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Ten Things We Need to Do to Achieve the Goals of the End the HIV Epidemic Plan for America

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Problem: DHHS announced a plan for Ending the HIV Epidemic (EtHE) by reducing new HIV infections in the United States by 75% within 5 years and 90% within 10 years through early diagnosis of all individuals with HIV, immediate treatment to achieve viral suppression, protection of high-risk but uninfected individuals including with pre-exposure prophylaxis (PrEP), and quickly responding to emerging HIV clusters.

Approach: Ten steps are outlined that will help the field achieve EtHE Plan goals.

Findings: Steps needed to reach EtHE goals are: (1) better reaching, understanding, and meeting the HIV prevention and care needs of Black men who have sex with men; (2) deployment of interventions that address social, cultural, behavioral, and structural determinants of HIV disparities; (3) improving uptake in biomedical HIV-prevention strategies in mid-sized cities across the country's center; (4) addressing with long-term commitment the urgent HIV-prevention needs in the US Southeast; (5) encouraging more frequent and regular HIV testing; (6) developing better strategies to not only encourage initiation but also the long-term and sustained use of PrEP by persons at high risk for contracting HIV infection; (7) improving the comfort and capacity of primary care providers to prescribe PrEP; (8) increasing HIV medical care retention and care re-engagement, especially among persons with competing life stressors; (9) developing sustainable implementation efforts; and (10) addressing policies that can facilitate or impede success in eliminating the HIV epidemic in the United States.

Conclusion: EtHE goals are achievable but will require concerted, sustained effort.

Key Words: eliminate the HIV epidemic, HIV prevention, implementation science, disparities

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There have been dramatic and transformative advances in the HIV prevention and HIV care arenas over the past decade. The life expectancy and health outlook for persons living with HIV infection (PLH) who are diagnosed early, who are in care and reliably adherent to antiretroviral therapy (ART) regimens, and who are durably virally suppressed have dramatically improved. Research has unequivocally shown that virally suppressed PLH do not transmit HIV infection to partners,[1,2] verifying the assertion that "undetectable equals untransmittable" (U = U). The HIV care continuum provides a practical heuristic that allows us to identify key junctures where interventions can be undertaken to improve HIV prevention, public health, and clinical outcomes,[3] and pre-exposure prophylaxis (PrEP) is highly effective for protecting at-risk persons from contracting HIV infection.[4,5] In the United States and much of the world, HIV incidence is finally declining.

In the context of these important developments, the US Department of Health and Human Services announced a plan for Ending the HIV Epidemic (EtHE) in America with the goal of reducing new HIV infections by 75% within 5 years and by 90% within 10 years. This will be achieved by implementing coordinated HIV-prevention strategies in counties and cities that account for the greatest number of new infections and in the 7 Southeastern states with high burden including in rural areas. The EtHE plan will coordinate the implementation of approaches for early diagnosis of all individuals with HIV infection, providing immediate treatment leading to viral suppression, protecting high-risk but uninfected individuals including with PrEP, and rapidly responding and taking action on emerging clusters or outbreaks.[6] The aim of EtHE is to achieve high public health impact by dramatically reducing HIV incidence in the targeted jurisdictions through the coordinated activities of federal, state, and local agencies working together with providers, agency partners, community constituencies, and researchers.

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The articulation and enactment of a national plan to end the HIV epidemic requires a critical mobilization of effort and is made possible by advances in biomedical HIV prevention. However, achieving the plan's goals will require the integration and grounding of biomedical prevention modalities in a foundation of sound behavioral, social, and implementation science and community engagement. Success in achieving high-impact EtHE public health outcomes will require addressing a set of key behavioral science implementation challenges. This article outlines 10 of those challenges.

THE FIELD MUST BETTER REACH, UNDERSTAND, AND MEET THE HIV PREVENTION AND CARE NEEDS OF BLACK MEN WHO HAVE SEX WITH MEN

Racial and ethnic minority men who have sex with men (MSM) have always borne a disproportionate burden of HIV infection. This is evidenced by sharp disparities in HIV incidence and prevalence, the proportion of minority men with undiagnosed HIV infection, levels of medical care engagement, and attainment of viral suppression. African American MSM are more likely than any other group to contract HIV infection and, if infected, to have worse HIV-related medical outcomes.[7] This is not just true in the country's largest cities. The disparities are just as great in mid-sized cities across the nation's heartland—cities such as Milwaukee, Cleveland, Detroit, Kansas City, St. Louis, and many others—as in large cities on the East and West coasts, and there are profound disparities affecting Black MSM who live in the Southeast.[8] Latino MSM are also disproportionately burdened by HIV infection in most of the country and especially in both large- and mid-sized cities with large Hispanic communities. Despite these disparities, remarkably few HIV-prevention interventions have been expressly designed to reach and benefit racial and ethnic minority MSM, far fewer than needed, given the level of disparities affecting MSM of color. Campaigns to increase PrEP awareness among young Black MSM are underway in some cities. However, the behavioral, social, and structural challenges to PrEP uptake are greater than PrEP awareness alone.

REDUCING HIV DISPARITIES AMONG BLACK MSM WILL REQUIRE INTERVENTIONS THAT ADDRESS SOCIAL, CULTURAL, BEHAVIORAL, AND STRUCTURAL DETERMINANTS OF THESE DISPARITIES

Racial minority MSM confront social, cultural, and structural challenges that increase vulnerability for contracting HIV infection and that impede optimal HIV health outcomes if infected. Black MSM face and must negotiate intersecting stigmas that stem from multiple oppressions and marginalized identities that include homophobia present in African American communities, racism and discrimination encountered in predominantly white communities, and—for HIV-positive MSM—stigma related to the disease. These and other stigmas can become internalized and —together with medical mistrust—combine and interact to create apprehension about HIV testing, HIV care engagement, and treatment adherence.[9] Stigma is likely to exert deleterious effects on HIV medical outcomes through both direct and mediated pathways. In its direct effects, stigma leads some people to avoid actions that might identify them as gay or to avoid HIV testing or medication-taking that could disclose their sexual orientation or HIV status. Homophobic stigma also increases mental health distress, especially depression and substance use. These psychosocial effects interfere with care engagement, adherence, and viral suppression.[10] PrEP also carries connotations of promiscuity and gay identity, views that may especially create stigma about PrEP among racial minority MSM considering its use,[11] and research has found deep concerns over long-term use of prescription medication when healthy.

Fortunately, social support and resilience can mitigate against many of these stigmas and concerns, and social and behavioral interventions can increase care-related social supports and capacity for resilience.[12,13] Social network-, peer- and community-, family-, and church-based interventions have the potential to help racial minority MSM navigate stigma arising from homonegativity[9] and will be essential in our efforts to eliminate the HIV epidemic among racial and ethnic minority MSM.

UPTAKE IN BIOMEDICAL PREVENTION STRATEGIES IS MUCH LOWER IN MID-SIZED CITIES ACROSS THE CENTER OF THE COUNTRY THAN IN LARGE CITIES ON THE COASTS. IMPROVED UPTAKE IS NEEDED IN THE HEARTLAND

Although PrEP uptake is rising in the country's largest cities, use of PrEP remains dramatically lower in mid-sized cities, especially cities in the Midwest and Southeast.[14] In these cities and regions—many of which are targeted in the EtHE National Plan—a smaller percentage of persons at high risk for contracting HIV infection presently use PrEP, and the PrEP use-to-need ratio remains lower than in the nation's largest cities,[15] creating a growing risk for geographical disparities in HIV incidence in mid-sized heartland cities. Slower uptake in biomedical prevention is probably due to lower community awareness for PrEP, lower provider awareness and comfort or experience in prescribing PrEP, fewer available public resources to fund PrEP, structural barriers, and stigma. Even in large cities when PrEP use has increased, users are less likely to be disadvantaged men and women of color and are more likely to be well-resourced white gay men. Apart from PrEP, uptake in other biomedical HIV-prevention methods in mid-sized cities lags behind the nation's largest cities. Early HIV diagnosis, care linkage, care retention, and viral suppression outcomes are generally worse in mid-sized cities with fewer AIDS-focused care resources. There is great benefit in EtHE's rollout in many cities that have historically been underserved and that have had limited HIV-prevention resources until now.

HIV-PREVENTION NEEDS IN THE SOUTHEAST ARE URGENT AND REQUIRE SUSTAINED ATTENTION AND LONG-TERM COMMITMENT

HIV incidence is disproportionately high in Southeastern states including large and small cities, towns, and rural areas, and the disease primarily affects African American MSM and women in the South. Relative to the rest of the country, persons in the Southeast living with HIV infection are least likely to know their HIV status, are least likely to receive early medical care and be virally suppressed, and are most likely to die from HIV disease. Nearly half of all Americans who die from HIV disease live in the Southeast.[8,16] Not only is this burden devastating to persons in the region with the disease, but low levels of viral suppression among PLH in the community fuel continued HIV transmission.

Implementation of EtHE activities in the Southeast has the potential to carry great health and public health benefits. However, factors that contribute to the disproportionate impact of HIV in the Southeast are striking and are intertwined with social, cultural, and economic circumstances in the region.[17] Maps of poverty dramatically overlap with maps of HIV incidence, prevalence, and mortality. Stigma related to sex, homosexuality, and HIV infection in the South is strong,[18] and the region's history of racism and conservatism contributes to the challenges faced by African Americans —and especially Black MSM—living with HIV infection. Resources and priority for HIV care services are limited, and providers in rural areas may lack experience in HIV prevention and care, including developments such as PrEP.[15] Failure to expand Medicaid or rollbacks in Medicaid coverage limit access to prevention and care services among those who are most disadvantaged and most poor. All these factors will require the development of comprehensive models of prevention that are grounded in perspectives of health equity and social, behavioral, and cultural change.

TOO FEW PEOPLE AT HIGH RISK TEST REGULARLY ENOUGH

A high percentage of MSM in the United States have had an HIV test at some point in their lives, but only a much smaller proportion of persons—even among those at highest risk—test on a regular and frequent basis.[19,20] Most persons diagnosed with HIV infection had a negative result on their last test, and over one-third of HIV infections contracted in the United States represent transmissions from individuals who are unaware that they are HIV-positive.[21]

Although testing campaigns have long been undertaken, the need for regular testing is less frequently emphasized. Persons at greatest risk for contracting HIV infection are relatively young and are individuals unlikely to have primary care providers (PCPs) or to seek regular preventive health services in the absence of an illness. This is especially true for young men. In addition to emphasizing the importance of regular HIV testing, efforts are needed to expand testing from clinic sites to low-threshold, easily accessed settings such as by outreach testing, testing in retail pharmacies, mobile testing, and modalities such as home testing. These strategies have been used successfully, but must be not only convenient but also available at little or no cost to regularly be used by high-risk individuals whose HIV status would not otherwise be diagnosed in timely fashion.

PrEP INITIATION IS IMPORTANT BUT PrEP RETENTION IS EQUALLY IMPORTANT AND REMAINS VERY PROBLEMATIC

We often gauge success in PrEP rollout based on how many people initiate use of the regimen, such as by the number of new prescriptions written. However, research shows that a high proportion of MSM who begin using PrEP either quickly stop or become very inconsistent in its use.[22,23]

Behavioral and social science discovery research is needed to better understand reasons for PrEP abandonment or inconsistent use to develop interventions to address the issue. Among potential reasons are: (1) inaccurate underestimation of personal risk; (2) changed relationship circumstances and belief that one no longer requires the regimen for protection; (3) questioning the reason to take prescription medications when one is not sick; (4) concern over side effects or the desirability of long-term medication use; (5) social stigma because PrEP use is seen as connoting promiscuity; (6) the cost of PrEP and difficulties in negotiating systems for medication payment as well as the costs of copayments and insurance deductibles; and (7) beliefs that using PrEP is not normative if few friends are personally known to use it. In some cases, individuals' discontinuation of PrEP may be reasonable such as following lifestyle or relationship change that objectively lessens risk for contracting HIV infection. However, many persons discontinue using PrEP even when their behavioral risk remains high. Research is needed to understand the reasons for these decisions from the perspectives of high-risk MSM themselves and—based on what is learned—to develop strategies to help persons maintain PrEP use for as long as they remain in need of protection.

PrEP for high-risk uninfected persons and serostatus knowledge and viral suppression among PLH are cornerstones of the EtHE strategy, and their implementation holds the promise of bringing about the end of AIDS. At the same time, the majority of persons who can benefit from PrEP are not yet on it, and a substantial proportion of PLH in the country are not virally suppressed. For these reasons, we should remain mindful that persons' risk behavior still matters and that risk behavior reduction must remain an aim of HIV-prevention interventions.

TOO FEW PRIMARY CARE PROVIDERS ARE EXPERIENCED AND COMFORTABLE IN PRESCRIBING PrEP, AND PROVIDER-LEVEL INTERVENTIONS ARE NEEDED

Efforts to scale-up PrEP use have most often sought to increase awareness and benefit perception among community members, especially MSM. This consumer-focused approach is needed. However, and unlike other traditional

HIV-prevention methods such as condom use, PrEP is a biomedical intervention that requires the participation and monitoring by a health care provider. Although most medical specialists of HIV infection diseases are very knowledgeable about PrEP, patients who can benefit from PrEP are uninfected persons who are not usually seen by HIV specialists. Persons who can benefit from PrEP are much more likely to be seen by PCPs. Relatively little attention has been directed to increasing the skills, comfort, and competence of PCPs to screen patients for PrEP appropriateness and to initiate discussions with their patients about PrEP. Fewer than 17% of PCPs in a national sample report ever prescribing PrEP, and initiating discussions about sex—a precursor to prescribing PrEP—is difficult and uncomfortable for many providers.[24]

Interventions are needed to increase the capacity and skills of PCPs to assess patients for PrEP appropriateness and to correctly prescribe PrEP when it is appropriate. Provider-level interventions are especially needed in cities and regions where the PrEP use-to-need ratio is low.[15] Among providers who have not yet prescribed PrEP, doing so can be considered an example of a medical practice innovation, and there is a large literature describing successful interventions used to increase providers' adoption of practice innovations. These approaches—which include skills' building, peer championing, and medical detailing—can guide strategies to increase providers' PrEP-prescribing capacity.

PERSONS NEWLY DIAGNOSED WITH HIV INFECTION IN THE UNITED STATES ARE GENERALLY LINKED TO INITIAL MEDICAL CARE. LONG-TERM RETENTION IN CARE REMAINS A CHALLENGE

Care continuum analyses show that the field has made great progress in developing practical strategies for linking newly diagnosed PLH to medical care. However, there is a much larger drop-off at the retention point of the continuum. CDC data show that 43% of new HIV infections in the United States can be attributed to transmissions from individuals who are aware of their HIV-positive status but who are out of medical care.[21] Because nonretention = nonsuppression, attention to this continuum juncture is critical.

Care nonretention is often related to having life problems that interfere with medical care engagement such as substance use, mental health issues, intimate partner violence, poor care-related social supports, and barriers such as unstable housing and lack of transportation.[17,25,26] Interventions are needed to reduce problems that would otherwise hinder care engagement by integrating comprehensive management services into HIV medical care, quickly following up persons who miss care visits, and other approaches.[27,28] In addition, a considerable number of PLH living in the community have long been out of care or have never entered care. Reaching out-of-care PLH in the community through their social network interventions with other HIV-positive persons holds promise as a strategy for engaging or re-engaging these PLH into medical care.[29,30]

IMPLEMENTATION EFFORTS NEED TO BE FOCUSED ON SUSTAINABILITY

As we prioritize scale-up and wider provider implementation of evidence-based biomedical/behavioral HIV-prevention methods, we would do well to heed lessons from the large body of research literature on how service organizations come to adopt innovations in their programs and approaches. Community and public health organizations do not always intrinsically embrace new approaches, and certainly do not embrace innovation based only on the recommendation of researchers.

Research for many years has shown that providers most often adopt new methods—such as HIV prevention through PrEP and to interventions along the HIV care continuum—when the new method is seen as advantageous for clients; when providers believe they have the skills and resources to be able to enact the new program; when influential professional peers embrace and endorse the new method; when the new approach is "owned" by the organization, its staff, and its stakeholders rather than externally imposed; and when outcomes after implementing the new method are positive. Previous research has shown that these factors influence provider organizations' adoption of new evidence-based HIV-prevention approaches,[31,32] and these lessons remain applicable as the field prioritizes the implementation of high-impact biomedically based HIV-prevention strategies.

POLICIES CAN FACILITATE OR IMPEDE SUCCESS IN ELIMINATING THE HIV EPIDEMIC

Policies matter a great deal in achieving success in HIV prevention but policies can also sometimes undermine success. One example of positive policy impact was the change in clinical practice guidelines that ART should be initiated immediately on HIV diagnosis, a policy change that has saved countless lives and prevented millions of new HIV infections worldwide. Another is the decision made by some cities to allocate public health resources to offer PrEP free or at reasonable cost, thereby accelerating its uptake.

Policies may also have unintended negative consequences. In past decades, many states enacted laws that criminalized knowingly exposing others to HIV infection. These policies were intended to prevent HIV transmission. However, such policies could have the unintended effect of increasing stigma and perhaps causing some PLH to conceal their infection from others, rather than disclose it.[33] Rollbacks in Medicaid or affordable insurance that would otherwise cover the costs of PrEP or ART for persons with low incomes could exert negative effects on HIV-related public health. Harsh enforcement of immigration policies may deter undocumented persons from seeking HIV testing, medical care, or substance abuse treatment,[34] thereby contributing to poor HIV medical outcomes. Behavioral and social scientists do not set policies. However, behavioral and social science research can inform policymakers about the impact of policies that can carry positive or negative effects on the success of our efforts to end the HIV epidemic.

SUMMARY

We are at a point of unprecedented opportunity to end the HIV epidemic in the United States, and the EtHE plan provides sharpness in focus, resources, and levels of coordination needed to achieve high impact in reducing HIV incidence. The analogy is often made that PrEP for high-risk uninfected persons—and ART treatment to produce viral suppression among all PLH—are our most powerful new tools for ending the epidemic. They are. However, having tools does not equate with knowing how best to use them. How we implement new biobehavioral HIV-prevention modalities to optimize scale-up and how we tailor them to meet the needs of communities that remain at greatest risk is the field's most critical current challenge. Behavioral and social science is essential for guiding successful HIV-prevention implementation, maximizing the coverage of new prevention modalities, and achieving high impact in ending HIV transmissions in the United States.

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