

NIH Support of Centers for AIDS Research and Department of Health Collaborative Public Health Research: Advancing CDC's Enhanced Comprehensive HIV Prevention Planning Project

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INTRODUCTION

In this supplemental issue of *JAIDS: Journal of Acquired Immune Deficiency Syndromes*, results are presented from National Institutes of Health (NIH)-supported research projects conducted by Centers for AIDS Research (CFAR) investigators in collaboration with their local Department of Health (DOH) in support of the Centers for Disease Control and Prevention's (CDC) Enhanced Comprehensive HIV Prevention Planning (ECHPP) initiative. The goals of this introductory article are to provide an overview of the ECHPP effort as contextual background, to describe the NIH support of research aligned with ECHPP priorities and the evolution of the CFAR ECHPP Working Group (CEWG), and to provide a synthesis of the manuscripts presented in this supplement, with a focus on research intended to inform and enhance outcomes in the HIV care continuum.

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OVERVIEW OF THE CDC ECHPP PROJECT

In July 2010, President Obama unveiled the National HIV/AIDS Strategy (NHAS), which was designed to produce significant programmatic and policy changes to address the HIV epidemic and HIV-related health disparities in the United States.¹ The NHAS aims to achieve 3 broad goals by 2015: (1) reduce new HIV infections, (2) increase access to care and improve health outcomes for people living with HIV (PLWH), and (3) reduce HIV-related health disparities. A fourth overarching goal—achieve a more coordinated response to the HIV epidemic—encourages collaborations among federal agencies and between federal agencies, state, territorial, local and tribal governments, and other nongovernmental partners including the “medical and scientific community.”²

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. *Combination prevention* is defined as the integration of behavioral, biomedical, and structural HIV interventions or strategies.³ Recently, new biomedical breakthroughs have increased the number of available prevention tools. These advances include research showing that antiretroviral treatment (ART) reduces HIV transmission^{4,5} and acquisition⁶ and extends and increases the quality of life of PLWH.⁷ Because all combinations of interventions and public health strategies are not equally efficacious, CDC has emphasized the need for high-impact combinations.⁸

In response to NHAS, the CDC initiated a 3-year demonstration project in September 2010 called the ECHPP project in the 12 Metropolitan Service Areas (MSAs) with the largest numbers of AIDS cases, representing 44% of the epidemic.⁹ CDC provides direct HIV prevention program funding to US state and territorial health departments and to a small number of local (city or county) health departments.¹⁰ ECHPP provided additional funding to support high-impact prevention in the following areas: New York City; Los Angeles; Washington, DC; Chicago; Atlanta; Miami; Philadelphia; Houston; San Francisco; Baltimore; Dallas; and San Juan.¹¹ This project was designed to embody the principles of the NHAS and to work with public health officials in the most affected areas in the country to address the ambitious goals of NHAS in health department programs. CDC worked with a variety of federal

partners on ECHPP including the Health Resources and Services Administration (both the HIV/AIDS Bureau and Bureau of Primary Health Care), the Substance Abuse and Mental Health Services Administration, the Indian Health Service, and NIH. Concurrently, and to support NHAS and ECHPP, the Office of the Assistant Secretary for Health and the Office of HIV/AIDS and Infectious Disease Policy, Department of Health and Human Services (HHS), implemented the 12 Cities Project, an initiative that seeks to improve coordination, collaboration, and integration of HIV/AIDS services among federal funders to improve local service delivery.¹²

The primary aim of ECHPP was to improve local program planning and implementation to have the highest impact possible on NHAS goals in each jurisdiction. Each grantee was asked to develop a prevention plan that used a specific local mix of 14 required and 10 “recommended to consider” interventions to maximize the impact of HIV combination prevention in its jurisdiction.⁹ The 14 required interventions included 2 HIV testing strategies (for clinical and nonclinical settings), 9 strategies for prevention with PLWH (including linkage to care, retention and re-engagement in care, provision of ART, and promotion of ART adherence, sexually transmitted diseases (STD) screening, prevention of perinatal transmission, partner services, behavioral risk screening and interventions, and linkage to other medical and social services), condom distribution for HIV-positive persons and for high-risk persons, provision of postexposure prophylaxis, and efforts to change existing structures, policies, and regulations that pose barriers to optimal HIV prevention, care, and treatment. In addition to the 10 “recommended to consider” interventions or public health strategies, innovative local interventions, defined as interventions that could have significant impact on NHAS goals, could be proposed by jurisdictions for inclusion in their prevention plans.⁹ To increase the ability of grantees to meet NHAS goals, the development of ECHPP jurisdictional prevention plans was guided by the following principles: (1) examine all local HIV prevention, care, and treatment resources, regardless of funding stream (federal, state, private, and local); (2) direct resources to achieve maximum impact on HIV incidence; (3) implement a combined core set of behavioral, biomedical, and structural interventions that were targeted and scaled to maximize appropriate coverage and impact; and (4) integrate local epidemiological, cost-effectiveness and efficacy data to improve data-driven decision making.⁹

Because of the importance of the NHAS, and the scale of the 12 Cities Project and ECHPP efforts, there was substantial interest in both evaluating and conducting research related to the planning, implementation, and impact of ECHPP. CDC is leading a systems-level evaluation of ECHPP. The evaluation is complex given the large number of interventions implemented by each jurisdiction (many of which were implemented at some level before ECHPP), the differences in local implementation across the 12 MSAs and the lack of a rigorous study design. Key evaluation questions will address the programmatic processes associated with local implementation, client outcomes for priority populations, and the overall impact of ECHPP in these communities using epidemiological and surveillance data. Except for some

programmatic data, all evaluation data are being gathered through preexisting data systems used routinely by CDC and other federal partners. CDC’s ECHPP evaluation goals are to (1) assess the extent to which ECHPP had an effect in the 12 MSAs and (2) monitor jurisdictional progress toward achieving 2015 NHAS objectives.⁹

NIH COLLABORATIVE SUPPORT OF RESEARCH ALIGNED WITH ECHPP PRIORITIES

As cited above, the fourth goal of NHAS is “Achieving a More Coordinated National Response to the HIV Epidemic.” The ECHPP project embodied this goal, and NIH leadership saw an opportunity to encourage grantees to work more closely with the CDC and the local health departments, with the goal of bolstering the research agenda associated with the ECHPP efforts. Because ECHPP was already underway, the NIH needed to move quickly to capitalize on this unique opportunity. Due to the programmatic nature of ECHPP, there was not an existing research infrastructure from which to call for NIH research, but the 9 ECHPP jurisdictions with the highest number of AIDS cases were also home to NIH-funded Centers for AIDS Research (CFAR), which are located at academic research institutions throughout the United States. Thus, supplemental funding to existing CFAR sites was identified as an ideal mechanism to rapidly integrate the NIH-supported research agenda with ECHPP activities and provide research and technical support to local DOHs. Supplement applications were solicited, internally reviewed, and awarded to CFAR sites where ECHPP activities were underway.

The CFAR program, led by the Division of AIDS at the National Institute of Allergy and Infectious Diseases (NIAID) and comanaged by the Fogarty International Center and the Office of AIDS Research, is cofunded by NIAID and a trans-NIH Steering Committee that includes cosponsorship from the National Cancer Institute, the National Institute of Child Health and Human Development, the National Heart, Lung, and Blood Institute, the National Institute on Drug Abuse (NIDA), the National Institute of Mental Health (NIMH), and the National Institute on Aging. The program emphasizes the importance of interdisciplinary collaboration, especially between basic and clinical investigators and behavioral scientists to support translational research. The mission is to provide administrative and research support to synergistically enhance and coordinate high-quality AIDS research projects. CFARs accomplish this through core facilities that provide expertise, resources, and services to their institutional investigators. Thus, the CFARs were well positioned to advance the coordination and scientific agenda associated with the ECHPP project.

In January 2011, the NIH CFAR program requested that the District of Columbia Developmental CFAR (DC D-CFAR) and its director, Alan E. Greenberg, coordinate the submission of a supplement on behalf of the 9 eligible CFARs in support of the ECHPP initiative, thereby establishing the CEWG. This initial NIH contribution was intended to provide a modest level of support to enable the CFARs to determine a research agenda that could be integrated into the ECHPP initiatives in their local jurisdictions and strengthen research

and community collaborations to respond to the NHAS goals. These activities, referred to as “ECHPP-1,” included developing collaborations with their DOH, providing technical assistance for a variety of ECHPP activities, and where feasible initiating pilot research efforts. The central CFAR principle of local control was emphasized—the types of technical assistance and research-related activities proposed should vary and be determined locally based on the needs and priorities of the local DOHs and the capacity and expertise of the CFARs. Consonant with the ECHPP aims and CFAR expertise suggested technical areas included statistical support, outcomes evaluation, behavioral and prevention expertise, clinical expertise, laboratory support, cost-effectiveness, and modeling. The aims of the

ECHPP-1 projects are shown in Table 1, and the initial results of these projects, many of which are ongoing, are presented in this supplement of *JAIDS: Journal of Acquired Immune Deficiency Syndromes*.

In 2012, the NIH CFAR program, along with the NIMH, observed the successful progress of the ECHPP-1 projects and provided additional research support with more focal guidance to conduct projects targeting specific steps in the treatment continuum^{13–20} for persons living with HIV/AIDS. NIMH supports a range of research projects devoted to understanding and mitigating the factors associated with drop offs along the HIV care continuum. However, the areas of linkage to care, retention, and re-engagement in care are relatively less studied. With the increased emphasis on

TABLE 1. CFAR ECHPP-1 Project Aims by City, CFAR, and Site PI

City	CFAR	Site PI	ECHPP-1 Project Aims
Atlanta	Emory	Stephenson	Provide training of counseling staff for couples HIV voluntary counseling and testing
Chicago	Chicago D-CFAR	Lubelchek	To develop, pilot, and implement a survey tool to assess provider knowledge and attitudes regarding routine HIV testing To implement a demonstration project of routine testing and linkage to care and prevention services in 3 high-risk clinics
DC	District of Columbia D-CFAR	Castel	Evaluate the DC DOH linkage to care portfolio Evaluate clinical and nonclinical routine HIV testing implementation strategies Assess the feasibility and cost-effectiveness of nPEP and PrEP
Houston	Baylor College of Medicine/UT Health	Giordano	Conduct a local resource capacity survey on HIV prevention activities from all testing facilities Assess comparative effectiveness and cost-effectiveness of local HIV prevention activities Establish a Scientific Advisory Council to advise DOH on HIV activities
Los Angeles	University of California Los Angeles	Rotheram-Borus	Implement interventions promoting adherence to antiretroviral medications Provide technical assistance on linking high-risk HIV-negative persons to services for mental health, substance abuse, housing, violence, etc. Facilitate adoption and implementation of brief alcohol screening and interventions for HIV-positive and high-risk HIV-negative persons
Miami	University of Miami	Rodriguez and Metsch	Investigate availability, accessibility, and acceptability of prescribing and obtaining postexposure prophylaxis by providers and high-risk persons Investigate potential availability, accessibility, and acceptability of prescribing and obtaining PrEP by providers and men who have sex with men Document and evaluate barriers and facilitators to addressing prevention, adherence, and retention
New York City	Albert Einstein/Montefiore	Bauman	Use existing data sets to identify populations and communities with delayed linkage to care Conduct survey of Bronx testing sites on linkage to care Identify model testing sites with timely linkage to care and conduct case studies
Philadelphia	Penn	Metzger	Provide technical assistance in application of Geographic Information Systems Assist in design, implementation, and analysis of provider and consumer survey of location of prevention and care services
San Francisco	University of California San Francisco	Charlebois and Morin	Develop and assess measures of linkage to care Estimate and compare rates of linkage to care among four PNI models Determine cost and relative cost-effectiveness of PNIs

PI, principal investigator; PrEP, preexposure prophylaxis; PNI, patient navigator intervention.

expanding HIV testing in many of the jurisdictions, it seemed timely to focus the next iteration of the supplement applications to (1) expand the scope of work to include a greater understanding of the clinic-level and patient-level factors associated with drop-off in care engagement, (2) conduct formative research on current practices for re-engagement of patients at the clinic level, (3) provide descriptive data of changes in clinic demographics as a result of the ECHPP initiative's activities to increase HIV testing and enhanced linkage to care as they relate to drop-off in care for specific subgroups, or (4) identify mutable targets at the clinic level and individual level for future intervention development to enhance care engagement and re-engagement. Results from these projects, referred to as "ECHPP-2," should be reported in late 2013 and 2014.

These research topics were solicited both because they were important and relevant to the needs of the DOHs and ECHPP activities and because these topics are high-priority research directions outlined in the NIH Office of AIDS Research Plan for HIV/AIDS Research and the missions of the NIMH, NIAID, NIDA, and other participating institutes. Therefore, in addition to providing immediate support to ECHPP activities, the projects were also intended to yield feasibility and pilot data that would enable the investigative teams to subsequently pursue larger-scale research proposals that would be responsive to Requests for Applications (RFAs) issued by NIH in 2011, 2012, and 2013 such as "Promoting Engagement in Care and Timely ART Initiation Following Diagnosis" (RFA-MH-12-060), "Advancing Community-level Approaches to Reduce HIV Infection in Highly Impacted Communities" (RFA-MH-13-090), and "Methodological and Formative Work for Combination HIV Prevention Approaches" (RFA-MH-14-180).

In 2012, the NIMH also separately provided supplements to each of 3 NIMH-funded AIDS Prevention Centers (APC) that are located in the ECHPP cities where CFARs are situated. This was an opportunity to bring in additional expertise in behavioral and social sciences from these Centers and to take advantage of their strong ties with their DOHs. The NIMH investigators at each center were required to propose high-priority science that complemented and synergized with the ongoing research activities that the CFARs were conducting. In each case, working in partnership with the CFARs was facilitated by the fact that at least 1 NIMH center investigator was central to the previous CFAR ECHPP activities.

Findings from these efforts are also expected in 2013–2014. Currently supported ongoing projects, referred to as "APC-1," are addressing the following issues: (1) improving ongoing preventive/treatment services among methamphetamine using, HIV-positive men who have sex with men to better link these men to care and to understand the interaction among risk behaviors, substance use, emotional distress, adherence to antiretrovirals, and viral load (University of California Los Angeles), (2) identifying strategies to improve loss to follow-up, including the role of surveillance in re-engagement (University of California San Francisco), (3) barriers to and facilitators of engagement in HIV care of HIV-positive individuals from 2 vulnerable and underserved populations: young men who have sex with men and transgender women (Columbia).

In November 2012, the DC D-CFAR hosted the first National CFAR/APC ECHPP Meeting in Washington, DC. The goals of this 2-day meeting were to present the results of the CFAR ECHPP-1 projects and the aims of the ECHPP-2 and APC-1 projects. There were approximately 100 participants including the site principal investigators from the 9 CFARs and 3 APCs, representatives from the 9 collaborating DOHs, HIV prevention scientists from an additional 11 CFARs and 2 APCs, representatives from the National Alliance of State and Territorial AIDS Directors and the Urban Coalition for HIV/AIDS Prevention Services, and US Government scientists from the White House Office of National AIDS Policy, HHS, NIAID, NIMH, NIDA, National Institute of Child Health and Human Development, and CDC. The CEWG was thus expanded to include investigators from any of the 21 CFARs and 5 APCs who work on HIV prevention research in collaboration with their local DOHs and was established as a formal inter-CFAR collaboration.²¹

In May 2013, the CFAR program released a supplemental funding announcement open to all eligible CFARs to submit research proposals related to the "HIV Treatment Cascade that build on existing collaborations with their local health departments ... to propose pilot interventions at one or more important junctures in the treatment cascade," referred to as "ECHPP-3." Concurrently, the NIMH will provide support to the APCs to conduct complementary cascade-related research (referred to as "APC-2"). Support for a second National CFAR/APC ECHPP Meeting has been secured to facilitate the presentation of the scientific results of the ECHPP-2 and APC-1 projects and the aims and progress of the ECHPP-3 and APC-2 projects.

In summary, there has been rapid scale up of CFAR- and APC ECHPP-related research activities during the past 2 years (2011–2013). Moreover, there has been a clear strategic evolution in the focus of research conducted by the CEWG: from establishing connectivity and conducting formative research with the DOHs in ECHPP-1, to conducting exploratory research on the HIV treatment cascade in ECHPP-2 and APC-1, and to developing cascade-related pilot interventions in ECHPP-3 and APC-2.

SYNTHESIS OF ECHPP-1 MANUSCRIPTS: RESEARCH FOCUS ON THE HIV CARE CONTINUUM

For this supplemental issue of *JAIDS: Journal of Acquired Immune Deficiency Syndromes*, each site principal investigator was asked to develop a manuscript based on initial results from their ECHPP-1 projects. As many of the ECHPP-1 and ECHPP-2 projects are still ongoing, CEWG sites were given considerable latitude to select the specific aspect of their work to include in this supplement. Of note, almost all these manuscripts are coauthored by collaborating academic and DOH investigators.

The ECHPP-1 research projects published in this supplement largely focus on steps in the HIV care continuum. The first step in the HIV care continuum is to identify HIV-infected persons through the expansion of HIV testing. Accordingly, the Baylor/University of Texas CFAR describes

its work with the Houston Department of HHS²² to conduct a survey of 84 health-related organizations about their HIV testing volume and practices. They report that almost half (49.1%) of the more than 210,565 HIV tests performed at these sites in 2011 did not receive support from public health funding, highlighting the importance of ensuring that testing campaigns and policies reach providers other than those receiving public funds. The Chicago D-CFAR worked in collaboration with the Chicago Department of Public Health²³ to conduct a survey among 3 specialty clinics (Dermatology, Psychiatry, and Trauma) at the Cook County public hospital. The goal of that project was to “assess provider knowledge, attitudes, and barriers to routine HIV testing”; results were then used to develop an educational intervention, which resulted in significant increases in HIV testing at 2 of the 3 clinics and identified important barriers to implementation of routine testing.

The next step in the HIV care continuum is to increase linkage to care for persons identified as HIV infected. As a component of the Baylor/UT CFAR survey,²² project investigators also found that 90% of responding organizations had active linkage to care activities, but only 46.5% had written linkage to care protocols, and that staff time, staff resources, and funding limitations were the greatest perceived barriers to linkage activities, with important differences noted between hospitals, clinics, and community-based organizations. The Einstein/Montefiore CFAR, working in collaboration with the New York City Department of Health and Mental Hygiene,²⁴ conducted in-depth qualitative interviews with the directors of 24 HIV testing agencies who participated in “The Bronx Knows” campaign (in which 607,570 HIV tests were conducted and 1731 newly diagnosed persons were found), and then conducted case studies of 9 programs with best linkage practices. They identified important challenges in linkage programs that included factors related to health systems, social issues including patient stigma, and working with high-risk populations; and numerous best linkage practices, including patient navigators, team approaches, case management, monitoring, minimizing stigma, and the importance of linkage champions. Last, the University of California San Francisco CFAR worked in collaboration with the San Francisco DOH,²⁵ community-based organizations, and clinical care providers to assess optimal measures of linkage to care. They examine the linkage to care process, highlight specific challenges to the assessment of linkage to care outcomes, including differing definitions, and the various types of clinical and surveillance databases that are available to assess linkage rates. The authors emphasize the importance of selecting the appropriate data source depending on the primary use of the measure and highlight the need for “integrated data systems” to better assess outcomes along the HIV care continuum.

Reports from several CFAR projects address issues related to increasing linkage to care and the remaining steps in the HIV treatment continuum, namely improving retention and re-engagement in care, and maximizing viral suppression. The DC D-CFAR worked in collaboration with the DC DOH²⁶ to use HIV surveillance data to assess the impact of medical case management on retention and viral suppression rates among 5631 HIV prevalent cases in FY 2010 and on

linkage to care rates among 789 persons newly diagnosed in 2009–2010. Importantly, medical case management sites were found to have a significantly higher rate of retention in care during the study period (76.2% vs 59.9%), although no differences were found in the rates of linkage to care or viral suppression. The University of Pennsylvania CFAR worked in collaboration with the Philadelphia DOH²⁷ to use HIV surveillance data to assess the association of various factors with linkage to care, retention in care, and viral suppression among 1704 persons newly diagnosed with HIV from 2008 to 2009. Using a highly innovative approach, they used Geographic Information Systems technology to identify specific geographical areas in Philadelphia that are associated with failure to achieve these cascade-related steps and then included these geographic variables in multivariate analyses to assess their independent contribution to each of the selected outcomes. Finally, in a study that addressed issues related both to improving retention in care and antiretroviral adherence, the Emory CFAR working in collaboration with the Georgia DOH²⁸ conducted 5 qualitative focus group discussions with a total of 35 gay and bisexual men who were in same sex relationships. Participants described the importance of dyadic HIV care for couples, comprehensive care that addressed other mental health and social needs, differences in care needs between seroconcordant and serodiscordant couples, and the importance of the interaction between interpersonal relationship dynamics and dyadic care.

The University of California Los Angeles CFAR²⁹ describes the implementation and results of a survey administered to agencies responsible for providing services to persons living with HIV/AIDS (PLWHA) in the state of California. This article examines issues that are being encountered as PLWHA transition from Medi-Cal fee for service and the Ryan White CARE Program to Medi-Cal managed care and the Low Income Health Program. Moreover, it provides insights into service provision for PLWHA, and the potential for gaps in care, as the Affordable Care Act is implemented in January 2014.

In an example of collaboration across CFARs, the Miami CFAR and the Miami-Dade County Health Department³⁰ worked collaboratively with the DC D-CFAR and the DC DOH to conduct a survey of 142 HIV providers to assess knowledge, attitudes, and practices related to the provision of nonoccupational postexposure prophylaxis (nPEP) in these 2 cities. The investigators report that a significantly higher proportion of HIV providers had prescribed nPEP in DC than in Miami (59.7% vs 39.5%), that most practices did not have written protocols for nPEP, and that providers were more likely to prescribe nPEP to patients with an HIV-positive partner or who were victims of sexual assault.

SUMMARY

The contributions reported in this supplemental issue highlight the relevance of NIH-funded CEWG research to health department-supported HIV prevention and care activities in the 9 US cities with the highest numbers of AIDS cases. The project findings have the potential to enhance ongoing HIV treatment and care services and to advance

the wider scientific agenda. The HIV testing to care continuum, while providing a framework to help track progress on national goals, also can reflect the heterogeneities of local epidemics. The collaborative research that is highlighted in this issue not only reflects a locally driven research agenda but also demonstrates research methods, data collection tools, and collaborative processes that could be encouraged across jurisdictions. Projects such as these, capitalizing on the integrated efforts of NIH, CDC, DOH, and academic institutions, have the potential to contribute to improvements in the HIV care continuum in these communities, bringing us closer to realizing the HIV prevention and treatment goals of the NHAS.

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