Female: 1,827
Statistically significant differences between comparison groups marked with a letter (95% significance)



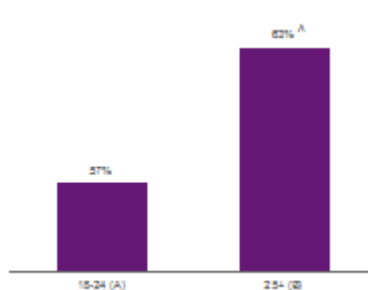
22. % Correct Answers by Age

Sample size: 3,363; 18-24: 117; 25-34: 1,207; 35-44: 667; 45-54: 735; 55-64: 563; 65+: 74
Statistically significant differences between comparison groups marked with a letter (95% significance)



23. % Correct Answers by Age

Sample size: 3,363; 18-24: 117; 25-34: 1,207; 35-44: 667; 45-54: 735; 55-64: 563; 65+: 74
Statistically significant differences between comparison groups marked with a letter (95% significance)



Size Matters: Some Organizations Have Higher HIV Science and Treatment Knowledge than Others

The smaller the organization, the less likely workers were to have high HIV knowledge scores. Consistent with this pattern, the lowest scores were found among those working in organizations with 10 or fewer workers. This trend could flow from comparative differences in organizational access to professional development resources, such as national, regional, or statewide conferences. Larger organizations are more likely to have sufficient resources to dedicate staff to HIV scientific issues or to invest in staff development.

Encouragingly, participants working at organizations serving highest-risk groups reported higher levels of HIV-related knowledge. Organizations serving heterosexual men scored quite low on HIV science and treatment knowledge, with an average score of 49.

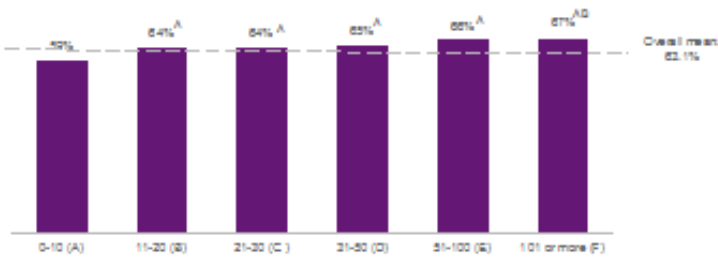
Radical differences were not observed in knowledge levels based on the type of organization in which participants worked. However, participants affiliated with CBOs were less likely than workers at ASOs and health departments to exhibit higher knowledge scores, with these differences found to be statistically significant. However, no significant differences were observed in knowledge scores among workers at state/local health departments and staff at ASOs.

Participants working in organizations that engage in advocacy and public policy work and that provide direct services to clients had the highest knowledge scores. Disturbingly, staff responsible for capacity-building assistance—i.e.,

HIV/AIDS workers tasked with building the competence and skills of other HIV/AIDS workers—scored lower (60%) on average than HIV/AIDS workers as a whole (63%).

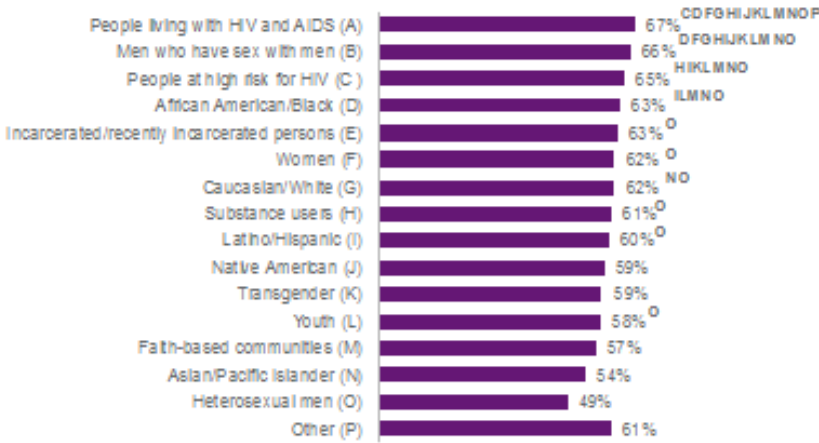
24. % Correct Answers by Organization Size

Sample size: 3,363; 0-10: 1,048; 11-20: 702; 21-30: 512; 31-50: 387; 51-100: 367; 101 or more: 347
Statistically significant differences between comparison groups marked with a letter (95% significance)



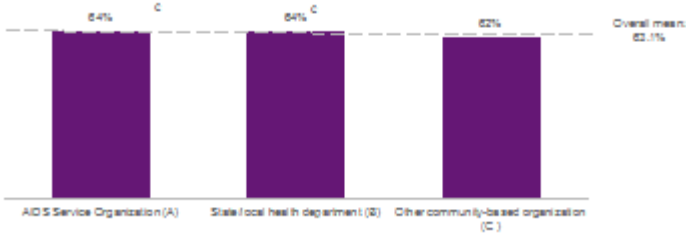
25. % Correct Answers by Communities Served

Sample size: 3,363; People living with HIV and AIDS: 1,387; Men who have sex with men: 1,247; People at high risk for HIV: 850; African American/Black: 1,862; Women: 358; Incarcerated populations/recently incarcerated persons: 146; Caucasian/White: 878; Substance users: 389; Latino/Hispanic: 885; Youth: 342; Native American: 116; Faith-based communities: 105; Transgender: 134; Asian/Pacific Islander: 66; Heterosexual men: 61; Other: 114
Statistically significant differences between comparison groups marked with a letter (95% significance)



26. % Correct Answers by Organization Type

Sample size: 3,363; AIDS service organization: 1,458; State/local health department: 726; Other community-based organization: 1,179
Statistically significant differences between comparison groups marked with a letter (95% significance)



27. % Correct Answers by Primary Services Provided

Sample size: 3,363; Outreach: 1,293; Prevention education: 1,769; HIV testing/counseling: 1,824; Medical: 827; Referral: 399; Treatment education: 321; Housing: 361; Case management: 1,210; Community mobilization: 219; Do not provide direct client services: 204; Other: 168

Statistically significant differences between comparison groups marked with a letter (95% significance)



Education Matters

The importance of education emerges as a clear theme across the survey findings. Among all variables, the level of educational attainment of the survey participant emerged as the most important predictor of strong HIV science and treatment knowledge. Participants with a college degree scored eight points higher, on average, than those with an associate's degree or less, while graduate education added an additional 10 points on the survey results.

Volunteers scored lower than employees and consultants on the survey. This is likely explained by employees' comparatively greater access to training and professional development resources. Consultants are often former staff who have benefited from professional advancement opportunities.

The longer a worker remains in the AIDS field, the higher his or her knowledge of HIV science and treatment. In particular, there was a marked difference in scientific knowledge between workers who had been in the field at least 10 years and those with shorter tenures.

Workers who are directors or administrators are substantially more likely to be knowledgeable about HIV science and treatment issues than

other workers. Participants focused on HIV prevention and outreach and on HIV support services were likely to score the lowest, with workers in AIDS housing programs scoring the lowest of all categories.

Location Matters: Regional and State Variation in HIV Knowledge

Respondents from the deep South, on average, scored two points lower than HIV workers from other parts of the country and five points lower than workers from the Midwest, who had the highest average level of HIV science and treatment knowledge. While the regional differences appear somewhat modest (Fig. 32), the difference between Southern HIV workers and those from other parts of the country is statistically significant. These differences remain statistically significant after controlling for education, length of tenure, and other variables.

"I was quite surprised to see where staff in the South who have the same educational levels as counterparts in other regions of the country score lower in some of these HIV-related

knowledge areas," said Fulton County's McKinley-Beach. "Access to training may be the key factor that explains these differences. Many Southern organizations and health departments are using every resource we have to ensure our communities survive this epidemic. It is difficult to prioritize training, staff development, and planning over service delivery. It will be difficult to achieve zero new infections without a strategy to build workforce capacity to implement scientific advances."

Although the HIV workforce in the South overall scored notably lower than workers from other regions, the South is not monolithic in this regard. Respondents from Kentucky, South Carolina, and Virginia actually scored above the national average on HIV science and treatment knowledge, while participants from Alabama and Louisiana had scores that were roughly equivalent with the national average. However, respondents from Florida, Georgia, North Carolina, and Texas scored clearly below average.

State-by-state comparisons of survey results need to be made with caution, as the number of respondents in some states was quite small. Among states with a sufficient number of respondents, Ohio, Pennsylvania, and Missouri had the highest average scores, followed by Maryland,

California, and Illinois. All three states with the lowest average scores—North Carolina, Georgia, and Florida—are in the South.

Statistical analyses of survey results identified several factors that appear to be driving state differences in HIV treatment literacy among the HIV workforce. Respondents from states with the highest scores generally are better educated, more likely to work for organizations serving high-incidence groups, and/or more likely to be HIV-positive or LGBT.

Notes

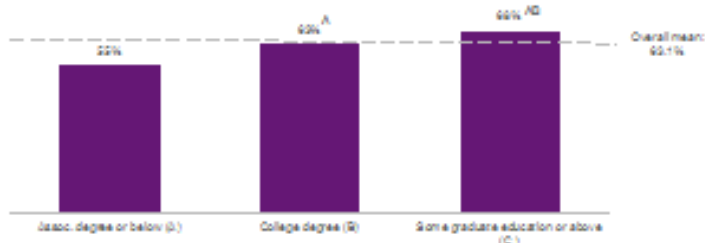
1. UNAIDS (2014). Fast-Track: Ending the AIDS Epidemic by 2030.

2. CDC (2014). HIV Prevention in the United States: Expanding the Impact. Available: <http://www.cdc.gov/nchhstp/newsroom/HIVFactSheets/Future/High-Impact-Prevention.htm>.

3. CDC (2012). New HIV Infections in the United States. Available: <http://www.cdc.gov/nchhstp/newsroom/docs/2012/HIV-Infections-2007-2010.pdf>.

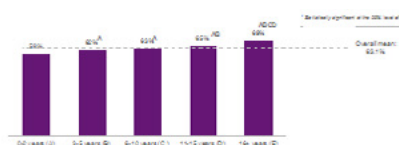
28. % Correct Answers by Level of Education

Sample size: 3,363; Associate degree or below: 928; College degree: 1,021; Some graduate education or above: 1,414
Statistically significant differences between comparison groups marked with a letter (95% significance)



29. % Correct Answers by Tenure in HIV Field

Sample size: 3,363; 0-2 years: 763; 3-5 years: 822; 6-10 years: 670; 11-15 years: 442; 16+ years: 666
Statistically significant differences between comparison groups marked with a letter (95% significance)



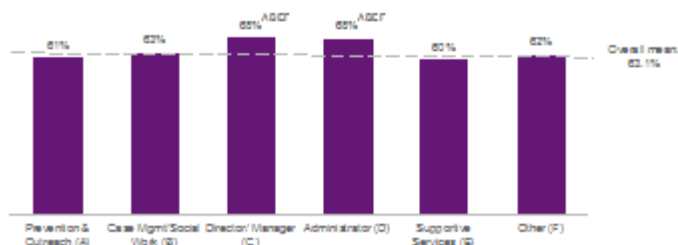
30. Bivariate Correlation

Sample size: 3,363; 0-2 years: 763; 3-5 years: 822; 6-10 years: 670; 11-15 years: 442; 16+ years: 666
Statistically significant differences between comparison groups marked with a letter (95% significance)



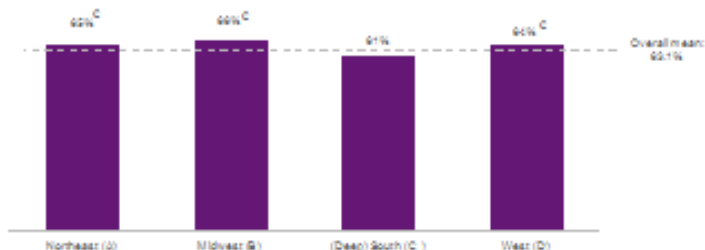
31. % Correct Answers by Primary Role

Sample size: 3,363; Prevention and outreach: 837; Case management/social work: 707; Director/manager: 554; Administrator: 283; Supportive services: 418; Other: 564
Statistically significant differences between comparison groups marked with a letter (95% significance)



32. % Correct Answers by Region

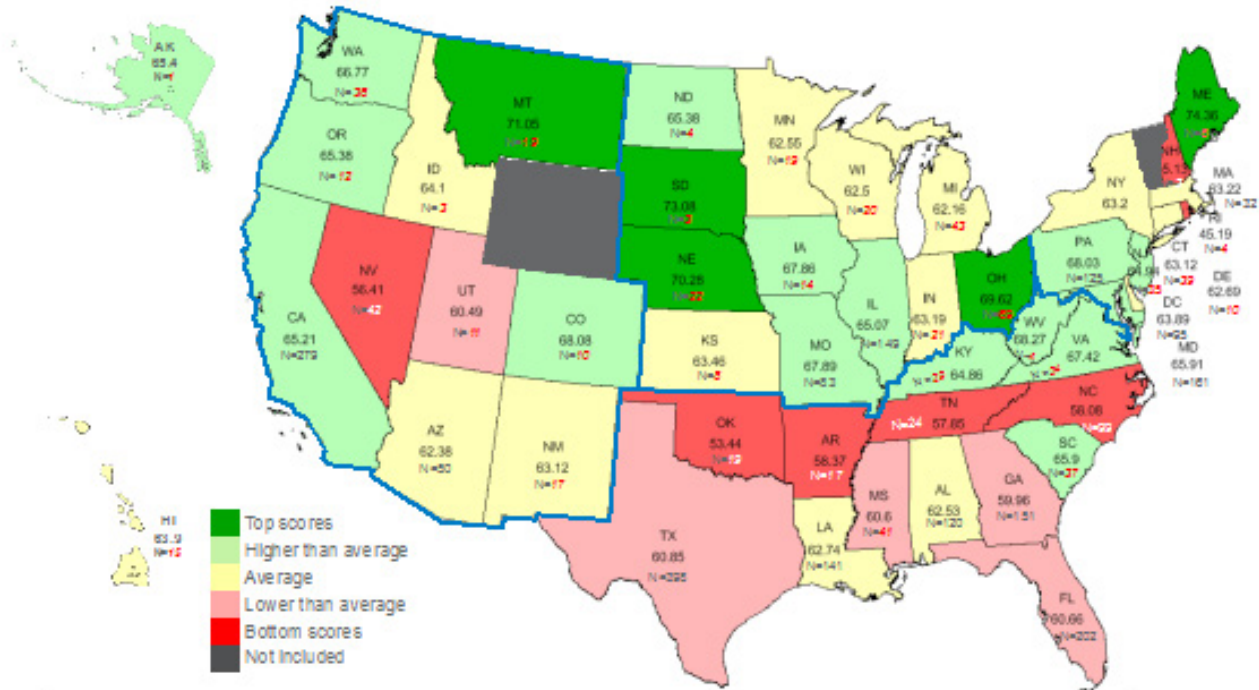
Sample size: 3,036; Northeast: 790; Midwest: 455; (Deep) South: 1,316; West: 495 (Excludes "Other")
Statistically significant differences between comparison groups marked with a letter (95% significance)



33. Scores by State

Sample size: 3,363; States combined across the three waves. Highest-scoring states included in this analysis were those with high enough base sizes for reasonable comparisons: Ohio, Pennsylvania, Missouri, Maryland, California, Illinois. Lowest-scoring states included in this analysis were those with high enough base sizes for reasonable comparison: Nevada, North Carolina, Georgia, Mississippi, Florida, Texas

Statistically significant differences between comparison groups marked with a letter (95% significance)



HIV Science and Treatment Literacy: Why It Matters

THROUGHOUT MOST OF THE HIV EPIDEMIC, THE CONDOM WAS THE PRIMARY TECHNOLOGY FOR PREVENTING SEXUAL TRANSMISSION. FOR DECADES, THE MAIN FOCUS OF HIV PREVENTION WAS BEHAVIORAL. PREVENTION EFFORTS ENDEAVORED TO HELP PEOPLE RECOGNIZE THEIR RISK FOR HIV AND TO TAKE STEPS TO AVOID ACQUIRING HIV—EITHER BY DELAYING SEXUAL INTERCOURSE OR BY USING A CONDOM DURING INTERCOURSE.

Treatment as Prevention

In 2011, the HIV prevention enterprise dramatically changed with the release of results from the HPTN 052 trial, which found that antiretroviral therapy reduced the risk of sexual HIV transmission by 96%.¹ The implications of this landmark study were immediately apparent. The very drugs that have transformed HIV infection from an automatic death sentence to one that is often chronic

and manageable also have the potential to stop the epidemic in its tracks.

Additional biomedical tools have since been validated by HIV prevention research, yet antiretroviral therapy remains by far the most potent prevention tool available (Fig. 34).

The HPTN results, however, also quickly raised profound questions about the effectiveness of prevention efforts. Even though HAART has been widely available in the U.S. since the mid-1990s, the national response has yet to effectively capture the prevention

potential of HIV treatment, with the annual number of new HIV infections remaining steady at round 50,000.

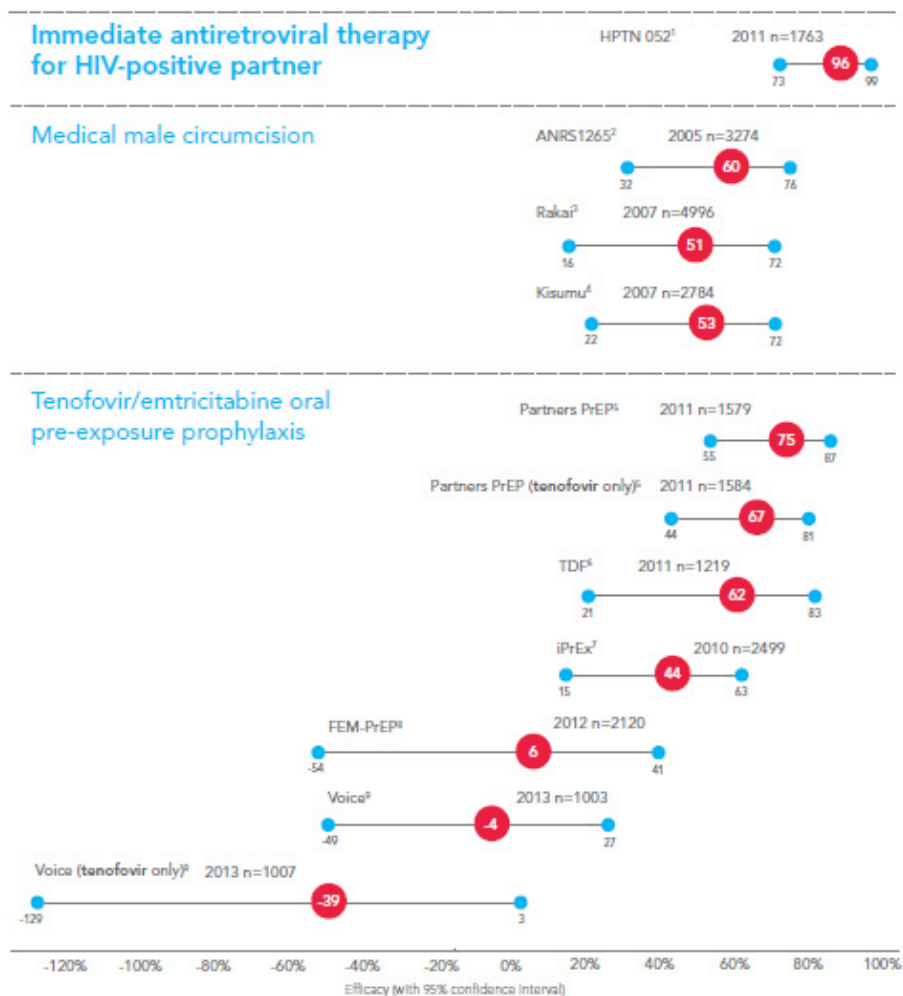
In reality, gaps across the HIV care continuum diminish the therapeutic and prevention benefits of HIV treatment. The most recent CDC analysis (Fig. 35) found that while 86% of people living with HIV know their HIV status, only 40% are engaged in regular HIV medical care. Due to patient loss across the HIV continuum, only 30% of people living with HIV have viral suppression.² Without viral suppression, people living with HIV fail to reap the full health benefits of treatment, and the communities in which they live lose the prevention benefits of lower community viral load.

As these patterns underscore, the central aim of HIV prevention efforts must be to close these gaps in the treatment continuum and to increase the share of people living with HIV who are virally suppressed to the highest level possible.

Informed patients and communities are vital to this quest to maximize viral suppression. People at risk of HIV appear increasingly to be getting the message that learning one's HIV status is essential, as the proportion of people living with HIV who know their status has steadily risen and is now approaching 90%. However, far too many people

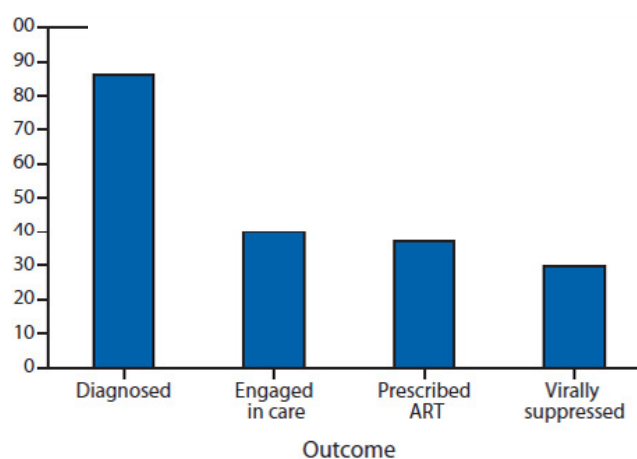
34. Efficacy of Available Bio-Medical Prevention Interventions Derived from Randomized Clinical Trials

Modified with permission from Marrazzo et al, JAMA, in press, 2014*



35. Estimated Percentage of Persons Living with HIV Infection* by Outcome Along the HIV Care Continuum

United States, 2011



who are diagnosed with HIV do not understand the clinical and prevention benefits of immediate HIV treatment and fail to take on board the importance of regular clinical monitoring, and many don't take their medicines as prescribed. Many people, especially those who remember earlier times in the epidemic, may fear that current HIV treatments have some of the same side effects that proved so challenging for early HAART regimens, when in reality current treatment regimens are relatively simple to take and easy to tolerate. For many people living with HIV, sub-optimal patterns of medical utilization stem not just from a lack of awareness or misconceptions but from life challenges that impede regular engagement in medical care, such as poverty, housing instability, substance use, mental illness, and violence and abuse.

Other Antiretroviral-Based Prevention Tools

Although a central focus of HIV prevention must be improving outcomes for people living with HIV, people who are uninfected but are at high risk of HIV infection also need strategies to lower their risk of acquiring the virus. In recent years, various antiretroviral-based methods have emerged to complement the well-documented prevention benefits of condom use, harm-reduction measures for people who inject drugs, and other risk-reduction measures.

These antiretroviral-based methods appear to be powerfully effective. This is especially well-documented for daily, oral PrEP, the efficacy of which exceeds 90% for individuals who take the regimen as prescribed.³ Initiation of antiretroviral therapy within 72 hours of a significant exposure (known as post-exposure prophylaxis, or PEP) is also recommended as another prevention tool for HIV-uninfected

people who engage in high-risk activities. These antiretroviral-based strategies are especially important for young Black gay men, whose HIV incidence (measured at 5.9% by one major research cohort)⁴ is roughly equivalent to the rate of new infections among young women in Southern Africa.⁵

These antiretroviral-based tools have achieved minimal uptake to date, especially among the populations that need these potent prevention tools the most. The maker of Truvada, a recommended regimen for PrEP, actively promotes the drug for therapeutic use but has declined to actively promote its use for PrEP. Scattered demonstration projects are underway, but their implementation has been slow, especially among young Black gay men. With young Black gay men experiencing HIV risks that are among the highest in the entire world, that low public health priority placed on rapid scale-up of PrEP in high-risk populations is perplexing.

But there are additional reasons why these new prevention tools have yet to be taken up. According to a recent survey by the Henry J. Kaiser Family Foundation, only about one-quarter (26%) of gay and bisexual men in the U.S. know about PrEP, only one in 10 know someone who has taken PrEP, and the vast majority report hearing little or nothing about PrEP.⁶ Mis-statements in the media—suggesting that PrEP is far less effective than condoms, when in fact the efficacy of these two strategies is comparable when individuals closely adhere to the daily regimen—may have fed a certain skepticism, among potential users and the broader HIV workforce, regarding the effectiveness of this still-new prevention strategy.

For all antiretroviral-based prevention methods—including PrEP, PEP and HIV TasP—consistent adherence to the prescribed regimen is pivotal. Only individuals who fully understand the importance of adherence and the consequences of non-adherence will have the means to

make full use of antiretroviral-based prevention tools.

Notes

1. Cohen MS et al. Prevention of HIV-1 infection with early antiretroviral therapy. *N Engl J Med*. 2011;365(6):493–505.

2. CDC (2014). Vital Signs: HIV Diagnosis, Care, and Treatment Among Persons Living with HIV—United States, 2011. *MMWR* 63:1113–1117.

3. Grant RM et al. (2010). Preexposure Chemoprophylaxis for HIV Prevention in Men Who Have Sex with Men. *New Eng J Med* 363:2587–2599.

4. Koblin BA et al. (2013). Correlates of HIV Acquisition in a Cohort of Black Men Who Have Sex with Men in the United States: HIV Prevention Trials Network (HPTN) 061. *PLoS ONE* 8:e70413.

5. Marrazzo J et al. (2013). Pre-exposure prophylaxis for HIV in Women: Daily oral tenofovir, oral tenofovir/emtricitabine, or vaginal tenofovir gel in the VOICE Study (MTN 003). 20th Conference on Retroviruses and Opportunistic Infections, Atlanta.

6. Hamel L et al. (2014). HIV/AIDS in the Lives of Gay and Bisexual Men in the United States.

Essential: An Educated, Informed HIV/AIDS Workforce

WHY DOES THE HIV SCIENTIFIC AND TREATMENT LITERACY OF THE HIV/AIDS WORKFORCE MATTER? IF THE PRIMARY HIV PREVENTION OUTCOMES ARE NOW CLINICAL, CAN'T HEALTH CARE PROVIDERS HANDLE HIV PREVENTION ON THEIR OWN?

While the paradigm shift from behavioral to biomedical prevention might seem at first to diminish the role of community-based HIV workers, nothing could be further from the truth. “Looking at the changing landscape of HIV prevention, it’s clear that the HIV workforce is as important as ever,” advises Danielle Houston, senior program advisor of the National Minority AIDS Council’s Treatment Education, Adherence and Mobilization Team.

One reason is every biomedical intervention depends on behavior, and the HIV/AIDS workforce has spent more than three decades in building expertise on influencing behavior.

“Suggesting that primary HIV prevention is exclusively or even primarily clinical misses the point,” says Phill Wilson, president and CEO of the Black AIDS Institute. “I’ve been

living with HIV for 35 years now. Every night when I look at the meds in my hand that I’m about to take, I’m face to face with the reality that I have an essential role to play in my own health. The meds can remain in their bottle, or I can take them. What the pills do is biomedical. What I do is behavioral. Our goal, therefore, should be to integrate the biomedical with the behavioral, as neither one is sufficient without the other.”

As the health care environment continues to evolve, new opportunities for health care access also mean new opportunities for individuals to fall through the system’s cracks. Without the support of community workers who are knowledgeable about the science of HIV, many people are likely to miss out on the promise of biomedical treatment and prevention technologies.

“The whole structure of HIV care has changed, with the Affordable Care Act and Medicaid expansion,” says Moises Agosto, director of the National Minority AIDS Council’s Treatment Education, Adherence and Mobilization Team. “With these changes, there is going to be a big expansion in the universe of health care providers working with people living with HIV. Increasingly, people living with HIV will be receiving their care not from a Ryan White clinic or a community-based AIDS organization, but from community health centers and other less-specialized providers. As people increasingly get their care from providers who have less experience in treating patients with HIV, ensuring that consumers are fully informed and actively engaged in their own care will be more important than ever.”

One lesson the AIDS response has clearly taught is that an empowered and engaged health care consumer is an informed consumer. Individuals need to understand why adherence is so important, how to interpret their lab results, and how to develop a strong, open relationship of communication with their health care providers.

While physicians and nurses have an important role to play in educating their patients, the HIV/AIDS workforce is uniquely positioned

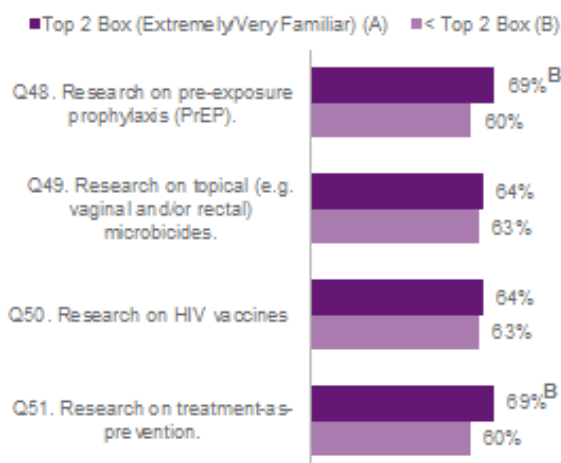
Familiarity and Attitudinal Agreement Go Hand-in-Hand with Higher Scores

On all but two of the attitudinal items, respondents with high familiarity (Q48-Q51) or high agreement (Q52-Q62) were significantly more likely to have higher scores on the HIV knowledge questions. This makes sense, as both knowledge questions and the agreement/familiarity questions appear to measure knowledge of HIV.

36. % Correct Answers by Level of Familiarity

Sample size: 3,363

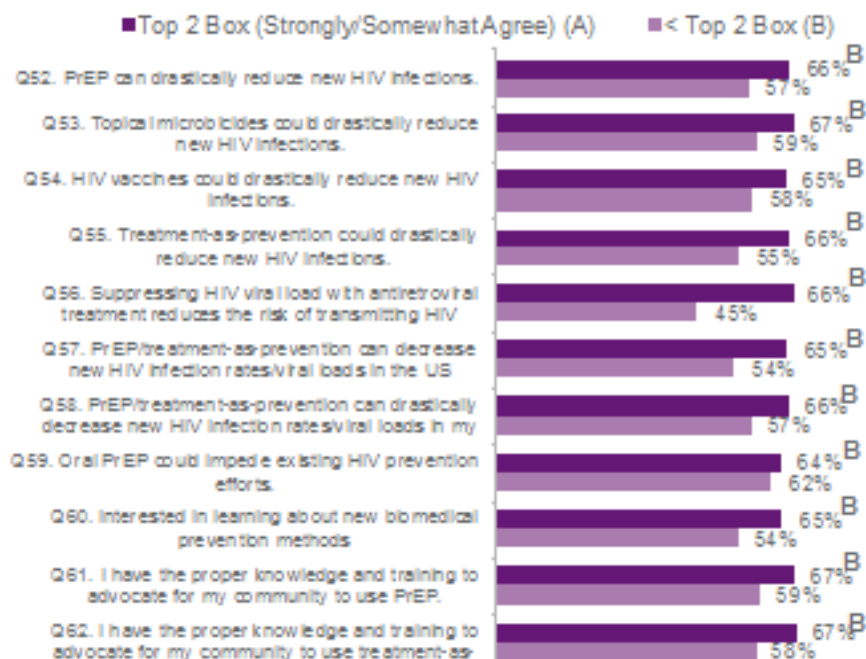
Statistically significant differences between comparison groups marked with a letter (95% significance)



37. % Correct Answers by Level of Agreement

Sample size: 3,363

Statistically significant differences between comparison groups marked with a letter (95% significance)



to deliver treatment education in a language that patients can understand. Occupying a relationship of trust with community members, HIV/AIDS workers can also help dispel myths about HIV testing and treatment. The HIV workforce is also ideally skilled to recognize and address challenges to treatment adherence and retention in care, such as housing instability, substance use issues, poverty, and depression.

While clinical sites can help promote retention in care—through automatic call-backs before appointments and other adaptations to clinic practices—most health care sites lack the capacity or expertise to ensure that patients remain engaged in care. Innovative partnerships between clinics and CBOs offer an unusually effective model to help patients maintain their HIV care. In particular, peer-based patient navigators can help patients overcome challenges associated with complex health care financing and delivery systems.

A well-educated, highly-motivated HIV/AIDS workforce will be critical to closing gaps in the HIV treatment cascade. “We need to rapidly increase testing of at-risk populations and get those people into care,” notes Mark Harrington of the Treatment Action Group. “All those things can’t all be done in the medical setting. The doctor simply doesn’t have enough time to explain everything an individual needs to know. The solution is to link community-based organizations to provider networks.”

For chronic diseases like HIV, self-care plays a central role in obtaining good health outcomes. While brief educational interventions during the delivery of clinical care have been shown to improve treatment adherence for a number of health conditions, these will be even more effective if they are complemented by strong community-based programs that provide more intensive, peer-based education and support. For example, collaborative learning models allow peers to learn from each other

over time, building and reinforcing knowledge about HIV-related self-care. “HIV is now a bit like diabetes,” Harrington notes. “Effectively managing HIV infection requires a lifelong commitment to behavior change and health promotion. There is a huge role for community health workers and peer health navigators to help people remain engaged in care. We know from drug addiction treatment and programs for the homeless that peer groups and peer navigators can really help people stay in care.”

The HIV/AIDS workforce’s role in promoting health care access is important not only for people living with HIV but also for HIV-negative people. However, people who are well, especially younger people, often perceive little reason to regularly access health care services. In New York State’s plan for ending the AIDS epidemic, jointly developed by community advocates and political leaders, the state aims to use Medicaid expansion to link high-risk HIV-negative people to regular health care, which can be used as a platform for delivering a combination of prevention approaches. For this vision to become a reality, HIV workers will need to play a central role in educating community members, motivating them to access care, and assisting them in navigating a rapidly evolving health care landscape.

“PrEP is definitely a game changer,” says Fulton County’s McKinley-Beach. “We have to have an educated staff to be able to speak about this tool in an unbiased manner.”

The Institute’s survey findings confirm that strong HIV science knowledge is likely to play a critical role in uptake of PrEP and other biomedical prevention tools, and high levels of HIV knowledge are closely linked with HIV workers’ willingness to promote biomedical prevention tools (Fig. 28). Unfortunately, as the Institute’s groundbreaking survey shows, people working in the HIV/AIDS field have inadequate knowledge

of biomedical interventions. Many, the survey found, don’t even believe the scientific evidence for the efficacy of these biomedical technologies.

“It would be a shame to have these tools that we’ve developed through research not be used because we’ve not invested in the training needed to get us to zero,” said McKinley-Beach.

To ensure that the HIV/AIDS workforce can play its optimal role in a rapidly changing environment, changes will be required. “We need to figure out how to restructure the HIV workforce so it can function in this new framework,” says Harrington. “It is clear that the HIV workforce has decades of useful experience, but now we need to ensure that medical training is part of their skill set.”

Building the HIV science and treatment capacity of the HIV/AIDS workforce isn’t something that can be achieved on the fly. Instead, long-term, focused investments are needed to create the kind of HIV/AIDS workforce that can be optimally effective in the new world of HIV prevention.

“We need a long-term educational and professional development plan for the HIV workforce,” said McKinley-Beach. “If you just take PrEP as an example, the HIV workforce not only needs to know basic information about PrEP, but also about how to integrate the intervention in HIV counseling and testing and in other components of the prevention continuum. This is not something that can happen in a one-hour training.”

Urgent Action Agenda: Build Strong HIV Science and Treatment Literacy

EXPERIENCE HAS PROVEN THAT THE HIV/AIDS WORKFORCE IS HIGHLY KNOWLEDGEABLE—ABOUT HIV ITSELF, ABOUT THE COMMUNITIES THEY SERVE, AND ABOUT EFFECTIVE STRATEGIES TO REACH, ENGAGE AND SERVE PEOPLE LIVING WITH AND AFFECTED BY HIV. EVERY ADVANCE IN THE HISTORY OF HIV/AIDS HAS BEEN LED, SUPPORTED OR SHEPHERDED BY THE HIV/AIDS WORKFORCE.

What the U.S. HIV/AIDS workforce survey shows, however, is that many HIV/AIDS workers have yet to be trained or educated about the major scientific developments of recent years that have transformed both the medical management of HIV/AIDS and the prevention of HIV transmission. As experience with countless other diseases demonstrate, the very best biomedical tools in the world will not be effective if they are not well used. To ensure that

these tools are effectively mobilized to end the HIV/AIDS epidemic once and for all, a major new national effort is needed to combine the behavioral and operational savvy of the HIV/AIDS workforce with robust knowledge and understanding of HIV science and treatment.

Specifically, the Black AIDS Institute urges immediate action to implement the following priority recommendations:

1

To help end the HIV/AIDS epidemic, a major national initiative is needed to increase HIV science and treatment literacy among the non-medical HIV/AIDS workforce.

A diverse array of trainings and skills-building strategies will be needed to build HIV science and treatment literacy in the workforce. *High-intensity trainings*, such as year-long, multi-session programs that combine extensive classroom instruction with opportunities for practical learning and ongoing mentoring and coaching, will be essential to build strong organizational capacity on HIV science and treatment issues and to instill the knowledge and skills needed by HIV/AIDS workers who will work most closely with science and treatment issues. *Medium-intensity trainings* include three-day regional trainings and participation in time-limited learning collaboratives that use adult learning techniques to increase knowledge and self-efficacy. *Low-intensity trainings* include single-day trainings, webinar series and other distance learning methods to build HIV science and treatment literacy.

2

Establish a clear and specific set of core competencies.

You never know what you don't know.

Many workers don't know what kinds of information they need to know to be better equipped to respond to an HIV/AIDS world where biomedical interventions are a critical part of the Prevention arsenal. In addition, people working in AIDS service organizations, community-based organizations, and health departments are going to have to interact with clinical providers on a routine basis. They will need to have different skills to maximize the services they bring to these organizations.

Finally, different roles and responsibilities demand different skill sets in order to be effective. There needs to be a series of consultations with policy makers, clinical providers, members of the HIV/AIDS workforce, HRNs, other experts, and PLWHA to establish a clear, concise and specific set of core competencies that people working in HIV/AIDS must have.

3

Establish a nationwide certification program for the HIV/AIDS workforce.

Thirty-four years into the HIV/AIDS epidemic, after the first national assessment of the HIV science and treatment knowledge of the HIV/AIDS workforce, it is clear that we no longer have the luxury of learning as we go. With the tools available to end the HIV/AIDS epidemic, we need to make sure that we have a workforce that can get us to the finish line.

Agreement needs to be reached on the core competencies needed by the HIV/AIDS workforce, and a certification program should be put in place to provide quality control for HIV/AIDS workers.

4

Require that HIV/AIDS workers pursue continuing education on HIV science and treatment issues.

Even with the very best training programs, knowledge often fades or becomes fuzzy over time, underscoring the need to period knowledge reinforcements. Moreover, the evidence base on HIV science and treatment continues to evolve, meaning that workers will need to stay abreast of new developments as they occur.

A mandatory continuing education program for the HIV/AIDS workforce should be put in place and linked to renewal of certification as an HIV/AIDS worker in good standing.

5

Dramatically increase the number of People Living with HIV/AIDS in the HIV/AIDS workforce.

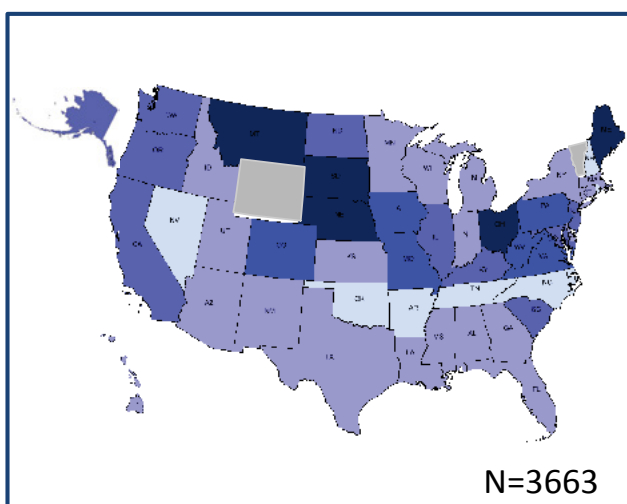
People living with HIV can play an extremely important role in prevention, treatment, patient navigation, policy, and advocacy. As data from the U.S. HIV/AIDS study shows, people living with HIV/AIDS in the workforce demonstrated higher levels of science and treatment knowledge than their HIV negative colleagues. They tended to be more familiar with bio medical interventions and held a higher level of belief in the efficacy of those interventions. Being HIV-positive would tend to raise one's knowledge of the virus through personal experience. People living with HIV/AIDS can serve as peer mentors and peer advocates. Who better to reach out to undiagnosed and newly diagnosed people living with HIV/AIDS than those who have the virus themselves?

Appendix

34	National Fact Sheet	102	State Comparisons
			Overall Knowledge Scores
38	State Fact Sheets		Individual Questions:
	Alabama		Basic Knowledge & Terminology
	Arizona		Treatment
	California		Clinical or Biomedical Interventions
	District of Columbia		Familiarity with Biomedical Interventions
	Florida		Efficacy of Biomedical Interventions
	Georgia		
	Illinois	132	DMA Fact Sheets
	Louisiana		Atlanta
	Maryland		Austin
	Michigan		Baltimore
	Missouri		Birmingham
	New York		California Bay Area
	North Carolina		Chicago
	Ohio		Dallas-Fort Worth
	Pennsylvania		Houston
	Texas		Los Angeles
			Miami-Ft. Lauderdale
			New Orleans
			New York
			Philadelphia
			Washington, D.C.

HIV Knowledge, Attitudes and Beliefs: HIV Workforce Study

National Fact Sheet



Overall Grade

D

61%

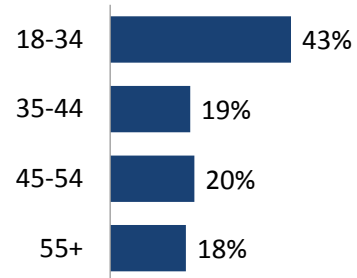
National

Demographic Profile: National

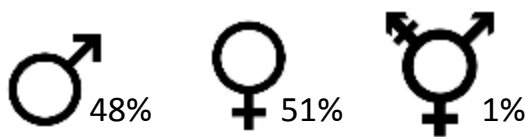
Gender at Birth



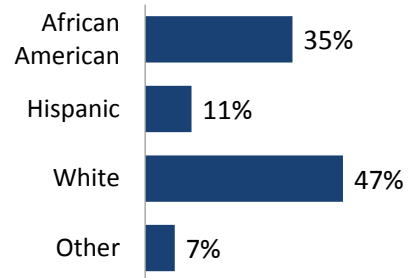
Age



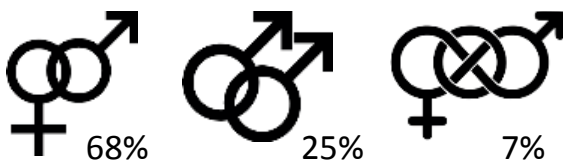
Gender Identification



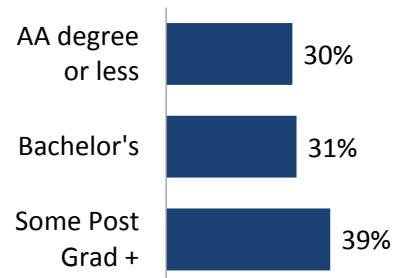
Ethnicity



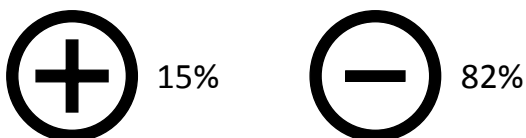
Sexual Orientation



Education

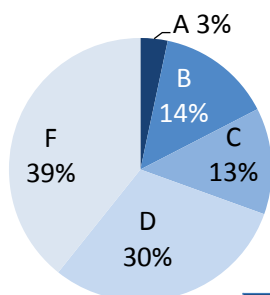


HIV Status

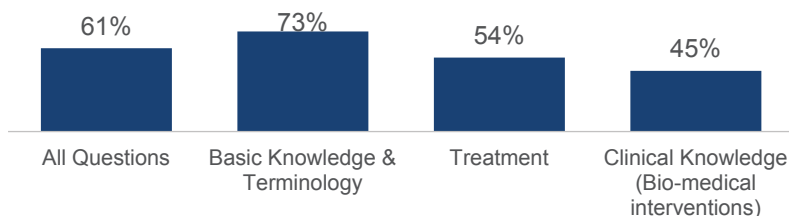


Knowledge Scores: National

Grade Distribution



Average % Correct by Question Category

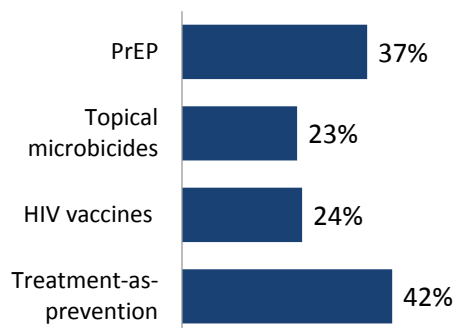


Ethnicity		Avg. Score			
Af Am (n=1272)	57%	69%	51%	41%	
Hispanic (n=404)	54%	64%	50%	38%	
White (n=1739)	67%	80%	59%	49%	
Other (n=248)	55%	63%	50%	44%	
Role					
Prev./Outreach (n=855)	60%	74%	52%	44%	
Director/Manager (n=565)	68%	78%	62%	54%	
Administrator (n=288)	68%	77%	61%	56%	
Case Mgmt/SW (n=764)	60%	75%	53%	39%	
Support Services (n=627)	53%	64%	48%	38%	
All Other (n=564)	62%	74%	55%	46%	

Attitudes

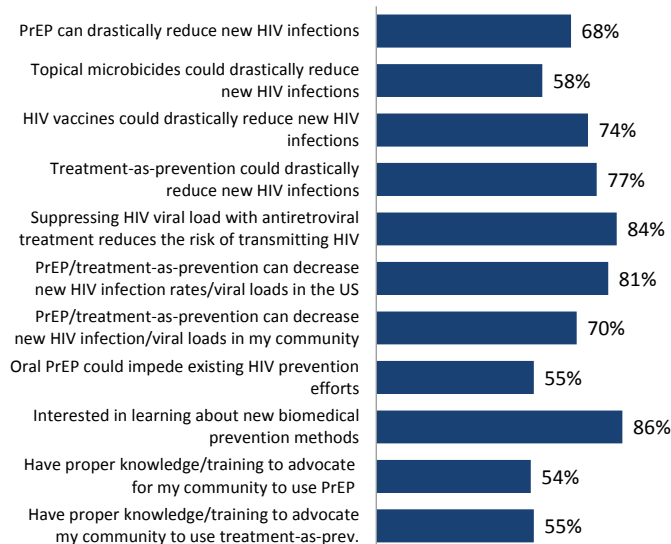
Familiarity with Bio-Medical Interventions

Rated "Extremely Familiar" or "Very Familiar"



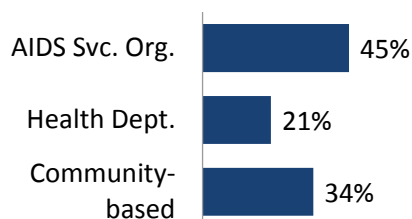
Belief in Bio-Medical Interventions

Rated "Strongly Agree" or "Somewhat Agree"

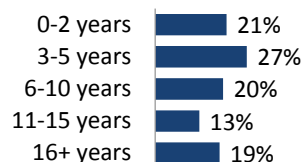


Work Profile: National

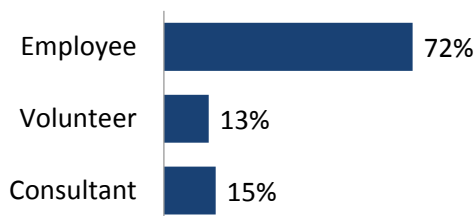
Type of Organization



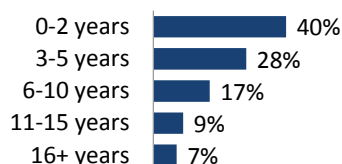
Tenure in HIV Field



Role in Organization



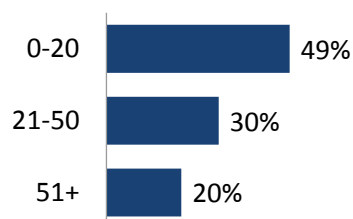
Tenure in Role



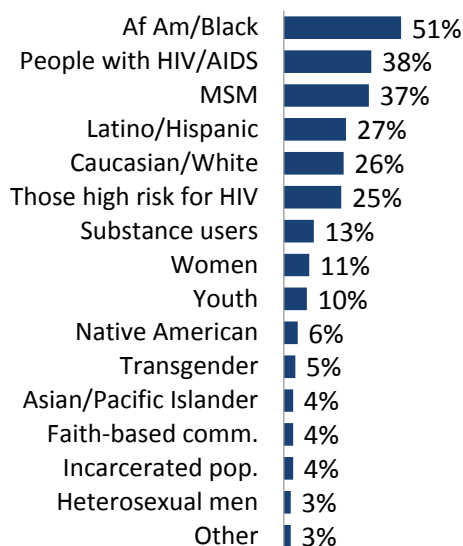
Type of Role



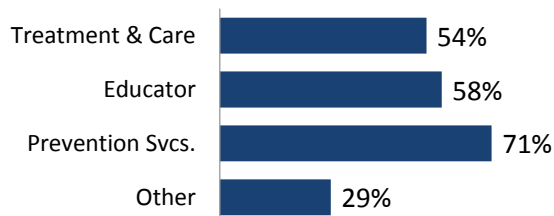
Size of Organization



Communities Served

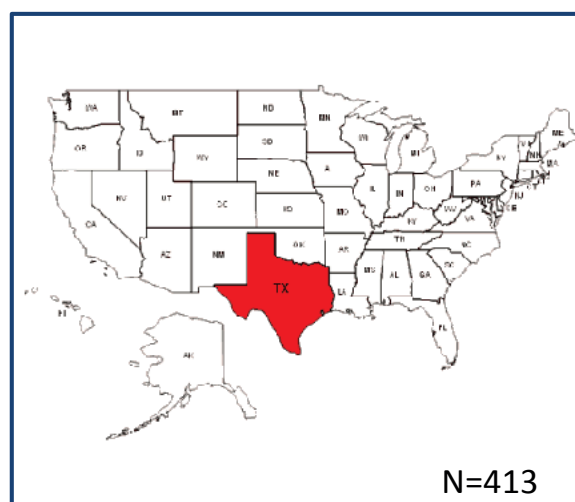


Primary Services



HIV Knowledge, Attitudes and Beliefs: HIV Workforce Study

Texas Fact Sheet



Overall Grade

D

60%

Texas

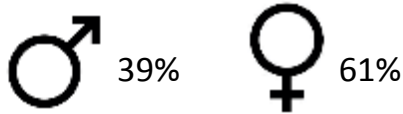
D

61%

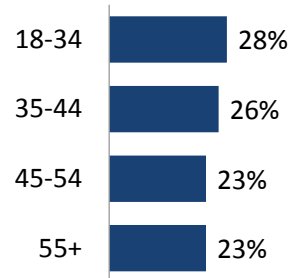
National

Demographic Profile: Texas

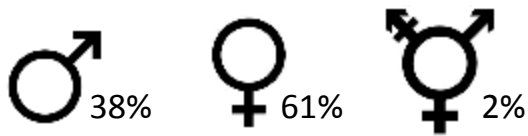
Gender at Birth



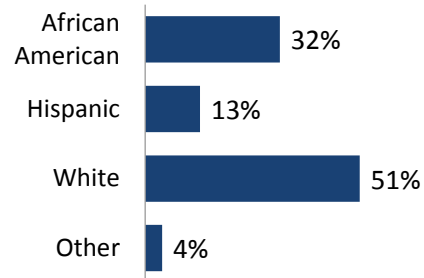
Age



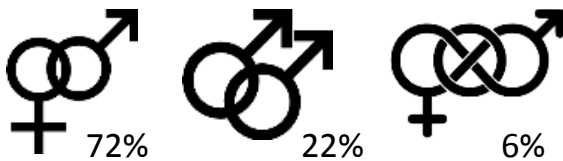
Gender Identification



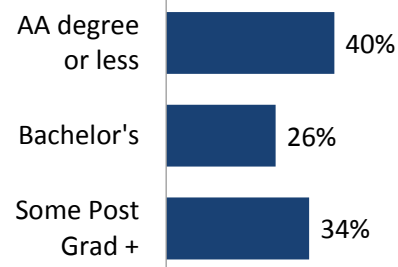
Ethnicity



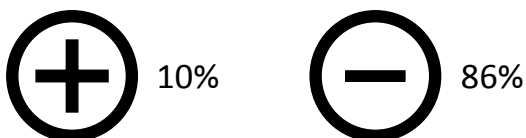
Sexual Orientation



Education

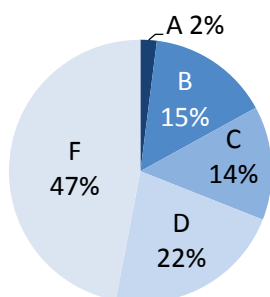


HIV Status

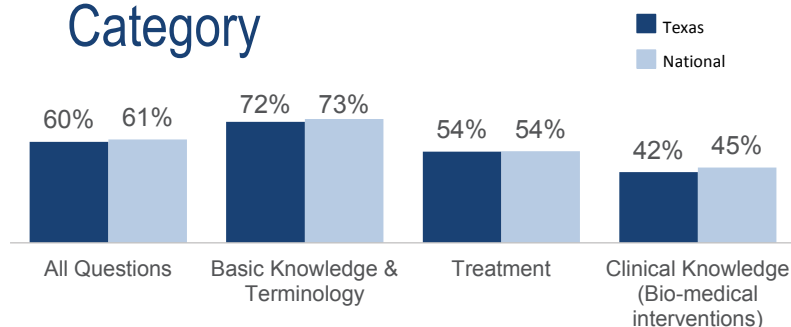


Knowledge Scores: Texas

Grade Distribution



Average % Correct by Question Category

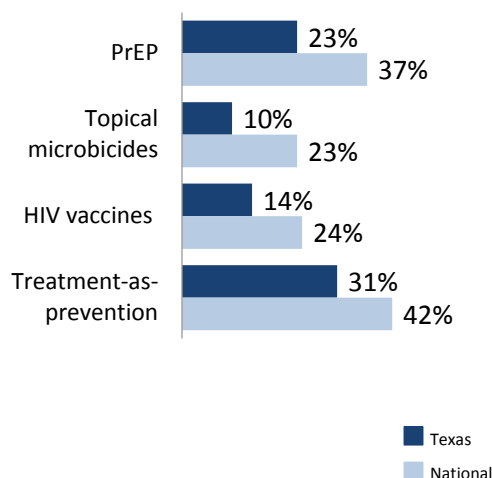


Ethnicity		Avg. Score (TX)			
Af Am (n=132)	55%	67%	51%	36%	
Hispanic (n=54)	55%	66%	52%	33%	
White (n=212)	64%	77%	57%	48%	
Role					
Prev./Outreach (n=114)	57%	69%	50%	41%	
Director/Manager (68)	67%	77%	64%	46%	
Case Mgmt/SW (n=53)	61%	74%	53%	43%	
Support Services (n=49)	53%	64%	48%	34%	
All Others (n=129)	61%	73%	54%	43%	

Attitudes

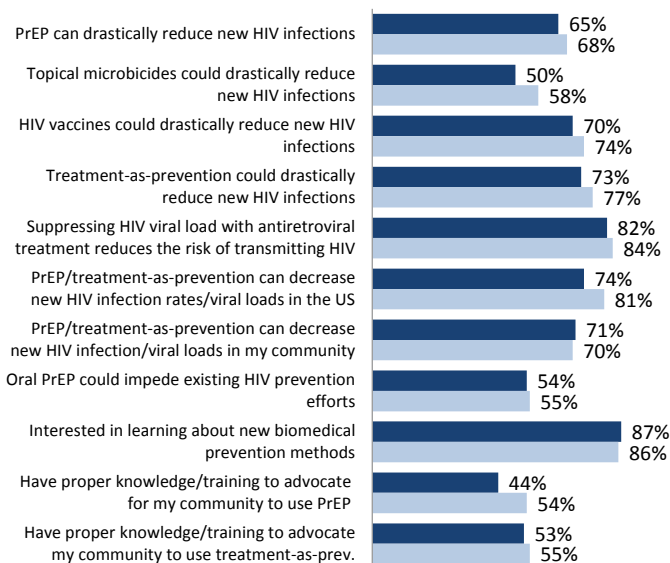
Familiarity with Bio-Medical Interventions

Rated "Extremely Familiar" or "Very Familiar"



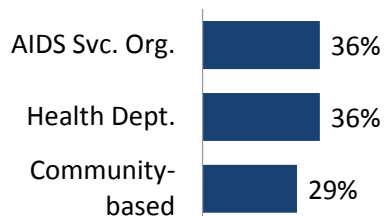
Belief in Bio-Medical Interventions

Rated "Strongly Agree" or "Somewhat Agree"



Work Profile: Texas

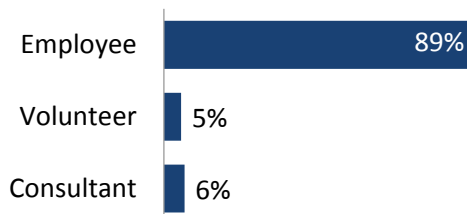
Type of Organization



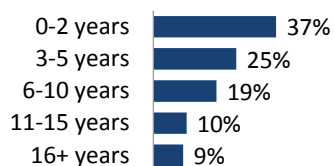
Tenure in HIV Field



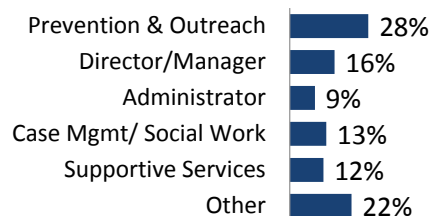
Role in Organization



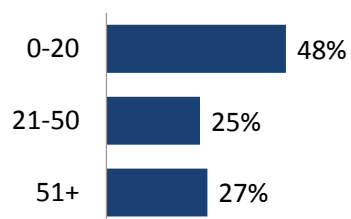
Tenure in Role



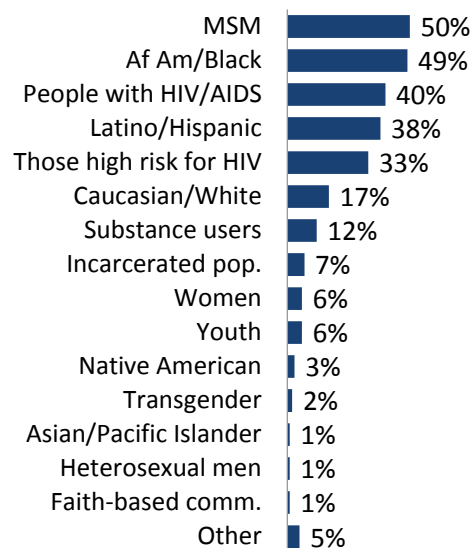
Type of Role



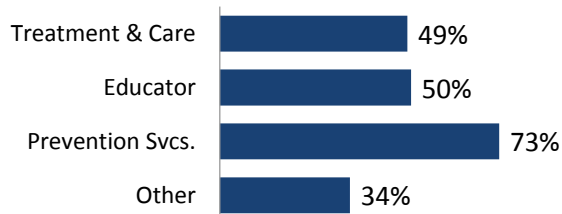
Size of Organization



Communities Served

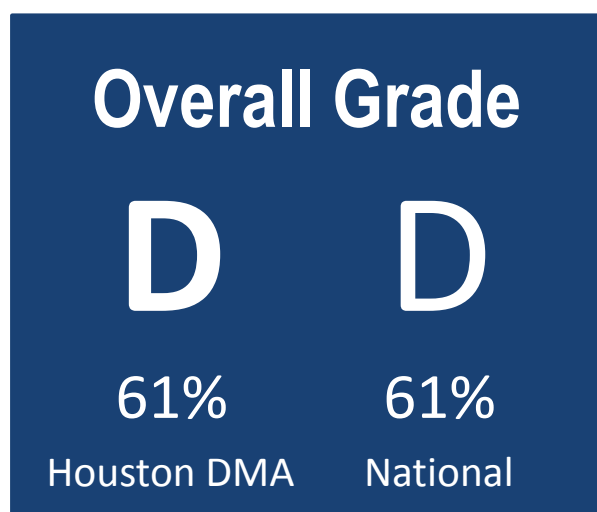
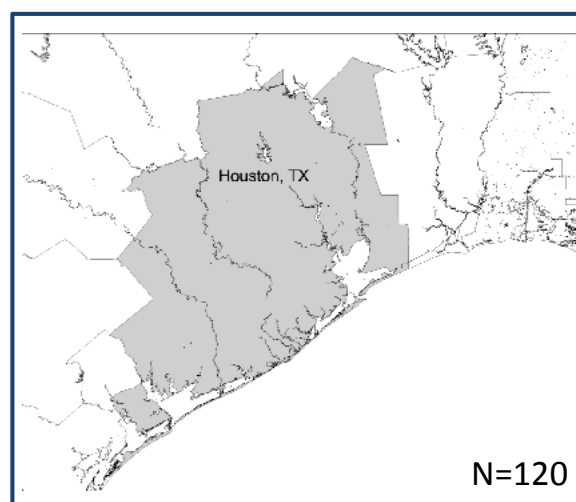


Primary Services



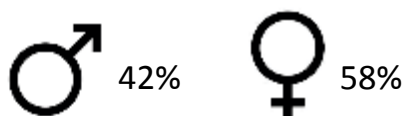
HIV Knowledge, Attitudes and Beliefs: HIV Workforce Study

Houston DMA Fact Sheet

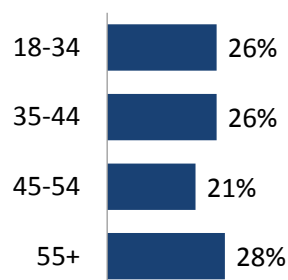


Demographic Profile: Houston

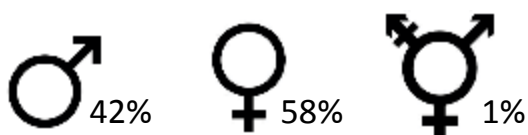
Gender at Birth



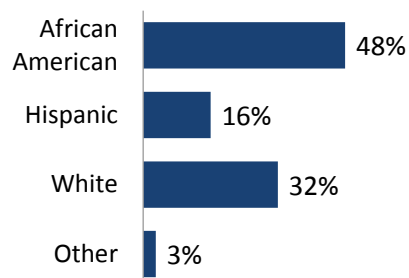
Age



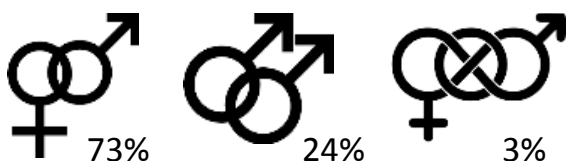
Gender Identification



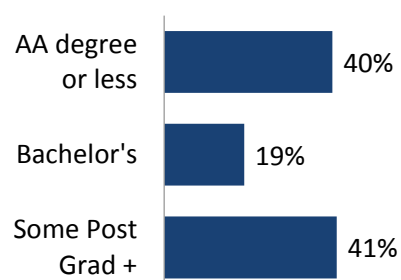
Ethnicity



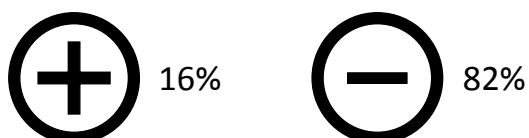
Sexual Orientation



Education

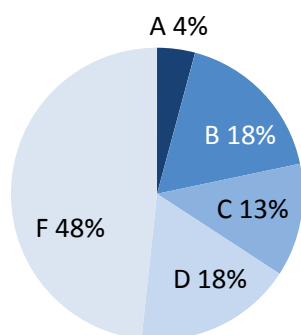


HIV Status

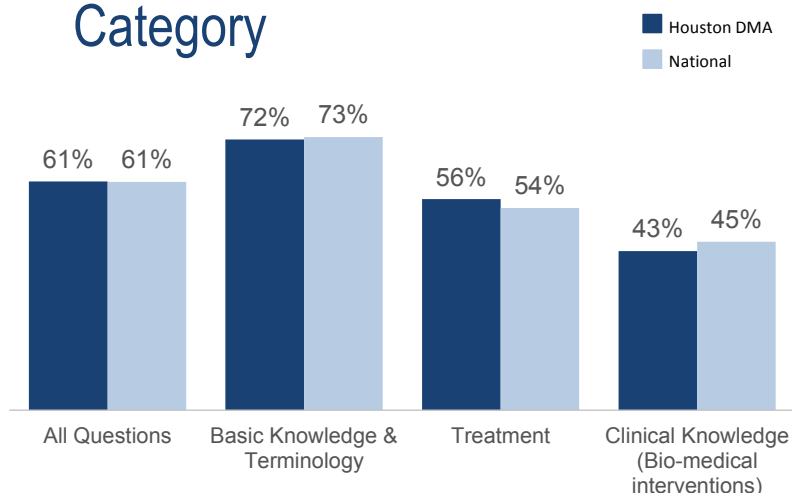


Knowledge Scores: Houston

Grade Distribution



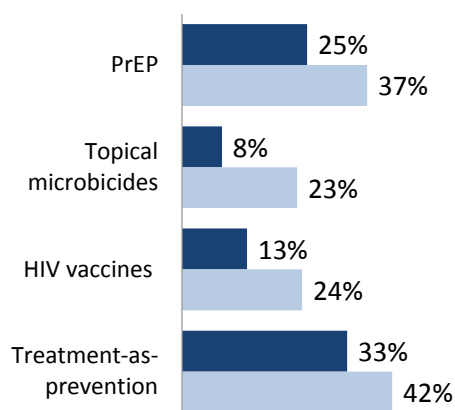
Average % Correct by Question Category



Attitudes

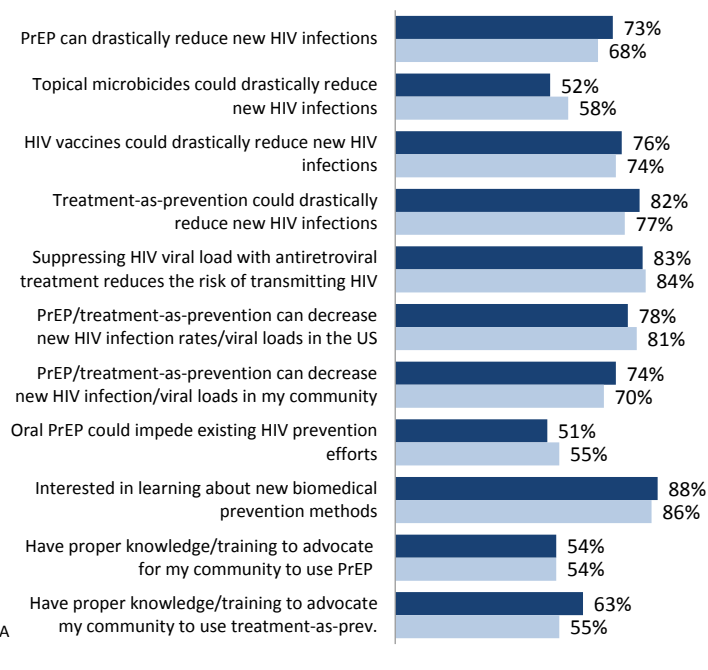
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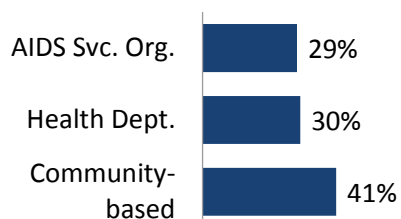
Belief in Bio-Medical Interventions

Rated "Strongly Agree" or "Somewhat Agree"

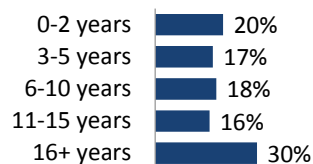


Work Profile: Houston

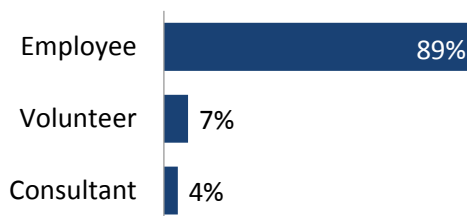
Type of Organization



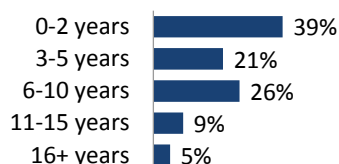
Tenure in HIV Field



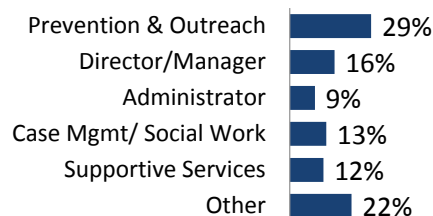
Role in Organization



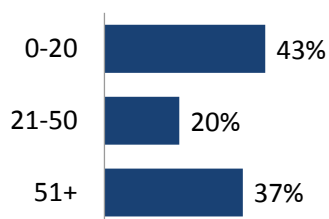
Tenure in Role



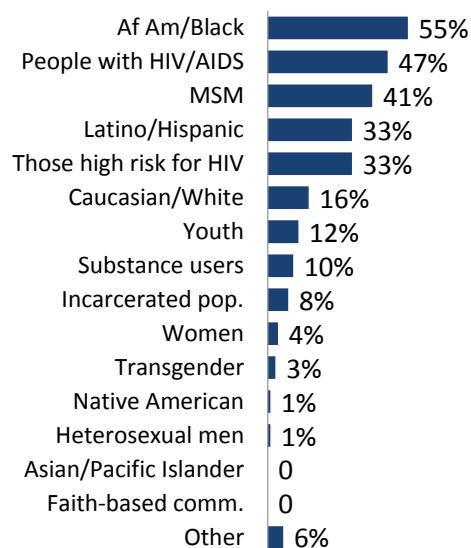
Type of Role



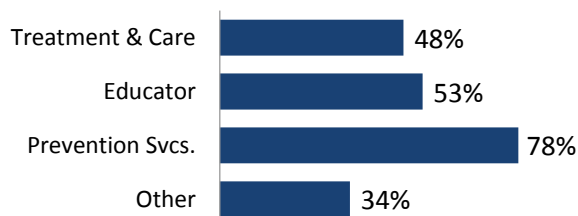
Size of Organization



Communities Served



Primary Services



Black AIDS Institute

FOUNDED IN MAY OF 1999, THE BLACK AIDS INSTITUTE IS THE ONLY NATIONAL HIV/AIDS THINK TANK FOCUSED EXCLUSIVELY ON BLACK PEOPLE. THE INSTITUTE'S MISSION IS TO STOP THE AIDS PANDEMIC IN BLACK COMMUNITIES BY ENGAGING AND MOBILIZING BLACK INSTITUTIONS AND INDIVIDUALS IN EFFORTS TO CONFRONT HIV.

THE INSTITUTE INTERPRETS PUBLIC AND PRIVATE SECTOR HIV POLICIES, CONDUCTS TRAININGS, OFFERS TECHNICAL ASSISTANCE, DISSEMINATES INFORMATION, AND PROVIDES ADVOCACY MOBILIZATION FROM A UNIQUELY AND UNAPOLOGETICALLY BLACK POINT OF VIEW.

OUR MOTTO DESCRIBES A COMMITMENT TO SELF-PRESERVATION: "OUR PEOPLE, OUR PROBLEM, OUR SOLUTION."

African American HIV University

The African American HIV University was developed in 1999 as a structural intervention program intended to change cultural norms and perceptions in the Black community around access to and utilization of HIV prevention services and to strengthen Black organizations' and individuals' capacity to address the HIV/AIDS epidemic in their communities.

AAHU is made up of two colleges. The Science and Treatment College is a four-stage program that raises HIV science and treatment literacy among HIV/AIDS workers and teaches them how to promote high-quality care in HIV/AIDS treatment and prevention, and implement HIP that leads to better outcomes along the HIV/AIDS treatment cascade and care continuum. Through the program, ASOs develop Black Treatment Advocates Networks to improve treatment outcomes and move toward viral suppression in Black communities.

The Community Mobilization College prepares community-based and AIDS service organizations to engage traditional Black institutions—churches, civil rights and social organizations, political leaders,

sororities/fraternities, academia, and the media—in local strategies to fight HIV.

Black Treatment Advocates Network

Black Treatment Advocates Network is the only collaboration of its kind, linking Black Americans with HIV into care and treatment, strengthening local and national leadership, connecting influential peers, raising HIV science and treatment literacy in Black communities, and advocating for policy change and research priorities. Each BTAN chapter hosts annual trainings and conducts treatment education, patient navigation, voluntary disclosure, and advocacy programming.

Greater Than AIDS

A collaboration between the Black AIDS Institute and the Kaiser Family Foundation, Greater Than AIDS is a national media campaign that increases awareness and encourages communities to be greater than any challenge ever faced, including HIV/AIDS.

Local Trainings

The Institute hosts pre-conference strategic meetings and post-conference updates in connection with leading national and international HIV/AIDS conferences. In conjunction with AAHU Fellows and local BTAN chapters, the Institute also conducts one-day trainings on groundbreaking HIV/AIDS topics in local communities.

National Webinars

The Institute broadcasts national webinars featuring acclaimed experts on various HIV/AIDS-related topics. Webinars occur each quarter and typically focus on groundbreaking HIV/AIDS science and research updates.

Technical Assistance

The Institute provides customized technical assistance to health departments, ASOs/CBOs, and clinical providers to enhance community engagement, improve HIV planning, and facilitate linkages between health departments, clinical providers, ASOs/CBOs, and people living with HIV and/or at high risk for HIV infection.

U.S. HIV Workforce Survey

The U.S. HIV Workforce Survey assesses the knowledge, attitudes, and beliefs of the United States HIV/AIDS workforce.

Developed by the Black AIDS Institute in partnership with industry leaders, researchers, and health departments, the survey provides a baseline assessment of what the HIV/AIDS workforce knows about HIV transmission, HIV, biomedical interventions, and the National HIV/AIDS Strategy.

Brown Bag Lunch Program

The Brown Bag Lunch Program is a series of monthly train-the-trainer webinars that raise the HIV programming knowledge of participants.

Each webinar is conducted by renowned HIV experts who raise participants' levels of awareness about biomedical research, medical interventions, and HIV-related policy, as well as other critical health issues such as STIs and hepatitis C. Upon completion of the series, participants are better able to develop their own HIV/AIDS programming informed by the latest HIV research and science.

FOR MORE INFORMATION OR MORE COPIES
OF THIS REPORT, CONTACT:

BLACK AIDS INSTITUTE

1833 WEST EIGHTH STREET #200

LOS ANGELES, CALIFORNIA 90057-4257

213-353-3610, 213-989-0181 FAX

INFO@BLACKAIDS.ORG

WWW.BLACKAIDS.ORG

