

SEPTEMBER 9-11, 2019



CONFERENCE REPORT

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LONDON FAST-TRACK CITIES 2019 CONFERENCE REPORT

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INTRODUCTION

Since the Joint United Nations Programme on HIV/AIDS (UNAIDS) convened high-level stakeholders in December 2013 to plot a roadmap towards expanding access to HIV testing and treatment with the aim of blunting the course of the HIV epidemic, there has been a growing sense of commitment and optimism by governments, non-governmental organizations, funders, and community leaders that ending AIDS as a public health threat by 2030 may be feasible.

Aided by more robust and granular programmatic data collection, and ever more accurate modeling methods, the direct impact of achieving sustained viral suppression among people living with HIV (PLHIV) and on HIV incidence in many cities and municipalities has grown increasingly convincing. The first set of global benchmarks for HIV testing, treatment, and viral suppression were unveiled on World AIDS Day 2014 to guide policymakers, implementers, and donors in the development of data-driven regional and country-level HIV plans.

Concurrently, a group of multi-level political, public health, and community representatives also committed on World AIDS Day 2014 to a more wide-ranging set of objectives aimed at assisting cities and municipalities to meet these same benchmarks while facilitating social transformation. Recognizing that active political engagement by Mayors and other municipal leaders would be critical to urban-focused HIV responses, a pioneering group of 26 cities and municipalities declared such a commitment by signing the *Paris Declaration on Fast-Track Cities*. *Ending the HIV Epidemic (Paris Declaration on Fast-Track Cities)*. From those original signatories, the Fast-Track Cities network has since expanded to more than 300 cities and municipalities, many of which have made great strides towards, met, or exceeded the UNAIDS 90-90-90 targets as outlined within the framework of the *Paris Declaration on Fast-Track Cities*. Beyond the quantitative targets, the Fast-Track Cities initiative also aims for zero stigma, and to put people living with and affected by HIV, tuberculosis (TB), and viral hepatitis at the center of all efforts to attain Sustainable Development Goal (SDG) 3.3.

In recent years, the highly intertwined epidemics of HIV, TB, and viral hepatitis have led to the recognition that work must proceed equally against these public health threats before any single disease can be eliminated. Therefore, the Fast-Track Cities initiative embraced programmatic targets developed by the Stop TB Partnership and the World Health Organization (WHO) to measure progress towards ending the TB epidemic and eliminating hepatitis B virus (HBV) and hepatitis C virus (HCV) infection, much more feasible for the latter since HCV cures in the form of direct-acting antivirals (DAAs) were approved as early as 2011.

In order to examine initial successes, best practices, lessons learned, and emerging challenges to attaining the HIV, TB, and viral hepatitis quantitative and qualitative targets, the International Association of Providers of AIDS Care (IAPAC), in partnership with UNAIDS and the Global Network of People living with HIV (GNP+), convened more than 750 representatives from over 220 cities for the inaugural *Fast-Track Cities 2019* conference, which took place September 9-11,

2019, in London. The conference was sponsored by Gilead Sciences, Merck & Co., Janssen Therapeutics, ViiV Healthcare, and Walgreens-Boots Alliance.

The Mayor of London, Sadiq Khan, opened the *Fast-Track Cities 2019* conference, welcoming conference delegates to a Fast-Track City that has made some of the most significant progress towards ending its local HIV epidemic. However, Mayor Khan also stressed that more work remains to be done, even in a model Fast-Track City such as London.

"I am proud of what we have achieved, but we need to go further," said Mayor Khan. He added that he "wholeheartedly supports the United Kingdom's bold ambition to get to zero new HIV infections, zero AIDS-related deaths, and zero discrimination," and pledged that persistent barriers to HIV pre-exposure prophylaxis (PrEP) needed to be torn down. Following the conference, the United Kingdom's National Health Service (NHS) expanded access to this prevention tool beyond a limited series of studies that had only enrolled a fraction of eligible HIVnegative individuals from distinct key populations.

In opening the conference and introducing Mayor Khan, IAPAC President/CEO José M. Zuniga said that the conference was convened in London "to shine a light on London's efforts to reduce and eliminate health inequalities that go against the principles of social justice." He added that "health inequalities are preventing people living with HIV, TB, and viral hepatitis, notably from disenfranchised and minority ethnic communities, from accessing the services they need to live longer, healthier lives – a reality we must change in every Fast-Track City."

Former UNAIDS interim Executive Director Gunilla Carlsson echoed Dr. Zuniga's charge to conference delegates regarding the urgent need to address health inequalities. She noted, however, that "the HIV response can [also] be a pathfinder for fostering resilience in cities. We need continued inclusive leadership from Mayors working hand-in-hand with their communities to address the many structural and social factors that contribute to people being left behind with no access to health services."

Following a high-level panel discussion with elected officials from 11 Fast-Track Cities* about barriers to equitable access to HIV and other health services, conference delegates engaged with dozens of focused cross-cutting panel discussions, oral abstracts illustrating new avenues of approach to close gaps across prevention and care continua, and plenary sessions examining governance for health, social accountability municipal financing, and institutional development.

* Mayor Kostas Bakoyannis, Athens, Greece; Mayor Josephina Belmonte, Quezon City, Philippines; Deputy Mayor Winston Ennis, Kingston, Jamaica; Mayor Anne Hidalgo, Paris, France (video); Mayor Sadiq Khan, London, UK; Deputy Mayor Simone Kukenheim, Amsterdam, Netherlands; Mayor Fernando Medina, Lisbon, Portugal; Mayor Svante Myrick, Ithaca, NY, USA; Chairman Robb Pitts, Fulton County, Atlanta, GA, USA; First Deputy Mayor Mykola Povoroznyk, Kyiv, Ukraine; Mayor Gennadiy Trukhanov, Odessa, Ukraine

Conference Framework

When the Fast-Track Cities coordinating leadership and network partners updated the *Paris Declaration on Fast-Track Cities* in July 2018, and again in November 2019, they asked cities and municipalities to re-commit to seven core principles:

- 1) Ending the epidemics of HIV, TB, and viral hepatitis in cities and municipalities by 2030
- 2) Placing people at the center of urban HIV, TB, and viral hepatitis responses
- 3) Addressing the causes of risk, vulnerability, and transmission of HIV, TB, and viral hepatitis
- 4) Using the HIV, TB, and viral hepatitis responses for positive social transformation
- 5) Accelerating HIV, TB, and viral hepatitis responses reflecting local needs
- 6) Mobilizing resources for integrated public health and sustainable development
- 7) Uniting as leaders with a commitment to data-driven accountability and transparency

The thematic tracks at the *Fast-Track Cities 2019* conference revolved around these core pledges, and the highlights from those presentations serve to explore the successes that have been achieved, the goals that were not attained, the efforts that have been made to increase comprehension, and best practices and lessons learned.

The Fast-Track Cities initiative places people affected by and living with HIV at the center of its efforts. Conference presentations corresponding to each of the seven pledges touched upon projects that originated from or were designed and implemented in close partnership with affected communities. However, most presentations fell under pledges three through six, which reflected concrete actions taken towards ending urban HIV epidemics and leveraging this work to end the TB epidemic and eliminate viral hepatitis by 2030.

Conference Report Structure

Made possible through support from ViiV Healthcare, this conference report synthesizes the content of the *Fast-Track Cities 2019* conference by looking first at leadership and progress made towards reaching the UNAIDS 90-90-90 targets. It then looks at placing people at the center of this work, including by addressing stigma, serving special populations, and improving quality of life. Next, the report examines innovations made in testing, prevention, and treatment that are aiding cities in reaching their goals to end urban HIV epidemics. Finally, the report looks specifically at key comorbidities including TB, viral hepatitis, and sexually transmitted infections (STIs) beyond HIV.



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A Tale of Three Fast-Track Cities

Cities and municipalities as diverse as London, New York City, and Nairobi City County are making substantial progress towards achieving SDG 3.3, or ending their local HIV epidemics. These three cities and municipalities, each with diverse populations, resources, and epidemic characteristics, also are leading the way towards meeting or exceeding the UNAIDS 90-90-90 targets. Together, they demonstrate overlapping and distinctive pathways towards the development and execution of innovative plans to attain these targets, plus zero stigma, by 2030. Their work in identifying key challenges and addressing them through data-driven, equity-based, innovative responses serves as a template for Fast-Track Cities around the world. Their progress also signals to global leaders that unwavering commitment and forward-leaning action can transform aspirational targets into practical realities.

London

The host city of the inaugural *Fast-Track Cities 2019* conference, London, has been a leader among the Fast-Track Cities network in exceeding benchmarks ahead of schedule and making the political commitment to achieve zero new HIV infections, zero preventable AIDS-related deaths, and zero HIV-related stigma by 2030, within an overarching goal of achieving the best possible quality of life for all people living with and affected by HIV in London.

According to Jane Anderson from Homerton University and Co-Chair of London's Fast-Track Cities Leadership Group, 2017 marked the year that the United Kingdom achieved 95% of all PLHIV knowing their positive status, 98% of whom had initiated antiretroviral therapy (ART), and 97% of whom had maintained viral suppression. Viral suppression is critically important because PLHIV who have an undetectable viral load can live a near-normal lifespan, and are also unable to sexually transmit HIV to others. London became the first Fast-Track City in the world to surpass the 95-95-95 targets, a historic milestone for a global European capital with 8.7 million residents.

Given that London accounts for a substantial proportion of PLHIV in the United Kingdom (38%), data arising from the city can serve as a foundation for efforts in other Fast-Track Cities in the region. In fact, between 2016 and 2018, the number of people newly diagnosed with HIV in London fell by nearly half. However, the number of people newly diagnosed continues to be more diverse demographically, and unfortunately, late diagnoses (CD4 count <350 cells/mm³ at diagnosis) are still too common and have only fallen in the past decade from 48% to 37%. While these data may at first appear to reflect mixed results, London's early success in meeting the benchmarks has yielded data that mirror the findings of leaders in other cities. Efforts to address their findings include substantial work

to discover and document the underlying factors that inhibit progress towards reaching zero across all categories.

It should not be a surprise that the factors that London's leadership have uncovered as obstacles in the way of fully reaching HIV programmatic targets are the very same factors that are strongly associated with poor health outcomes across populations regardless of disease or condition (e.g., economic hardship, homophobia/transphobia, racism, sexism, stigma). While the number of new diagnoses among men who have sex with men (MSM) has fallen steeply in London since 2015 (corresponding with an increase in the use of PrEP), this welcome decline was preceded by steady infection rate increases in the MSM population between 2008 and 2015. Moreover, while new diagnoses among MSM have remained flat in UK regions outside of London over the past decade, new cases in London have fallen by nearly 50%. These and other data confirm that while HIV incidence reductions are occurring in London, similar reductions are not happening among all populations within the city, or elsewhere in the United Kingdom.

The same epidemiological trends that have been observed in Australia, Canada, Western Europe, and the United States are mirrored in the data from London. While HIV prevalence is still rooted firmly in key populations, namely MSM and transgender women, new HIV diagnoses in Londoners over age 15 are increasingly found in non-white individuals whose suspected transmission risk is heterosexual sex or injection drug use.

The provision of free universal HIV testing and ART for everyone living in the United Kingdom, combined with clear consensus guidelines, have played a significant role in shortening the median time from diagnosis to ART initiation in London by roughly 500%. In contrast, time to ART initiation for PLHIV who are diagnosed outside of London has dropped by only 50%.

Epidemiologists have noted a similar trend in the number of MSM with a viral load >200 copies/mL, which saw significant declines between 2010 and 2015. These improvements were primarily driven by MSM in London, where the number fell by more than half, which included those estimated to be living with HIV but undiagnosed, and those diagnosed but either not treated or on ART but whose virus remained unsuppressed. A much smaller decrease was noted in men residing outside of London.

Dr. Anderson celebrated the successes and promoted the factors that lead to them. For instance, London has benefited from strong political and activist leadership, and financial investment from the NHS and pharmaceutical industry partners. Nevertheless, she also reflected that effecting change in the remaining 2% to 5% of undiagnosed PLHIV, or those on ART but not virally suppressed, will remain a significant challenge without additional innovative programs and resources. She encouraged investments in complementary strategies for directly blunting onward transmission and ensuring sustained care for PLHIV. In particular, as viral suppression rates exceed 95%, finding and re-engaging those who are

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undiagnosed, or diagnosed but not on ART, will be more difficult and perhaps increasingly costly as a prevention measure compared with biomedical and other interventions for HIV-negative people.

Considering that expansion of PrEP saturation in key populations across various cities and municipalities has consistently correlated with reductions in new HIV diagnoses, experts should consider the long-term public health and economic impact of adjusting comprehensive prevention and treatment plans. Expanding PrEP access and utility alone has been associated with substantial reductions in new HIV infections in cities around the globe, including London, once PrEP saturation is sufficiently high. Population-level PrEP effectiveness was demonstrated in the EPIC-NSW study in Australia with an estimated 25% of at-risk MSM on PrEP.

Dr. Anderson recommended several approaches that apply to and which will be necessary to improve both HIV prevention and care. These include:

- Adopt and innovate new models to address both HIV prevention and care. These may include digital technologies and targeted personcentered outreach and marketing to those most at risk of being left behind.
- Improve coordination between vital services such as HIV, mental health, and substance use treatment.
- Renew focus on key populations facing complex problems that undermine sustained ART adherence, and recognize these may include newer or dynamic challenges, such as a growing aging HIV population.
- Meaningfully respond to the reality that HIV requires long-term disease management, including peer and social support, and that HIV services must give equal attention to measuring and addressing quality of life.
- Recognize that the diverse communities of people who are both atrisk for or are living with HIV must be recognized as vital innovators of programs, active partners in multi-stakeholder processes, and leaders in public health policy.

Nairobi City County

Nairobi City County, with its 4.9 million residents, comprises 10% of Kenya's total population. Between 2012 and 2019, this urban hub, the largest megalopolis in East Africa, quadrupled the number of PLHIV who are diagnosed and those who are currently on ART. Nairobi City County's progress reflects not only global, national, and local investment to expand ART access, but a detailed tactical plan that evolved steadily over time. It should be noted that during this timeframe, the WHO substantially and consistently updated its ART guidelines, shifting recommendations regarding with whom and when to start treatment, but also in recommending improved first-line ART regimens as new antiretroviral drugs proved their efficacy.

Presenting the steps Nairobi City County took to reach testing and treatment targets, <u>Carol Ngunu</u> from the Nairobi City County Department of Health

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described a multi-year process that highlighted the participation and training of multiple sectors of society, including government leaders, public health and medical care professionals, affected communities, and donors. Notably, Dr. Ngunu highlighted that capacity-building and monitoring and evaluation (M&E) have been essential, as has responsiveness to stakeholder concerns, specifically those shared by affected communities.

The initial and foundational approach to improving on the 90-90-90 targets in Nairobi City County involved identifying and appropriately responding to the conditions that could impede progress. In order to ensure that people with an HIV diagnosis were linked to ART, whether newly diagnosed or in-care but untreated, a variety of interventions that involved non-medical staff and peers were developed by HIV program implementers, professional associations, and community-based organizations, and ratified by the WHO. Doing so meant training for peers and case managers, the development and distribution of HIV treatment and health

literacy materials, the creation of patient support groups, and the use of peer mentors and navigators. Moreover, case managers improved community tracing and, with peers, escorted clients to clinician visits and provided patients reminder contacts through short message service (SMS), a text messaging service component of most mobile device systems. To address medical and systematic concerns, clinicians received training and mentorship, were assisted with adopting quality improvement protocols, and worked in teams to deliver differentiated care to mitigate with clinic congestion and overburdening of healthcare staff. Additionally, commodity security and medication forecasting were integrated into the model.

In all, the clinical support center conducted visits to roughly 20 sites per quarter between January 2018 and mid-July 2019, and between 50 to 80 mentors and mentees were trained each quarter. Trainings for health care workers were focused on ART, key populations and adolescents, in addition to the APT tools being piezeered to ensure quality each and



addition to the ART tools being pioneered to ensure quality care and evaluation.

Dr. Ngunu reported significant success, with 81% of newly diagnosed individuals linked to ART the same day, and 94% within 90 days. Additionally, differentiated service models were instituted, including specific clinic days for clients enrolled in prevention of mother-to-child transmission (PMTCT) programs, as well as adolescent and pediatric clinics. Additional differentiated service delivery models included specific days for patients who were viremic, a fast-track model for stable patients, and ART support groups.

As with most Fast-Track Cities' efforts, success in Nairobi City County has relied on political leadership, including from Kenya's First Lady Margaret Kenyatta and Nairobi City County's Governor Mike Sonko, specific commitments for HIV resource allocation, and the development of a strategic plan with tracking and accountability measures. Additionally, strong partnership and coordination with all stakeholder groups, including those in the private sector, have been invaluable.

Of course, challenges remain, particularly that many of the PLHIV who are lost to follow-up are the same individuals who initiated ART the same day they received a HIV diagnosis. In response, Nairobi City County has strengthened its case management and treatment literacy programs in the hope of overcoming this problem.

New York City

An early signatory of the *Paris Declaration on Fast-Track Cities*, New York City leveraged the support and commitment of the statewide *New York Blueprint for Ending the Epidemic*, released in April 2015, to create its own city-wide plan, which was announced by Mayor Bill de Blasio on World AIDS Day 2015. The following summer, in June 2016, New York City became a Fast-Track City.

New York City was one of the first urban areas to be significantly affected by the emergence of the AIDS pandemic in the early 1980s, with more than 150,000 deaths to date. Its efforts to combat the AIDS crisis and to prevent and treat HIV infection have been at the forefront of the HIV community activist movement for nearly 40 years. More than 125,000 people currently live with HIV in New York City, which means that America's largest metropolitan area is also the epicenter of the



HIV epidemic in the United States. Unlike many other major cities, the HIV epidemic in New York City affects a diverse group in terms of race, gender, and sexuality.

Nonetheless, disparities in health outcomes persist. While HIV prevalence and new cases remain centered among MSM and transgender and non-binary individuals, heterosexual cisgender women account for a larger proportion of cases in New York City than in many other US cities. Furthermore, the majority of those living with or newly diagnosed with HIV identify as African American or Latinx. While New York City has a dedicated healthcare infrastructure, the city's epidemic remains deeply impacted by economic hardship, racism, and stigma.

Although the number of newly diagnosed individuals began to decline in 2010, it was not until the adoption of state- and city-wide plans in recent years that new HIV cases began to fall more precipitously. By 2020, HIV

incidence is projected to hit an all-time low of 1.3%, with an incidence rate nearly two-thirds less than it was just a decade earlier. <u>Oni Blackstock</u> from the New York City Department of Health & Mental Hygiene presented data to substantiate those projections at the *Fast-Track Cities 2019* conference. For one, the proportion of people who received an HIV diagnosis during acute HIV infection increased from 1.9% to 13.7% between 2008 and 2017. This corresponds with the percentage of PLHIV who are virally suppressed at 85% by 2017 and use of PrEP at 32% by

2017. The number of new diagnoses among MSM, the largest single risk group, fell by nearly one-third between 2013 and 2017. Similar patterns have been hallmarks of Fast-Track Cities where meaningful reductions in HIV incidence have been reported.

However, many systemic disparities remain in New York City. African Americans accounted for 38% of new HIV diagnoses among cisgender men and 61% of cisgender women. In men, 38% of new diagnoses were Latinx, and for women, 27%, and while new HIV cases have fallen in recent years among MSM, the trend is flat for all other risk groups. The city is also seeing racial disparities in meeting the UNAIDS 90-90-90 targets. While ≥90% or PLHIV have been diagnosed or achieved viral suppression after starting ART regardless of race, the proportion of PLHIV starting ART has not yet reached 90% among any racial category and was 5% lower among African-American patients in 2017 compared to others.

New York City's *Ending the Epidemic* plan, which aims to exceed the Fast-Track Cities benchmarks, emphasizes a streamlined approach to HIV testing, prevention, care, and treatment, as well as retention and re-engagement in HIV services for patients who are lost-to-follow-up. The plan is comprised of five steps, encompassed under an "HIV Status Neutral Prevention and Treatment Cycle," applicable regardless of a person's HIV status. These steps include:

- 1) identifying PLHIV who remain undiagnosed and linking them to healthcare;
- 2) linking and retaining PLHIV in healthcare to maximize virus suppression so that they remain healthy and prevent further transmission;
- 3) providing PrEP to high-risk persons to keep them HIV negative;
- 4) eliminating HIV-related stigma and discrimination; and
- 5) applying a racial equity and social justice lens to the HIV response.

Although leaders in the HIV field have called for increased integration of services for HIV prevention, care, and treatment (in addition to related programs for mental health and substance use), the barriers to service integration have made this process challenging. While there are certainly formidable structural obstacles, including limited and fluctuating public and private financing, New York City's prominent placement of HIV-related stigma and racial equity has been pioneering.

Dr. Blackstock reported that New York City has moved towards structural integration by accelerating the flow from HIV diagnosis to treatment through same-day visits to a provider, rapid ART start, active lab monitoring, comprehensive social service assessments and referrals, and adherence and retention services, which may include intensive housing programs and financial incentives for maintaining viral suppression. Primary prevention in HIV-negative individuals has been scaled up and includes a diverse combination of HIV prevention and linkage to care services based on epidemiological heat maps, including rapid access to post-exposure prophylaxis (PEP) and PrEP, where appropriate. Anti-HIV stigma efforts have included several large multi-level public campaigns to reduce stigma related to HIV status, sexual orientation, and gender

from 90-90-90 to Getting to Zero

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identity, with one specifically designed to raise awareness and acceptance of PrEP. Finally, the city has ensured that anti-racism and social justice initiatives are an active component not only of HIV services, but also the organizational and clinical staff where these services are provided.



A key principle of the Fast-Track Cities initiative is datadriven decision-making. Data allow cities and municipalities to track their progress towards meeting benchmarks or pause for reevaluation when challenges arise. Additionally, it is vital to communicate successful outcomes, as several Fast-Track Cities have exceeded the 90-90-90 targets ahead of schedule and seen reductions in new HIV cases. Outcomes and process data from successful Fast-Track Cities can serve not only to guide others in their efforts but also as opportunities for successful cities and municipalities to scrutinize their data to ensure validity.

Assessing successes and performing near-real-time evaluation and adaption in the fact of uncertain or negative results is another invaluable advantage of accurate, robust, and timely datasets. Three examples include tracking rapid ART start data, emerging data about potential successes

and challenges across several jurisdictions in the United States and elsewhere, and novel approaches to data-driven testing, which are engaging key populations that are not otherwise testing for HIV.

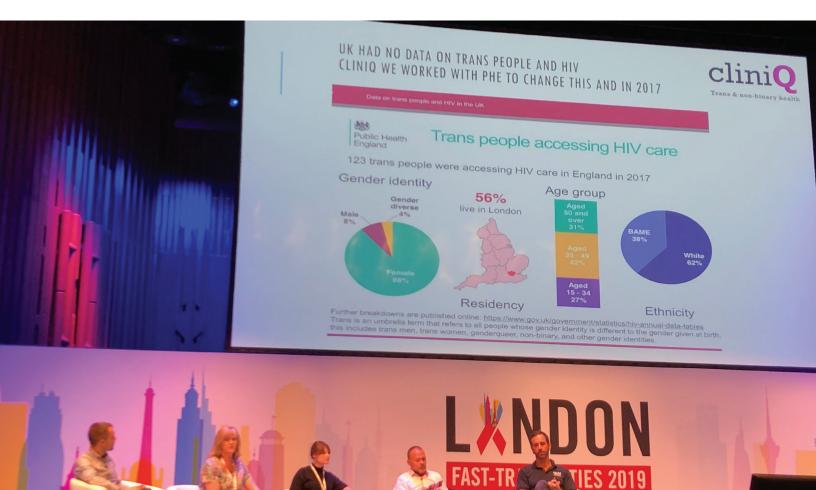
Projecting and Monitoring 90-90-90

At the time of the conference, several Fast-Track Cities had surpassed the 90-90-90 targets or were on trajectories to do so. <u>Olena Lukashevych</u> of the Kyiv City Public Health Center in Ukraine reported the Fast-Track City of Kyiv had an estimated 19,837 PLHIV diagnosed and was on the way to achieving the UNAIDS 90-90-90 targets. In 2018, the Kyiv targets stood at 73%-73%-96%. In San Francisco, with an estimated number of PLHIV at 16,000, those targets were 94%-79%-94% (2016 data).

In the United Kingdom, the Fast-Track Cities of London and Brighton & Hove had surpassed the 90-90-90 targets, with Manchester, Liverpool, and Glasgow on track to do so. Still, <u>Valerie Delpech</u> from Public Health England noted a challenge with late HIV diagnoses proportions in Brighton & Hove (24%) Liverpool (33%), London (27%), and Manchester (40%), even as trends in diagnoses decreased in these cities over the past five years. Dr Delpech went on to say that HIV has no transmission borders, that any person can acquire HIV, and reminded delegates that life is not a randomized clinical trial (although it is random). She went on to promote a whole system approach to achieving Fast-Track Cities targets, coupled with local solutions conceived, implemented, and monitored by local stakeholders.

Eve Plenel with Vers Paris sans sida (Towards an AIDS-Free Paris) described the undiagnosed epidemic of approximately 3,600 people in that city, with the majority of people who do not know their HIV status being MSM born abroad and men and women born in sub-Saharan Africa. She indicated that 350,000 new targeted additional tests are needed to reach the undiagnosed. The plan to scale-up HIV testing in Paris includes free walk-in HIV tests in medical laboratories without a medical prescription and targeted rapid tests based in hospital emergency rooms.

Summarizing some of the barriers to HIV testing in his region, <u>Miguel Pedrola</u> of the AIDS Healthcare Foundation for Latin America and Caribbean, cited stigma discrimination, punitive laws and regulations, unfriendly health systems, and poverty. Nonetheless, Dr. Pedrola indicated that in 2018 the AIDS Healthcare Foundation tested 4,655,685 patients, identifying 139,424 positives, for a prevalence of 3% in the region



Modeling Impact and Effectiveness

Despite numerous successes in the fight against HIV and a USD\$20 billion annual investment in the United States, conference delegates heard that progress there has stalled, with an estimated 40,000 Americans being newly diagnosed each year, and implementation of evidence-based interventions to prevent, diagnose, and treat HIV suboptimal and stymied by wide disparities in access across regions and ethnic groups.

In his presentation, <u>Bohdan Nosyk</u> from the Simon Fraser University in Vancouver, BC, Canada, asked the question, "What will it take to end the HIV epidemic in the United States?" through the lens of an economic modeling study in six US cities. An estimated 23,039 unique combinations of interventions per city were identified and the optimal combination of implementation strategies for a range of investment levels chosen for each city. Dr. Nosyk's conclusions were that the end the HIV epidemic goals are not attainable without large reductions in new infections among African-American and Latinx MSM. At ideal implementation, HIV incidence among African-American and Latinx MSM in Miami would be reduced by 78.8% and 84.7% by 2030, respectively, nearly eliminating disparities relative to white MSM. People who are most likely to be living with or acquire HIV are frequently living in poverty, without stable housing or reliable health insurance, hindering access to care. Addressing these social determinants of health is critical to ending the epidemic.

Another presentation from the United States examined the impact of PrEP on HIV incidence in 19 Fast-Track Cities. Utilization of PrEP was calculated from a national pharmacy and medical claims database and adjusted for the number of persons at risk of HIV from the CDC surveillance program. All Fast-Track Cities had PrEP utilization data available. From 2012-2017, HIV incidence declined faster in Fast-Track Cities than in the rest of the United States, despite these cities having higher HIV rates. According to Trevor Hawkins from Gilead Sciences, the decline was fastest in the Fast-Track Cities where PrEP use was highest. Improvements to both PrEP uptake and viral suppression rates in Fast-Track Cities could lead to even more significant declines in the rates of new HIV diagnoses.

Sindhu Ravishankar from IAPAC presented 90-90-90 trends and modeling implications for getting to zero new HIV infections and zero AIDS-related deaths in city and municipal HIV responses. As of the conference dates, 13 Fast-Track Cities had achieved the first 90 target, 16 cities the second 90 target, and 23 cities the third 90 target before the conference began. Importantly, trend data from 2015-2018 demonstrated a steady improvement in the trajectory to achieve the 90-90-90 targets in many cities and municipalities.

Ravishankar also reviewed epidemiological trends in select cities with respect to HIV incidence, AIDS-related mortality, and ART coverage to better understand progress in ending urban HIV epidemics and what needs to be done in terms of ART scale-up to achieve this objective. The modeling used a UNAIDS definition for ending HIV epidemics, which stipulates less than one new HIV infection and one AIDS-related death per 1,000 adults. Modeling projections were reported for Nairobi City County under scenarios of current ART coverage levels and aggressive ART scale up aggressive ART scale-up, defined as annual testing for anyone at risk followed by immediate ART. At current ART coverage levels, Nairobi City County's HIV epidemic could end by 2050. With aggressive ART scale up, according to the modeling, it could end as soon as 2024.

Unite as Leaders

Tom Coffey, Health Advisor to London's Mayor Khan, reviewed his city's HIV response through a health diplomacy lens. London was the first global city to meet and surpass the target of 95-95-95, meaning that 95% of PLHIV knew their HIV status, 98% of whom were on treatment, and 97% of which had suppressed viral loads. Dr. Coffey defined London's HIV response as based on a whole-city plan, with effective political, public health, clinical, and community leadership developed through London's Fast-Track Cities initiative.

In addition to the delivery of comprehensive HIV prevention, care, and treatment, other key components of London's plan are the roll-out and scale-up of PrEP, and the Mayor's Young Londoners Fund, which is helping children and young people through a wide range of local community projects facilitating activities for young Londoners. According to Dr. Coffey, the last round of funding included a grant to Body & Soul, a charity established to address a gap in HIV services for children, young people, and families. London's aspiration is that, by 2030, it will achieve zero new HIV infections, zero preventable AIDS-related deaths, zero stigma, and zero inequality in sexual health.

UNITE is a global network of more than 100 national parliamentarians from more than 50 countries and five continents, whose strategy emphasizes political accountability, awareness, advocacy leadership to drive change and end infectious diseases through the collaboration of politicians, the scientific community, civil society, the media and the private sector. UNITE's <u>Ricardo Baptista Leite</u>, who is also a Member of the Portuguese National Parliament, examined governance for health leadership to transform global goals into local action. He described how the days of "business as usual" in healthcare are over and cited the impact of social inequities, rising costs, demographic pressure, and increasing burden of chronic disease.

Deborah Gold from the United Kingdom's National AIDS Trust spoke about social accountability and philanthropy. Social accountability is the obligation of powerholders to take responsibility for their actions to protect the interests of poorest and most marginal and build mechanisms for civil society to hold institutions to account. A recent example of social accountability in action was that of PrEP in England, with the health system initially not providing PrEP, resulting in coordinated action across civil society, sustained use of parliament, social media, traditional media, public protest and court action to make PrEP available to all. The role of philanthropy in social accountability is as funders

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and drivers of change and good practice. As large donors, philanthropies have significant political capital and can use this capital to drive political commitment. Philanthropies can also act as conveners of wide range of actors, bringing together government, business and civil society.

Finally, <u>Robert Ndugwa</u> from UN-Habitat, one of the four core partners of the Fast-Track Cities initiative, discussed strengthening systems leadership to accelerate city HIV responses towards getting to zero, and the role of good governance in sector and non-sector institutional development. The essential building blocks of good health systems are leadership and governance, financing, data and information, medical products, vaccines, technologies, health workforce, and service delivery. Urban governance represents the many ways by which institutions and individuals, both public and private, participate in the planning and management of the common affairs of the city. Conflicting or diverse interests are accommodated, and cooperative actions promoted. Dr. Ndugwa indicated that this model embraces the activities of formal institutions and informal organizations alongside the social capital of the general public.

IAPAC's Dr. Zuniga reiterated that urban governance for fast-tracking the HIV response is key, particularly given the rapid pace of urbanization, and the imperative to achieve the Sustainable Development Goals (SDGs) by 2030. He noted that IAPAC and its partners are actively working to end the epidemics of HIV, TB and viral hepatitis at the national, subnational, and municipal levels by 2030 (SDG 3). With a decade left to attain the SDGs, he recommitted IAPAC to SDG 3, but also to interconnected SDGs, including no poverty (SDG 1), gender equality (SDG 5), reducing inequalities (SDG 10), and creating sustainable cities and communities (SDG 11).

As a core partner of the Fast-Track Cities initiative, Dr. Zuniga said that IAPAC is joining forces with like-minded institutions to ensure that Fast-Track Cities are safe, sustainable, inclusive, and resilient, by achieving a set of 10 commitments over a "Decade of Action" to achieve the SDGs. He added that drawing up the commitments was guided by the Denver Principles (the foundation for the self-empowerment of PLHIV), the Declaration of Alma Ata, the Paris Declaration on Fast-Track Cities, and the New Urban Agenda, as well as the promise that the SDGs represent for an improved human condition by 2030.

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HIV was among the first and most stigmatizing health conditions in history, where those directly affected by the disease engaged in public direct action to transform the way that healthcare professionals, scientists, public health funders, and governmental officials responded to the disease – all despite being themselves the targets of discrimination, persecution, and violence. While members of affected communities repeatedly demonstrated their essential value in working as equal partners to combat the HIV, TB, and viral hepatitis epidemics, meaningful

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community engagement is still too often overlooked or given lesser status as an ethical and scientifically valid method to respond to public health crises.

A recent example of effective community-based action is the nearly universal adoption of a public health message that achieving undetectable HIV levels renders PLHIV unable to transmit the virus sexually, which is the basis for "Undetectable equals Untransmittable" (U=U). This community-inspired movement, led by PLHIV, demands that high-level public health and government officials embrace the U=U message unequivocally, thereby simultaneously elevating a highly effective method for curbing HIV transmission and reducing stigma among PLHIV. This is just one demonstration of the type of community engagement that prompted the four originators of the Fast-Track Cities movement – IAPAC, UNAIDS, the United Nations Human Settlement Programme (UN-Habitat), and the City of Paris – to insist that urban HIV, TB, and viral hepatitis responses must place people at the center of those responses.

As was demonstrated at the *Fast-Track Cities 2019* conference, and multiple national and regional consultations and workshops sponsored by the Fast-Track Cities initiative, addressing the root causes of risk and vulnerability for HIV transmission is a multipronged approach – one that not only recognizes the other infectious and non-infectious diseases and conditions that go alongside, including TB and viral hepatitis alone – but also the myriad psychosocial and cultural burdens, all creating clusters of "syndemics" which are not only synergistic, but self-reinforcing.

But these syndemics are not inevitable or irreversible, and local planning can make them less and less of a reality. Moreover, these plans are designed to address many of the factors that create the syndemic conditions in the first place and help to ensure that individuals are able to escape the forces that pull them down and, as important, help lift others on their way back up – the very definition of a community-based response.

Addressing Stigma

Promoting U=U

HIV Prevention Trials Network (HPTN) 052 study has had a significant and durable impact on the response to the HIV epidemic. Designed to demonstrate whether earlier ART initiation might both reduce HIV-related morbidity and mortality as well onward transmission to HIV-negative sexual partners, the study conclusively affirmed both. In doing so, data from the 2016 HPTN 052 study and the 2015 START study led successive national and international HIV guidelines committees to recommend ART for all PLHIV regardless of CD4 count.

Additional large studies have confirmed the initial results of HPTN 052. By the time the PARTNER 1 study reported finding no HIV transmissions from condomless

sex between serodiscordant partners in 2014, a movement to destigmatize PLHIV and their sexual lives was fully in motion. Results from a related study, PARTNER 2, offered convincing evidence that the data were robust and that the prevention potential of viral suppression in PLHIV was equally strong for MSM in whom the primary risk for acquiring HIV was receptive anal sex.

The core U=U message is that PLHIV who achieve durable viral suppression are unable to transmit the virus to others sexually. As the lead speaker in a panel devoted to undoing HIV-related stigma, the Prevention Access Campaign's Bruce Richman, who started the U=U awareness campaign, described how an informal coalition of advocates birthed a transformative movement by insisting that the widespread adoption and dissemination of the U=U message would transform the social, sexual, and reproductive lives of PLHIV, dismantle HIV-related stigma that leads to poor health and human rights abuses, align with HIV treatment goals, and provide a public health argument for access to HIV diagnostics, care, and treatment.

Richman reported that as of 2019, 920 partners from 98 countries had committed to the U=U message, including high-level scientific panels, government ministries, and professional associations. Richman concluded by pointing out that partnerships are key, including those mentioned above, but pushed for partners to assist with delivering clinician and community trainings, disseminating regularly updated communications, and leveraging funding for community-based U=U activities.

Eve Plenel with Vers Paris sans sida (Towards an AIDS-Free Paris) walked conference delegates through the ramifications of differing messages and meanings of the U=U message among Parisians. Like many other Fast-Track Cities, Paris reported nearing the 90-90-90 targets in 2019, but also contending with disparities in ART coverage, and delayed HIV diagnoses and viral suppression rates among different populations, with foreign-born women having the worst outcomes.

Plenel posited that spreading the U=U message could enhance the city's stakeholder groups to more successfully engage those who have not been reached or retained in care. To this point, Plenel cited a 2017 survey from the French advocacy group, AIDES, of the attitudes of the general population in France towards PLHIV generally and about the U=U message specifically. Among the findings were that 21% of parents would feel "uncomfortable" if their children's teacher was HIV positive; 87% thought that condomless sex with a person living with HIV on effective ART would carry a "high" or "very high" risk of HIV acquisition; and only 2% declared the risk of transmission from those with suppressed virus as "very low" or "almost zero."

Addressing Stigma in Key Populations

<u>George Ayala</u> of MPact reported on the results of a worldwide survey to assess the health and human rights issues affecting gay and bisexual men. Dr. Ayala and his colleagues worked directly with 120 community-based organizations

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(CBOs) in 62 countries, along with thousands of advocates across multiple social media platforms.

While the survey data, which are from 2013, may not fully reflect current trends, they do consistently demonstrate that gay and bisexual men have difficulty accessing prevention, testing and treatment services, and continue to face barriers to HIV testing and prevention services in particular. The experience of discrimination and homophobia had a strong correlation with engaging treatment and prevention services. Men who reported feeling comfortable with their health care providers were approximately 20% more likely to have been tested and to be retained in care and were 40% more likely than men who did not feel comfortable with their providers to report having ever used PrEP. Not surprisingly, lesbian, gay, bisexual, and transgender (LGBT) leadership of CBOs substantially increased the

odds of the men being tested by 63% and being engaged in HIV prevention programs by nearly 2,000%. Conversely, experience with clinical-provider discrimination and sexual stigma were strongly associated with poorer outcomes, with men who experienced clinical-provider discrimination being 48% less likely to be linked to care and 56% less likely to be virologically suppressed. The odds of viral suppression were also cut in half in men who reported experiencing sexual stigma.

In a related effort, researchers followed a prospective cohort of HIV-negative cisgender and transgender persons who have sex with men and the impact of PrEP-related stigma on disclosure to others about PrEP use to others after initiation. The majority anticipated some difficulty with disclosing their PrEP use to friends, with 89.4% predicting disclosure to be moderate to hard, namely due perceived associations between PrEP and promiscuity and HIV. While nearly all of the participants in the study



ultimately disclosed their PrEP use to at least one other person (e.g., friend, sex partner, family member), and did so within three months, two factors associated with non-disclosure or delayed disclosure – namely, feeling more anxiety about becoming infected with HIV or having less risk behavior – may have implications for addressing stigma in PrEP delivery and messaging.

In all, these data meshed with Dr. Ayala's decade-plus of work with gay and bisexual men around the globe, who offered a set of recommendations to health professionals that include normalizing sexuality and sex, being transparent about any questions that are asked or recommendations that are made, with an explicit invitation that a patient or client does not have to answer a question they are not comfortable answering. Finally, as a lesson applicable in all areas of life, Dr. Ayala recommended that clinical providers simply listen.

While stigma alone does not account for the impact of the HIV epidemic in people who identify as transgender or non-binary, particularly in transgender women, it

is interwoven in the internal and external factors that increase both susceptibility to infection and poorer outcomes after diagnosis. <u>Michelle Ross</u> from cliniQ, a holistic wellbeing and sexual health center for transgender people in the United Kingdom, spoke to this issue. In particular, she addressed some of the reasons why transgender women have the highest HIV rates, broadly speaking, of any population group in the world. In essence, the intersectionality of stigma, gender, race, ethnicity, sexuality, economics, and interpersonal and societal violence is a significant contributor.

To address these contributing factors, however, stakeholders ranging from the clinic to the heads of government must properly collect data on gender identity properly in the first place. For instance, Ross and her colleagues are implementing a "two-step" gender identity question, which first asks people how they prefer to define their gender identity and then whether this is the same gender they were assigned at birth. This method resulted in a nearly five-fold increase in the number of clients at a Seattle clinic who could be properly considered other than cisgender. A difference of such magnitude has tremendous implications for measuring Fast-Track City targets for transgender and non-binary people, and for properly assessing critical needs and the success of services and programs.

Another central feature of cliniQ and many of the most successful providers of HIV and sexual health services for transgender people around the globe are genderaffirming services promoted alongside HIV testing, prevention, PrEP, and ART services. Finally, as was explored by Lyle Muns, a former Amsterdam-based sex worker who presented on stigma and HIV vulnerability among sex workers, the fractured familial, personal, educational, and professional relationships that are commonplace for transgender people are often also fractured for sex workers, making essential services such as housing and healthcare insufficient. Vocational support to ensure the ability to retain employment can have substantial value, with perhaps one of the greatest values being as leaders in the design and delivery of services to transgender people and sex workers.

Risk, Vulnerability, and Transmission

Deeper scrutiny and information exchange about what is and what is not working in the Fast-Track Cities that have made the greatest progress towards attaining the 90-90-90 targets is critical. Almost every presentation at the *Fast-Track Cities 2019* conference offered reasons for hope, even when uncovering new challenges. In fact, the emphasis on openly and transparently sharing successes and challenges for continued quality improvement is one of the distinguishing features of the Fast-Track Cities initiative.

Violence against Adolescent Girls and Young Women

While key populations, such as transgender women and MSM, disproportionally carry the burden of HIV in many cities and municipalities, the HIV epidemic is

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generalized in sub-Saharan Africa, where the majority of PLHIV globally reside. In sub-Saharan Africa, the highest HIV incidence is among adolescent girls and young women, with 74% of all new infections occurring in females aged 15 to 19.

The causes for high HIV incidence are multifactorial, but poverty, cultural norms, and discriminatory legal systems are formidable hurdles, depriving adolescent girls and young women of fundamental human rights and exposing them to physical and sexual violence. These issues were a particular focus at the *Fast-Track Cities 2019* conference, where <u>Ebony Johnson</u> from the Athena Network and <u>Gloria</u>. <u>Maimela</u> from the University of the Witwatersrand in Johannesburg, explored the causes and conditions for high HIV incidence, as well as potential solutions.

They reported that 20 million adolescent girls and young women live in conflict zones or areas where political and community structures are fragile, and where a majority of women living with HIV are economically distressed or poor. Poverty and

disrupted social and political structures led to humanitarian crises, including forced migration, food and housing shortages and limited or no access to health care services. As adolescent girls and young women frequently possess the least social power and self-agency, survival often demands dependency on male partners, either through transactional sex, sex trafficking, or forced child marriages.

No single solution will prevail against the barriers to effective HIV prevention and treatment, but emerging data and on-the-ground experience shed light on promising interventions. In keeping with the theme of community leadership and partnership, Johnson urged governmental and other powerful stakeholders to insist that adolescent girls and young women should be at the table when discussing practical targets, and methods for addressing economic insecurity and gender-based violence and discrimination.



This process of re-evaluation starts with culturally and linguistically appropriate interventions that educate girls about sexual health and ways to avoid interpersonal violence (IPV), but also economic incentives to complete secondary education. Johnson also stressed that services must accommodate school hours, and that funding must also increase for sexual and reproductive health services, especially for interventions designed and conducted in partnership with adolescent girls and young women to address the economic and cultural factors that increase vulnerability to HIV and poor health.

Dr. Maimela continued this theme by reporting rates of IPV against women aged 15 years and older, which almost always exceeds 15% and may top 65% in some Central and sub-Saharan African countries. She pointed to a strong body of evidence showing that IPV increases the risk of HIV infection particularly in adolescent girls and young women, with women who have experienced IPV being

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54% more likely to have HIV than women who have not experienced IPV. In fact, IPV rates range from 68% to 95% in women living with HIV over their lifetimes. Moreover, men who perpetrate violence towards women are twice as likely to be living with HIV themselves. Causes are multidimensional and require interventions at multiple levels to confront the reality that some adolescent girls and young women may have multiple sexual partners and are significantly younger than their male partners. This age discrepancy leads to tremendous power imbalances, with adolescent girls and young women lacking control of their own bodies and sex lives, and diminished ability to negotiate condom use.

Women not living with HIV are frequently prevented from testing or reluctant to test for HIV or access other sexual and reproductive health services, and once diagnosed are less likely to initiate and adhere to ART, or to remain in care. However, studies are showing that integrating IPV services with HIV programming, including prevention, is feasible and acceptable to women. Moreover, combined services have the potential to shape new gender norms and synergistically improve health outcomes. The EMPOWER study, which links IPV and PrEP services using a peer-oriented empowerment model in adolescent girls and young women aged 16 to 24 in Johannesburg, South Africa, and Mwanza, Tanzania, is spearheading a contemporary response to this prevalent hurdle to optimal health outcomes for women and girls in high-prevalence settings.

Other studies, such as the Tathmini and Swa Koteka trials, have demonstrated reductions in partner violence towards adolescent girls and young women who receive programming that focuses on their knowledge, attitudes and beliefs about gender-based violence, and similar reductions from programming that provides conditional cash transfers for school attendance. Integrating HIV and IPV services has another benefit, which is more comprehensive tracking of IPV. However, adolescent girls and young women remain vulnerable to cultural norms and acceptance that violence is an acceptable part of a loving relationship. Interventions must engage women from the onset, promote women's agency, and be cognizant of evolving gender norms and the risks brought on by technology, such as social media and SMS that can increase the potential for partners to monitor their behavior. In the end, governmental leaders must embrace a commitment to placing the fundamental rights of women prominently in their plans to attain and surpass quantitative and qualitative programmatic targets.

Mental Health and Substance Use

Mental illness is a leading cause of physical health problems and reduced economic circumstance around the globe, with adolescents and young adults (who are most likely to acquire HIV) experiencing the highest rates of psychological disorders and manifesting problems with substance use. As mental illness and substance use render individuals significantly more likely to acquire HIV, less likely to maintain viral suppression if they become HIV infected, and more likely to die from AIDS-related complications, 90-90-90 plans that do not incorporate mental health screening and treatment are likely to remain insufficient and/or fail. Robert Remien of Columbia University in New York City reported data showing the global burden of mental illness, providing examples in MSM from six US cities and cisgender women in Tanzania and the United States. Among 4,295 MSM living with HIV in the United States, the greater the number of co-occurring conditions, such as substance use or a history of childhood sexual abuse, the likelihood of maintaining viral suppression was significantly reduced. In a longitudinal study of 1,487 Tanzanian women living with HIV, mortality was 6.6% over 24 months in women with depressive symptoms compared with 3.7% in women without symptoms. In a prospective cohort study of US women living with HIV, those with depressive symptoms were twice as likely to die as women without symptoms, controlling for other common causes of death.

Yet, Dr. Remien pointed out, such discouraging outcomes are not inevitable. Studies have shown that screening tools for depression, anxiety, and substance use can be conducted with few resources and can be easily integrated into the flow of HIV and sexual and reproductive health care. While mental health challenges, and concomitant HIV infection, can have a biological as well as a social basis, treatments are available and can range from medications to culturally appropriate individual and group counseling interventions, or even communitybased empowerment and anti-stigma activities. Therefore, mental health and substance use screening and treatment needs to be integrated into every step of HIV prevention and treatment continua, said Dr. Remien, and plans to attain and surpass the 90-90-90 targets should properly prioritize mental health and substance use programming.

Aging with HIV

The number of people with HIV surviving into older age continues to grow exponentially. <u>Clive Blowes</u> of the Terrence Higgins Trust reported that in London, 21% of all new HIV infections originated among individuals over the age of 50, and it is estimated that 54% of PLHIV in London will be over 50 years of age by 2028.

Because many older individuals have co-occurring diseases and health conditions, which are often exacerbated by HIV, and because worries about economic wellbeing and the ability to persist with lifelong HIV treatment are widespread among older people with HIV, the issue of HIV and aging must receive greater focus from the international public health sector.

In a 2019 survey conducted by Public Health England among older people living with HIV in London, multiple factors that could diminish health and wellbeing were noted as currently problematic or worrisome. These included challenges with coordinating health care among multiple providers for multiple conditions, finding general practitioners and social workers who understand HIV care and will not behave in stigmatizing ways, and financial concerns. Many PLHIV did not put aside sufficient means to cover living expenses at the point when they are no longer able to live independently. Forty-five percent of those surveyed reported being actively employed versus 36% receiving government benefits. Those receiving benefits had the lowest sense of wellbeing and the heights levels of HIV self-stigma, which is particularly concerning as older age prompts many to leave active

employment and rely on social programs. Over half of the respondents over age 50 reported living in poverty, with poverty increasing by 48% since 2010. Older women living with HIV had the lowest levels of well-being and unique medical and psychosocial needs.

Attention to the needs of those aging into their 50s and beyond with HIV is rapidly increasing, with New York City having developed a subsection on HIV and aging in its statewide and city-level Ending the Epidemic plans. Nevertheless, proven interventions have yet to be identified, making the need for older people with HIV to become active partners in the Fast-Track Cities initiative a priority.

Migration

Carlos Van der Laat from the International Organization for Migration described migration and HIV as the Achilles Heel of efforts to accelerate urban HIV responses. Migrants make up 3.4% of the world's population but contribute to 9.4% of the share of global gross domestic product (GDP). In the world's cities, foreign born populations range from 37% in the Fast-Track Cites of Melbourne and London to 46% in Toronto.

Migrants are particularly susceptible to HIV acquisition, especially in urban settings and, while migration is not necessarily a risk to health, it is a social determinant of health with disparities shaping the health outcomes of migrants. Challenges in addressing HIV vulnerabilities among mobile migrant populations include lack of migrant-specific data to inform decision-making, limited access to services based on legal and/or HIV status, lack of recognition of migrants in national AIDS strategies, and inadequate comprehensive services reaching mobile populations. Dr. Van der Laat quoted former UN Secretary-General Kofi Annan's 2001 Nobel Peace Prize lecture, in which he remarked that "today's real borders are not between nations, but between powerful and powerless, free and fettered, privileged and humiliated."

Injection Drug Use

The HIV responses across Eastern Europe and Central Asia (EECA) among people who inject drugs was the focus of the presentation from <u>Rosalie Hayes</u> from the National AIDS Trust in London. The presentation asked two key questions: "How are people who inject drugs in the EECA region affected by HIV?" and, "How are health authorities across EECA responding to the HIV epidemic among people who inject drugs in their country?" Of the approximately 16,000 people who were diagnosed with HIV in the WHO European Region in 2017, 14% resided in Western Europe and 80% live in Eastern Europe, with people who inject drugs accounting for more than a third of new infections in Eastern Europe. Countries in Europe have implemented widely divergent responses to the provision of combination prevention for people who inject drugs, including targeted delivery of services, health promotion, infectious disease treatment, testing, vaccination, drug dependence treatment, and clean injection equipment distribution.

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stigma against people who inject drugs and PLHIV, which can be intersectional in the case of PLHIV who inject drugs.

Prioritizing Quality of Life

Many individuals and groups, including leaders in the Fast-Track Cities movement, have called for improved quality of life to be constructed as a qualitative fourth 90 target to complement the existing quantitative 90-90-90 targets. Quality of life is comprised of many factors, not limited to experiences of stigma and financial insecurity, or satisfaction with health care and social services. Some long-term survivors with HIV have also been pleading for funders, policy makers,

and health experts to recognize that more life is of limited advantage if one's quality of life is poor. There have thus been arguments about the best way to add quality of life measures to health outcomes evaluation and monitoring. A valid scale would have to prove consistent across diverse populations, settings, and resource levels, and be simple enough for integration into different types of care settings and service delivery models. Several presentations at the *Fast-Track Cities 2019* conference addressed these challenges and proposed promising methods for consideration.

Imane Sidibé from IAPAC presented on the association's efforts to quantify the health-related quality of life (HR-QoL) of PLHIV in 15 Fast-Track Cities distributed throughout Africa, Asia-Pacific, Europe, Latin America and the Caribbean, and North America. Sidibé reported data from a cross-sectional self-administered survey (online and paper-based) completed by 3,206 respondents, the majority of whom were male, with the exception of African



countries, where women far outnumbered men. The demographics of the survey respondents closely matched those found in the general population of PLHIV in most of the regions. For instance, respondents in North America skewed older while those from Africa and Asia-Pacific were younger. The majority of respondents (80%) had been on ART consistently, however, respondents in Africa and North America averaged just over 60%.

While a majority of respondents reported being satisfied or very satisfied with their quality of life (roughly 30 to 40% on average reporting satisfaction and an additional 20% on average reporting being very satisfied), regional variations existed and require further exploration. Echoing Dr. Remien's presentation on mental health, Sidibé revealed that rates of depression and anxiety among survey respondents ranged from 40% to 74% among those who had been living with HIV for 10 or more years. Fears about stigma and HIV disclosure were reported by a substantial number of participants (25% on average). In all, the respondents' top three cited worries about growing older across the regions were

decreased mobility and disability, lifelong requirements to take ART, and a shorter life expectancy.

A thorough exploration of quality of health measures was also presented by <u>Meagan Kall</u> of Public Health England on behalf of the Positive Voices Study, which surveyed 4,424 individuals living with HIV in the United Kingdom. Overall, the study found that while HIV care-related needs appeared to be well met among the majority of respondents, many reported unmet psychosocial and practical support needs. Unmet needs ranged from highly specific services, such as treatment for substance use and chemsex, to more global needs, such as prevalent experiences of social isolation and loneliness, which are strongly associated in the general population with significantly poorer mental and physical health outcomes.

Notably, the Positive Voices Study respondents not only matched the overall demographics of PLHIV in the United Kingdom, but 87% also completed a paperbased survey, potentially reducing some of the selection bias that can occur with surveys that are fielded exclusively online. Two important findings reported by Kall were that, while satisfaction with HIV-specific medical services was exceptionally high overall, exceeding 85%, people who inject drugs as well non-binary and transgender individuals reported less satisfaction with their HIV-specific care. When comparing Positive Voices respondents to the general public, most quality of life measures were similar. However, study respondents were twice as likely (50% versus 24%) to report depression and anxiety. This could be partly explained by the fact that, while only 20% of respondents reported that they had unmet needs in their HIV care, 47% reported unmet non-HIV health needs and 62% had unmet social and welfare needs.

In all, Kall recommended several ways that quality of life could be significantly improved based on the responses to the Positive Voices survey. These interventions include integrating substance use and chemsex treatment, mental health services, and sexual and reproductive health services into generalized HIV care; developing personalized care plans and attending better to the diagnosis and treatment of other long-term health conditions; and involving peers in a variety of services to improve care and diminish social isolation.

Finally, <u>Graham Brown</u> from La Trobe University in Melbourne presented a novel and straightforward model to track quality of life within standard public health practices, along the lines of viral suppression rates within a given community. Based on several existing quality of life instruments, the research team in Australia sought first to create a new and simplified instrument that they hoped could be implemented without significant challenges by community-based organizations and then tracked over time. The survey instrument included 13 items across four domains, which included health, psychological, social, and functional concerns.

Despite the PozQoL survey being a shorter survey, sensitivity testing in the field, based on completed surveys of 465 PLHIV, revealed a high degree of consistency with other existing instruments and with test-retest reliability, both of which are critical to establishing the validity of the instrument as a method to track quality

of life across populations over time. The final step, which was a feasibility study, resulted in positive data and the identification of some additional issues to consider. While the majority of those organizations responding to a survey (n=15) or interviewed (n=9) found the instrument easy to use, determining how best to incorporate it into the workflow of a busy clinic or organization with limitations for data collection and analysis remains to be understood. As well, the pilot survey was prepared in English only, which could overestimate the validity of the survey while underestimating the challenges with implementation. Nevertheless, Brown offered two possibilities for improvements: 1) digital solutions for data collection and analysis, and 2) enhancing the implementation kit and related online resources.

Dr. Brown closed by acknowledging the significant and positive influence that the principles of greater involvement of people living with HIV/AIDS (GIPA) and meaningful involvement of people with HIV/AIDS (MIPA) played from the start of the process, including the conceptual development of the instrument to the end, which demanded significant investment in mobilizing stakeholders for the implementation trial.

Community-Led Responses

Community-led care and prevention continuum responses were reviewed in panel sessions, concurrent panels, and oral abstracts. Under the title of "Generating and Fulfilling Demand to Increase ART Coverage," <u>Solange Baptiste</u> from the International Treatment Preparedness Coalition (ITPC) reminded delegates that, "You can't demand something that you don't know about." Baptiste said that, while knowledge is necessary, it is insufficient to generate demand, and that advocacy is critical. The *United Nations Political Declaration on Ending AIDS*, which set countries on the fast-track to ending the epidemic by 2030, calls for at least 30% of all service delivery being community-led.

The goals of community-based research are to contribute to the advancement of knowledge by offering access to new information and to strengthen community and transform results into action in the form of practical real-world interventions. Daniela Rojas Castro from Coalition PLUS France, an international network of community NGOs in 40 countries that fight HIV and viral hepatitis, briefed delegates on community-based participatory research for quality assurance. Community-based participatory research serves to better identify people's needs, improves the quality of data, helps to better understand local epidemics, and puts sustainable solutions in place that can have a greater impact thanks to community engagement.

<u>Andres Maiorana</u> from the University of California, San Francisco, discussed a multi-level HIV community-based mobilization intervention for MSM and transgender women in Peru known as *Generación Actual (Current Generation)*. The program focuses on health systems and peer navigators to improve engagement in HIV care, sensitization of healthcare staff, and positive prevention. What Works and Why (W3) Project is supporting community and peer-led programs to adapt, scale-up, and demonstrate their impact in rapidly changing community and policy environments in Melbourne. <u>Graham Brown</u> from La Trobe University in Melbourne said the project aims to develop more consistent language to describe the contributions of peer-led responses, support the collection of more meaningful data, enhance staff confidence in implementing programs, promote the use of peer evaluation methods, capture the unique impact of peer-led action, and build stronger evidence of peer contributions to the HIV response.

<u>H. Rodrigo Moheno</u> from the Fundación México Vivo in México City delivered a presentation centered on how to increase HIV prevention services utilization and promote sexual health. Fundación México Vivo works to enable more people to live a full and healthy sexuality by providing information and services that allow them to choose, prevent, detect and manage sexual health issues in a timely manner. Through educational publications and videos, workshops, social media and festivals, Fundación México Vivo aims to improve individual, family and social quality of life through inclusion, equality, respect, health, love, and art.

Additionally, <u>Siyabonga Nzimande</u> from THINK (TB and HIV Investigative Network) presented on the effectiveness of patient adherence groups ("clubs") as a model of care for stable patients on antiretroviral in the eThekwini Metropolitan Municipality, South Africa. The municipality evaluated the effectiveness of a group-based model of care run predominantly by non-clinical staff in retaining patients in care and maintaining adherence. Conducted by THINK, the primary objective of the evaluation was to compare the effectiveness of community versus clinic-based adherence clubs on retention in care and viral suppression. Retention in clinic care after 40 months was 97% for club patients, compared with 85% among those who qualified for clubs but continued to be managed outside of the club model.

Housing is unique as a social determinant of health shaping the daily lives of PLHIV, while also a manifestation of broader, antecedent, structural processes of inequality and marginalization that are fundamental drivers of HIV vulnerability and poor HIV outcomes. <u>Charles King</u> from Housing Works in New York City described efforts to guarantee housing support for low-income PLHIV. He indicated that because rates of HIV incidence are as much as 16 times greater among persons experiencing homelessness, Housing Works advocated an expansion of New York City's HIV/AIDS Services Administration (HASA) housing and services to all low-income PLHIV. As of June 2019, King reported 28,011 HASA households receive housing support, which represents 20% of PLHIV in New York City.



LANDON FAST-TRACK CITIES 2019



INNOVATIONS IN HIV TESTING, ART, AND Prep

Innovations in HIV Testing

In the 35 years that have passed since laboratory testing for HIV antibodies became possible, it has never been easier for most individuals to discover their HIV status and in most cases to access ART to achieve viral suppression. Nevertheless, a substantial minority of people – especially those who remain at



heightened risk – do not become aware of their status until they have experienced significant negative physical health outcomes. When public health efforts are unable to reach those least likely to be tested, the first critical step along the 90-90-90 pathway is missed.

The session focused on innovations in HIV testing began with presentations about <u>estimating HIV coverage</u> in Paris to shape an adequate HIV testing policy, <u>community-</u> <u>based HIV testing</u> in Athens, and <u>key population-led health</u> <u>services</u> to optimize HIV testing and linkage to care in Latin America. In addition, self-testing and provider-initiated testing were the two areas of innovations in HIV testing explored at the *Fast-Track Cities 2019* conference, each demonstrating how innovative (and often commonsense) approaches can help diagnose HIV in people who would otherwise be missed.

HIV Self-Testing

Nitika Pai from McGill University in Montréal, QC, Canada, said that selftesting has been used in a number of contexts successfully, especially to reach populations where geography, limited capacity, or stigma present significant burdens. Various presentations on HIV self-testing at the *Fast Track Cities* 2019 conference focused on these realities, and efforts to utilize novel delivery strategies of self-testing kits to aid in reaching the first of the 90-90-90 targets.

HIVcheck.jp Project

Kota Iwahashi from akta, a Tokyo-based non-governmental organization (NGO), reported on the HIVcheck.jp project from Japan, which seeks to expand HIV testing to Japanese MSM, who bear the burden of the epidemic in the country but who continue to experience barriers to regular HIV testing. Iwahashi showed data from a 2017 study revealing that only 84.2% of MSM had ever tested for HIV and 20.1% were unable to take a test due to the reduced capacity of a test site, predominantly limited hours, accessibility, and capacity. Additionally, although

self-testing is increasing in use and popularity, matching traditional clinic-based testing in total tests performed in the country, there remains uncertainty about its performance compared with conventional point-of-care testing, as well as how best to integrate it into HIV epidemic elimination plans.

HIVcheck.jp was established to combine targeted distribution of HIV self-test kits with online test result provision and access to counselors and clinic referrals. This allowed for a full analysis of not only the acceptability and performance of the technology (e.g., how many kits were returned and how many were reactive), but also how many testers were first-time testers, especially those whose results were reactive. These results could be compared with traditional point-of-care testing.

HIV self-test kits were distributed every Monday evening from 7 pm to 10 pm at a Tokyo community center, with staff members explaining how to use the kits and check for results. The kits included a bio-behavioral survey, allowing for risk assessments along with the collection of specimens. Of the 1,421 kits distributed, 99% checked their results online. Of those tested, 27% had tested between one and two years ago, and 27% had tested over three years ago. Importantly, 25.2% had never tested and of greater significance was that the positivity rate was nearly eight times than historically found in standard point-of-care testing sites. These results demonstrated the importance and success of a community-led HIV self-testing intervention combining convenience and accessibility.

Click-and-Collect

<u>Will Howells</u> from the Terrence Higgins Trust in London reported that self-testing kits for HIV have been on sale in the United Kingdom since 2015, with pilots run by the Terrence Higgins Trust initiated in 2016 and 2017 and the SELPHI study. A legacy from 2018 allowed the Terrence Higgins Trust to run a web-based promotion and distribution of kits that was expanded in partnership with Public Health England.

The Terrence Higgins Trust collected results anonymously online for those who chose to report them, and ran a direct helpline for those with reactive results. An SMS reminder was sent to participants 7 days after an order and an additional SMS reminder 10 days after the order if needed. In all, 24,000 kits were ordered, with 75% of orders placed by MSM and 16% by Black Africans. Of these, 25% had never tested and 37% had not tested for greater than one year. The return rate was 60% and 0.61% of reported results were reactive.

A sufficient number of individuals (10%) used the Click-and-Collect option to suggest replication or expansion, especially given that 18% of users were black African men and there was higher uptake by black, Asian and minority ethnic (BAME) MSM. Furthermore, 40% of reactive results were from orders associated with targeted marketing. Acceptability was high, with 98% surveyed saying they would use the service again.

Provider-Initiated HIV Testing

Missed opportunities to intervene with care and treatment for PLHIV due to a failure to test for the virus is an age-old problem, and not unique to this epidemic or to infectious diseases as a class of health problems. Nevertheless, with the immensity of the benefit that would arise from early diagnosis, no idea should remain unexplored. Innovations in provider-focused behavior change was one area highlighted at the conference.

An innovation in testing for acute HIV, the LIGHT initiative, was described by <u>Desmond Hsu</u> from the Guy's and St Thomas' NHS Foundation Trust in London. Acute HIV infection is highly infectious and a key driver of HIV epidemics, often presenting as a non-specific glandular fever-like illness. Historically, an electronically ordered glandular fever screen (GFS) by a physician in the United Kingdom only included screening for Epstein-Barr virus, cytomegalovirus, and toxoplasmosis. HIV testing required additional test ordering. Only 14% of physicians did so. The LIGHT initiative piloted the automatic addition of a HIV test to the GFS screen and resulted in a 135% increase in HIV test requests with an HIV positivity rate of 0.7%

Innovations in ART and ART Delivery

Chloe Orkin from Queen Mary University of London Barts Health NHS Trust in London spoke about an ART innovation in relation to the third 90 target: longacting antiretrovirals. Implantable and injectable drugs have been employed in other specialties such as contraception, psychiatry, and osteoporosis. In the 2016 ECHO trial, women strongly preferred long-acting injectable contraception. In the field of osteoporosis, once-yearly infusions improved adherence and has been particularly helpful for those with cognitive impairment and immobility. In the field of psychiatry, long-acting injectable drugs have reduced relapse rates and hospitalizations, improved patient satisfaction, avoided first-pass metabolism, and reduced drug-drug interactions.

In opening her presentation, Dr. Orkin asked, "Do we really need to take three drugs for 50 years?" In doing so, she pointed out the attraction of long-acting antiretrovirals, including the investigational long-acting injectable cabotegravir and rilpivirine, in terms of infrequent dosing, lower overall drug dose, ART adherence, health privacy, and treatment-related stigma. Dr. Orkin also presented the week 48 pooled analysis of the ATLAS and FLAIR studies, which reported no differences in efficacy between oral and injectable ART. However, she raised some concerns with long-acting antiretrovirals, including injection volume, the requirement for a cold chain, and side effect management as the drugs cannot be removed once injected without an implantable mechanism. Dr. Orkin predicted these issues will be partly overcome by injectables which can be removed for adverse effects and have the potential to provide ART for years with a single insertion.

Nombulelo Magula from the University of KwaZulu-Natal in South Africa examined why PLHIV are still dying in the era of potent ART. In reviewing causes of morbidity and mortality in sub-Saharan Africa, Dr. Magula referred to the ongoing presence of opportunistic infections, HIV-related malignancies, and non-AIDS-related morbidities among ART-naïve patients.

Raising the importance of taking the UNAIDS 90-90-90 message into affected communities, Dr. Magula referenced a KwaZulu-Natal Province's health project through which clinicians are mobilized to visit communities in urban and rural area to deliver HIV and TB services, and communities are mobilized by Mayors, traditional, and other leaders to utilize these services. She said this combination, in conjunction with the types of innovations that would be



covered in the conference's sessions about innovations in ART delivery, were key to attaining the surpassing the 90-90-90 targets.

RAPID

In 2013, researchers at San Francisco General Hospital conducted the first experiment of the feasibility and effectiveness of same-day provision of ART to people testing HIV-positive who were either in acute or early infection, or who presented with a CD4 count at or below 200 cells/mm³. The RAPID protocol was found acceptable and safe for people offered treatment, feasible for the clinic, and most importantly, resulted in a significant drop in the number of months to reach full viral suppression (1.8 versus 4.3 months).

Since then, other rapid-start programs have launched around the globe, taking place in diverse settings in terms of the affected populations as well as the social conditions, infrastructure, and resource challenges that are present. Detailed presentations on the implementation of five such rapid-start programs (four in the United States and one Europe) were presented at the *Fast-Track Cities 2019* conference.

Some have questioned whether programs such as San Francisco's RAPID are feasible in cities and municipalities with more diverse populations and more significant resource challenges. Rapid-start programs situated in four different US cities – Birmingham, AL; New Orleans, LA; Phoenix, AZ; and New York, NY – proved that similar initiatives can be implemented widely in varied settings and may enhance ART initiation and retention. Two of these rapid-start programs are centered in southern cities in the United States. Southern cities in the United States report some of the highest estimated rates of HIV incidence in the country, as well as a history of deficient financial resources to fight the HIV epidemic.

Crescent Care Start Initiative

Jason Halperin reported on the differences in treatment outcomes in clients enrolled at the Crescent Care Clinic in New Orleans, LA, USA, between December 2016 and March 2018. Clients received care according to either the previously existing Early Intervention Services (EIS) protocol or a newly designed Crescent Care Start Initiative (CCSI), where newly diagnosed clients must be seen by a provider within 72 hours and initiate ART within 30 days.

Differences between the rapid start CCSI clients and standard EIS clients were detectable from the first time-point, with 99.5% of CCSI clients starting ART on the same day as diagnosis compared with 97% of EIS clients. These differences grew in magnitude throughout the treatment and care cascade. In CCSI clients, 87% were retained in care and 88.5% maintained viral suppression as compared to EIS clients, of whom only 75% were retained and just 67% maintained continuous viral suppression.

Dr. Halperin indicated that various overlapping factors likely contributed to the difference in outcomes, including same-day appointments, flexible provider scheduling (including on-call backup), ART preapproval prior to lab testing, availability of ART starter-packs, and guaranteed sustained access to ART.

1917 Clinic Fast-Track

A presentation by <u>Aadia Rana</u> on the rapid-start program at the 1917 Clinic at the University of Alabama, Birmingham, one of the oldest joint research and clinical care sites dedicated to HIV care in the United States, also revealed a trend towards positive results. Rana pointed out that Birmingham, AL, USA, which joined the Fast-Track Cities network in 2017, shares many of the factors that lead other southern US cities to similarly struggle to meet 90-90-90 targets. These factors include historical experiences with poverty and the necessity to serve rural populations that are often far-removed from the urban clinics. Nevertheless, rapidstart programs could help ameliorate some of these struggles.

Dr. Rana's presentation involved a retrospective analysis of ART-naïve people diagnosed with HIV within the previous 90 days who were offered ART according to either a standard of care (SOC) or the University of Alabama, Birmingham's Fast-Track protocol between May 2018 and March 2019. Under both protocols, a health worker is responsible for confirming a new diagnosis and treatment-naïve status and making referrals to the clinic for laboratory tests, a first appointment with a health care provider, and assessment of health care benefits. Under the SOC protocol, these multiple steps may occur on separate days and be somewhat disjointed. Under the Fast-Track protocol, the aim is for the first engagement with the health care provider to include any necessary laboratory work, screening for benefits eligibility, provision of the first 30-days of antiretroviral drugs, and any other necessary services during a single visit.

Dr. Rana further reported that while the shorter time from HIV diagnosis to viral suppression was statistically significant at 90 days (related to the substantially

INNOVATIONS IN HIV TESTING, ART, AND PREP

shorter time from diagnosis to a first visit with a provider), there were no differences in viral suppression at six and 12 months. Viral suppression exceeded 85% at 12 months in both groups. Therefore, while improvement is needed, the gap is not as substantial as in previous years, and further exploration about how best to improve the program and expand it into other southern US states could be beneficial.

Rapid Start

Phoenix, AZ, USA, is the sixth largest city in the United States, accounting for more than 50% of new HIV diagnoses in Arizona in 2016-2017. The city's ability to meet or exceed the 90-90-90 targets will greatly contribute to the nation's overall effort to end the HIV epidemic in the United States. Thanes Vanig with Spectrum Medical reported that Phoenix, which joined the Fast-Track Cities network in 2016, rolled out a rapid ART program in 2018 at the two largest HIV clinics, one publicly funded by the Ryan White CARE Act program and the other a private clinic. A convenience sample of 142 newly diagnosed, ART-naïve patients

(116 public and 26 private) who accepted same-day start of treatment between January 2018 and December 2018 and who had follow-up viral load results were chosen for a retrospective analysis. These patients were compared with a historical sample receiving standard care through the public health system.

Dr. Vanig observed that the historical controls tended to be older (median age 43) and non-MSM (22%), compared with Ryan White CARE Act program clinics and the private clinic Rapid Start patients (median age 30 and 31 respectively and 92% MSM). A history of substance use and mental health issues was far more prevalent among Rapid Start patients in Ryan White CARE Act program clinics (46% and 55% respectively) than in private clinic patients (4% for both).

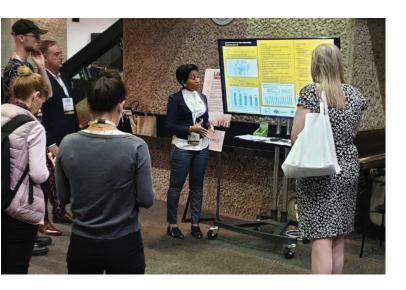
Nevertheless, time from diagnosis to viral suppression and start of ART to viral suppression were highly statistically

significant between standard of care and both Rapid Start settings. Historically, the time from diagnosis to viral suppression averaged 93 days in Ryan White CARE Act program clinic patients, compared to 56 days among Rapid Start patients in Ryan White CARE Act program clinics and 42 days among Rapid Start patients in the private clinic (p = 0.016). Rapid Start similarly improved time from start of ART to viral suppression, with an average number of 33 days among Rapid Start patients in Ryan White CARE Act program clinics and 32 days among Rapid Start patients in the private clinic compared with 69 with historical Ryan White CARE Act program clinic controls (p = 0.001).

Not surprisingly, given the significant rates of substance use and mental illness in Rapid Start patients in Ryan White CARE Act program clinics, there were differences in care retention at three and six months, with the private clinic retaining 100% of its 26 clients through six months and the Ryan White CARE Act program clinic losing 13% at three months and 23% at six months. While Vanig noted that additional impact analyses are needed, he indicated that the results are strong enough to warrant extension to other cities.

H-Team

While the Netherlands in particular, of many Western European countries, has demonstrated significant progress in the fight against the HIV epidemic, new infections are continuing to occur and are on the increase among MSM. Therefore, the importance of identifying acute infections in order to stem a resurgence of new infection clusters will be vital even in jurisdictions that meet or exceed the 90-90-90 targets.



Towards this goal, <u>Maartje Dijkstra</u> reported on behalf of the HIV Transmission Elimination Amsterdam (H-TEAM) program, which is, in part, an initiative to implement targeted screening and immediate ART in those with acute HIV infection. While an aim of the project is validation of a predictive algorithm for acute HIV infection, Dr. Dijkstra presented data on the difference in ART initiation between those treated according to the acute HIV trajectory algorithm compared with those receiving routine diagnostics and care at a sexually transmitted infection clinic in Amsterdam between 2015 and 2017.

The utilization of a symptom and risk algorithm seeking the existence of acute HIV infection showed substantial benefits. While only 249 clients were tested according to the acute HIV trajectory protocol, compared to 16,021 who were tested according to routine procedures, the acute trajectory protocol performed well, with 7.6% of those tested confirmed HIV-

positive and 4% having acute HIV, compared to 0.7% confirmed HIV-positive and 0.03% acutely infected in those tested according to the routine protocol.

Two speakers, Maira Marra from the Maputo City Council's STI, HIV, AIDS Program and Mpande Mukumbwa-Mwenechanya from the Center for Disease Research in Zambia, focused on differentiated service delivery. With a population of 1.1 million, Maputo City has six hospitals and 30 primary care facilities providing HIV services, including ART under a test-and-treat strategy. Available differentiated care models include one-stop shops (maternal and child consultation, TB sector, and adolescents and youth friendly services); fast flow (multi-month antiretroviral drug dispensing); community adherence support groups; ART adherence clubs; and all-family care. Thirty-one health facilities in Maputo City are implementing the one-stop shop model, and results from this differentiated service delivery approach indicate improved ART adherence, increased retention in care, and reduced health care worker workloads. In Zambia, a time-and-motion study revealed substantial inefficiencies for both patients and health care workers, workloads heavily concentrated in the first few hours of clinic opening, and limited health care worker and patient interaction time. Differentiated service delivery may help to redistribute workloads more evenly and prevent patients queuing for hours before clinic opening. After 12 months of differentiated service delivery rollout in Zambian clinics, a discrete choice survey demonstrated that minimizing the burden of frequent appointments improved retention in care.

Innovations in HIV PrEP

Sheena McCormack from the Medical Research Council Clinical Trials Unit at Imperial College and 56 Dean Street at Chelsea and Westminster Hospital in London reviewed the successes and gaps in PrEP rollout in the context of U=U. The 56 Dean Street clinic has seen an 80% decline in new HIV infections between 2015 and 2019. The EPIC-NSW study in Australia demonstrated the populationlevel effectiveness of the rapid, targeted, high coverage rollout of PrEP in MSM, which reported an overall 21.5% decline in new infections. However, gaps were identified in terms of HIV testing, stigma, access to clinics, and the diagnosis and treatment of sexually transmitted infections.

Also presenting on the topic of PrEP, <u>Kenneth Mayer</u> from the Fenway Institute and Harvard Medical School discussed "Scaling Up PrEP in a Boston Community Health Center." The Fenway Institute has more than 2,500 PLHIV and conducted the first PrEP studies in the United States. Of 16,128 at risk HIV-negative patients between 2012 and 2017, 25% initiated PrEP. Over five years, 1.3% of those who did not use PrEP became HIV-infected, compared to 0.4% of those everprescribed PrEP and 0.1% of those with a current PrEP prescription at the time of infection.

Technology and ART

The Infectious Diseases Institute (IDI) in Kampala, Uganda, was established in 2012 with a mission to strengthen health systems in Africa with a strong emphasis on infectious diseases through research and capacity development. The IDI's <u>Rosalind</u>. <u>Parkes-Ratanshi</u> presented about harnessing digital health technologies to increase access to antiretroviral therapy. Developed by the IDI, the *ART ACCESS App* enables PLHIV on stable ART to request refills of their antiretroviral drugs via their smart phone and collect them directly from community pharmacies bypassing congested HIV clinics. In the initial rollout at two clinics and three community pharmacies, 4,892 (50.2%) of patients transferred from paper prescriptions to the app.

Novel strategies are required to reduce undiagnosed HIV and end the HIV epidemic. HIV testing may be increased by making HIV self-test kits available through digital vending machines in venues frequented by high risk groups in the wider community. In the Fast-Track Cities of Brighton & Hove in the United Kingdom, vending machines dispensing self-tests were installed in venues frequented by MSM. From 2017 to 2019, a total of 713 tests were dispensed, an average of 27.9 tests per month, of which three were positive.

ADDRESSING COMORBIDITIES

Tuberculosis

During a session on Aligning Fast-Track Cities to Reach the TB 90-(90)-90 Targets, <u>Suvanand Sahu</u> from the Stop TB Partnership described TB as the biggest killer among infectious diseases, and the leading killer of PLHIV. He also addressed the global impact of TB, with 10 million people developing TB each year and nearly two billion people carrying the bacterium and thus at risk of developing active TB disease.

Launched in 2016, the Zero TB Cities initiative is a global movement for comprehensive TB care in 28 cities and districts globally. Dr. Sahu noted that TB can be prevented, treated, and cured; that some of the most important drivers of the TB epidemic are concentrated in cities and municipalities; and that cities and municipalities have the resources to put an end to urban TB epidemics. Based on the principles of "search, treat, and prevent," and TB prevention and care in households, the places where people seek care and where they work, a coalition of local government businesses and civil society is working to achieve the TB 90-(90)-90 targets. The targets aim to find at least 90% of all people with TB, place them on appropriate therapy (reaching at least 90% of key populations), and achieve at a least 90% success rate as early as possible but no later than 2025. In closing, Dr. Sahu said that cities and municipalities can and should lead in ending the TB epidemic, a goal that could be achieved through a collaboration between the Fast-Track Cities and Zero TB Cities initiatives.

Padmaja Keskar from the Municipal Corporation of Greater Mumbai and the Mumbai Districts AIDS Control Society in Mumbai, India, reviewed TB within the context of the HIV response in Mumbai, a city characterized by a migrant population of 37%, a high population density of 28,542 people per square kilometer, poor housing without ventilation, overcrowded transport, poor nutrition, and high levels of comorbidities. The city's TB Transmission Control Strategy is focused on finding active TB cases, with cough surveillance at all building entrance points, rapid diagnosis, temporary separation to reduce exposure, cough hygiene, and effective treatment. Recommendations for reduction in the burden of TB among PLHIV are based on intensified case finding, TB preventive therapy, and infection control in HIV care settings. Future plans for a TB-free Mumbai by 2025 include improved quality of care, better patient support, improved adherence, community engagement, workplace interventions, and research and innovation.

New TB diagnoses in Karachi in 2018 totaled 25,339. <u>Aamir Khan</u> of Interactive Research and Development (IRD) in Singapore, presented on Zero TB Karachi, which targets multiple diseases from a single-disease platform. With support from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), targeting multiple diseases from a single disease platform was feasible in the Zero TB Karachi context. Integrated screening and treatment of TB, HIV, mental health, routine immunization, and diabetes – responsive to the needs of patients and communities – improved community engagement and treatment outcomes.

Michel Kazatchkine, Special Advisor to UNAIDS for the EECA Region, concluded the session with a presentation focused on TB and HIV-TB co-infection in Europe. Treatment coverage of PLHIV coinfected with TB in EECA is low. In 2017, 91% of new TB patients in the WHO European region knew their HIV status but only 67% of reported PLHIV with TB started ART. Multi-drug resistant TB (MDR-TB) is one of key drivers of the TB epidemic in EECA, with one in five new TB patients and one in two previously treated TB patients having MDR-TB. HIV, HCV, TB/MDR-TB and drug use are major and closely interlinked challenges in EECA. Forty percent of the more than 3.5 million people who inject drugs in the region are living with HIV and two-thirds have HCV infection, with large variations between countries. People who inject drugs have a two- to six-fold higher risk of contracting TB. There are high levels of incarceration, largely linked to criminalization of drug use and people who inject drugs, including those with HIV, TB, and HCV, concentrated in prisons, with little to no access to prevention and care programs in prisons.

Viral Hepatitis

On behalf of the *Tackle HIV/HCV* program's partners, <u>Barbara Taylor</u> from UT Health in San Antonio, TX, USA, presented about the integration of HCV care into urban HIV clinics in South Texas, with a focus on targeted access to community knowledge, linkage to treatment and education for HCV/HIV among people of color. Approximately 25% of people living with HIV in the United States are coinfected with HCV. Co-infected individuals are a priority population for HCV care and treatment because plasma HCV RNA levels are higher in matched HIV positive and HIV negative controls, and co-infected individuals develop histological and clinical features of HCV liver disease more rapidly than those with HCV alone.

The programmatic goals of *Tackle HIV/HCV* are to establish an integrated model of HCV/HIV services, including support for substance use disorder and mental health conditions, provide support, educate, and screen for HIV/HCV in communities. Their work focuses primarily upon people of color and sentinel surveillance for acute and chronic HCV in people living with HIV (including people of color). The ECHO (Extension for Community Healthcare Outcomes) telementoring model is used to educate and support HIV providers in treating HCV infection. With adequate education and support, non-specialist primary care HIV providers treat HCV infection. Addressing HCV infection in people with HIV can be achieved with an integrated approach to delivering both HIV and HCV care and treatment in one clinical encounter.

Lucy Garvey from the Imperial College Healthcare NHS Trust presented on the decline in HCV incidence following the introduction of directly acting antivirals (DAAs) in London. The British HIV Association's (BHIVA) goal of curing HCV in 100% of HIV/HCV-coinfected patients by 2021, Dr. Garvey presented data from

four central London HIV clinics that provide care for more than 7,000 MSM living with HIV. The 2015 peak incidence rate/1,000 MSM living with HIV per year of follow up of 17/1,000 declined to 5/1,000 in 2018. The decline in incidence coincides with increased prescribing of HCV therapies via NHS England DAA program and reduction in time to treatment of acute HCV cases. However, the reduction in incidence falls short of WHO target to reduce by 90% by 2030. This would require incidence rate to fall to 1.7/1000 HIV-positive MSM per year of follow-up.

Initiated in 2016, the *Amsterdam ABC* action plan aims to coordinate and stimulate the HBV/HCV response at the city-level by improving five domains; awareness, general health, prevention, access to care and treatment, and case finding. Ellen Generaal from the Amsterdam Department of Infectious Disease Public Health Service described current projects including HBV, HCV, and HIV case finding and linkage to care for undocumented persons; HCV case finding in supervised injection facilities; the 'NoMoreC' risk reduction and awareness program for MSM; the CELINE national HCV retrieval project, which uses hospital records to relink patients to care; and a qualitative study of barriers and facilitating factors for primary care physicians to test for HBV and HCV.

A panel discussion, moderated by John Ward of the Coalition for Global Hepatitis Elimination at the Task Force for Global Health, described the global burden of HIV/HCV with 2.75 million HIV/HCV-coinfected people, of whom 1.4 million are people who inject drugs. According to Dr. Ward, with decreasing costs of DAAs from USD\$6,000-26,000 per patented DAAs in the United States to the cost of licensed generics of USD\$300-900 in more than 104 countries and locally produced or negotiated DAA prices of USD\$40 in the Ukraine, USD\$60 in Pakistan, and USD\$80 in Rwanda, HCV treatment is cost- effective (value for money) or cost-saving (saving medical costs associated in treating end-stage HCV, notably liver transplants). To conclude the panel discussion, Jessica Hicks from the World Hepatitis Alliance explained that global targets for reducing mortality from viral hepatitis will not be met without greatly accelerating universal access to testing, HBV treatment, and HCV cures.

Other STIs beyond HIV

The WHO estimates that are 1 million new STIs occur daily, most of which, including chlamydia, gonorrhea, and syphilis, can increase the risk of HIV acquisition. Additionally, increasing gonorrhea azithromycin resistance and emerging resistance to extended-spectrum cephalosporins present a unique challenge to stemming the tide of STI infections. In offering his assessment of STIs in the era of HIV "treatment as prevention" and PrEP, <u>David Harvey</u> from the National Coalition of STD Directors in Washington, DC, USA, said the world is off-course in achieving 2030 targets, including a 90% reduction in the incidence of gonorrhea and syphilis.

Harvey next focused on STI data from the United States, citing that STI rates are at their highest levels ever recorded and continue to increase annually. He noted that between 2003 and 2017, the US Centers for Disease Control and Prevention (CDC) recorded a 196% increase in syphilis, 95% increase in chlamydia, and 66% increase in gonorrhea. These increases, which he attributed in part to merging STI and opioid epidemics as well as declining condom use, threaten progress made in the US HIV response. In closing his sobering presentation, Harvey proposed updating national STI guidelines, funding STI prevention and care, increasing STI research (including point-of-care diagnostics and vaccines), and integrating STI services into existing HIV services, notably PrEP programs, and vice versa.

CONCLUSION

The inaugural *Fast-Track Cities 2019* conference convened more than 750 delegates from over 220 cities to discuss successes achieved, lessons learned, best practices, and challenges to ending urban HIV, TB, and viral hepatitis epidemics by 2030. In the spirit of the core values of the Fast-Track Cities initiative, conference delegates represented communities and civil society, civic leaders, health ministries, public health authorities, scientists, and innovators. While focused primarily on attaining the HIV 90-90-90 targets and achieving SDG 3.3 (ending the HIV, TB, and viral hepatitis epidemics by 2030), the conference's multidisciplinary program also tackled issues such as governance for health, social accountability, and health inequalities, reflecting the reality of urban centers whose leaders and constituents face a complex multiplicity of priorities. Consensus among conference and delegates signaled that the end of these global epidemics – HIV, TB, and viral hepatitis – will begin in the urban areas where they first emerged.





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