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BOSTON UNIVERSITY
THE FUTURE OF PEPFAR
MARCH 28, 2024
1:00 P.M. ET

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>> PATRICIA HIBBERD: Good afternoon. My name is Dr. Patricia Hibberd. I serve as professor and Chair of Global Health at the Boston University School of Public Health. I am standing in for Dean Galea, who is sorry to miss this event due to a scheduling conflict. On behalf of our school, welcome to today's Public Health Conversation. These conversations are meant as spaces where we come together to discuss the ideas that shape a healthier world. Through a process of open discussion, debate, and the generative exchange of ideas, we aim to sharpen our approach to building such a world.

Guided by our speakers, we work towards a deeper understanding of what matters most to the creation of healthy populations. Thank you for joining us for today's conversation. In particular, thank you to the Dean's Office and the Communications team, without whose efforts these conversations would not take place. And thank you to our keynote speaker, John Nkengasong, Ambassador-At-Large, US Global AIDS Coordinator and Senior Bureau Official for Global Health Security and Diplomacy at the Bureau of Global Health Security and Diplomacy at the U.S. Department of State.

The U.S. President's Emergency Plan for AIDS Relief, known as PEPFAR, represents the biggest Commitment by a country to address a single disease in history. Launched by President George W. Bush, PEPFAR has been supported by subsequent administrations and congresses, enjoying bipartisan engagement with its mission. Today we will discuss the present and future of PEPFAR, and our broader progress towards the Sustainable

Development Goal of ending the AIDS epidemic by 2030.

I look forward to learning from all our speakers today as we discuss this important topic. I am now delighted to introduce today's moderator, Peter Hayward. He is the founding Editor-in-Chief of The Lancet HIV and has served in this role since 2014. He hosts the podcast "The Lancet HIV, in conversation with" and speaks to the journal's authors to explore their research and its impact on people's health, health care, and health policy. He previously served as Deputy Editor of The Lancet Infectious Disease. Over to you, Peter.

>> PETER HAYWARD: Thank you, Dr. Hibberd, for that introduction. I'm delighted to have been asked to moderate this session and I'm looking forward to it. I hope everyone will enjoy the conversations we're going to have. I hope you all feel free to participate in the discussion later by asking questions of our panel by using the Q&A function in Zoom.

It is first my pleasure to introduce today's keynote speaker, Ambassador John Nkengasong. Dr. Nkengasong is Ambassador at Large at the U.S. Global AIDS Coordinator -- sorry, the U.S. Global AIDS Coordinator, and Senior Bureau Official for the Global Health Security and Diplomacy at the U.S. Department of State's, Bureau of Global Health Security and Diplomacy.

Dr. Nkengasong's role as a senior official includes leading the President's Emergency Plan for AIDS Relief. A virologist with over 30 years in public health, Dr. Nkengasong has previously served as the Director of African Centers for Disease Control and Prevention, is the Branch Chief and Associate Director for Laboratory Science at the U.S. CDC's Division of Global HIV and Tuberculosis International Laboratory, is Acting Director at the CDC's Center for Global Health and Co-chair of PEPFAR's Laboratory Technical Working Group.

What a list there. Incredible. Dr. Nkengasong is the recipient of numerous prestigious awards and recognitions. Most recently, he served as one of the World Health Organization Director General's Special Envoys for COVID-19. We are delighted to be joined by Ambassador Nkengasong. I'll now turn things over to him. Ambassador Nkengasong.

>> JOHN NKENGASONG: Can you hear me? Just testing.

>> PETER HAYWARD: We can hear you now.

>> JOHN NKENGASONG: Good. Thank you, Peter, for the kind introduction. Thank both of you, Pat, for your kind invitation to join this very important dialogue. Let me say that it's truly an honor to be with you on this dialogue, because of someone who is so special and dear to me. I think I owe my presence here today in front of you because of that person, Dr. Greenberg. Dr. Greenberg hired me at CDC, to join CDC in 1994.

And we're in 2024. So it's exactly 30 years ago that I first met him. And he nurtured my first steps in transforming me from being a bench virologist to a public health expert, and taught me the rules of CDC and the rigor of conducting public health. I don't know what I am today, if I'm a public health person, a policy-maker or whatever, but either way, I owe a lot of that to Dr. Greenberg. So it's truly humbling to be in the presence of someone you consider as a giant and hero and mentor

in your life.

Knowing him, he will be embarrassed and not want me to say this. But it's a unique moment to say it in public and in private. So, in the next couple of minutes, I will go through -- just share my reflections on PEPFAR's role in the global HIV/AIDS pandemic response. Then, now, and in the future.

So, to start off with, this is -- I usually call PEPFAR as the title suggests here . . . I usually see PEPFAR in the lense of inequity and equity. And as the title suggests here, PEPFAR is an inequity gap closer. This slide shows you where we were in 1996 timeline. The blue lines shows you deaths in the mid-90s, then you see a sharp decrease in the number of deaths.

At the same time, deaths continued to increase in Africa. And over the period of between 1996 and 2006, almost 10 million African Americans died of HIV/AIDS. HIV/AIDS have created havoc in Africa at that time. And the graph you see here on your left-hand side shows the effect of HIV/AIDS in terms of life expectancy. That has decreased significantly in many African countries.

Decreased 35 years in Zimbabwe. And the GDPs in those countries have decreased by 2.6 percentage points. Then, in January 2003, at the State of the Union address, President Bush announced PEPFAR. And I urge that you read this. It says to make a severe crisis, I propose the emergency plan for AIDS relief, a work beyond all current international efforts to help the people of Africa.

And the last part of that is so profound. Seldom has history offered a greater opportunity to do so much for so many. President Bush. And the picture on the bottom panel here shows President Bush. And at that time, senator Biden, who was the Chair of the Foreign Relations Committee, and Senator Kerry. They all served in different functions. Today we have President Biden continuing to support PEPFAR.

Last year, as we celebrated the 20th anniversary of PEPFAR, there were so many editorials that were written. One of those caught my attention. It was one that was written and published in The Hill by former President of Botswana, and the former HHS, health animal services department, Tommy Thompson. And I hope that you read the title here. It says How PEPFAR Helped to Save Botswana from Extinction.

Over the last 21 years, because of PEPFAR, AIDS-related deaths have declined by 68% since their peak in 2004. Because of PEPFAR, the rates of new infections have decreased by 42% across many countries in Africa. And 25 million lives have been saved. 5.5 million babies born free of HIV/AIDS.

At the same time, PEPFAR has had broad impact in other areas. GDP has increased by 2.1% in countries that have received PEPFAR support. Child mortality has decreased by 35% in countries that PEPFAR has supported. And girls and boys, the rate of girls and boys drop out of school decreased by 9%. Immunization rates have increased by 10%. This is a study that was conducted.

PEPFAR has also strengthened health systems across the board. And we invest every year $1.1 billion in supporting

health system strengthening across the board. This slide shows you some of those areas that PEPFAR has contributed significantly, including strengthening of the 170,000 healthcare facilities.

And I must say here that this infrastructure that you see, the massive infrastructure in Africa is being used every day. When the need arises to respond to disease outbreaks, including the recent pandemic, the COVID-19 pandemic, and cholera outbreaks in West, Eastern, and Southern Africa.

This slide shows here progress, how countries have progressed over the years. And it shows you in blue the rates of new infection, incident rates and in red the deaths of HIV. And regardless of where you are in some of these countries that had the highest burden of HIV/AIDS, you see that the blue line, which is the incident rate, has decreased significantly, progressively, and has crossed the line around the 2020-2022 timeline and it's now currently below the rates of deaths.

You see that in other countries outside of Africa where PEPFAR is engaged, in Cambodia, Nepal and Thailand. Because of PEPFAR and other programs, the trajectory of HIV/AIDS has been changed.

However, the story is not uniform everywhere. We continue to see areas that require aggressive acceleration efforts like in Burma where the two lines are crossing. Just a reminder, the top line is the incident and the red is mortality. In Indonesia and Laos. You also see areas that we characterize as epidemic of concern in the Kek Republic, Tajikistan, Papua New Guinea, and the Philippines. The rate of new infection has increased by 400 percentage over the last couple of years.

The fight against HIV is not over. HIV will not be defeated everywhere if it still continues to exist anywhere in the world. If we have to get to our 2025 goals, which is to achieve the three 95, make sure 95% of people who are infected know, 95% who know are linked into treatment, and 95% of those have suppression, we have a long way to go.

It means between now and 2025 we need to find about 2 million people and put them on treatment. And that is the blue line you see there, which is hidden, the diamond. But if we continue to accelerate the way we are, we will miss that target, which is the red line. So we need to accelerate as much as possible everywhere, especially in those countries that have not achieved the kind of progression or trajectory that I just showed you for Botswana, Swahili, and Namibia.

How do we end HIV/AIDS? We published a commentary in Nature in November 28th where we said this is how the world finally ends HIV/AIDS, especially in Africa. We said we should prioritize young people, specifically girls and young women age 15-24 and men 25-35, because the rates of new infection is extraordinarily high in this group.

Young people age 15-24 account for 27% of new infections globally. If you focus on Africa, they constitute 65% of new infections. In eastern and southern Africa where the burden of HIV is the highest, only 25% of girls and 17% of boys between the ages 15-19 underwent testing in the past year.

Why is that important? If you look at Tanzania, focus on the right-hand side, it shows you the results of data we collected recently. If you look at viral load suppression by sex in the age group 15 and 25-34, it tells a story that the rate of suppression is just 54% around the age group 15-24 years. And only about 76% amongst the age 25 and 34.

And if you look at the corresponding age, especially between 25 and 34 years it's only about 57%. And if you look at that age group, males, 62%. So you continue to work hard in bringing young males into care. Make sure that they receive their treatment and they stay in treatment. Otherwise the cycle of transmission will continue.

Our ultimate goal is to bring HIV/AIDS to an end by the year 2030. And a pathway to that is by the end of next year, which it means we have about 20 months, we should bring as many countries as possible to the three 95 goals. To do that, we need a strong collaborative spirit between government, the civil society and partners. We have to act with respect, courage, and boldness. We have to set targets, ambitious targets and have the courage to meet them and implement policy change that will address those targets.

So in the next year, this year and next year, PEPFAR will be championing a theme called Sustain and Accelerate. Sustain gains we have made, but accelerating as much as possible. We have offered a five by three strategy which says we have to focus on the five pillars that you see here listed one to five.

We then have three enablers, which is community leads, be innovative and lead with data so that we know exactly where to focus the limited resources.

So, there are lessons that we've learned. First of all, political leadership matters if we bring HIV/AIDS to an end. let me just expand on that. I always use the formula which says good politics equals good public health equals lives saved. In a book published in 2015, Peter stated this. It says, science does little good when it operates independently of politics and economies, and politics is worthless if it rejects scientific evidence and respect for human rights.

I think that was true then. It's true today. So, in terms of politics, why does it matter? In the early '20s we saw good politics on display and it's thanks to this that we were able to bend the trajectory. In 2000, the U.N. Security Council adopted the first resolution by the United Nations ever to characterize HIV/AIDS as a threat for global security.

In 2001, the U.N. General Assembly held a special session on HIV/AIDS, the first ever by world leaders focusing on this. And in 2001, the global forum was established and it has since raised 60 billion and saved 50 million lives across the three diseases. And this is President Bush, Secretary General Anan, President of Nigeria at that time, and Colin Powell. That is the power of good politics, where we apply them uniformly.

Second is invasion and data-driven approaches. We have seen the power of innovation, where from the start of in the mid-'90s as I showed, treatment of HIV was based on a cocktail of drugs. Because of good science and innovation, today we just require

one pill. And we are now in the place where it is very possible that in the future we will be moving towards injectable treatment.

We already have injectable preventive interventions. In the last couple of months, PEPFAR has launched a program in six African countries to begin to implement injectable HIV prevention drugs which we hope could be a game-changer. And this was just published in Science a few days ago. To be very specific, on March 25th.

We also know that PEPFAR is positioning itself to look at ways that could bring AI and machine learning into predictive models that can help us identify HIV patients for treatment and suppression. This is a study that was published in South Africa, not by us. And that shows the power of applying machine learning and AI into HIV response programs.

Health financing, as I move to my conclusion, remains a critical focus if we are to bring HIV/AIDS to an end. This is an important slide and it shows you three colors. In blue it shows the out of pocket expenditure. This is general financing and you can deduce from this, and I'll go to the next slide on that.

But in orange, it shows you government expenditures in countries. Green is total expenditure. It clearly shows if we have to bring HIV/AIDS to an end, financing will matter, sustained domestic financing will matter. For example, in 2020, out of pocket expenditure was 168 billion. Domestic financing was 140 billion. And international funding was 41 billion.

So a part of the funding must come from the countries. And this slide shows you over the years where HIV funding is coming from. The red bars indicate domestic funding and private sector funding. And the light bars there, red bars indicate United States funding and you can see that PEPFAR funding has flat-lined over the years.

And the global funding is the dark red color there, clearly showing that if we have to -- in a sustained manner, having the dialogue with countries we support, using the leverage to unlock domestic financing and make sure that they are used appropriately is going to be important.

Where do we go from here? To conclude, just last week, PEPFAR was reauthorized for one year. And this was published by the Bipartisan Policy Center. It says this is a notable step forward. Full bipartisan reauthorization is still needed. We welcome the one-year reauthorization of PEPFAR that we urge we continue to work with Congress in a bipartisan way to ensure that we have a clean five-year reauthorization.

And this is a tweet from the chairperson, Senator who says, deeply disappointed. PEPFAR is one of the most successful bipartisan foreign assistance programs in the nation's history. I'm deeply disappointed that the traditional five-year reauthorization wasn't secured in this year's appropriations package. We remain optimistic that it will be the case next year when PEPFAR in March comes up for renewal.

PEPFAR continues to be a bipartisan program. I've engaged with several senators, Congresspeople over my close to two years tenure in this position. I'd like to thank the bipartisan nature

of the support that PEPFAR has enjoyed including in arriving at this one-year support that we just got.

PEPFAR has enjoyed the support of eleven Congresses and four Presidencies. If it is reauthorized, this is what we project will happen. About 5.2 million AIDS-related deaths will be prevented. This will lead to 4 million fewer orphans due to HIV/AIDS. It will lead to 6.4 million new HIV infections prevented, resulting in 1 million fewer new infections in children.

That is the power of this program if it continues to be supported in a bipartisan manner. If we suddenly stop PEPFAR, what will happen in the high-burden countries? You see an increase of about 400% in the number of deaths. This is the orange line. So, again, reiterating that the gains we've made over the years, we must continue to sustain the response.

It also shows that the rates of orphans will increase significantly. This is modeling we published recently. So, thank you for the opportunity to share my thoughts with you. And I really, sincerely thank you all for giving me the opportunity to be on this platform.

>> PETER HAYWARD: Well, thank you, Ambassador Nkengasong. That was a fantastic overview. And it's really great to see not only the direct benefits that PEPFAR has for people living with HIV or at risk of HIV, but also the off-target effects and benefits that have really made a massive difference to people in countries who have benefitted from PEPFAR support. Thank you.

I'd now like to take a moment to introduce the rest of the speakers that are going to be speaking in our program today. First, we're going to hear from Susan Cu-Uvin, who is the Director of the Providence Boston Center for AIDS Research. Dr Cu-Uvin also serves as Professor of Obstetrics and Gynecology and Medicine at the Albert School of Medicine at Brown University, and Professor of Health Services, Policy and Practice at the School of Public Health.

Then, we are going to hear from Alan Greenberg, Director of the District of Columbia Center for AIDS Research. He's a Professor in the Department of Epidemiology in George Washington Milken Institute School of Public Health, and a Professor of Medicine and Microbiology, Immunology, and Medicine in the GW School of Medicine and Health Sciences.

Finally, Renee Heffron, an HIV Prevention Researcher with doctoral training in clinical epidemiology and an expanded methodological toolkit that incorporates implementation science, behavioral science, and qualitative research. Dr. Heffron serves as a Professor of Medicine and Director of the Center of AIDS Research at the University of Alabama, Birmingham. She leads numerous projects that address consequential questions about HIV prevention with colleagues in Uganda, Kenya, and South Africa.

So, first, Dr. Cu-Uvin, over to you.

>> SUSAN CU-UVIN: Can you see my slides?

>> PETER HAYWARD: We can, yes.

>> SUSAN CU-UVIN: Okay. So I want to thank the organizers for inviting me, and I want to thank the ambassador for giving a very, very great summary of how important the PEPFAR is to all

of us. And I'm going to focus more on how the future of PEPFAR affects our Providence Boston Center for AIDS Research. The Providence Boston Center for AIDS Research is a collaboration between Brown University, its affiliated hospitals, and Boston University and Boston University Medical Center.

So, if you look at all the PEPFAR countries that have been mentioned, we see work in Kenya, in South Africa, in Uganda, Ukraine, India, Philippines and in Brazil. So, we do work a lot with our collaborating PEPFAR countries. And I can tell you, without PEPFAR support for infrastructure, for clinical -- for the clinics and for the staff, none of this would have been possible.

I know these are busy slides, but you don't have to read all of this. I just wanted to give you an overview of all our current programs, from our CFAR that are currently funded working on HIV care cascade, HIV prevention, looking at comorbidities, and cancer related to HIV in Kenya. We have two training grants, one for the prevention of HIV-related cancer in HIV-infected women, and in partnership with Moia University on statistics training on HIV.

We have big data and AI in decision-making. As the Ambassador said, the use of AI is starting. And how do we help using AI in HIV care cascade. We are doing a lot of resistance work, resistance failure and what would be the second line of choice in terms of anti-retrovirals for those who are failing. We work mainly also with perinatally infected Kenyan children and adolescents, because they have been most exposed to different kinds of anti-retrovirals.

And it's a very difficult population to deal with in terms of adherence, and have a higher risk probably of developing HIV resistance. We also are working with the community and micro-finance groups. The Ambassador mentioned about financing. And sometimes we can rely on the government. We can rely on donors. But occasionally we also have to strengthen the community in terms of relying on their own financial resources to address their HIV needs.

In terms of prevention of cervical cancer, I'd like to tell you a short story that we have a Fogerty Training Grant. And we train several of our obstetrician gynecologists as Fogerty scholars. And 2009 when I went to Kenya there was no established cervical cancer screening program. And we know that HIV -- women with HIV are more at risk for developing cervical dysplasia or neoplasia and eventually cervical cancer because they are more at risk for human papilloma virus infection and persistence of human papilloma virus infection based on their immune logical deficits.

We started with a small Fogerty grant to test 150 HIV-infected women through visual inspection with acid and Pap smear. Why did we choose visual inspection? Because it is -- can be done by nurses and midwives. It costs 20 cents. And Pap smears need a laboratory infrastructure and technologists and it cost at that time about $9, which is unaffordable for many of our patients.

With that small study we showed that 40% of women who have

HIV have cervical abnormalities. And this was at a time when there was no massive spread of anti-retroviral therapy. Since that time from one site we have spread to about ten sites. And when we look at our data last month we have screened over 180,000 women, both HIV with and without HIV.

So we are now looking at the effects of treatment and looking up more pathogenesis issues and why some women develop cancer and why some women don't develop cancer. So we also have work in emergency rooms. We are -- there are persons at risk who don't meet the healthcare system unless they are in an emergency situation and have increased the testing rates for HIV in the emergency situation from 23% to over 70%.

And some innovative work on mobile phone-based screening for HIV and anemia in young children that are exposed to HIV.

In South Africa, it's mainly -- part of the work is mainly on HIV and TB. We have a lot of researchers working at the intersection of HIV and TB, transmission of drug-resistant TB. We have work on re-exposure prophylaxis particularly in women who are pregnant and postpartum women. We are looking at the evidence-based behavioral therapy in terms of HIV treatment outcomes among women who are undergoing intimate partner violence.

We're looking at migration in HIV outcomes. We're looking at cardiometabolic health among HIV-exposed and unexposed children who are the majority now of the children being born, because as the Ambassador said, one of the biggest successes in implementing HIV therapy to pregnant women is even in Africa we have decreased mother to child transmission to less than 2% if they are taking their medications.

But many of these children who don't have HIV have been exposed to HIV. We also have work, working with students and teachers and adolescents to prevent HIV transmission. As the Ambassador pointed out, in Africa, young women are very high-risk and have a high prevalence and incidence of HIV infection.

So, I am very grateful to the Ambassador for bringing up the issue about the Philippines. The Philippines was one of our HIV training sites in the 1990s. But because there was a very low prevalence and incidence of HIV, despite the fact that the neighboring southeast Asian countries like Thailand and Cambodia had higher rates and incidents and prevalence of HIV, the Philippines remains below 1,000 year after year.

And so the Fogerty International Center told us we probably should stop our work in the Philippines. And we did stop our work in the Philippines. But as you can see, it's now estimated that the HIV incidence globally is going to come down, but in the Philippines it's projected to go up. And from the 2023 numbers now, there are over 160,000 people with HIV in the Philippines.

And each year you can see the incidence going higher. I think 2020 was an aberration because of the COVID pandemic, or testing was less. But it's mainly also in men who have sex with men and cis gender women. So we have a training grant led by Donna and myself. Unfortunately, she has moved to MRE University.

But we will continue our work with the Philippines.

So all the work that we have done in the Philippines really have centered on men who have sex with men and transgender women, trying to understand their vulnerabilities, preventive services, intake of anti-retroviral therapy, and adherence to medication, availability of services, but also characterizing how much stigma they have to undergo and the overlap between substance use and sexual risk for this population.

In Uganda, much of our work is on HIV, alcohol abuse, and HIV and TB. Dr. Samet has the International Uganda Boston Network for Alcohol Research on Hearing Aids. It's a P01, work with the Regional Referral Hospital and City HIV Clinics, looking at the impact of alcohol use on TB, continuing among people with HIV and testing the effect of gabapentin on improving HIV suppression via alcohol use reduction.

There's a new grant, with Boston University and we're looking very much forward into looking at the issues of multiple infections and frailty among the aging population. Because like the U.S., with less mortality because of anti-retroviral therapy, even in Africa, patients with HIV are living longer and reaching an age where we did not expect anybody to be growing so old.

My oldest patient in my own clinic is 86 years old. When I started HIV work in the late '80s, I never thought any patient of mine would live to their 80s. In India, Brazil, Ukraine, Dominican Republic, we work on cascade, nutrition, networks and clustering, drug resistance and HIV/TB. Despite the fact that there is a war in Ukraine, I must honestly tell you that we have been able to continue our work in Ukraine.

Unfortunately, our work with Russia has stopped. I hope that this will not be permanent. But the work in Ukraine, because of the -- because of our great collaborators, this has not stopped. I don't know how they do it. They have been able to enroll and follow up their patients. And this is a testament to really the dedication of staff researchers and the infrastructure that PEPFAR has put in even in countries where war is ongoing.

So, in summary, I would just like to say that without the support of PEPFAR countries where our CFAR is collaborating institution, we would lose the opportunity to continue our work in improving and understanding the HIV care cascade, elimination of HIV, pre- and post-exposure prophylaxis, STI treatment like the PrEP, understanding HIV resistance in second-line therapy, our work on HIV and comorbidities, communicable and noncommunicable diseases, our work on improving mental health, HIV and TB, which go together in many, many countries, understanding social behavioral factors to improve HIV care, prevention, and retention, and reaching vulnerable populations, LGBTQ, patients with intimate partner violence, children and adolescents, economically disadvantaged populations, rural populations, patients with mental health issues, immigrants, populations with human insecurity, nutritional insecurity.

I can not thank the PEPFAR program enough. I am disheartened that it has only been extended for a year, but I am sure the Ambassador and all the people who are in leadership

know the importance of PEPFAR and will continue all our work and the collaborations between PEPFAR and the CFAR. Thank you so much.

>> PETER HAYWARD: Thank you, Dr. Cu-Uvin. That was a really fantastic presentation just showing -- I'm gobsmacked by the activities you're involved in. And it was a really great overview and insight into some of the PEPFAR-supported work that goes on. So, thank you.

I would like to remind everyone watching the session today, please do join in the conversation by adding your questions to the Q&A function on Zoom. Looking forward to an exciting and interesting Q&A session at the end of the presentations. But for now, I'd like to hand over to Alan Greenberg for the next presentation. Alan.

>> ALAN GREENBERG: Thank you. Sharing slides here. I'd like to thank you, thank the BU School of Public Health for the invitation today, Peter for your kind introduction, and especially Dr. Nkengasong for your very kind words and for your leadership of the absolutely vital PEPFAR program.

My remarks will be somewhat brief. I'm flagged by some of the world's experts in global HIV today. And our portfolio is more modest, but it's an honor to present it today.

So I'm the Director of the DC Center for AIDS Research. Our submission focused on the HIV epidemic in D.C. As many people know, D.C. had one of the more profound urban HIV epidemics in the United States, and most of our focus has been locally.

However, we have nine partners. And I work at the George Washington University, but people are from many different institutions who are in Washington. And especially American University in the last five years or so. There's a School of International Service. And Shannon is the dean of the school. In the George Washington School of Public Health, both in the prevention department especially that's an emerging number of investigators who have been working on HIV in PEPFAR countries.

We have 260 members, as you can see on the bottom, about two-thirds of whom are fairly well-engaged in the CFAR but we only have a handful or two of investigators who are actively working in PEPFAR countries. So it's a reasonably small portion of our portfolio.

And a lot of the focus has been on prevention and social science. It was fascinating to see Dr. Cu-Uvin's presentation and the spectrum from clinical work to laboratory work to prevention work. But I think as you'll see, most of the investigators who work in Sub-Saharan Africa are social scientists. So we have three from AU, three from GW, but you can see we're working in Tanzania, Dominican Republic, there's an overlap with some of Dr. Cu-Uvin's presentation.

There are several studies, one in Tanzania, one in South Africa, including Dr. Koa, who came from Brown University last year to Washington, D.C., who worked on interpersonal violence. There's the HIV self-testing project. There's a stigma investigation, and another stigma investigation. And a very fascinating intervention where youth are being employed to help provide care to persons aging with HIV in southern Africa.

And there's a new project. So, a training award was funded from one of our colleagues working on transgender women in Ecuador. So compared to what Dr. Cu-Uvin presented, it's a more modest portfolio. But many of these are recent grants. And it's good to see that investigators are engaged.

We also, as everyone knows, we give out pilot awards. Between 2016 and 2021 there was a lot of interest in HIV in PEPFAR countries, especially as you saw in the previous slide, two of these investigators were able to get awards and publish their data and were successful in competing for NIH awards.

In the last couple of years since the pandemic we haven't had a lot of applications for international work. And we're hoping that will change in the years ahead.

And another thing our leadership wanted me to point out was it's been very interesting in the last year or so. We've had three different applications where people have been funded either through the CFAR or through the supplemental application where investigators are adapting global interventions and bringing them to Washington, D.C.

So in fact, a lot of the expertise and lessons learned are being applied locally in our community. And one is a peer-to-peer mentor program for postpartum women living with HIV in D.C., they're adapting a mentor program from the United kingdom.

There's a community-based organization about PrEP, that was adapted from research, and there's a group intervention for stigma that was tested and shown to be helpful in Nigeria that is now being applied in Washington, D.C. So we thought that was interesting, lessons learned through the global context being applied to a local context.

So I'll keep my comments short. We have a small but emerging portfolio of global HIV research, largely about prevention and behavioral science. The countries we're working with, some overlap with Dr. Cu-Uvin. Nigeria, Tanzania, South Africa, Ecuador, and DR. Key populations, adolescent girls and boys, sexual minority men, transgender women, female sex workers, pregnant women, persons aging with HIV, and there are several investigators who are adapting intervention from the a global context to apply in D.C.

So, that's it. Just a brief overview of what's happening in Washington. And I yield my time to my expert colleagues. Thank you.

>> PETER HAYWARD: Thank you so much, Professor Greenberg. That was a nice presentation and interesting to hear about how efforts -- PEPFAR-supported efforts are also contributing to programs in the USA. Again I'd like to remind you all to add your questions to the Q&A function on Zoom. And we'll now go over to our final speaker, Renee Heffron. Over to you.

>> RENEE HEFFRON: Thanks so much. It's really a pleasure to be here today, on behalf of the UAB Center for AIDS Research. I'm going to start with a slide to tell you about our center, but I think as you're seeing from the presentations by my colleagues, the Centers for Aids Research supported by NIH are here to support research. So it was wonderful for Ambassador

Nkengasong to show us that following the research is foundational to the PEPFAR structure of programs and implementation strategies.

And so we're here to fill in gaps, address unanswered questions and move the needle forward on ways to advance the curbing of the HIV epidemic. When I took the role of CFAR director at the University of Alabama in Birmingham two years ago, Dr. Greenberg said if you know one CFAR, you know one CFAR.

And so our three presentations are all slightly different today. And what I wanted to do with my time with you was to talk a little bit broadly about the HIV epidemic. What I think we heard from Dr. Nkengasong are the priorities for PEPFAR over the next few years to meet the goal -- the strategic goals. And then intersections with the UAB CFAR in particular as some examples.

And also wanted to start by saying that I started my first real job was in 2005 with the Centers for Disease Control in Zambia. If you were following the timeline of PEPFAR, that was at the time where PEPFAR had been announced and it had been almost two years. And so systems were flowing and things were really getting under way. And it was a busy and an exciting time to spend 3 1/2 years in Zambia participating in the rollout in the early days of PEPFAR.

And since then either directly myself through different roles or indirectly through partners and friends I've been involved in PEPFAR and seeing its impact and watching things unfold. So it's very exciting to be here.

So the Center for AIDS Research at the University of Alabama, this is a figure showing our structure. We're composed of five service cores as we call them and then two scientific working groups. And one on substance use and one on global health reciprocal innovation.

But I also would be remiss if I didn't point out that we are located in the deep South of the U.S. and the figure on the right shows you HIV prevalence around the U.S. We are located in one of the most highly burdened locations in the country. And we have a laser focus on HIV in Alabama and in the near region.

But then we also have an expansive focus and a long history of working globally. So, in terms of priorities for the HIV epidemic in general, I think there are three main things in term of implementing programs. And the first thing is to support virally suppressed people. And the second to reduce gaps in viral suppression. And then the third is to expand access to PrEP as primary prevention. These aren't in ranked order.

In terms of supporting virally suppressed people, this means thinking about the long game and how do you support people who are living with a chronic infection. This means supporting services for comorbidities -- mental health, substance use, quality of life, co-infection with other STIs, hepatitis and other infections.

And I'm not going to show you a long list of grants and research that people at the UAB CFAR are working on, but there are -- all of these topics are covered. And looking at innovative solutions and understanding in some cases about virology and immunologic outcomes to support people as they

advance into older age living with HIV.

Next, reduce gaps in viral suppression. Dr. Nkengasong referenced this by talking about the high-hanging fruit. I think about this as needing to adapt in some settings and contexts almost a mindset of eradication where we've reached more than 95% of people who are diagnosed and know their status being virally suppressed. We've got to do more and understand and reach in places where there's not as high as 95%, but keep striving.

We're going to need to look at individual needs and really target approaches. These are data that just were presented at the Conference on Retroviruses and Opportunistic Infections by one of our CFAR members who was the protocol chair for the latitude study.

These results were exciting. Working with people with HIV who were not suppressed, either lost to followup or having poor response to their regimen, showing that an injectable regimen was superior in terms of virologic failure and treatment-related failure to the standard of care oral medications. So really hoping we're going to see changes in guidelines in the U.S. and hoping we can see this injection roll out to people with HIV through PEPFAR and globally.

I would be remiss if I didn't let you know in Alabama, our viral suppression rate hovers around 63%. And depending on which region and state you're at, it's a little higher or a little bit lower. And I wanted to bring up in this instance this idea of global health reciprocal innovation. Dr. Greenberg mentioned this just a few minutes ago, but it's really this idea that the NIH and others are really taking seriously and moving forward about leveraging what we've learned from other settings and adapting them elsewhere.

And I think in terms of reaching the high-hanging fruit or those who are not yet virally suppressed there's a lot we can learn from countries that have reached that 95% and we can try out either through research protocols or programmatic kinds of evaluations newer strategies so that we can go deeper and increase viral suppression.

And third is expanding access to PrEP as primary prevention. In my career thus far, it has been focused on PrEP. I could say a lot. But I'm just going to keep my comments few. I think it's very exciting that we have three methods that have shown efficacy and that are part of national guidelines in many countries.

I really am excited for the near future when I think, when I hope and think we will truly see a toolbox of methods for people so that it's not just a daily oral pill as the only option, but during certain seasons of risk or partnerships an injectable might be better, or a vaginal ring might be better for some people in some times.

And very excited to see this roll out. And also to be able to conduct research looking at ways to optimize multiple product PrEP programs.

At the UAB CFAR, one of the things that's a thread through all of the PrEP research that's ongoing is putting community at the center. And we are constantly in collaboration and in

coordination with our community partners. We have tried to have a very broad definition and an inclusive definition of what community means. Many times it's community-based organizations or AIDS service organizations, but also extending that to our public health departments, other academic research partners, and our Ryan White-funded HIV clinics.

And building and strengthening relationships with each of these so that we can talk about the community needs and priorities and how to center those in the research that we're doing.

So I think I'll just end back with this slide. I think there's tremendous opportunities going forward for PEPFAR and the Centers for AIDS Research to be able to be working on ways to impact programs and impact of the programs to support people who are already virally suppressed, people who are not yet maybe diagnosed and not yet virally suppressed and also to expand access to PrEP as primary prevention.

Thank you for inviting me to be here today. I'm really looking forward to this discussion.

>> PETER HAYWARD: Thank you so much, Renee. And we've got questions coming in and I've got questions. Would like to encourage anyone listening if you've got questions to put them in the Q&A function on Zoom and we'll try to get to as many of them as possible.

But I'm going to start with a question that has come in for Ambassador Nkengasong. And this was a question from Politico. And the question is, are you worried that PEPFAR is losing bipartisan support, given that one of its main champions won't be a member of Congress next year, when it will come up for reauthorization again?

>> JOHN NKENGASONG: Thank you, Peter. Let me say this and take it for a very honest answer. I think over the last one year that I have been working on the reauthorization, I have seen nothing other than a very strong bipartisan support for PEPFAR. I've been to a Congressional delegation visit in South Africa with Congresspeople and senators on both sides, and there's nothing but strong support in the field.

Just recently, two-three-week ago, I was in Cape Town with 18 Congresspeople, very strong bipartisan support. So I would not think that this one year is a collapse in that bipartisanship, rather than some inaccurate information was provided since April and it led to a derailment of the process. I remain optimistic that between now and March, we'll continue to engage Congress and educate people.

Because remember, only 10% of people serving in Congress were there when PEPFAR started. So we need to really go back in there and do a whole educational process to show, educate what PEPFAR is and what it's doing for impact. Just to end on a light note, two years ago when I met with President Bush in September of 2022, he joked. He said Ambassador, people don't -- most people now don't know what PEPFAR is.

If you say PEPFAR they think it's toothpaste. (Chuckling) So that was a light moment. We need to educate more. We need to inform more. We need to engage more with Congress to make sure

that they understand the power of PEPFAR, the life-saving ability of PEPFAR that in my view is the greatest act in humanity since I will say, in this century, in the fight against infectious diseases.

>> PETER HAYWARD: Thank you very much for that answer. And I think maybe I'd like to throw this open to the other panelists and say if you could make one point as a case for continued support of PEPFAR, what would you say to convince those people in power that PEPFAR is really worth the investment? And perhaps I'll come to you each in turn in the order you presented. So, Susan, I wonder what you would say. Susan? Did you hear the question, Dr. Cu-Uvin?

Oh, you're muted.

>> SUSAN CU-UVIN: Oh, I'm on mute. Sorry. Can you just repeat --

>> PETER HAYWARD: So following on from --

>> SUSAN CU-UVIN: I was on mute.

(Laughter)

>> PETER HAYWARD: Yeah. It's so easily done. Following on from Ambassador Nkengasong's remarks there, I was wondering what one point would you make -- this is a bit reductionist. What one point would you make to people who are in charge of reauthorizing and refunding PEPFAR? What one point would you make to them to convince them of the value of continued support for PEPFAR?

>> SUSAN CU-UVIN: I think aside from the big reduction in AIDS infections and mortality and the building of infrastructure, training of healthcare providers, including the community, PEPFAR, although intended primarily for HIV care, has expanded beyond HIV. I think that it has become the pillar of public health, noncommunicable diseases. I think we are concentrating on HIV, but because we have improved HIV, it has become really the pillar in the infrastructure for public health in many, many countries.

So, when we look at the number of people saved, like we say it saved 25 million people. It decreased mother-to-child transmission. We are only looking at the tip of the iceberg of what PEPFAR has really done for the world. I think it's beyond HIV. It is one of the biggest investments that really has transformed care in many countries. Without PEPFAR I think we would have had more deaths with many, many other diseases aside from HIV.

And there would have been no infrastructure or trained healthcare providers and community workers. And the advocacy alone I think it mobilized people who were not thinking that they were part of a healthcare system. It mobilized communities. It gave voice to underrepresented or marginalized population. I remember when HIV/AIDS just started. It's one of those diseases, without the activists, I don't think we would have progressed that far.

And I think PEPFAR has been the pillar of many of those things that we call value added. I think they're beyond value added. So that's what I think.

>> PETER HAYWARD: Right. Thank you. And then Alan, if I

could come to you for your thoughts.

>> ALAN GREENBERG: Thank you, Peter. I'll be brief. I think it's a combination of looking carefully at the incredibly compelling data that Ambassador Nkengasong presented. We're talking about saving millions of lives. And the other half of that is, I think it was Bill, one of the former directors of the CDC once taught us when we were younger about the importance of seeing faces beyond the numbers.

Millions of people is a lot of people. If you lined up the impact of the human beings, the children, the families, the mother, the fathers who have been affected by the PEPFAR program and put a human face on it, it is a staggering contribution to humanity. Thank you.

>> PETER HAYWARD: Thank you. Renee?

>> RENEE HEFFRON: Sure. Probably just amplifying a bit what my colleagues have said, but I think Dr. Nkengasong's slide about health systems strengthening was tremendous. And starting to put some of the data in addition to the direct HIV-related data into focus. And I think that's hugely powerful.

And I also wanted to just amplify what Dr. Cu-Uvin was saying about the systems and the structures that are built for HIV but really broad-reaching. We were living in Africa when the COVID pandemic hit. And the folks on front lines of doing HIV testing and HIV care became the folks on the front lines of COVID testing and COVID identification and those things because the systems -- and those were the systems and structures that were there.

That's a tremendous example of the size of the infrastructure and the power of the infrastructure, and how it can be leveraged for other things.

>> PETER HAYWARD: Great. Thank you all for that. I'm just looking at some of the other questions. I would encourage anyone watching to add their questions to the Q&A if they've got them. There's a question here from Gwen who's wondering -- who wonders how the panelists anticipate USA's localization strategy impacting the way that PEPFAR programs are implemented, especially since PEPFAR is a leader in terms of investing in local partners.

How might a focus on localization encourage or discourage further investment from local financing sources that are critical to the long-term success of PEPFAR-initiated interventions? Maybe Ambassador Nkengasong, you could speak to that first and we'll give the others an opportunity to chime in.

>> JOHN NKENGASONG: Absolutely, Peter. I will keep my answer short here. We know that PEPFAR has strengthened government systems tremendously. PEPFAR has continued to strengthen local capacity, not just government, but other local organization, national organizations. As we speak about 366 national or local partners benefit directly from PEPFAR funding to sustain the program. That is very important, because we know that PEPFAR will not be there forever.

And we must sustain the gains we've made. And we have to invest in national systems to maintain it for the longest. That is what localization is all about. It's not about local versus

international partners. It's about how do you view that local capacity. And nobody argues to that. Everybody wants to see that. In Lesotho, they have government capacities that function well, they have local NGOs that can continue to do their job, that they have some other private sector that can do that.

That's what we want. That's what we mean by bridging the gaps in inequities. So I think localization is part of that sustainability agenda, which has to be defined in three lenses. We have to continue to make sure political leadership matters, both in countries that we work and here in the city that we are in, Washington, D.C., and other capital cities that global health matters.

Global health is part of global health security, and part of universal coverage. Second is that we have to make sure that localization speaks to the program needs, because localization is not an outcome. It should be a process for helping us to achieve the outcome. The outcome is bringing HIV/AIDS to an end as a public health threat and maintaining the quality of life of people affected so that they continue to be productive.

And localization also means financial -- has financial implications, which as I showed on the slide, we see that a lot of financing for this program comes from the domestic side of the house. So how do we make sure that the government of Lesotho also begins to form NGOs, civil societies, that have the right capacity to have them in their response so that localization is not just about PEPFAR supporting local partners and national partners.

>> PETER HAYWARD: Thank you very much for that. Would any of the other panelists like to speak to that? I think Ambassador Nkengasong gave a pretty full and thorough answer there.

>> SUSAN CU-UVIN: I can tell you that from our experience, you know, I think every donation is towards the sustainability of the countries. I don't think -- the countries are expecting a dole-out forever. But the presence of PEPFAR gave them at least an edge to reach where they can start moving in their own direction. I think that if you decimated the youth, the younger people, let's take Africa, and they were dying and the life expectancy was minus 35 years, minus 25 years, without the help from PEPFAR to start with, the GDP, the workers, the number of people that can bring up the country, we would be at a very big disadvantage.

In Kenya we have a small example. When we brought anti-retroviral therapy of course our patients had an effect. They started becoming very healthy. Then we realized there was food insecurity. They were living, but because they haven't been able to work, their farms, or they haven't been able to have a job, it wasn't that easy. So, a philanthropist donated land. And our HIV-infected patients started farming the land.

Then they distributed the harvest among all of them. And then it became so successful there was extra harvest after distributing it to all the patients that had HIV. They opened a restaurant. And every time I go there we eat. The nurses, the doctors, the healthcare workers eat in the restaurant from the harvest. And now they're selling the extra harvest.

So I think these are small, very, very small stories, but this is where it starts. When we started the cervical cancer program I had to go to the market to buy the cotton swabs, everything. And now at Moia University we have a cancer center donated by some philanthropists.

Why? Because there was HIV and cervical cancer, HIV and KS. And now there's treatment for leukemia and all other kinds of cancers. And this is now a public-private partnership. It just needs a nudge. I think sometimes we don't know where to begin and some visionary gives us this little nudge. And from there it's -- people want to be independent. Nobody wants to be a beggar.

I don't think -- everybody has pride. I don't think there's any country, no matter where you are, that don't want to be sustainable and not be dependent on somebody always dictate how their country should be governed or how it should move forward. I think some people just need help. And that is how I see PEPFAR.

>> PETER HAYWARD: Thank you. And would anyone else like to say anything to this point? No? Okay, then. So, I'd just like to then -- actually just come to a couple of really -- there's sort of a specific couple of questions relating to other comorbidities and PEPFAR's involvement in the Q&A that I thought we could address quickly. And you might have to wave at me or come off mute and give the answer if you have something to say to this.

You had questions relating to whether PEPFAR is doing any work in viral hepatitis and oral health as been mentioned. Could anyone speak to that? Renee.

>> RENEE HEFFRON: Yeah, I can start. I know that NIH is very interested in both of these and they have released recent RFAs specific to both of those things, oral health in people with HIV and also hepatitis B disease prevention and treatment in people with HIV. So it's definitely a priority for NIH and for HIV researchers that are part of our CFARs, as are all of the comorbidities that I mentioned.

Mental health for sure, quality of life, all of those things are research priorities.

>> SUSAN CU-UVIN: I just want to add that we have a new scientific working group on HIV and oral health. And we have gotten several grants in that. So I think it is really something that we are looking forward. We are able to partner with the BU Dental School. And that's a big area that we would like to start to be more involved in.

>> PETER HAYWARD: Well, watch this space, then. Thank you very much for the contribution there. So, yeah. So then, one thing that's actually come up a couple of times in the discussion is obviously the fantastic benefits of PEPFAR and the amazing results that's happened. I wonder if anyone would like to talk about the challenges that an aging population of people living with HIV present and how -- sort of what your experience is in your work.

Might tell us about how we need to prepare for that globally. Alan, would you like to talk to that first?

>> ALAN GREENBERG: I think in Washington, I think more than

half the people living with HIV are now approaching 50 or beyond. So it's a real significant problem. And we work closely with them, with us, they talk to us. We listen to them. They listen to us. And we have a very important relationship with the community. And their major message to us in the past year is exactly what you're saying, to focus on the health and well-being of persons aging with HIV.

And I've been seeing a lot of data from the community about issues that are of concern to them. And certainly neurocognitive decline and cardiovascular disease, and mental health issues are three that are mentioned very, very commonly. My colleagues here have great expertise in these areas. I'm eager to hear what their impressions are. You're on mute.

>> PETER HAYWARD: I'm sorry. Hold on. Renee, sorry.

>> RENEE HEFFRON: That's okay. I just wanted to make one point, because there's a lot of work at the UAB CFAR on aging with HIV as well. Something that has stayed with me was a presentation by Yvette Rafael from South Africa, a tremendous activist and advocate. A couple of years ago she made this presentation. And we're still on the quest for a cure.

And people with HIV really would love a cure. And I think that's something that our CFARs and the collective of laboratories across the U.S. are working on. It's not going to be one individual. It's a big question and a big problem and a very challenging thing. And so that work is also going. It's not -- there is nothing that's ready for prime time and implementation, but the research to get us closer to a cure is a priority for many of the CFARs.

>> PETER HAYWARD: Great. Thank you. Susan, did you have anything to add on to this?

>> SUSAN CU-UVIN: No. Like Alan and Renee said, the median age of our population is now 58. And we see that also in our collaborating international countries. It's a wonderful problem to have, but to be honest, we are dealing with dementia, frailty, mental health issues, widowhood, your friends dying, you're alive, loneliness.

And also the economic issues of being alone when you're old. It's not cheap to live long. And so all of these are hitting us in many, many ways. I think HIV's the least of all their problems, I can tell you. They're below detectable. They have good CD4 counts. We have six social workers in a clinic of 2,000 patients. They're extremely busy looking for shelter, fighting eviction, getting your heating, getting your electricity, making sure that you are not homeless, making sure that you have food.

During the COVID pandemic, we spent $110,000 of our clinic money just giving $50 vouchers for food up to a maximum of $500 per person because there was no jobs! And they were homebound. And particularly the elderly, who have arthritis or hip replacements and everything, it is really -- we look at HIV as a disease, but it is a person beyond HIV. And sometimes HIV's the least of all their problems.

We are just lucky that we have Ryan White and in other countries they have PEPFAR that has given us the opportunity to provide more services than what we could without any of these

government-supported infrastructures. So, it is very important, I think, for us to advocate for all these programs to continue not forever, because like I said, nothing is forever.

But up to a point it might vary from one country to the other, from one state to the other, where they can be sustainable on their own. But to pool resources together at once I think is a catastrophe, to pull resources at once.

>> PETER HAYWARD: Thank you for that. And I see we're coming towards the end of our time now. I'm not sure if I've got time to go to another question here. I suspect not. I'm receiving the signal. Thank you very much for your contributions there and thank you for your questions. I apologize for any questions that we didn't get the chance to get to. I'd now like to hand back over to Patricia Hibberd for closing remarks.

>> PATRICIA HIBBERD: That was an absolutely fantastic presentation. And it's very, very clear that everybody on the panel and the Ambassador strongly have endorsed the huge impact and power of PEPFAR over the many years. And have noted the number of lives saved as well as livelihoods saved. And now a lot of the challenges are with -- the good challenge is the prolongation of life and where PEPFAR is going.

Clearly, I think we all hope that there will be continued funding. And Susan, as you were saying, if the whole thing is pulled all at once, it certainly sounds very destabilizing. But I would like to say a huge thank you to the entire panel. And also to the audience for joining. And the superb questions asked by the audience. And Peter, thank you so much for your expert moderation of this session. Thank you all.

(Session concluded at 2:29 p.m. ET)