## Staying at Zero: The Role of Social Science in Ending the HIV Epidemic



«90-90-90» - ambitious target aimed at ending AIDS



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HIV Center for Clinical and Behavioral Studies Columbia University & NYSPI October 24, 2019



## Getting to Zero



#### GETTING TO ZERO

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#### **ZERO NEW HIV INFECTIONS.** ZERO DISCRIMINATION. ZERO AIDS-RELATED DEATHS.



#### Strategy – At a glance

#### Global commitments

Achieve universal access to HIV prevention, treatment, care and support

Halt and reverse the spread of HIV and contribute to the achievement of the Millennium Development Goals

#### Strategic Directions

#### Revolutionize HIV prevention

More than 7000 people are newly infected with HIV every day. A revolution in prevention politics, policies and practices is critically needed. This can be achieved by fostering political Incentives for commitment and catalysing transformative social movements regarding sexuality, drug use and HIV education for all, led by people living with HIV and affected communities, women and young people. It is also critical to target epidemic hot spots, particularly in megacities, and to ensure equitable access to high-quality, cost-effective HIV prevention programmes that include rapid adoption of scientific breakthroughs.

#### Catalyse the next phase of treatment, care and support

A total of 1.8 million people died from AIDS-related causes in 2009. Access to treatment for all who need it can come about through simpler, more affordable and more effective drug regimens and delivery systems. Greater links between antiretroviral therapy services and primary health, maternal and child health, TB and sexual and reproductive health services will further reduce costs and contribute to greater efficiencies. Enhanced capacity for rapid registration will increase access to medicines, as will countries' abilities to make use of TRIPS flexibilities. Nutritional support and social protection services must be strengthened for people living with and affected by HIV, including orphans and vulnerable children, through the use of social and cash transfers and the expansion of social insurance schemes.

#### Advance human rights and gender equality for the HIV response

Social and legal environments that fail to protect against stigma and discrimination or to facilitate access to HIV programmes continue to block universal access. Countries must make greater efforts: to realize and protect HIV-related human rights, including the rights of women and girls; to Implement protective legal environments for people living with HM and populations at higher risk of HM infection: and to ensure HIV coverage for the most underserved and vulnerable communities. People living with and at higher risk of HIV should know their HIV-related rights and be supported to mobilize around them. Much greater investment should be made to address the intersections between HIV vulnerability, gender inequality and violence against women and girls.

#### Vision and goals

#### Vision: To get to Zero New Infections

Goals for 2015:

Sexual transmission of HIV reduced by half, including among young people, men who have sex with men and transmission in the context of sex work

Vertical transmission of HIV eliminated and AIDS-related maternal mortality reduced by half

All new HIV infections prevented among people who use drugs

#### Vision: To get to Zero AIDS-related Deaths Goals for 2015:

Universal access to antiretroviral therapy for people living with HIV who are eligible for treatment

TB deaths among people living with HIV reduced by half

People living with HIV and households affected by HIV are addressed in all national social protection strategies and have access to essential care and support

#### Vision: To get to Zero Discrimination Goals for 2015:

Countries with punitive laws and practices around HIV transmission, sex work, drug use or homosexuality that block effective responses reduced by half

HIV-related restrictions on entry, stay and residence eliminated in half of the countries that have such restrictions

HIV-specific needs of women and girls are addressed in at least half of all national HIV responses

Zero tolerance for gender-based violence

People Inclusive responses reach the most vulnerable. communities mobilized. human rights protected

Core

Themes

Countries Nationally owned sustainable responses, financing diversified, systems strengthened Synergies Movements united, services integrated, efficiencies secured across Millennium Development Goals

GETTING TO ZERO 2011-2015 UNAIDS STRATEGY

## 90-90-90

«90-90-90» - ambitious target aimed at ending AIDS



Zero new HIV infections. Zero discrimination. Zero AIDS-related deaths.

CID 2011:52

REVIEW ARTICLE HIV/AIDS

#### The Spectrum of Engagement in HIV Care and its Relevance to Test-and-Treat Strategies for Prevention of HIV Infection

#### Edward M. Gardner,<sup>1,3</sup> Margaret P. McLees,<sup>1,3</sup> John F. Steiner,<sup>2</sup> Carlos del Rio,<sup>4,5</sup> and William J. Burman<sup>1,3</sup>

<sup>1</sup>Denver Public Health and <sup>2</sup>Kaiser Permanente Colorado, Denver, <sup>3</sup>University of Colorado Denver, Aurora, Colorado, and <sup>4</sup>Rollins School of Public Health of Emory University, and <sup>5</sup>Emory Center for AIDS Research, Atlanta, Georgia



Stage of Engagment in HIV Care

Figure 2. The spectrum of engagement in HIV care in the United States spanning from HIV acquisition to full engagement in care, receipt of antiretroviral therapy, and achievement of complete viral suppression. We estimate that only 19% of HIV-infected individuals in the United States have an undetectable HIV load.



## 1. Getting to Zero and the 90-90-90 Targets: How are we Doing?





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#### Source: D. Birx, 2018 90-90-90 Targets Workshop, AIDS 2018

## **Progress is Variable**

#### CASCADE PROGRESS VARIES AMONG REGIONS



FIGURE 3.3. KNOWLEDGE OF HIV STATUS, TREATMENT COVERAGE AND VIRAL LOAD SUPPRESSION, BY REGION, 2016

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UNAIDS 2017. Ending AIDS: Progress Toward the 90-90-90: UNAIDS special analysis, 2017

## 2. Is it 90-90-90 or 90-81-73?

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## Targets and Cascades: Two Ways to Show the Same Data



#### HIV TESTING AND TREATMENT CASCADE



UNAIDS 2017. Ending AIDS: Progress Toward the 90-90-90.

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### PEPFAR funded household surveys Show Achievements towards the global HIV SDG 90/90/90 Goals



Source: D. Birx, PEPFAR Scientific Advisory Board Meeting, Oct. 16, 2019

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\*Data based on self-reported status, ARV metabolites still being analyzed.

## **Targets and Gaps**

## Remarkable progress on HIV testing and treatment







Source: D. Birx, PEPFAR Scientific Advisory Board Meeting, Oct. 16, 2019



## **Social Science Questions**

- In the 90-90-90 framework, and the treatment cascade, what exactly is being measured?
- How is it being measured? Over what timeframe?
- How does this influence the interpretation of outcomes/progress?
- How does that interpretation affect research, program, and policy priorities and choices?
- What would happen if the outcomes back-tracked over time (i.e., progress toward the 90s is reversed), e.g. through drug stock-outs, natural disasters, war and conflict, etc.?
  - How would this be interpreted?



## 3. The Targets Leave Behind 10/10/10

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## Who Are the Missing 10/10/10?





living with HIV will receive antiretroviral therapy



receiving antiretroviral therapy will have viral suppression

UNAIDS 2017: Ending AIDS: Progress Toward the 90-90-90

## First 90: Knowing One's Status

#### 90-90-90: Treatment for all



#### 90–90–90 HIV treatment targets

30 million people on treatment by 2020 90% of people living with HIV know their status 90% of people who know their status are on antiretroviral therapy 0% of people in antiretroviral herapy achieve iral suppression



## 90 % Of People Living With HIV Will Know Their HIV Status



Granich, et al. 2017. Status and methodology of publicly available national HIV care continua and 90-90-90 targets: A systematic review. PLoS Med 14(4).

## The Missing Men

## FIRST 90

Missing: men under 35, women under 25, well children, infants, and MSM In the last 4 years we have tested nearly 300M people, Evolving and optimizing testing strategies

PEPFAR

Source: D. Birx, 2018 90-90-90 Targets Workshop, AIDS 2018



Psychological and Socio-medical Aspects of AIDS/HIV

#### ISSN: 0954-0121 (Print) 1360-0451 (Online) Journal homepage: http://www.tandfonline.com/loi/caic20

Men "missing" from population-based HIV testing: insights from qualitative research

Carol S. Camlin, Emmanuel Ssemmondo, Gabriel Chamie, Alison M. El Ayadi, Dalsone Kwarisiima, Norton Sang, Jane Kabami, Edwin Charlebois, Maya Petersen, Tamara D. Clark, Elizabeth A. Bukusi, Craig R. Cohen, Moses R. Kamya, Diane Havlir & the SEARCH Collaboration

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## Not Just Undiagnosed: Late Diagnosis, Too



#### Late HIV diagnosis: All ages with CD4 <200



Source: VP Saldanha, 2018 90-90-90 Targets Workshop, AIDS 2018



## **Social Science Questions**

- Why do people not get tested and re-tested?
- Why does late diagnosis occur?
- Which people are more or less likely to get tested or have a late diagnosis in a given context, and why?
- Why are men avoiding or being missed in HIV testing?
- How will new testing technologies, such as home testing, affect testing rates among different populations?
  - What is it that these new technologies offer to people that might make testing more (or less) acceptable?

## Second 90: Diagnosed and On ART

Coverage of antiretroviral therapy by sex, global and regional, 2017



Source: VP Saldanha, 2018 90-90-90 Targets Workshop, AIDS 2018



OUNAIDS

## Second 90: Diagnosed and On ART

## Treatment access often lower among key populations

Antiretroviral therapy coverage, by population, select countries, 2014–2017



GAY MEN AND OTHER MEN WHO HAVE SEX WITH MEN

Female sex workers 

Adult women (aged 15 years and older

#### Source: P. Ghys, 2018 90-90-90 Targets Workshop, AIDS 2018

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Source: Global AIDS Monitoring, 2018.



## Third 90: Achieving Viral Suppression

Viral load s	suppres / level	sion at the	9
Aged 15- 64	4 (59)	Aged 15-24	
<ul> <li>Swaziland</li> </ul>	68%	<ul> <li>Swaziland</li> </ul>	<b>42%</b>
<ul> <li>Lesotho</li> </ul>	61%	<ul> <li>Lesotho</li> </ul>	<b>42%</b>
<ul> <li>Zimbabwe</li> </ul>	55%	<ul> <li>Zimbabwe</li> </ul>	34%
• Malawi	<b>59%</b>	<ul> <li>Malawi</li> </ul>	34%
• Zambia	<b>51%</b>	<ul> <li>Zambia</li> </ul>	<b>26%</b>
• Uganda	48%	<ul> <li>Uganda</li> </ul>	26%
• Tanzania	42%	<ul> <li>Tanzania</li> </ul>	28%

Source: D. Birx, 2018 90-90-90 Targets Workshop, AIDS 2018

#### Must focus on who we are missing : Botswana : adult males vs females



## **Social Science Questions**

- Who are the 10-10-10 who are not being reached?
- Why them?
- What does this tell us about health and social inequalities in a given context (or globally) more generally (i.e., beyond HIV)?
- What cultural norms about gender are at play that account for the missing men in test and treat programs?
  - Can and should they be "intervened" with?
- How does knowledge of who is missing out influence research, program, and policy decisions?

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4. 90/90/90 Targets & Care Continua are Focused on Treatment; Treatment is Necessary, but Not Sufficient, to Get to Zero

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## **Beyond Viral Suppression**



Source: Jeffrey Lazarus, PhD, ISGlobal, Hospital Clinic, University of Barcelona; reproduced by Emily Newman, For people with HIV, what's next after viral suppression? *BETA* October 3, 2017.

#### UNDETECTABLE = UNTRANSMITTABLE



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## **Reductions in HIV Incidence: Off Target**



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## **Regional Differences in HIV Incidence Reductions**

#### ALARMING RISE IN NEW INFECTIONS IN EASTERN EUROPE AND CENTRAL ASIA



FIGURE 2.7. NEW HIV INFECTIONS, ALL AGES, BY REGION, 1990–2016 Source: UNAIDS 2017 estimates.

## Population Differences in HIV Incidence Reductions: South Africa

- Rate of new infections cut by 44% in past five years.
- There were 231,000 new infections in 2017.
- But incidence rate among young people aged 15-24 years is high at 7.9%.
- Incidence among young women is three times the rate of young men.
  - This gender difference has not changed in many years.

## **Social Science Questions**

- Why is treatment scale-up reducing HIV infections in some places and among some groups, but not others?
  - Why are gender differences in uptake of treatment and rates of new infections so intractable in certain contexts?
- Might people be accessing treatment, but not taking it consistently over sufficient time; and what about people who don't want to take ART?
  - Are they stigmatized as "lackards?"
  - How does a strategy based on all people living with HIV being on ART respond or adapt to those who choose not to take the drugs?
- What about people for whom treatment isn't working, i.e., who are not achieving sustained viral suppression even if adherent to their regimen?
  - Are they stigmatized as "failures?"
  - What other (non-ART) HIV care and prevention strategies are made available to them to improve their own health and prevent onward transmission?

5. 90-90-90 Targets Focus on HIVinfected People; But HIV-uninfected People Also Matter; and PrEP is not the only Prevention Strategy for Them

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## **Declining HIV Diagnoses in UK & San Francisco**



Public Health England. *Progress towards ending the HIV epidemic in the United Kingdom: 2018 report* 



SFDPH HIV Epidemiology Annual Report 2018



1 Cares in the "Other/Unknown" meial/ethnic category include 9% Native Americans, 87% multi-moe, and 3% unknown 2 See Technical Notes "Date of Initial HIV Diagnosis."



## Race & Gender Disparities in PrEP Use in the U.S.: MMWR October 19, 2018/Vol 67/No 41

- From 2014 to 2016, annual number of PrEP users aged 16+ increased by 470%--from 13,748 to 78,360.
- 95.3% of PrEP users were men.
- In 2016, Although black men and women accounted for approximately 40% of persons with PrEP indications, nearly six times as many white men and women were prescribed PrEP as were black men and women.
- Black/African Americans are 12% of U.S. population, but 44% of new HIV diagnoses.
  - Black MSM = 6/10 of all new diagnoses
  - Black women = 61% of new diagnoses among women



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## Lack of Awareness is Barrier to PrEP Uptake Among Women

INTERNATIONAL JOURNAL OF

STD&AIDS

International Journal of STD & AIDS

DOI: 10.1177/0956462415601304

2016, Vol. 27(10) 873-881

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std.sagepub.con

(\$)SAGE

AIDS PATIENT CARE and STDs Volume 29, Number 2, 2015 Mary Ann Liebert, Inc. DOI: 10.1089/apc.2014.0142

> Knowledge, Attitudes, and Likelihood of Pre-Exposure Prophylaxis (PrEP) Use Among US Women at Risk of Acquiring HIV

Judith D. Auerbach, PhD,<sup>1</sup> Suzanne Kinsky, MPH,<sup>2</sup> Gina Brown, MSW,<sup>3</sup> and Vignetta Charles, PhD<sup>4</sup>

AIDS PATIENT CARE and STDs Volume 28, Number 12, 2014 © Mary Ann Liebert, Inc. DOI: 10.1089/apc.2014.0003

#### Perspectives on HIV Prevention Among Urban Black Women: A Potential Role for HIV Pre-Exposure Prophylaxis

Charlene A. Flash, MD, MPH,<sup>1</sup> Valerie E. Stone, MD, MPH,<sup>2</sup> Jennifer A. Mitty, MD, MPH,<sup>3,4</sup> Matthew J. Mirniaga, ScD, MPH,<sup>4,5</sup> Kathryn T. Hall, PhD,<sup>6</sup> Douglas Krakower, MD,<sup>3</sup> and Kenneth H. Mayer, MD<sup>3,4</sup>

Original research article

HIV risk and awareness and interest in pre-exposure and post-exposure prophylaxis among sheltered women in Miami

Susanne Doblecki-Lewis<sup>1</sup>, Larissa Lester<sup>2</sup>, Bryanna Schwartz<sup>2</sup>, Constance Collins<sup>3</sup>, Rai Johnson<sup>3</sup> and Erin Kobetz<sup>4</sup>



Goparaju et al., J AIDS Clin Res 2017, 8:9 DOI: 10.4172/2155-6113.1000730

**OMICS International** 

Stigma, Partners, Providers and Costs: Potential Barriers to PrEP Uptake among US Women

Lakshmi Goparaju\*, Nathan C Praschan\*, Lari Warren-Jeanpiere, Laure S Experton, Mary A Young and Seble Kassaye Geogetown University, Weshington, D.C., USA \*\*Doth shee frist-authorship

Walters et al. Harm Reduction Journal (2017) 14:40 DOI 10.1186/s12954-017-0166-x

Harm Reduction Journal

**Open Access** 

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#### RESEARCH

Awareness of pre-exposure prophylaxis (PrEP) among women who inject drugs in NYC: the importance of networks and syringe exchange programs for HIV prevention

Suzan M. Walters<sup>1,4\*</sup>, Kathleen H. Reilly<sup>2</sup>, Alan Neaigus<sup>3</sup> and Sarah Braunstein<sup>2</sup>

University of California San Francisco

## **Social Science Questions**

- Who does and does not have access to PrEP, and why?
- How does PrEP disrupt traditional notions of 'safe' and 'unsafe' sex?
- Does PrEP confers on its users a level of agency and control not generally achieved with condoms?
- What is the impact of the promotion of PrEP on long-term condom users?
- How does PrEP affect sexual practices and cultures?
- How will different formulations and modes of delivery of PrEP influence its uptake and use by different groups of people?
  - How will it influence answers to all the questions above?

Auerbach JD and Hoppe TA. Journol of the International AIDS Society 2015, 18(Suppl 3):19983 http://www.jiasociety.org/index.php/jias/article/view/19983 | http://dx.doi.org/10.7448/IAS.18.4.19983



#### Commentary

Beyond "getting drugs into bodies": social science perspectives on pre-exposure prophylaxis for HIV

Judith D Auerbach<sup>5,1</sup> and Trevor A Hoppe<sup>2</sup>

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#### Abstract

Social scientists have much to contribute to the analysis of the real and potential contribution of pre-exposure prophysiks (PEP) to HV prevention around the world. Reyrond ust a matter of dinical efficacy and genering pills into popelysis months, PEP areas a number of important social-psychological questions that must be attended to in order to translate biomedical and clinical findings into upsike of PEP annorg enough people at risk of HV infection to produce population-level effectiveness. PEP is a dynamic pheromenous Mr Siductical attrabutes that intrue both optimism and existing and effective HV prevention strategy. PEP disrupts traditional notions of "safe" and "unala" seq, it conters on its users a level of agency and control not generally achieved with concerns, and it affects sex and particles and secand cultures in memoryling ways. At the dynamics pherometry of undifferent contexts, and as new modes of PEP administration emerge, it will be important for social societists to be engogical in assessing HV and the secand particles and secand curves.

## **The Primary HIV Prevention Gap**

### Mind the Gap



AVAC. HIV Prevention on the Line, 2014

San Francisco

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## **Prevention as a Dynamic Process**



San Francisco Horn T, Sherwood J, Remien RH, Nash D, Auerbach JD, et al. Towards an integrated primary and secondary HIV prevention continuum for the United States: a cyclical process model. J Int AIDS Soc. 2016 Nov 17;19(1):21263. doi: 10.7448/IAS.19.1.21263.

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## 6. Getting to Zero Requires More than Scale-up and Implementation Science



University of California San Francisco

## Strategic Priorities for San Francisco Getting to Zero Consortium



Susan Buchbinder, IAS 2017

# 7. Prospects for Getting to and Staying at Zero (or 100-100-100): Some Sobering Social Science Contributions



Friedman SR, Rossi D, Braine N. Theorizing "Big Events" as a potential risk environment for drug use, drug-related harm and HIV epidemic outbreaks. Volume 20, Issue 3, May 2009, Pages 283-291

Theory, Measurement and Hard Times: Some Issues for HIV/AIDS Research

Samuel R. Friedman, Milagros Sandoval, Pedro Mateu-Gelabert, Diana Rossi, Marya Gwadz, Kirk Dombrowski, Pavlo Smyrnov, et al.



Springer

Mojola SA and Warroyi J. Journal of the International AIDS Society 2019, 22(54):e25302 http://onlinelibrarywiley.com/doi/10.1002/jia2.25302/full | https://doi.org/10.1002/jia2.25302



#### COMMENTARY

#### Contextual drivers of HIV risk among young African women

Sanyu A Mojola<sup>18</sup> D and Joyce Warnoyi<sup>2</sup> D

#### NICOLE ANGOTTI, TARA MCKAY AND RACHEL SULLIVAN ROBINSON

Department of Sociology, American University; Center for Medicine, Health, and Society, Vanderbilt University; School of International Service, American University Email: angotti@american.edu, Email: tara.mckay@vanderbilt.edu, Email: robinson@american.edu

#### Lgbt Visibility and Anti-Gay Backlash

Unintended Consequences of Responses to HIV/AIDS in Malawi and Senegal

Sociology of Development, Vol. 5, Number 1, pps. 71-90. electronic ISSN 2374-538X.

University of California San Francisco

## **Cost & Financing**

HIV resource availability\* in low- and middle-income countries by source of funding, 2010-2017 and 2020 target









#### FIGURE 2.

HIV cases in Greece by year of report and route of transmission (Men who have Sex with Men-MSM, People Who Inject Drugs-PWID, Heterosexuals-HET).



#### FIGURE 3.

Hypothesized partial model of pathways from the economic crisis in Greece to HIV transmission among People Who Inject Drugs (PWID). Arrows that are in bold represent associations for which there are supporting data.

Source: Nikolopoulos GK, et al. Big Events in Greece and HIV Infection Among People Who Inject Drugs. *Subst Use Misuse*. 2015 June; 50(7)

#### Populism threatens Brazil's HIV/AIDS response

Long a standard bearer among developing nations in the global fight against HIV/AIDS, is Brazil's new populist government, led by Jair Bolsonaro, seeking to sweep the epidemic under the carpet? Joe Parkin Daniels investigates.





BIA's Richard Parker says HIV is slipping down the list of political prioritie

## **Unintended Consequences**

"The inclusion of gay men and other msm in the global HIV/AIDS response established them as 'new sexual subjects of development' who were 'vulnerable' and 'in need' of assistance... Donors' emphasis on msm provided new urgency, research interest, and sources of support for a handful of nascent labt- and msm-identified groups on the African continent to mobilize and to disseminate prevention knowledge to their communities. . . Donor policies targeting gay men and other msm have also put msm and labt organizations in the middle of broader conflicts around political and cultural sovereignty in some African countries, leading to political and popular backlash against same-sex sexualities."

N Angotti, T McKay, RS Robinson. Lgbt Visibility and Anti-Gay Backlash: Unintended Consequences of Responses to HIV/AIDS in Malawi and Senegal. Sociology of Development; 5(1), 2019.]



IAS Statement: Anti-homosexuality Bill poses severe threat to human rights of LGBT community in Uganda

Uganda is facing a serious threat to human rights and the HIV response with the announcement of plans to introduce legislation that will impose the death penalty on people found to have had sex with a member of their own sex or to have "promoted" homosexuality.

The Ugandan Minister of Ethics and Integrity, Simon Lokodo, announced the plans on Thursday, 10 October, arguing that "homosexuality is not natural to Ugandans" and that stiffer penalties are needed to prevent the "recruitment" of young people into homosexuality. He asserted that the legislation has the support of President Yoweri Museveni.

October 23, 2019

San Francisco

University of California

## **Dynamic Contexts**

Mojola SA and Warnoyi J Journal of the International AIDS Society 2019, 22(S4)s25302 http://online.itmarywileycom/doi/10.1002/jis2.25302/full | https://doi.org/10.1002/jis2.25302



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Figure 1. Intervention context

## Conclusions

- Aspirational targets and goals, like 90-90-90 and Getting to Zero are good heuristic devices.
- But they also can be used in ways that mask important dynamics, disparities, and inequalities in the HIV response that compromise their achievability.
- While it is tempting to hope that we can end the HIV epidemic through the massive scale-up of drugs and technologies, because it seems so much easier, quantifiable, and less painful than dealing with the messiness of social life, the data show that to truly get to and stay at zero, we will have to contend with the messy stuff.
- This means acknowledging that it exists, conducting fundamental social research to elucidate how it operates, and devising effective strategies for mitigating its ill effects and harnessing its potential for positive outcomes.
- There is good social science literature on all of this that should be read by non-social scientists, too; and there is much more of this kind of research that needs to be done and supported.

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  - Mitchell Warren, AVAC
  - Susan Buchbinder, San Francisco Department of Public Health