U.S. Department of Health and Human Services
National Institutes of Health

Office of AIDS Research

Office of AIDS Research Advisory Council

Fifty-Third Meeting

February 27, 2020

5601 Fishers Lane, Room 1D13

Rockville, Maryland

Meeting Minutes

Council Members Present: Dr. Jennifer Kates (Chair), Dr. Mary Glenshaw (Executive Secretary), Dr. Maureen M. Goodenow (Director, Office of AIDS Research), Dr. Ingrid V. Bassett, Dr. Tricia H. Burdo, Ms. Lynda M. Dee,* Dr. John C. Chin,* Dr. Heidi M. Crane, Dr. William G. Powderly, Dr. Jonah B. Sacha, Dr. Kimberly K. Scarsi, Dr. Bruce R. Schackman, Dr. Babafemi Taiwo, Dr. Blanton S. Tolbert, Dr. Charles R. Wira*

***Ex Officio* Members Present:** Dr. Jonathan Mermin, Dr. Diana Finzi and Dr. Sarah Read on behalf of Dr. Carl W. Dieffenbach

Advisory Council Representatives Present: Dr. Richard E. Chaisson, Dr. Carlos del Rio, Dr. Alan Greenberg

Invited Speakers and Guests: Dr. Keri Althoff, Dr. Nahida Chakhtoura, Ms. Antigone Dempsey, RADM Francis Frazier, Dr. Neeraj Gandotra, Ms. Kay Hayes, Dr. Timothy Holtz, Dr. Anne Neilan, Dr. Brooke Nichols, Dr. Alice Pau, Mr. Carl Schmid

Council Members Absent: Dr. Scott Rhodes, Ms. Dázon Dixon Diallo, Dr. Lynne M. Mofenson

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* Participated remotely.

Welcome and Introductions

Jennifer Kates, Ph.D., Kaiser Family Foundation

Dr. Jennifer Kates welcomed participants to the fifty-third meeting of the National Institutes of Health (NIH) Office of AIDS Research Advisory Council (OARAC). Meeting materials provided to Council members included the agenda, a conflict-of-interest form, and minutes from the fifty-second OARAC meeting, held on October 23, 2019. In addition, hard and soft copies of the *NIH*

Strategic Plan for HIV and HIV-Related Research Fiscal Year (FY) 2021–2025 and the *Congressional Budget Justification FY 2021* were distributed to members.

A motion to accept the minutes of the fifty-second OARAC meeting, held on October 23, 2019, was approved unanimously.

Dr. Kates reviewed the fifty-third meeting agenda, noting the inclusion of time for public comments.

Report from the Office of AIDS Research (OAR) Director

Maureen M. Goodenow, Ph.D., OAR, NIH

Dr. Maureen M. Goodenow welcomed new OARAC members and thanked those who are rotating off the Council. She provided a high-level overview of the first 5-year *NIH Strategic Plan for HIV and HIV-Related Research,* released in January with significant input from stakeholders and subject-matter experts. The plan includes four key strategic goals:

1. Advance rigorous and innovative research to end the HIV pandemic and improve the health of people with, at risk for, or affected by HIV across the lifespan.

2. Ensure that the NIH HIV research portfolio remains flexible and responsive to emerging scientific opportunities and discoveries.

3. Promote dissemination and implementation of research discoveries for public health impact across agencies, departments, and stakeholders within the U.S. Government and globally.

4. Build human resource and infrastructure capacity to enhance sustainability of HIV research discovery and the implementation of findings by a diverse and multidisciplinary workforce.

The 5-year plan ensures that fluidity and flexibility are part of the larger framework of HIV research at the NIH, which allows the NIH to respond quickly to major events, such as dolutegravir clinical guidance, and natural disasters, such as hurricanes. Another example is the HIV Vaccine Trials Network (HVTN) 702 clinical trial for vaccine efficacy, which was stopped this month (February 2020) in response to findings from an independent data and safety monitoring board. An interim review showed that the vaccine failed to prevent HIV acquisition among participants. Dr. Goodenow emphasized that no concerns about participant safety have been reported and noted upcoming opportunities to discuss and monitor the situation.

Dr. Goodenow provided OAR staff updates, including new personnel, recent awards, and promotions; welcomed newly appointed OARAC members; and expressed gratitude to those who have completed their terms of service. Dr. Goodenow has actively participated in a number of notable conferences since the previous OARAC meeting, including:

- The Centers for AIDS Research (CFAR) Center Director's Meeting

- The Ethical Considerations for HIV Prevention Research in the Era of Highly Effective HIV Prevention meeting

- The 4th Annual Biomedical HIV Prevention Summit

- The Research Centers in Minority Institutions (RCMI) 2019 Conference
- The 16th Annual African American Men Who Have Sex with Men (MSM) Leadership Conference on Health Disparities and Social Justice
- The HIV Research for Prevention (HIVR4P) Programme Organizing Committee Meeting
- The International Maternal Pediatric Adolescent AIDS Clinical Trials Network Scientific Leadership Retreat
- The Presidential Advisory Council on HIV/AIDS (PACHA) meeting

Dr. Goodenow commented that the Congressional Budget Justification for FY 2021 has been submitted and that the Professional Judgement Budget is in progress. Budget increases for FY 2020 were allocated primarily to vaccine and cure research and the *Ending the HIV Epidemic: A Plan for America* initiative. Additional support was provided for the International AIDS Society (IAS) meeting occurring in Oakland and San Francisco, California, in July 2020. She reviewed the status of current NIH/OAR working groups dedicated to the *Ending the HIV Epidemic* initiative; HIV-associated comorbidities, coinfections, and complications; construction and renovation of facilities; and the HIV Treatment Guidelines Task Force.

Recent engagement and outreach activities were noted, including World AIDS Day 2019 and a planning meeting for HIVR4P in Cape Town, South Africa, which allowed Drs. Goodenow and Glenshaw to visit a number of clinical sites, engage with investigators and policy makers, and observe novel strategies for testing and ARV delivery.

Recent listening sessions in San Francisco and at Howard University in Washington, D.C were noted. Additionally, Dr. Goodenow announced that OAR will host a satellite session at the IAS (AIDS 2020) conference in July and an HIV neurocognition, Alzheimer's disease, and aging cost-sharing program with the National Institute on Aging later in the year.

Discussion Highlights

Dr. Goodenow clarified that the report from the HIV Comorbidities, Coinfections, and Complications working group likely would be ready in the summer of 2020, but the exact timeframe is to be determined. She added that the Professional Judgement Budget is expected to be drafted in March.

When asked about possible collaborations with the President's Emergency Plan for AIDS Relief (PEPFAR), Dr. Goodenow pointed out that PEPFAR is focused on implementation of the research that the NIH conducts, so strengthening communication could benefit both research and implementation.

In response to a question regarding HIV stigma, Dr. Goodenow noted that discussions are ongoing about how to acquire baseline data about stigma in various countries to be able to measure and evaluate interventions to mitigate the effects of HIV stigma around the world.

In response to discussion regarding HIV research priorities, Dr. Goodenow emphasized that until an HIV vaccine is safe, effective, and widely available, the most important areas of HIV research to end the epidemic are eliminating new infections and delivering treatment to ensure viral suppression and prevent transmission.

Attendees recommended further coordination with other international groups in addition to PEPFAR; additional linkage of OAR efforts with efforts related to the ongoing opioid epidemic; reporting at a future OARAC meeting from a committee working to include pregnant women in clinical trials; and consideration of opportunities to further understand the new coronavirus emerging in late 2019 in the context of HIV and access to treatment during disasters.

Ending the HIV Epidemic **Leadership Panel Discussion**

Jennifer Kates, Ph.D., Kaiser Family Foundation

Dr. Kates introduced the panelists and reminded attendees of the primary goals of the *Ending the HIV Epidemic* initiative: reducing new infections by 75 percent within 5 years and by 90 percent within 10 years. The four main pillars are to (1) diagnose all people with HIV as early as possible, (2) treat HIV infection as rapidly and effectively as possible to achieve sustained viral suppression, (3) prevent new transmissions by using proven interventions, and lastly (4) respond quickly to potential outbreaks. In the first phase of the initiative, the HHS agencies will focus programmatic and research activities in the 57 jurisdictions in the United States that account for 50 percent of all new HIV diagnoses in the United States.

Centers for Disease Control and Prevention (CDC)

RADM Jonathan Mermin, M.D., M.P.H., Director of the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, CDC

RADM Jonathan Mermin noted the differences in rates of new infections in various geographic locations throughout the country and across various demographics and behaviors. Men who have sex with men (MSM), as well as transgender women, are more than 150 times more likely to have HIV infection than heterosexual men and women. In addition, incidence is eight times higher among African Americans and three times higher among Latinx communities than among white Americans. RADM Mermin emphasized the need to focus resources on the populations who carry a disproportionate burden of HIV.

However, RADM Mermin emphasized that researchers need to move beyond these clear health disparities and “look under the hood.” He noted that many gaps in knowledge remain related to understanding why some interventions are effective and others are less effective. For example, gaps in the HIV continuum of care include roughly 150,000 people who have not been diagnosed or linked to treatment, many people who do not receive or adhere to care continuously, and less-than-ideal viral suppression among people receiving care. Access to and uptake of pre-exposure prophylaxis (PrEP) remains uneven in the United States. In terms of rapid response to potential outbreaks, documentation of new infection clusters has been successful. For example, an HIV outbreak among a community of people who inject drugs in Scott County, Indiana, was halted by rapidly increasing Syringe Service Program access, antiretroviral therapy (ART), and PrEP.

With regard to HIV research priorities, RADM Mermin noted that while HIV vaccine and cure research must continue, other strategies must be ramped up now. He underscored that long-acting therapeutic agents could have a significant effect on HIV prevention by changing the requirements for adherence. Sexually transmitted infections (STIs) are another area to address, potentially through digital media, that could impact HIV transmission rates. RADM Mermin emphasized the importance of research to address social determinants of health and other structural issues that affect treatment and prevention of HIV.

RADM Mermin outlined CDC's activities related to HIV and the *Ending the HIV Epidemic* initiative, including qualitative investigations, evidence-based interventions, demonstration projects, and formal studies. He highlighted a study of home-based HIV testing that demonstrated higher rates of diagnosis among individuals and persons with whom the individuals shared the tests.

Health Resources and Services Administration (HRSA)
Antigone Dempsey, M.Ed., Director, Division of Policy and Data, HIV/AIDS Bureau, HRSA

Ms. Antigone Dempsey explained that HRSA includes the HIV/AIDS Bureau, which manages the Ryan White HIV/AIDS Program, and the Bureau of Primary Healthcare, which manages the Health Center Program. She noted that the HIV field has moved beyond health maintenance for people with HIV, making this the right time to enact a new strategy toward ending the epidemic. The Health Centers will take the lead in the Diagnose pillar of the EHE initiative and provide additional support in the Treat pillar, which also will include activities under the Ryan White HIV/AIDS Program. For the Prevent pillar, the Bureau of Primary Healthcare will provide PrEP in the targeted jurisdictions, enabling quick mobilization of the initiative by leveraging existing HIV care infrastructure and networks. Ms. Dempsey emphasized that the *Ending the HIV Epidemic* activities will add more flexible and innovative ways to address gaps in care and adherence.

In addition to funding efforts using existing infrastructure in targeted areas, HRSA will add funds for technical assistance providers to ensure that the initiatives are implemented. AIDS Education and Training Centers (AETCs) will receive additional funding to increase provider training. The Ryan White HIV/AIDS Program will work to reduce the number of people who are currently in treatment but not virally suppressed, as well as to link people who are newly diagnosed to care within 24 hours whenever possible. Ms. Dempsey noted the differences in viral suppression rates among subpopulations, noting that the disparities are especially persistent among people who lack stable housing. She reiterated that efforts within the initiative will leverage existing community resources and assess areas in which implementation discrepancies must be addressed.

Ms. Dempsey noted key themes identified in HRSA's listening sessions—both challenges and resiliency factors—and discussed the activities of an ongoing interagency working group that includes HRSA, CDC, and the NIH, and has expanded to include additional NIH Institutes and Centers (ICs), the Substance Abuse and Mental Health Services Administration (SAMHSA), and other federal partners in support of *Ending the HIV Epidemic.* This federal working group is identifying aspects of collaboration that require clarification, such as definitions that require alignment, shared priorities, and lessons learned. Ms. Dempsey noted several areas in which further research is needed, highlighting the need to keep people engaged in care and support persons with HIV who are aging. She emphasized that the shared goal of ending the epidemic already has fostered significant collaboration and efforts in this initiative.

Indian Health Service (IHS)
RADM Francis Frazier, M.S.N.-FNP, M.P.H., Director of the Office of Public Health Support, IHS

RADM Francis Frazier explained that 2.6 million American Indians and Alaska Natives (AI/AN) are eligible for healthcare through the IHS; 1.6 million of those are active clinic users. Funds received by the IHS for the *Ending the HIV Epidemic* initiative will be focused on treatment and care management services, prevention of Hepatitis C, prevention of HIV, and enhancing linkage to care. Approximately 60 percent of the IHS budget is contracted to tribal health programs, which provide health care services within AI/AN communities.

RADM Frazier noted that although the IHS has focused on HIV screening, rates of screening have reached 50–60 percent in larger IHS hospitals, with higher rates at primary care facilities. He emphasized that IHS and CDC data use different criteria to identify AI/AN status, which can lead to discrepancies in rates when assessing HIV diagnosis among AI/AN populations and subpopulations.

Because the IHS focuses primarily on primary care provision, RADM Frazier pointed out the need to involve non-physician providers within primary care teams, such as pharmacists, health technicians, and nurses. He presented data on the promising rates of viral suppression in the IHS jurisdictions in the Southwestern United States, where more than half of HIV diagnoses among AI/AN populations occur. Although most IHS sites are rural and isolated, RADM Frazier highlighted the HIV clinic at the Phoenix Indian Medical Center, which provides many cascade-of-care services in one clinic and has demonstrated 93 percent adherence to care and 92 percent viral suppression. Clinic staff credit their success to strong relationships with their patients and accessible, culturally competent services.

RADM Frazier highlighted the Cherokee Nation Pilot Project, one recipient of *Ending the HIV Epidemic* funds, which is located in the largest tribal health system covered by the IHS. The Cherokee Nation previously engaged in a successful program to eliminate hepatitis C, and is focusing on training pharmacists in PrEP evaluation and delivery, training nurses in HIV screening, implementing onsite medication, and integrating community health workers and patient navigators for the *Ending the HIV Epidemic* initiative. RADM Frazier noted the importance of addressing barriers posed by stigma. The pilot project aims to (1) diagnose all people with HIV as soon as possible using public awareness campaigns to increase testing and screening, and (2) prevent new infections via PrEP implementation and education and a safe syringe service program. He noted the funding awarded to tribal epicenters, which will support services related to STIs, hepatitis C, and HIV to improve health-related outcomes and reduce health disparities.

Substance Abuse and Mental Health Services Administration (SAMHSA)
Neeraj Gandotra, M.D., Chief Medical Officer, SAMHSA

Dr. Neeraj Gandotra explained that SAMHSA approaches *Ending the HIV Epidemic* with a focus on providing treatment access for a considerably high-risk population, namely, persons with substance use disorders and individuals with mental illness. Significant percentages of these individuals are not in care and there is a paucity of mental health professionals are available to treat those individuals. Because of this, Dr. Gandotra emphasized the need to integrate specialized services with primary care partners and address the service gaps within communities.

Substance use disorder and mental illness can significantly increase the risk of contracting HIV—HIV rates are about twice as high in the population of people with mental illness and substance use disorder as in the general population. Additionally, a growing number of individuals who are aging with HIV are at high risk of developing depression.

SAMHSA's mission is to reduce the impact of mental illness and substance use in American communities. The goal is to ensure that everyone receives the treatment they need, including access to HIV screening in every mental health center and substance use treatment center. Dr. Gandotra emphasized that engaging individuals in treatment for substance use or mental health will lead to other treatment-seeking behaviors. SAMHSA aims to increase HIV testing and pre- and post-test counseling; engage all those identified with an HIV infection with the

appropriate treatment provider(s); and provide technical assistance to grantees, primary care centers, and any other parties working to improve screening.

Dr. Gandotra outlined SAMHSA's grants related to the *Ending the HIV Epidemic* initiative, which include many prevention programs that have been successful in testing and referring people to treatment. SAMHSA aims to increase service integration, improve screening across all centers, reduce the transmission of HIV through prevention efforts, and reduce the health care disparities in minority populations. SAMHSA is developing a guidebook for treatment of those living with HIV and substance use disorder and mental illness, which will be released in June or July. Additionally, a recent project to track every grantee and monitor testing and referrals to treatment will provide data that can help improve outcomes. SAMHSA representatives are working with the distributor of an oral fluid test to help implement testing in behavioral health organizations that do not have the capacity to conduct blood tests. Dr. Gandotra also emphasized that SAMHSA's technology transfer centers can help anyone understand evidence-based practices in this field.

National Institutes of Health (NIH)
RADM Timothy Holtz, M.D., M.P.H., Deputy Director, OAR, NIH

OAR Deputy Director Dr. Timothy Holtz explained that OAR is working across ICs to coordinate NIH research and fill gaps in knowledge important to the *Ending the HIV Epidemic* initiative. Many gaps are related to implementation; others relate to basic and translational science. OAR works to allocate, track, and report NIH funding for this initiative to HHS and other government agencies, including the $11 million in OAR innovation and NIH HIV strategic funds awarded in FY 2019 to jumpstart *Ending the HIV Epidemic* projects.

Centers for AIDS Research (CFARs) and AIDS Research Centers (ARCs) serve as the research platforms supporting the implementation science aspect of the *Ending the HIV Epidemic* initiative. FY 2019 *Ending the HIV Epidemic* funding included supplements to CFARs and ARCs to investigate the best ways to deliver evidence-based interventions and services to populations with a disproportionate risk of HIV. FY 2019 funding included five administrative supplements from the NIH Sexual and Gender Minority Research Office (SMGRO) to support *Ending the HIV Epidemic* projects among sexual and gender minority populations.

An additional NIH-supported *Ending the HIV Epidemic* activity is developing partnerships with AIDS Education and Training Centers. These programs can identify the best implementation strategies to integrate behavioral health into HIV prevention and primary care settings, as well as support translational research projects in basic biomedical, behavioral, and clinical research that will identify innovative approaches to promoting minority health and addressing health disparities research among early-career investigators.

OAR continues to host listening sessions to gather input from a variety of stakeholders. Recurring themes include the need for federal coordination to facilitate prevention, treatment, and care across the spectrum of social and structural issues that affect individuals and communities and the need for increased communication within and outside the NIH to highlight NIH-supported research. OAR is working to increase collaborative research with Offices within the NIH and with other networks of HIV-related researchers.

Presidential Advisory Council on HIV/AIDS (PACHA)
Carl Schmid, M.B.A., Co-chair, PACHA

Mr. Carl Schmid explained that PACHA's goals are to gather input from the community and deliver those messages to the federal government via advice to the U.S. Department of Health and Human Services (HHS) Secretary and other federal partners. PACHA has had three recent meetings in diverse geographic locations, which included visits to HIV clinics, and fostered connections among federal partners. The four districts that received FY 2019 funding to jumpstart *Ending the HIV Epidemic* projects (DeKalb County in Georgia; Baltimore; East Baton Rouge, Louisiana; and the Cherokee Nation of Oklahoma) reported that areas needing more research and effort include PrEP, stigma, the gay and transgender communities, and testing. In conjunction with the recent PACHA meeting in Washington, D.C., PACHA members visited two clinics, Whitman-Walker Health and Family Medical. Whitman-Walker Health provides PrEP to approximately half of the 4,500 people currently on PrEP in Washington, D.C., but Family Medical only has prescribed PrEP for 20 patients despite its location in an area significantly affected by HIV. Mr. Schmid suggested that research related to PrEP could include the effects of pill size on adherence, the benefits of long-acting PrEP, and the effects of variations in insurance coverage. Mr. Schmid suggested that the NIH can play a role in fostering collaboration and connecting HIV service providers in all parts of the country, as well as disseminating information.

U.S. Department of Health and Human Services, Office of the Assistant Secretary of Health (HHS)
Kaye Hayes, M.P.A., Principal Deputy Director, Office of Infectious Disease and HIV/AIDS Policy, HHS

Ms. Kaye Hayes emphasized the key theme uniting this session's presentations—collaboration across society—echoing other panelists' remarks that the *Ending the HIV Epidemic* initiative has increased collaboration in an unprecedented way. She noted that HHS outreach includes specialized teams of U.S. Public Health Service Commissioned Corps officers serve in Atlanta, Dallas and Los Angeles to support the *Ending the HIV Epidemic* initiative. In addition, Ms. Hayes's office manages the Minority HIV/AIDS Initiative Fund, which allocated funding to jurisdictions jumpstarting the *Ending the HIV Epidemic* initiative and will allow lessons learned to be gathered and shared with collaborators.

Ms. Hayes noted the role of addressing stigma to enable accelerated progress toward EHE goals. Her office manages the National HIV/AIDS Strategy, which currently is being updated, including sections on viral hepatitis and STIs. Ms. Hayes emphasized that collaboration and stigma are the most important themes to take away from this panel.

Discussion Highlights

Dr. Gandotra clarified that SAMHSA is working to implement best practices and provide additional guidance to improve discrepancies in testing. Mr. Schmid explained that the implementation projects discussed in relation to PrEP are in their early stages—195 community health centers have received funds during Phase 1 of the initiative to increase their PrEP systems, with additional community health centers planned for the next phase. Ms. Hayes and RADM Mermin emphasized the importance of increasing the workforce and including in implementation science research questions about the most effective types of community workforce, how to promote the most useful skills, and operational questions about syringe service programs.

Ms. Hayes emphasized that listening sessions and collaborations with other groups are opportunities for communities to express their concerns and for leaders to gather the consensus on how to move forward to end the epidemic. Ms. Dempsey noted that the *Ending the HIV Epidemic* funding has more flexibility than some other HIV/AIDS programs, but a cultural shift is needed to encourage innovation. A participant suggested adding K awards or other training-related components to the *Ending the HIV Epidemic* initiative.

Updates to the U.S. Department of Health and Human Services HIV/AIDS Treatment and Prevention Guidelines from the Working Groups of the OARAC

Alice Pau, Pharm.D., Clinical Center, NIH
Nahida Chakhtoura, M.D., Ms.G.H., Eunice Kennedy Shriver *National Institute of Child Health and Human Development, NIH*

Dr. Alice Pau reminded the attendees that the adolescent and adult antiretroviral (ARV) HHS HIV/AIDS treatment and prevention guidelines are the most-viewed guidelines document, followed by the adult opportunistic infection (OI) guidelines. The ARV guidelines were updated in December 2019, and include a new section on treatment as prevention that focuses on the importance of viral suppression—based on the use of antiretroviral therapy—in preventing sexual transmission of HIV. This section includes information on the clinician's role in helping patients achieve viral suppression and emphasizes that unprotected sex with a suppressed viral load does not prevent STIs. Dr. Pau listed the other updated sections, including "When to Start," "What to Start," and sections on laboratory monitoring, ART and weight gain, optimizing ART, acute and early HIV infection, HIV in older patients, and tuberculosis and HIV. Additionally, the section on cost considerations was revised to include discussion of cost expenditures and the complexities of the payment process in the United States, as well as the role of generic ART. Planned updates for the upcoming year include a new section on transplantation and HIV; revisions to the section on optimizing ART; and updates to the sections on HIV and adolescents, discontinuation of ART, and drug-drug interactions.

Dr. Pau explained that the OI panel added 13 new members, including two new section heads, with a focus on adding diversity. A new subcommittee has been charged with reviewing each section for accuracy, clinical relevance, readability, and appropriate rating. Dr. Pau reviewed updates to the OI guidelines made in the past 6 months and added that a new section on immunizations is being written with an HIV-specific immunization table.

Dr. Nahida Chakhtoura explained that pageviews for the pediatric guidelines have been consistent with a peak last year, likely related to the dolutegravir information. Three joint sections with the perinatal guidelines were updated in December 2019; updates for the rest of the guidelines are planned for April 2020. Dr. Chakhtoura reviewed the planned changes for this update, including rapid initiation of ART within days of diagnosis for all children, updated U.S. Food and Drug Administration recommendations, and revised wording to align with the adult and perinatal guidelines. Additionally, a new subsection for adolescents addresses special considerations for sexual minorities. Other tables and appendices have been updated in accordance with revised recommendations. Dr. Chakhtoura explained that the panel continues to work on clarification of ARV dosing recommendations for newborns with perinatal exposure; these updates will be published in real time in both the pediatric and perinatal guidelines. The pediatric ARV subgroup is consulting with experts to update the ARV dosing recommendations for both premature and term newborns.

Dr. Chakhtoura noted that the only section in the pediatric OI guidelines updated since the last OARAC meeting is the addition of new information related to varicella zoster immunoglobulin protection. She noted two new co-chairs of the pediatric OI guidelines panel.

The perinatal guidelines also have maintained a high number of pageviews since the peak related to dolutegravir. Following updates made in December 2019 and January 2020, the guidelines now emphasize communication between clinicians and patients in the discussion of risk and benefit of all treatments. The dolutegravir section has been updated to explain the data from the Botswana study and provide recommendations and a counseling guide.
Dr. Chakhtoura noted an additional section on lactation inhibition and revisions to the section on long-term follow-up of infants exposed to ARV. She added that a section on PrEP in pregnancy is planned for 2020.

Discussion Highlights

When asked about 1-month preventive therapy for tuberculosis, Dr. Pau explained that the tuberculosis section group continues to discuss this issue and planned to communicate this question to the OI panel. She also planned to communicate participants' comments about the use of studies conducted in countries other than the United States.

Participants asked how to better communicate frequent updates to providers. Dr. Pau noted that tables are included in an abbreviated format to allow quick reference. Dr. Chakhtoura added that some panel members represent other agencies and groups, allowing them to act as liaisons for disseminating information. Updates also are presented yearly at the Conference on Retroviruses and Opportunistic Infections (CROI) and IAS.

When asked how the panels plan to build capacity for new treatments, Dr. Pau explained that an upcoming retreat will include discussion of implementation of long-acting therapies.
Dr. Goodenow added that a new OAR-coordinated task force will include the co-chairs of each of the guidelines panels.

Updates from the NIH Advisory Council Representatives

AIDS Research Advisory Committee (ARAC)

Richard Chaisson, M.D., Johns Hopkins School of Medicine

Dr. Richard Chaisson reviewed the Director’s Update from the most recent ARAC meeting, including the budget increase for the National Institute of Allergy and Infectious Diseases and projected payline increases. He emphasized that the success rate for grant applications is more than 20 percent, which is an improvement over previous years. Network recompetition is underway, with scores available now and awards scheduled for December 2020. Clinical Trial Unit reviews will begin soon for awards to be funded in December 2020.

During the last ARAC meeting, participants voted on new Small Business Innovation Research (SBIR) topics—a point-of-care test for the *Ending the HIV Epidemic* initiative and a topic related to targeting intracellular proteins or nucleic acids for next-generation HIV therapeutics—and both were approved.

A number of reports were presented at the meeting, including on SBIR, activities underway through the AIDS Vaccine Research Subcommittee, an overview of the vaccine research program, an overview of the basic science program, a review of the research portfolio in

therapeutics, and an update on the virtual clinical trial initiative described at the last OARAC meeting, which now has been restructured to develop projects that meet the needs of women. Dr. Chaisson noted several studies presented in the reports and commented on the increasing interest in a cure for hepatitis B, which is important globally and to persons with HIV given the high rate of coinfection in many resource-limited settings.

National Advisory Council on Drug Abuse (NACDA)
Carlos del Rio, M.D., Emory University School of Medicine

Dr. Carlos del Rio noted that the current funding opportunity announcements from the National Institute on Drug Abuse (NIDA) focus on implementing the HIV care cascade for justice-involved populations and assessing the effect of cannabinoids on HIV-induced inflammation. Two other requests for applications (RFAs) related to the *Ending the HIV Epidemic* initiative—collaborative initiatives with NIAID and National Institute of Mental Health (NIMH)—focus on understanding viral suppression and transmission and on implementation research in the Ryan White HIV/AIDS Program.

Concepts approved during the last NACDA meeting were related to reducing stigma related to drug use in human services settings, elucidation of mechanisms underlying complex morbidities of substance use disorder and other mental illnesses in people living with HIV and advancing HIV research through computational neuroscience. Dr. del Rio noted *Ending the HIV Epidemic* concepts focused on new models of integrating HIV addiction and primary care service and on using imaging approaches to characterize HIV reservoirs in lymphoid tissue in the central nervous system in the context of injection drug use. Dr. del Rio also noted that he is presenting a satellite symposium at the IAS conference on the syndemics of HIV and substance use.

National Advisory Mental Health Council (NAMHC)
Alan Greenberg, M.D., George Washington University

Dr. Alan Greenberg highlighted the RFA co-sponsored by NIDA and NIMH to enhance screening and treatment for mental health and substance use disorders at Ryan White sites to increase retention in care and viral suppression and to strengthen research and service delivery collaboration between NIH grantees and HRSA-funded HIV care sites. Although mental and behavioral disorders are common among persons at risk for and living with HIV, they are underdiagnosed and undertreated. The Ryan White HIV/AIDS Program has high rates of viral suppression, but gaps remain among people with decreased access to mental health and substance use care. Research in enhancing treatment of mental and substance use disorders could lead to improvement of HIV outcomes. NIDA and NIMH have solicited proposals for implementation science applications for this project in a number of topics. Applications were submitted in January 2020 and will be reviewed in April and May, with a planned start date of July 1. Dr. Greenberg noted that a meeting at NIH is planned to foster collaboration and data harmonization among awardees and projects.

Discussion Highlights

Participants commented that the suggested timeline of several years before the initiative focusing on meeting the needs of women referenced by Dr. Chaisson will be active was unacceptable. In response to a question about sexual and gender minorities, Dr. del Rio explained that an initiative is in progress to change the way information on patients ’sexual and gender minority status is captured and standardized.

When asked to predict the most productive areas that would lead to ending the epidemic, Dr. Chaisson agreed with the areas suggested by Dr. Goodenow, which included eliminating new infections and delivering treatment to ensure viral suppression and prevent transmission until an HIV vaccine is safe, effective, and widely available. He added that the ARAC focused on stopping transmission by engaging people in treatment, as well as discussing SBIR for adherence technologies, rapid-diagnostic tests, and next-generation therapies. Dr. Chaisson emphasized the importance of maintaining a broad portfolio of research given the potential for surprising outcomes, such as the HVTN 702 study mentioned by Dr. Goodenow. Dr. del Rio commented that one of the largest gaps in knowledge is the lack of interventions for substance use, given its significant contribution to both acquisition of infection and inability to adhere to care.

PEARL: Projecting Age and Multimorbidity Among People on HIV Treatment in the United States to the Year 2030

Keri Althoff, Ph.D., Johns Hopkins University

Dr. Keri Althoff explained that the Projecting Age, Multimorbidity, and Polypharmacy (PEARL) model is a simulation model to project the number of persons with HIV who have initiated ART, the age distribution of those people, and the comorbidity burden among those individuals in the United States through the next decade. With effective treatment and prolonged survival, persons with HIV now live longer, leading to an older population overall. However, these individuals are not a homogenous group, with some subpopulations who face different barriers to care, different levels of stigma and racism, and different risks for comorbidities and mortality. Dr. Althoff emphasized that these key populations almost always are defined at the intersection of gender, HIV acquisition risk, and race and ethnicity.

The PEARL model is unique in the use of estimates specific to 15 subgroups known to be important to the epidemiology of HIV in the United States, allowing researchers to assess these subgroups individually, compare them, or estimate the total epidemic as a combination of these populations. PEARL focuses on the U.S. epidemic among adults who have initiated ART because transmission dynamics are difficult to model, particularly in a timely manner among the 15 subgroups. This model then reflects an era in which all people with HIV are treated, allowing researchers to assess multimorbidity as persons with HIV thrive and age.

PEARL uses research-ready longitudinal data from the North American AIDS Cohort Collaboration on Research and Design (NA-ACCORD)—which captures the diversity of people with HIV in the United States and allows the stratification into 15 subgroups—as well as data from CDC. Dr. Althoff explained PEARL's logic, which incorporates people who disengage and reengage in care, mortality functions, and rates of ART initiation. PEARL projects a bimodal distribution of age among persons with HIV who have initiated ART in 2030 because younger individuals are more likely to have initiated treatment in an era with less toxic regimens and at higher CD4 counts. When this age distribution is divided into the 15 subgroups, many subgroups show a median increase in age of at least 9 years from 2010 to 2030, but some subgroups—such as Hispanic MSM and white women who inject drugs—have a smaller increase in median age. Additionally, some subgroups do not reflect the bimodal distribution, likely because of differences in the natural and treated histories of HIV infection. PEARL projects 853,000 individuals with HIV who have initiated ART by 2030, with noticeable growth among individuals in their 60s and 70s. Dr. Althoff and her team used PEARL to project the age distribution if the goals of the *Ending the HIV Epidemic* initiative were reached, showing a plateau of ART initiators under the 75 percent reduction in new cases by 2024.

PEARL can be used to predict numerous age-related comorbidities in persons with HIV, including both physical and mental comorbidities, but some of the most important age-related comorbidities in persons with HIV are not yet included. The projections indicate that the multimorbidity burden among persons with HIV using ART will continue to grow, with 63 percent having two or more comorbidities in addition to HIV by 2030. If the *Ending the HIV Epidemic* goals are met, this estimate rises to 71 percent. Age-stratified estimates show that even people as young as 40 to 49 are experiencing heavy comorbidity burdens. The various subgroups show significant differences in multimorbidity burden, again likely related to differences in barriers to care, racism, and discrimination. Dr. Althoff commented on PEARL's limitations, many of which are related to the limitations of the data available. She emphasized that PEARL demonstrates the need to consider additional care models and support HIV clinicians who serve as primary care providers to ensure that the U.S. health care system can support individuals with multimorbidity and HIV as they continue to age. Additionally, NAACCORD and multidisciplinary research teams must continue to be supported to increase big data and collaborative research science to address this complex issue.

Optimizing the Use of Novel Diagnostic Tools to Improve Treatment Outcomes Among Those on ART: From Access to Clinical Action

Brooke Nichols, Ph.D., M.Sc., Boston University School of Public Health

Dr. Brooke Nichols reminded attendees that viral load monitoring is intended to improve patient care, but in many countries the testing timeline is very long. In resource limited settings, such as Zambia, sample transport and result delivery can be delayed or challenged. Point-of-care diagnostics could be used to access regions and patients that are difficult to reach efficiently, which would lead to improved outcomes. Although Zambia, for example, rapidly scaled up its viral load monitoring program, little attention has been paid to access complications in the last mile of delivery between health care facilities.

Dr. Nichols and her team used models to determine the most equitable way to reach a high percentage of patients in Zambia, assessing the cost of placing point-of-care viral load test instruments at the facilities that are the most difficult to reach. A geospatial model identified candidate facilities and optimal locations for instrument utilization at the most efficient cost. In the original sample transport network, 46 percent of facilities, or 675 facilities, were not reached; Dr. Nichols and her team identified 337 point-of-care candidate facilities that were remote and low in testing volume. These 337 facilities comprise 20 percent of the total facilities in the country, but only 3 percent of total viral load volumes. The scenario with the lowest cost per test provided was an optimized combination of both true point-of-care and near point-of-care connections between these facilities, demonstrating a 53 percent reduction in cost.

Dr. Nichols and her team then added consideration of improving patient outcomes to determining the best point-of-care model. A study in South Africa, which provides ART to all persons with HIV through a centralized network, showed that point-of-care viral load testing improved viral load suppression and retention in care. To determine how best to implement point-of-care testing in this system, Dr. Nichols and her team considered the appropriate volume, equipment, laboratory improvements and constraints, and patient outcome improvements. Dr. Nichols and her team used the model to compare a variety of scenarios using these four factors, considering the costs of implementing point-of-care testing broadly or specifically. The minimum requirements for volume matching were facilities that performed four to seven tests per day. Equipment also was considered, as the two point-of-care testing devices currently on the market have significant differences in analytic sensitivity and capacity, and the m-PIMA would misclassify 16 percent of viral load tests as meeting South Africa's guidelines for

suppression. Improvements to the laboratory included reduced distance to the source laboratory and specimen rejection rates. Patient outcome improvements considered included identifying specific patients who need a point-of-care test, identifying facilities that could be improved by point-of-care testing, identifying specific patients at specific facilities, or providing point-of-care testing broadly. After considering a high variety of scenarios, Dr. Nichols and her team found that a scenario with centralized testing was the least costly, but it generated the least amount of health. A scenario that identified specific patients in specific facilities was the most cost-effective way to implement point-of-care testing.

Dr. Nichols recommended further research in cost-effective and sustainable implementation modeling to identify creative interventions and novel diagnostics.

The Role of Simulation Models to Improve Care for Adolescents and Young Adults Affected by HIV

Anne Neilan, M.D., M.P.H., Massachusetts General Hospital

Dr. Anne Neilan explained that the term “computer model” refers to algorithms and equations used to capture the behavior of a system or clinical problem, providing useful information to make decisions in the absence of ideal data. For example, data collection in studies with adolescents often is impractical because of the long periods of follow-up that would be required. Cost-effectiveness analyses do not always identify the least costly strategy, but they allow researchers to identify whether an additional benefit would be worth additional cost.

Dr. Neilan and her team work with Cost-Effectiveness of Preventing AIDS Complications (CEPAC) models to simulate HIV testing, disease progression, and treatment. She presented examples of situations in which CEPAC models were used to rapidly integrate emerging data—including to assess the risk and benefits of dolutegravir for pregnant women—to inform trial design and interpretation, and to inform policy goals.

Dr. Neilan explained that an adolescent- and young adult-focused HIV simulation model is useful because of the rapidity of developmental changes in this period. Adolescents and young adults with HIV have substantially poorer HIV care continuum outcomes than adults given the challenges of adolescence and the additional burden of stigma, as well as the challenges of transitioning from pediatric to adult care for adolescents with perinatal HIV infection. Despite this disproportionate burden, adolescents and young adults often have difficulty accessing HIV biomedical prevention technologies—for example, in most places, minors are not able to access PrEP.

Adolescent-focused models can explore changes in adherence behavior over time and project outcomes over longer horizons than would be possible with observational studies or trials. Dr. Neilan discussed two model-based analyses of adolescent-focused HIV testing conducted to determine the most clinically effective and cost-effective strategies for HIV screening among youth in the United States. The most effective strategy for youth with no identified HIV risk factors was a one-time routine HIV screening at age 25 years, which is after the peak of HIV incidence. For youth with identified HIV risk factors, such as young MSM, the most effective testing strategy is HIV screening every 3 months.

Dr. Neilan outlined her work with the Adolescent Trials Network Modeling Core, including modeling a hypothetical adherence intervention that averted 15 percent of transmissions and showed that even interventions generating small improvements in virologic suppression may improve clinical outcomes and be cost-effective. Future directions for the CEPAC model include

examining novel approaches to testing and the value of improved access to biomedical HIV prevention technologies, as well as additional adherence intervention trial work.

Dr. Neilan explained that modeling can help the NIH understand how interventions should be scaled and which interventions to use. Additionally, modeling can be used as an adjunct to trial planning, trial execution, and post-trial implementation. Diverse modeling methods can address distinct questions across the lifespan, which is particularly important given the significantly different issues facing infants, adolescents, adults, and the elderly.

Discussion Highlights

The modelers were asked to comment on parts of their training that helped them succeed. Drs. Neilan and Althoff emphasized the importance of the NIH Loan Repayment Award and mentor support mechanisms. Dr. Althoff suggested that HIV training grants could be a useful approach to involving more students in the field. She added that the pilot data necessary for the PEARL grant application were gathered through a pilot award made to Wake Forest University.

Dr. Nichols agreed with participants that the mismatch between the number of point-of-care tests conducted per day in some locations and the number of tests each point-of-care machine can conduct per day (i.e., capacity) is an important consideration when assessing utilization.

When asked about mechanisms for transferring modeled information into the policy realm, Dr. Althoff explained that she provides a 1-page executive summary and a Twitter thread for her papers to make the findings easy to distribute to policymakers. She has developed and made available a “do-it-yourself dissemination kit” to help researchers and students communicate their findings outside the narrow research field. Dr. Nichols added that many of her projects in Africa include direct engagement with a diverse network of agencies that help distribute the findings. Dr. Neilan emphasized the importance of face-to-face interaction.

Dr. Neilan clarified that although some results in increased life expectancy may seem small, cost-effectiveness and life expectancy must be considered relative to benchmarks from studies of other conditions, such as cancer.

Dr. Althoff explained that policy assessments sometimes must identify a missing component, which can be assisted with modeling. Dr. Kates suggested that OAR could help bridge the gap between modeling and the *Ending the HIV Epidemic* initiative. Dr. Althoff encouraged more rapid and multilevel dissemination of *Ending the HIV Epidemic* data to connect the data to modeling research.

Public Comment

Jennifer Kates, Ph.D., Kaiser Family Foundation

Dr. Kates stated that no written public comments had been received.

Closing Remarks and Adjournment

Maureen M. Goodenow, Ph.D., OAR, NIH
Jennifer Kates, Ph.D., Kaiser Family Foundation

Dr. Goodenow thanked the Council members, guidelines working groups, and speakers.

Dr. Kates added her thanks and adjourned the meeting at 4:26 p.m. EST.

Certification

I hereby certify that, to the best of my knowledge, the foregoing summary minutes are accurate and complete.

Jennifer Kates

Digitally signed by Jennifer Kates
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Date: 2020.07.23 20:03:08 -04'00'

July 23, 2020

Jennifer Kates, Ph.D.
Chair, OARAC

Date

Mary Glenshaw -S

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July 23, 2020

CAPT Mary Glenshaw, Ph.D., M.P.H.
Executive Secretary, OARAC

Date