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Opportunities for HIV Combination Prevention to Reduce Racial and Ethnic Health Disparities

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Abstract

Despite advances in HIV prevention and care, African American and Latino Americans remain at much higher risk of acquiring HIV, are more likely to be unaware of their HIV-positive status, are less likely to be linked to and retained in care, or to have suppressed viral load than are Whites. The first National HIV/AIDS Strategy (NHAS) has reducing these disparities as one of its three goals by encouraging the implementation of combination high impact HIV intervention strategies. Federal agencies have expanded their collaborations in order to decrease HIV-related disparities by: better implementation of data-driven decision-making; integration and consolidation of the continuum of HIV care; and the reorganization of relationships among public health agencies, researchers, community-based organizations (CBO), and HIV advocates. *Combination Prevention*, the integration of evidence-based and impactful behavioral, biomedical, and structural intervention strategies to reduce HIV incidence, provides the tools to address the HIV epidemic. Unfortunately, health disparities exist at every step along the HIV testing-to-care continuum. This provides an opportunity and a challenge to everyone involved in HIV prevention and care to understand and address health disparities as integral to ending the HIV epidemic in the U.S. To further reduce health disparities, successful implementation of NHAS and combination prevention strategies will require multi-disciplinary teams, including psychologists with diverse cultural backgrounds and experiences, to successfully engage groups at highest risk for HIV and those already HIV-infected. In order to utilize the comprehensive care continuum, psychologists and behavioral scientists have a role to play in re-conceptualizing the continuum of care, conducting research to address health disparities, and creating community mobilization strategies.

Introduction

Ethnic and racial health disparities have existed from the beginning of the HIV epidemic (Hall, Byers, Ling, & Espinoza, 2007). Higher HIV prevalence and incidence are observed among African Americans and Latino Americans relative to their representation in the population (Centers for Disease Control and Prevention [CDC], 2012b). Disparities have also been documented in important HIV-related care parameters, such as linkage to and retention in care and viral suppression (CDC, 2013). African Americans and Latino Americans are identified later in their course of HIV disease and are less likely to be

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engaged in medical care than are White persons living with HIV (PLWH) (Andersen et al., 2000). Even after anti-retroviral therapies (ARVs) were introduced in the mid-1990s, and HIV-related deaths declined dramatically among all racial and ethnic groups, rates of decline were least among African Americans and Latino Americans (Hall et al, 2007; Levine et al., 2010). The time is ripe for psychologists to help the nation address these disparities, as the first National HIV Prevention Strategy (NHAS) outlines three primary goals, one of which is to reduce HIV-related health disparities (White House Office of National AIDS Policy, 2010).

Despite the statistics that reflect troubling health disparities, there is global recognition that the broad range of available prevention tools can be used to create a generation free of AIDS. In part, this optimism is due to a series of biomedical breakthroughs, particularly the ability of ARVs to reduce HIV transmission (Cohen, 2011; Cohen et al., 2012) and acquisition (Grant et al., 2010), and to extend and increase the quality of life of PLWH (Department of Health and Human Services, 2012). There is also increasing recognition about the importance of not only identifying people with unrecognized HIV infection, but also linking and retaining HIV-positive persons in care to achieve the maximum viral suppression at both the individual and community levels. While the prevalence of HIV testing and linkage to care is relatively high, the proportion of HIV-positive persons who remain in care, achieve viral suppression, and receive prevention counseling is low (CDC, 2011c). The broad array of available prevention tools has resulted in efforts to combine HIV prevention interventions together in order to have the highest impact on the HIV epidemic (White House Office of National AIDS Policy, 2010). *Combination Prevention* is defined as the integration of behavioral, biomedical, and structural HIV intervention strategies (Kurth, Celum, Baeten, Vermund, & Wasserheit, 2011), and because all combinations are not equally efficacious, it is important to emphasize the need for high-impact combinations if we are to stop the HIV epidemic (CDC, 2011b). Scaling-up high-impact combination prevention holds the promise to significantly impact the HIV epidemic and represents the best strategy to significantly reduce health disparities.

Whereas having the tools and policies to address the HIV epidemic presents opportunities, the persistence of racial and ethnic health disparities presents a challenge to everyone involved in HIV prevention and care. These opportunities and challenges are most apparent when examining the health disparities that exist at each step in the HIV testing-to-care continuum (Gardner, McLee, Steiner, del Rio, & Burman, 2010; Valdesseri, 2012). Health disparities are evident in awareness of HIV infection, linkage to HIV care for those who test positive, retention in HIV care, and adherence to ARV treatment to achieve viral suppression. Psychologists have unique expertise in understanding how social systems interact with individual behavior to impact health, an expertise that has been critical in creating theory-driven and evidence-based strategies to decrease health disparities.

Thomas and colleagues (2011) have described three phases of research on health disparities: first, documenting the existence of disparities (well-documented for HIV); second, identifying causes, including social determinants of disparities, as well as disease-specific causes (again, well-documented for HIV); and third, creating programs to reduce disparities, similar to the existing behavioral interventions available from the CDC (Effective Interventions, 2012; CDC, 2008). A fourth phase of research on health disparities is proposed in which the complex structural relationships between factors such as poverty and racism are related to health disparities (Thomas, Quinn, Butler, Fryer, & Garza, 2011). Multi-level, comprehensive interventions which explore more than one HIV-associated outcome, especially those drivers of HIV-associated racial and ethnic health disparities, could be responsive to the new, broader paradigm to reduce health disparities. Psychologists and behavioral scientists who aim to participate in the fourth generation of research can

work to minimize the ways in which their research practices mirror existing social structures that contribute to health disparities. Psychologists also design and conduct research to directly address those social determinants and structural factors that allow health disparities to persist.

This article will briefly describe the NHAS as a policy roadmap to addressing health disparities in HIV, describe the opportunities afforded by high-impact combination prevention, and discuss the challenges presented by the health disparities across the HIV testing-to-care continuum. The opportunities for psychologists and behavioral scientists to influence how HIV prevention and care is conceptualized, researched, and implemented will be highlighted throughout.

National HIV/AIDS Prevention Strategy (NHAS)

At a structural level, the NHAS represents a visionary document that aims to produce significant programmatic and policy changes to address the HIV epidemic and HIV health disparities in the United Sates. NHAS aims to achieve three main goals by 2015: 1) reduce the number of people who become infected with HIV; 2) increase access to care and optimal health outcomes for PLWH; and 3) reduce HIV-related health disparities. The NHAS recognizes that there is no single solution to addressing HIV in the United States, emphasizing the importance of implementing a combination of approaches to prevention. A fourth goal of NHAS, achieving a more coordinated response to the HIV epidemic, encourages collaborations at the federal level and between federal agencies and state, territorial, local and tribal governments, as well as the development of the mechanisms to monitor progress toward the first three goals (White House Office of National AIDS Policy, 2010).

In response to the NHAS goals, the CDC initiated a demonstration project called the Enhanced Comprehensive HIV Prevention Planning (ECHPP) project in the 12 Metropolitan Service Areas (MSAs) with the most cases of AIDS (CDC, 2011a). The 12 ECHPP MSAs represented 44% of cases in the United States at that time (CDC, 2011a). ECHPP aimed to improve program planning in each MSA by utilizing a mix of interventions to maximize the impact of HIV combination prevention locally. The ECHPP project tried to improve upon existing practices by asking health departments to: 1) examine all local HIV prevention, care, and treatment resources, regardless of source (federal, state, private, foundations); 2) direct resources to achieve maximum impact on HIV incidence; 3) use a core set of behavioral, biomedical, and structural interventions implemented in combination, targeted, and scaled to maximize appropriate coverage and impact; and 4) increase data-driven decision making by attempting to incorporate local epidemiologic, cost-effectiveness and efficacy data (CDC, 2011a). To support NHAS and cross-agency collaboration, the National Institutes of Health funded supplements for two different research programs to conduct small pilot studies in most of the ECHPP cities. (District of Columbia Developmental Center for AIDS Research, 2012). These initiatives are ongoing, and in addition to their future outcomes, they provide a structure for continued collaboration across agencies. In addition, CDC’s core funding for state health departments across the nation also incorporated the principles of high impact prevention (CDC, 2011d)

In late 2012, CDC funded a second generation demonstration project in eight states called Care and Prevention in the United States (CAPUS) (CDC, 2012a). The three goals of this program, which is focused on racial and ethnic minorities, are to 1) increase identification of unknown HIV-positive persons, 2) increase linkage, retention, and re-engagement in care, and 3) address health disparities that directly and proximally affect these first two goals. Unique aspects of this program are the direct focus on health disparities, a requirement that 25% of the funding be dedicated to community-based organizations, and the involvement of

multiple federal agencies in the planning and management of the program (including the Department of Health and Human Services [HHS], the Health Resources Services Administration [HRSA], and the Substance Abuse and Mental Health Services Administration [SAMHSA]) (CDC, 2012a).

The NHAS implementation has encouraged closer working relationships among public health departments, psychologists, AIDS service organizations, medical clinics, academic researchers and advocates. In many cases, public health departments are leading the agenda-setting for the types of research, policy and program questions that are important to their jurisdictions and, as a result, research projects are conceptualized and prioritized based on their salience to the local epidemic. Through capacity-building partnerships, academic researchers support the public health departments with the goal of creating stronger bidirectional relationships. This reorganization is a fundamental shift in ongoing priorities for setting research agendas at the local level from academic institutions to public health authorities. As highlighted by CDC funding of state health departments nationwide, as well as the ECHPP and CAPUS demonstration projects, each community, region, and state must base their planning and implementation of combination prevention strategies tailored to their local epidemic. Communities will need to shape their implementation policies based on the size and demographics of their local HIV epidemic, as well as leverage improvements in access to testing, linkage to care, and maintenance in care at each point on the treatment cascade.

Addressing health disparities across the HIV testing-to-care continuum

The continuum from HIV testing, to long-term adherence to care comprises the steps necessary to intervene upon and measure progress towards the NHAS goals. The HIV testing-to-care continuum presents a series of opportunities for implementation of high impact combination prevention interventions to reduce both HIV and associated health disparities by:

1. identifying HIV-positive persons as soon as possible after HIV infection;
2. linking them to and retaining them in care;
3. ensuring access to and utilization of ARVs for all HIV-positive persons and
4. sustaining them in health care lifelong to realize the individual and community benefits of treatment.

Health disparities exist at every step along the continuum with gaps in each step contributing in an overlapping and cumulative fashion to perpetuate racial and ethnic health disparities (CDC, 2010a). In addition, ARV-based interventions can be implemented as part of the combination of interventions as they have demonstrated significant impact on HIV incidence, in addition to their well-known health benefits when administered for the purposes of HIV treatment.

Unfortunately, challenges remain in regards to ensuring adequate access and utilization across all steps of the HIV testing-to-care continuum, so the benefits can be realized across all groups. Psychologists and behavioral scientists have a role to play in designing interventions, and conducting their research in such a way as to assist in addressing the health disparities in HIV. Interventions are needed, to be included as part of high impact combination prevention, that attend to the racial and ethnic disparities at every step along the continuum.

HIV testing: increasing awareness of HIV status and targeting PrEP and n-PEP for prevention

Scaling-up of HIV testing is a critical component of combination prevention, due to the high transmission potential for those who are unaware of their HIV status. Currently, just fewer than 20% of people living with HIV in the United States do not know their HIV status (CDC, 2011c). Thus, HIV testing serves as an important tool for the purposes of ensuring that individuals know their HIV status and, for those who test HIV-positive, can be rapidly linked to HIV care. However, racial and ethnic disparities exist within the group of people unaware of their HIV status. White, non-Latino Americans have the lowest percentage of undiagnosed infections compared with Latino Americans and African Americans (CDC, 2010a). Ensuring that HIV testing is routine at locations that are more likely to be accessed by African Americans and Latino Americans, such as emergency rooms, is important because these sites are least likely to routinely test for HIV (Jha, Li, Orav, & Epstein, 2005; Hsieh, Rothman, Newman-Toker, & Kelen, 2008; Hsieh, Wilbur, & Rothman, (2012). The use of conventional lab-based HIV screening, batched hourly, has been shown to dramatically increase routine HIV screening in a high-volume emergency room (Hoxhaj et al., 2011), and this method holds promise for expanding HIV testing to other high-volume settings that serve racially and ethnically diverse patients.

Community mobilization is one approach that has been used to address health disparities across a variety of health conditions and is also a common approach to increase the uptake of HIV testing. Two highly visible, recent efforts underway in Washington, D.C., and the Bronx, New York (McNeil 2012; New York City Department of Health and Mental Hygeine, 2011) are aimed at engaging and mobilizing the African American and Latino American communities, particularly around HIV testing. For example, in 2006, multiple agencies, let by the public health department, formed a coalition to stop transmission in Washington, D.C. and a multi-prong approach, including the widespread provision of insurance, was adopted with routine, rapid HIV testing implemented in all health care settings. The rates of HIV testing increased threefold within the first year, and 24% of the population was tested within one year (CDC, 2010b). Increases were also observed in the number of individuals receiving CD4 cell counts within three months of an HIV diagnosis. These efforts demonstrate the power of effective community mobilization, and structural level changes which serve as a platform upon which to build implementation efforts.

Historically, clinic- and community-based venues have been the primary locations for HIV testing; however, the recent FDA approval of the first oral-fluid, rapid, consumer-controlled, home-based HIV test provides an alternative to previous approaches. It is too early to know if this new option for HIV testing will have any impact on racial and ethnic disparities in knowledge of HIV serostatus. It is possible that disparities seen in awareness of HIV status could be lessened by the availability of a home-testing kit for HIV. Given that mistrust in the medical system has been documented among African Americans and Latino Americans, this testing option may offer an alternative that may substantially improve HIV testing rates among those communities (Bogart et al., 2010, 2011). However, the costs of the test kit, and ensuring subsequent linkage to care for those who test HIV positive, are among the challenges. Thus, individuals who test HIV positive at home face the challenge of interacting with a medical system that they may not trust, potentially resulting in low rates of linkage to HIV care.

Another tool in the combination prevention toolbox is pre-exposure prophylaxis (PrEP), which is the use of ARVs for HIV prevention among HIV-negative individuals who take drugs in advance of potential exposure (Grant et al., 2010). This adds to the ARV-based prevention options for people who are HIV-negative joining non-occupational post-exposure prophylaxis (n-PEP), which is when ARVs are taken soon after a suspected exposure to HIV

(Schechter et al., 2004). Again, it is too early to tell if PrEP will have an impact on racial and ethnic health disparities, but the data on the n-PEP uptake suggest that disparities may be seen. Outside of occupationally related PEP, n-PEP is most typically used by gay and bisexual men and other men-who-have-sex-with-men [MSM], the group with the highest prevalence of HIV (CDC, 2005; Shoptaw et al, 2008). There are currently many community efforts to increase uptake of n-PEP among African American and Latino American communities (Gay, Kashuba, & Cohen, 2009; Schechter et al., 2004). However, participation by racial/ethnic minority MSM (24%–49%) remains lower than participation by Caucasian MSM (46%–76%) (Krakower et al., 2012; Mayer, Mimiaga, Gelman, & Grasso, 2012; Mimiaga, Case, Johnson, Safren, & Mayer, 2009; Roland et al., 2011; Sayles et al., 2011).

To gather early data on PrEP knowledge, prior to the FDA approval, a series of studies examined the anticipated barriers and attitudes towards the utilization of PrEP by MSM, including African Americans and Latino Americans (Al Tayyib & Trun, 2011; Brooks et al., 2009; Eisingerich, 2012; Krakower et al., 2012; Liu et al, 2008; Mimiaga et al., 2009). Overall, knowledge of PrEP is low and willingness to utilize PrEP is dependent on a range of factors including stigma, perceived personal risk of HIV infection, ARV side effects, and accessibility and sustainability of access to ARV. As PrEP demonstration studies are continuing, close observation of potential racial and ethnic disparities should be monitored and addressed.

Psychologists and behavioral scientists have a role to play in creating effective community mobilization strategies, understanding the roll-out of new tools such as home-testing, and most importantly, documenting their effectiveness in addressing health disparities. Consistent with the NHAS aims, research is needed to demonstrate that interventions and strategies to increase the number of individual who are aware of their HIV status are both effective and cost-effective. Thus, part of the role of research psychologists and behavioral scientists, is to continue to systematically document linkages between the social and individual factors, and the health outcomes disparities. When disparities in health outcomes cannot be explained by lack of access or utilization of a given HIV prevention modality, theories of health disparities (e.g., Thomas et al., 2011) suggest looking to underlying, and often more distal, social and structural factors.

Linkage to HIV Care

Timely linkage to HIV care following a seropositive HIV test is critical, made even more so by the data on the individual and prevention benefits of ARV treatment (Cohen, 2011). Rates of linkage to HIV care vary widely across jurisdictions, but are generally suboptimal (CDC, 2011c). For example, in Los Angeles, 37% of PLWH do not access care in the first year following HIV diagnoses (Leibowitz, Mendes, & Desmond, 2011). In the Kaiser Permanente HIV Cohort Study (2012), African Americans and Latino Americans presented with lower CD4 counts (later in diagnosis) than Whites, suggesting late diagnosis, delayed linkage, or both. Recent CDC data for 12 states and 2 MSAs indicated lower linkage to care among African Americans (75%) compared to whites (83.1%) and Latino Americans (82.7%) and substantial variation between jurisdictions (CDC, 2013).

Multiple strategies, employing principles from social and behavioral science, are being explored to make linkage to care an immediate step after testing (Kalichman et al., 2011). Some examples include, peer-based strategies to help individuals navigate the health care system and address barriers to access and utilization, and contingency management approaches which incentivize timely linkage to care (Prendergast, Podus, Finney, Greenwell, Roll, 2006; Reback et al., 2010). However, few approaches are aimed at addressing the social determinants that underlie health disparities. Though not specific to

HIV, a report by the Institute of Medicine (IOM) outlines specific recommendations regarding changes to the health care system that are needed to eliminate racial and ethnic health disparities (Smedley, Stitch, & Nelson, 2003). Many of the recommendations from the IOM report are applicable to the disparities in HIV care. For example, the report calls for a greater understanding, through research, of the role that beliefs and attitudes on the part of patients and providers play in their behavior. PrEP, n-PEP, home based testing, and sustained linkage to care will vary substantially based on beliefs of PLWH, especially African Americans and Latino Americans. Psychologists and behavioral scientists have been influential in developing theories of behavior change that include such psychosocial factors as attitudes and beliefs. These theoretical models could be integrated with theories of health disparities to include the social (e.g., racism, stigma) and structural (e.g. poverty) factors that may work together to drive racial and ethnic health disparities.

Retention in HIV Care and Adherence to ARV Treatment

Once a PLWH is linked to HIV care, the personal and prevention benefits of treatment are only seen among those individuals who stay in care and maintain a suppressed viral load (Das et al, 2010). Retention in care has been defined in multiple ways using different parameters such as clinic attendance or laboratory monitoring. Despite the challenges of determining a singular definition of retention in HIV care, all available data indicate that rates of retention in care in the U.S. are suboptimal (CDC, 2013). In addition, significant racial and ethnic disparities exist with recent CDC data for indicating that retention in care was lower for African Americans (37.7%) than Whites (47.6%) and Latino Americans (40.7%) with substantial variation between jurisdictions (CDC, 2013). Poor retention in care limits the accessibility of ARV treatment for individual and prevention benefits, contributes to worse HIV-related health outcomes, decreases the opportunity to detect non-HIV-related health conditions that can be identified during the course of routine HIV care, and limits exposure to HIV prevention services.

Sustained viral suppression has become a cornerstone to prevention with PLWH because of the evidence that treatment can reduce transmission by up to 96% (Cohen & Gay, 2010). And apart from a select group of individuals, most PLWH require sustained adherence to ARV treatment to achieve viral suppression. In addition there is growing evidence of the individual benefits of starting on ARV treatment at higher CD4 counts, in an earlier stage of the disease, than was previously recommended (Department of Health and Human Services, 2012). Again, the data suggest that improvements are needed in terms of the percentage of PLWH in the U.S. who are living with their virus fully suppressed. Nationally, viral suppression is only seen among 25% of PLWH (Medicaid Monitoring Data, 2011) with African Americans and Latino Americans engaged in HIV care exhibiting the lowest rates. Recent CDC data for 12 states and two MSAs showed that viral suppression was lowest among African Americans diagnosed with HIV (61.3%) with the highest rates among Whites (78.3%). Suppression among Latino Americans was in between the other two groups (71.4%) (CDC, 2013). Some potential contributing factors to this disparity can be found in factors that influence access to ARV medications. For example, prescriptions for ARV medications are least likely to be consistently accessible for minorities (Kalichman, Catz, & Ramachandran, 1999). In May, 2012, about 2700 PLWH in ten states have waiting lists for receipt of ARV medications (Childress, 2012; Kaiser Family Foundation, 2012). The data on waitlists are not broken down by race or ethnicity. However, the presence of wait-lists, that include individuals who qualify for ARV medication, works against the HIV health care and prevention goals of NHAS, CDC, and local health jurisdictions.

Among those individuals linked to care and on ARV medication, there is some evidence that adherence may vary by race/ethnicity with African American and Latino American patients demonstrating lower levels of adherence to ARVs (Kaiser Permanente HIV Cohort Study,

2012). There is substantial evidence that adherence is lower among populations with low levels of education, health literacy, or income (Braverman & Dedier, 2009; Reback et al., 2010; Sankar, Neufeld, Berry, & Luborsky, 2011; Weingarten et al., 2002). Poverty, substance use, high levels of homophobia, and a long tradition of barriers to accessing and receiving high quality health care have been associated with HIV rates among marginalized populations (Groh et al., 2011; Kalichman et al., 1999; Mannheimer et al., 2005). For example, persons without transportation, who speak a different language than their provider, or with a different set of norms regarding interaction, are far less likely to be adherent to medical regimens (Kalichman et al., 1999). Thus, even if they are able to adhere to medications, some disproportionately affected groups may have difficulty remaining in HIV or primary medical care. That said, it is important to note that racial and ethnic differences have not been shown in the efficacy of adherence support interventions (Simoni, Pearson, Pantalone, Marks, & Crepaz, 2006). Also, the potency of ARV medication is sufficient to eliminate racial and ethnic disparities in morbidity and mortality among those retained in HIV care as demonstrated in one large urban clinic (Moore & Bartlett, 2011). Therefore, ARV treatment and behavioral interventions provide effective tools that, if adequately deployed, could reduce or eliminate some HIV related health disparities.

Public health specialists and health care providers are challenged in gaining trust, reaching, and maintaining relationships with those most impacted by HIV (Mays, Cochrane, & Zamudio, 2004). For example, trust is a key issue for African Americans to be effectively engaged in HIV prevention (Bogart et al., 2010). One study found half of the African American study participants believed HIV was man-made and the government was using African Americans as guinea pigs, withholding cures for HIV from the public (Bogart et al., 2011). These data suggest that conspiracy beliefs remain real for some African Americans (Bogart et al., 2011). Psychologists and behavioral scientists may play an important role in understanding and addressing the psychosocial factors such as stigma, racism, and medical mistrust that have been associated with decreases in access and utilization of HIV prevention and care.

Psychologists have unique expertise in understanding individual behavior and social systems and how they impact health. Research conducted by psychologists has sought to increase the uptake of HIV testing, facilitate immediate linkage to care, increase adherence to medications, and enhance maintenance of medical care lifelong. Behavioral and system level changes are going to be needed in the organization of the continuum of HIV care to integrate combination prevention approaches. In addition, culturally competent psychologists are needed to enhance cultural sensitivity at the individual and systems level to the cultural norms, values, and beliefs of key populations.

Challenge for psychologists

National policies regarding HIV have been restructured with the NHAS and high-impact combination prevention offering an array of tools that have the potential to dramatically impact the HIV epidemic. Health disparities exist across the HIV testing-to-care continuum, but the continuum presents the framework to examine the opportunities and challenges at each step with regards to addressing racial and ethnic health disparities. The research conducted by psychologists and behavioral scientists will be critical to informing the new generation of combination prevention interventions, as well as their implementation, to address health disparities. The creation of novel, scalable interventions that can eliminate disparities along the HIV testing-to-care continuum and help to transform medical care to an inviting, non-stigmatizing environment that successfully engages ethnic minority persons at HIV risk or infected is a significant, but answerable challenge.

Psychologists and behavioral scientists cannot address the pervasive health disparities alone. Community engagement is critical to achieving the goals of NHAS, realizing the benefits of the combination prevention tools and eliminating HIV infection. AIDS Service Organizations, other NGOs, and advocates provide access to, deep knowledge of, and sustained relationships over time with affected populations. Only sustained engagement and structural supports at the local level will enhance utilization of HIV services by underserved ethnic minority young people and adults (Phytel, 2012). Integrating the community knowledge and expertise with that of the health care system is a formidable challenge made even more urgent by the benefits of ARV medications for prevention goals. Communities planning to implement ARV-based combination prevention will need procedures for ensuring access (e.g., transportation, medical packaging, community health workers to support adherence) combined with adequate public health education and engagement (Denning & DiNenno, 2010; Kaiser Permanente HIV Cohort Study, 2012). Capacity building efforts are needed that enhance, in an integrated way, the community, public health, and medical expertise needed to successfully deliver combination prevention to the public.

Psychologists have been pioneers in the area of patient engagement (Joe, Simpson, & Broome, 1999; Horstmann, Brown, Islam, Buck, & Agins, 2010). Though, not the focus of this article, there is ample evidence of the role of mental health problems in HIV prevention and care. In particular, mental health problems and disorders are consistently associated with high risk of HIV, low adherence, and lack of maintenance in care (Heckman et al.,1998; Clements-Nolle, Marks, Guzman, & Katz, 2001). Therapeutic approaches used by psychologists, such as cognitive-behavioral approaches to improve mental health and health behaviors, are an important component of HIV prevention and care. However, the integration of mental health care with HIV prevention in care should be careful to not exacerbate the factors that underlie the health disparities in both conditions.

Paralleling the disparities in access and engagement of minorities in the system of HIV care, disparities exist in the research workforce. The National Academy of Sciences has called for substantial increases in the numbers of scientists from ethnic minority groups and international settings (Committee on Underrepresented Groups and the Expansion of the Science and Engineering Workforce Pipeline, 2011). A recent analysis of NIH-funded grants found that African American were under-represented by 10% among those receiving funding, after controlling for a large number of educational, publication, and personal history factors (http://www.nih.gov/news/health/aug2011/od-18.htm). Integrating the research teams with cultures that value and provide equal power to behavioral, basic, and biomedical expertise is likely to be as challenging as creating and broadly implementing combination prevention strategies. The racial and ethnic disparities that exist in the scientific workforce will pose a challenge to fully implementing combination prevention and realizing reductions in HIV related health disparities.

In the long battle to eliminate health disparities, new tools are now available to eliminate HIV-related disparities. By combining the exciting new biomedical discoveries with well-established and emerging behavioral approaches, combination prevention today offers the greatest hope for stopping HIV and eliminating disparities for the next generation. We cannot achieve this goal without fundamentally transforming the policy structures, theoretical models of implementation science, and our workforce. The NHAS and scientific advances have provided the structural shifts in policy and the prevention and treatment tools that could eliminate health disparities. Now our science, priorities, and workplace norms must shift to embrace these changes.

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