

AIDS 2022

Highlights of 24th International
AIDS Conference

Produced by **NAM aidsmap** and **IAS – the International AIDS Society**



Anti-racism and decolonizing the AIDS response

- ▶ Speakers addressed racism, racial discrimination and decolonizing the AIDS response.
- ▶ Winnie Byanyima, Executive Director of UNAIDS, highlighted that many delegates without European, North American or Australian passports were blocked from attending the conference.
- ▶ Inequalities and racism drive the HIV epidemic. Unconscious bias continues to play a role in keeping people from the table, even in the most well-meaning organizations.



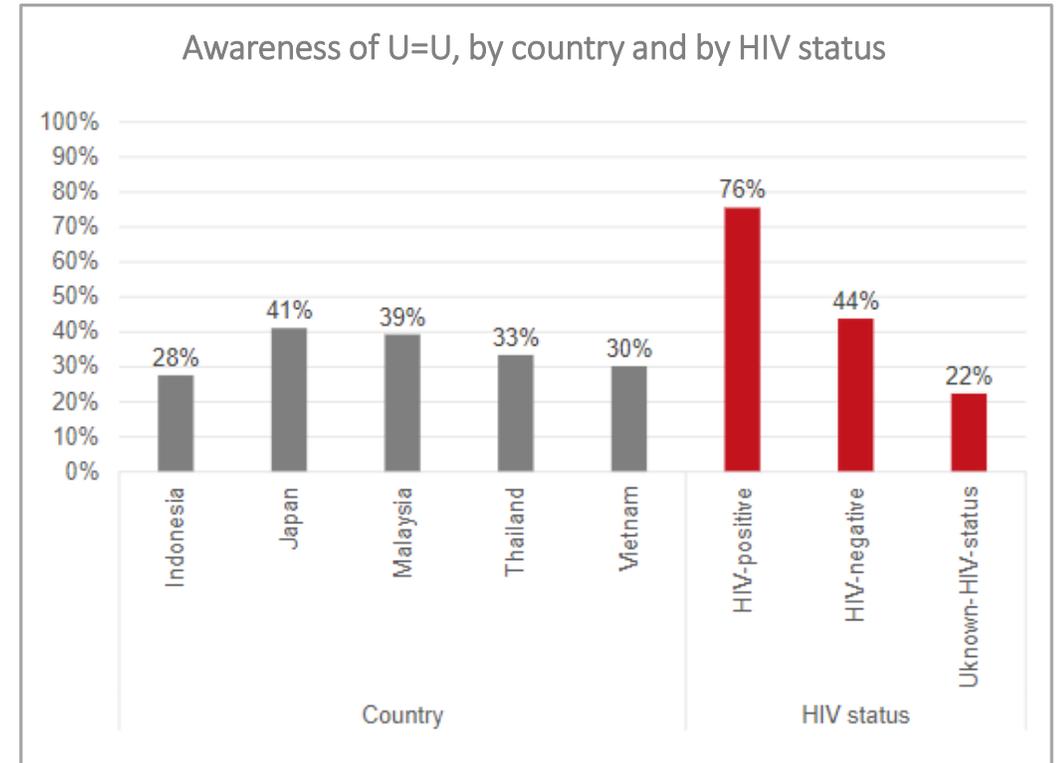
Winnie Byanyima of UNAIDS at the AIDS 2022 opening session.
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Integrating U=U into HIV care

- ▶ An online survey investigated awareness of Undetectable = Untransmittable (U=U) among gay, bisexual and other men who have sex with men in Asia.
- ▶ From May 2020 to January 2021, it recruited 15,872 participants.
- ▶ 6.8% were living with HIV, 46.2% HIV negative, and 47% of unknown status.
- ▶ 35.9% were aware of U=U, 44.8% had never heard of it, and 19.3% were not sure.



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- ▶ Several presentations explored challenges communicating the U=U message in healthcare settings.
- ▶ Research in Canada found that sexual health practitioners had difficulty communicating the notion of “zero risk”.
- ▶ A UK organization has developed free online training modules for health professionals to support them to confidently communicate U=U with their clients.



Richard Angell and Chamut Kifetew from the Terrence Higgins Trust at AIDS 2022.
Photo by Matthew Hodson

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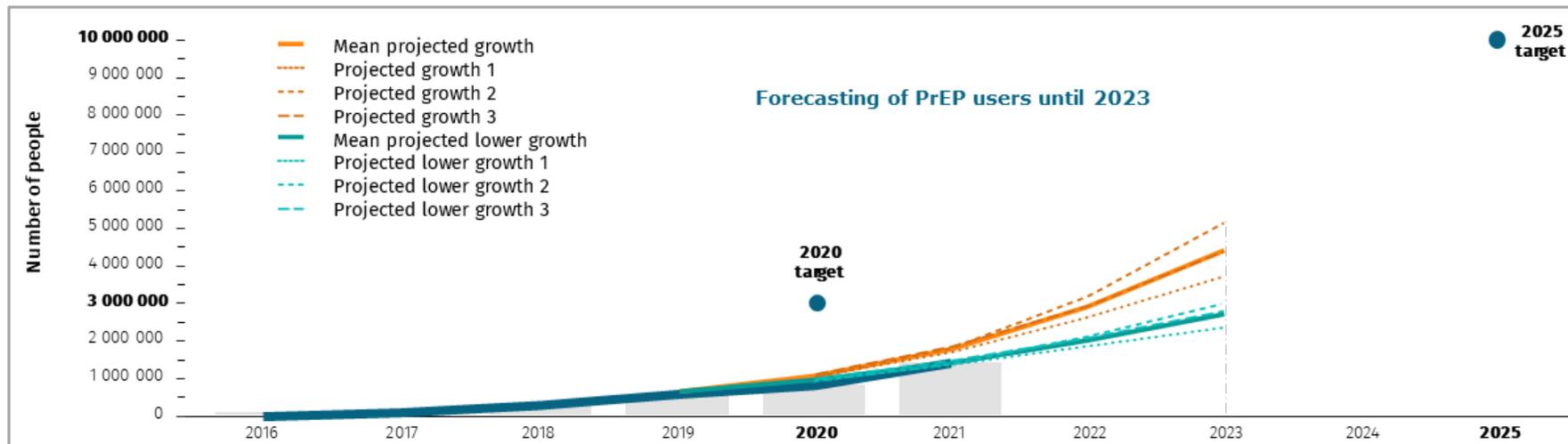
- ▶ A survey of 3,206 people living with HIV in seven cities in the global South found that over half did not understand the meaning of “undetectable viral load”.
- ▶ In Latin America, awareness of U=U has been raised through large public events, such as Pride, social media, storytelling, music videos and official government campaigns.
- ▶ In the Caribbean, treatment uptake, adherence and the U=U message have been limited by stigma, poverty, weak health systems and low levels of literacy.
- ▶ In the Middle East and North Africa, HIV-related stigma, conservative religious attitudes towards sex and limited human rights present formidable challenges.
- ▶ Local activism can be key in creating awareness and changes.
- ▶ New guidance from PEPFAR asks countries to integrate U=U messaging in HIV services.

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Introducing long-acting PrEP

- ▶ Many people who could benefit from oral PrEP do not have access to it.
- ▶ In 2020, the number of people using oral PrEP was just 28% of the target of 3 million in low- and middle-income countries.
- ▶ Daily PrEP is not feasible for everyone. Long-acting PrEP has the potential to address some of the challenges.

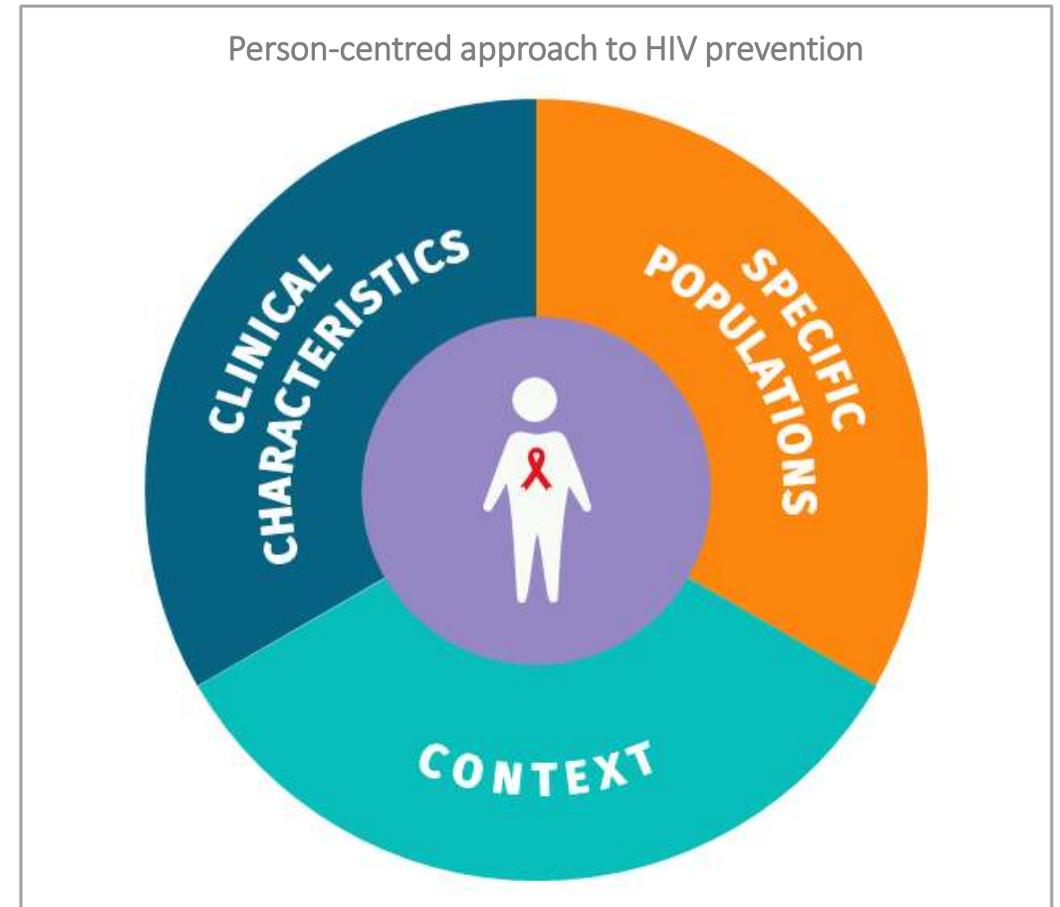


PrEP usage, forecasting and targets

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- ▶ The dapivirine vaginal ring and injectable cabotegravir will be available in more countries soon.
- ▶ Open-label extension studies have shown more use of the vaginal ring than in Phase 3 trials, and modelling data suggest greater risk reduction.
- ▶ Implementation studies will be vital in understanding barriers to roll out and how best to integrate products into health systems.



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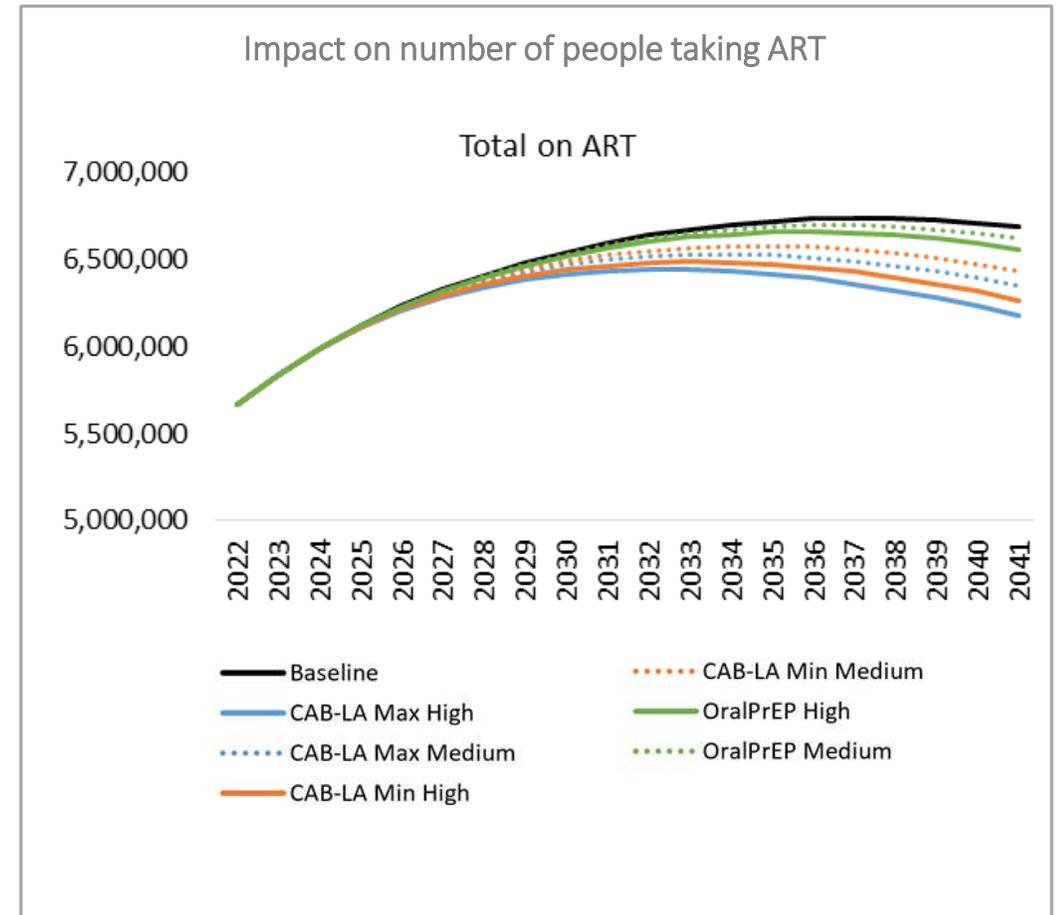
Cost effectiveness of injectable PrEP in South Africa

- ▶ Modelling explored the relative cost effectiveness of long-acting injectable cabotegravir (CAB-LA) versus oral PrEP in South Africa.
- ▶ The model was based on effectiveness of oral and injectable PrEP shown in previous studies.
- ▶ It used drug prices in South Africa for oral PrEP with tenofovir disoproxil/emtricitabine (TDF/FTC) and five possible price levels for CAB-LA (one to five times the price for generic TDF/FTC).
- ▶ It also included costs for delivery, such as staff time.
- ▶ Providing CAB-LA is expected to prevent more cases of HIV, therefore lowering the future cost of antiretroviral therapy and avoiding AIDS-related deaths.

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- ▶ If CAB-LA cost the same as oral PrEP (\$80 a year), it would be more cost effective at minimum duration: \$1,705 per life year saved.
- ▶ At \$160 a year, minimum-duration CAB-LA would cost \$2,751 per life year saved – marginally over the cost-effectiveness threshold.
- ▶ To be cost effective at high coverage, CAB-LA PrEP would need to cost less than \$9 per injection (\$54 a year).



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Making long-acting cabotegravir PrEP affordable

- ▶ Rapid roll out of long-acting HIV prevention injections could significantly reduce new HIV cases.
- ▶ Current pricing of long-acting cabotegravir (CAB-LA) is too high. Making it affordable is likely to depend on generic manufacturers.
- ▶ The pharmaceutical company, ViiV Healthcare, has committed to supplying CAB-LA to the 14 countries that were involved in clinical trials.
- ▶ At AIDS 2022, ViiV announced a licencing agreement with the Medicines Patent Pool to allow 90 countries to access generic versions of CAB-LA.
- ▶ However, many countries are not covered by the agreement, including Russia, Brazil, Mexico and several others in central Europe, Latin America and Asia.

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Taking antibiotic after sex to reduce STIs

- ▶ The DoxyPEP study recruited 501 gay and bisexual men and trans women.
- ▶ 327 were HIV-negative people using PrEP (regular medication to prevent HIV) and 174 were people living with HIV.
- ▶ Two-thirds were given doxycycline to take after sex as post-exposure prophylaxis (PEP).
- ▶ They were told to take a single dose of doxycycline (200mg) as soon as possible and no more than 72 hours after condomless sex.

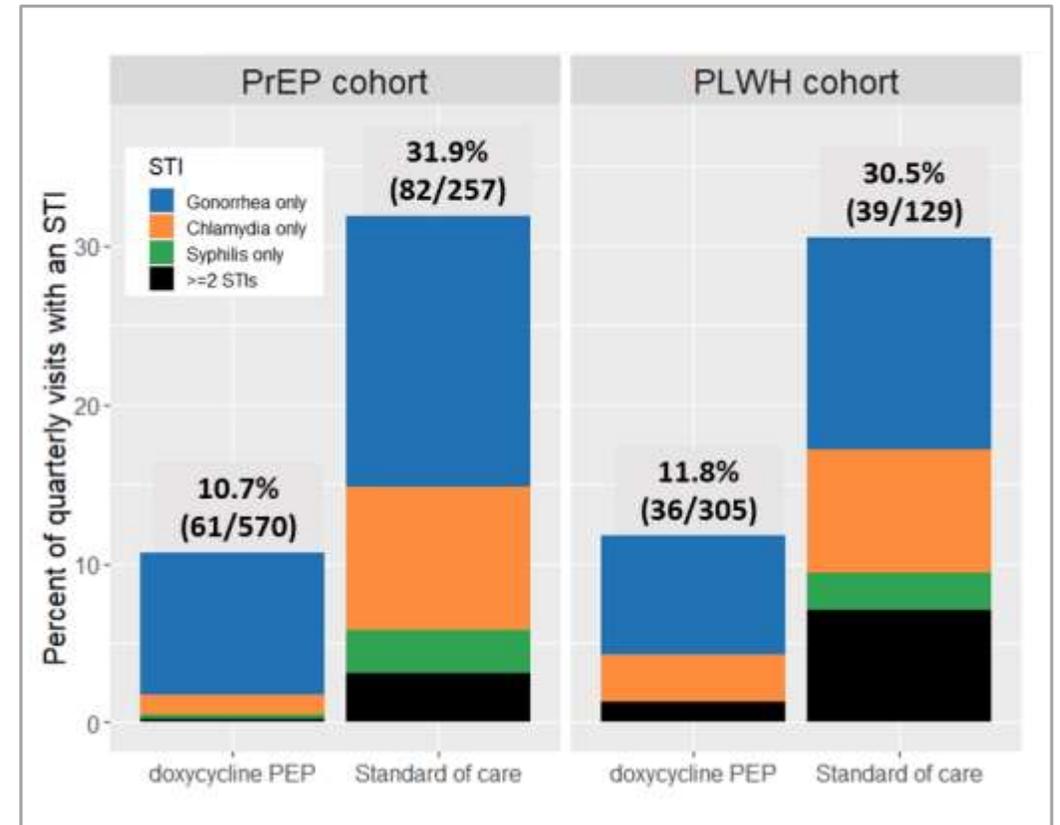


Annie Luetkemeyer of the University of California San Francisco at AIDS 2022.
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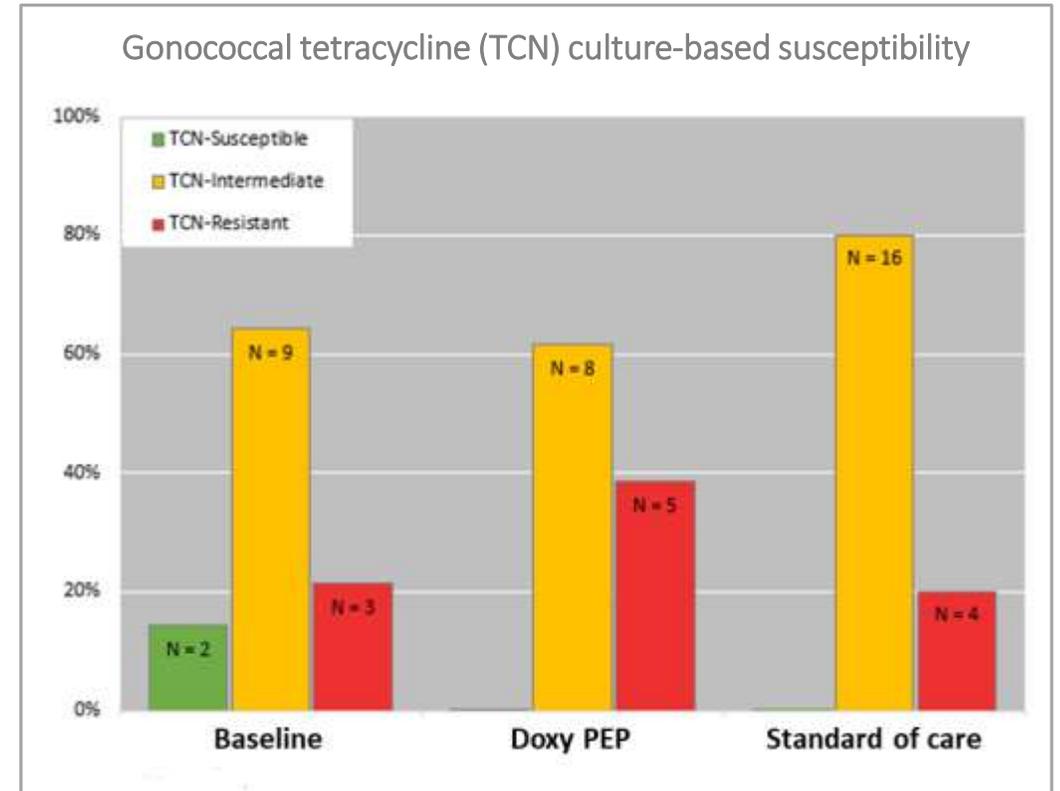
- ▶ The incidence of gonorrhoea, chlamydia and syphilis was measured and a significant reduction was seen in all three STIs compared with the standard of care.
- ▶ Overall, doxycycline taken after sex reduced STIs by 66% in HIV-negative participants (PrEP cohort) and by 62% in participants with HIV.



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- ▶ During the study, resistance in acquired gonorrhoea infections among people taking doxycycline nearly doubled (from 3 to 5 cases). This should not impact gonorrhoea treatment.
- ▶ Larger studies and ongoing surveillance are needed to assess impact on resistance.



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Questions, comments, discussion

Taking PrEP during pregnancy

- ▶ An ongoing study is enrolling mother-child pairs in western Kenya, including some mothers who took PrEP during pregnancy. Data were presented for 664 pairs.
- ▶ Nurses assess children’s growth and neurodevelopment at six-month intervals.
- ▶ 17% of the mothers had started PrEP (oral tenofovir disoproxil fumarate and emtricitabine) during pregnancy.

Characteristics of mother-child pairs

Characteristic	PrEP exposure during pregnancy	
	Any (n=119, 17%)	None (n=545, 83%)
	% or Median (IQR)	
Maternal age, years	30 (25-35)	28 (25-33)
Child age, months	26 (22, 33)	26 (21, 31)
Currently married	93%	91%
Maternal education, years	9 (8-12)	10 (8-14)
Number of living children	4 (3-5)	3 (2-4)
Preterm birth	10%	9%
Partner known to be living with HIV	13%	3%

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- ▶ No differences were observed in stunting, wasting, weight, length or neurodevelopment between infants exposed to PrEP during gestation and those not exposed at months 24, 30 and 36.

Child growth indicators

	Median (IQR)	
	Any PrEP exposure during pregnancy	
	Any (n=119)	None (n=545)
24-months¹		
Weight (kg)	11.2 (10.2, 12.8)	11.5 (10.5, 12.7)
Length (cm)	85.0 (81.3, 87.2)	85.0 (83.0, 87.5)
30-months²		
Weight (kg)	12.5 (11.0, 13.6)	12.8 (11.1, 14.0)
Length (cm)	89.0 (86.0, 93.0)	89.0 (86.0, 92.0)
36-months³		
Weight (kg)	14.0 (12.0, 15.0)	13.8 (12.7, 14.7)
Length (cm)	95.0 (92.0, 97.0)	94.0 (91.5, 97.0)

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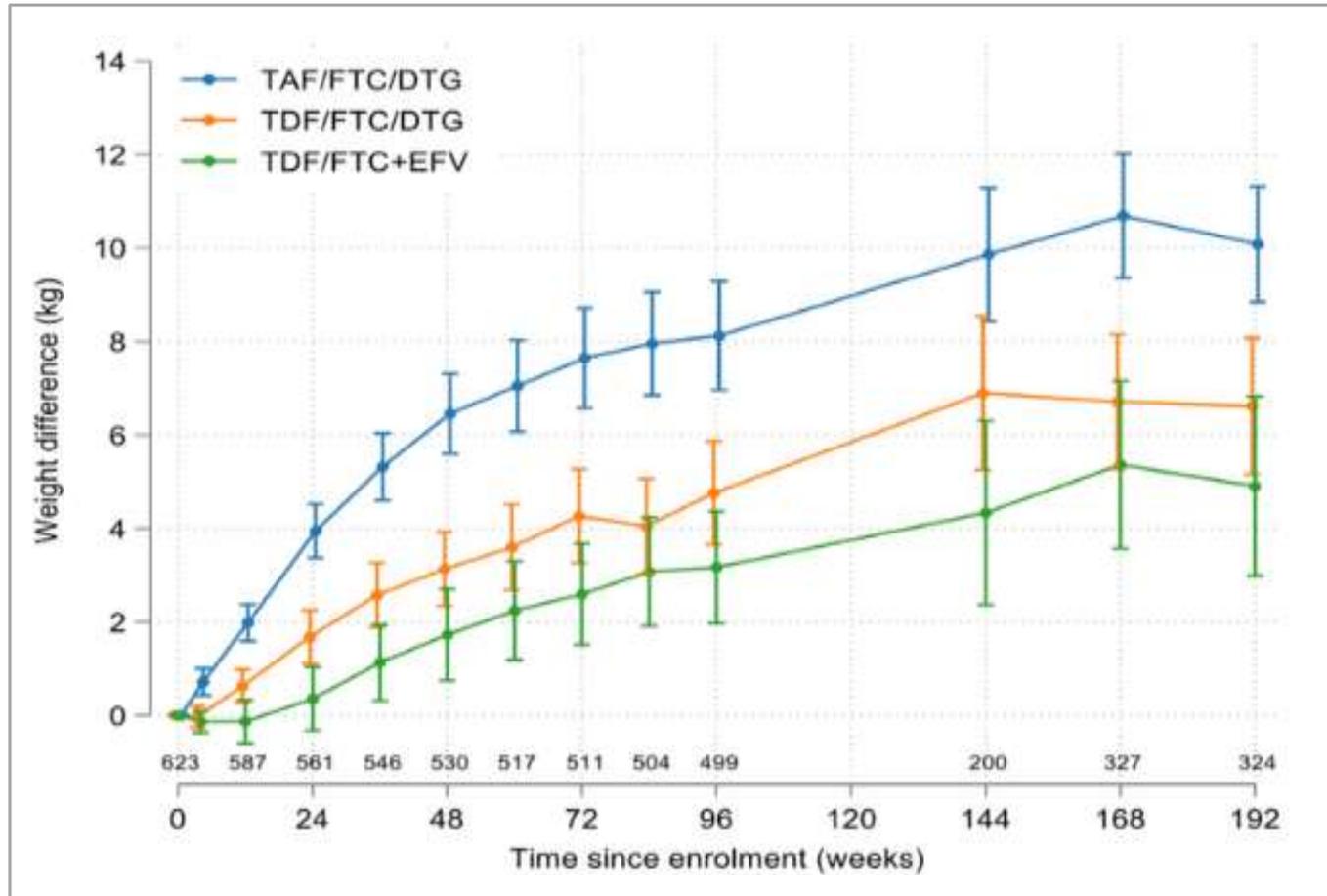
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Weight gain with TAF plus dolutegravir

- ▶ ADVANCE was a large, randomized trial of three HIV treatment regimens:
 - Arm 1: dolutegravir/tenofovir disoproxil fumarate/emtricitabine (DTG/TDF/FTC)
 - Arm 2: dolutegravir/tenofovir alafenamide/emtricitabine (DTG/TAF/FTC)
 - Arm 3: efavirenz/tenofovir disoproxil fumarate/emtricitabine (EFV/TDF/FTC).
- ▶ 48-week and 96-week results showed that DTG-based regimens were non-inferior to the efavirenz-based regimen, but found greater weight gain in the DTG groups, particularly in the group receiving DTG/TAF/FTC.
- ▶ At this year's conference, the final 192-week results were presented.

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Weight gain on first-line ART among women over 192 weeks by regimen

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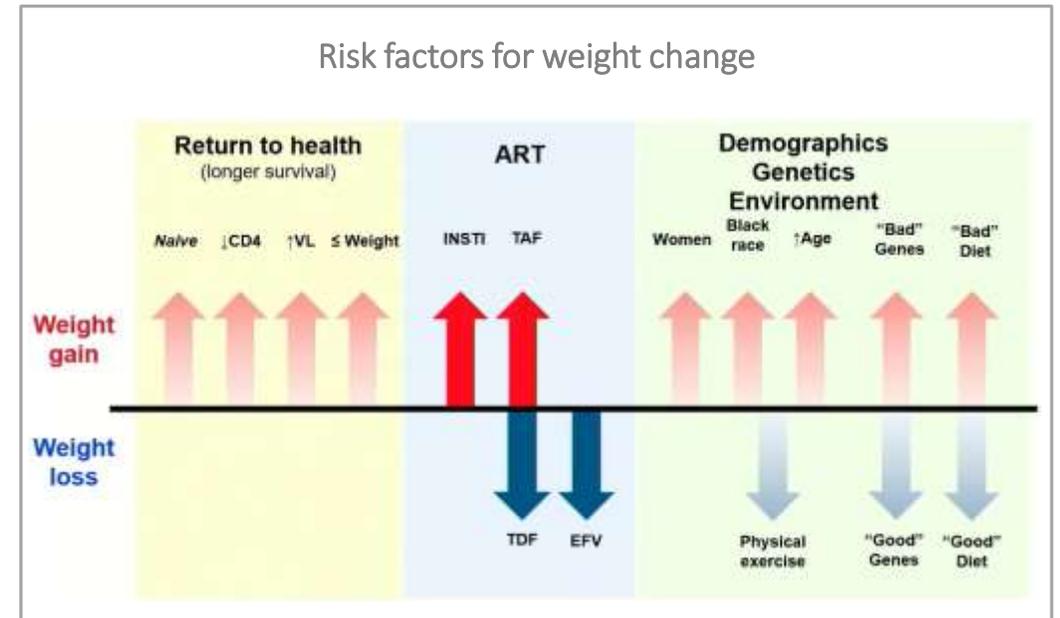
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- ▶ At 192 weeks (around four years), people taking DTG/TAF/FTC had gained around 9kg, compared with 5.8kg for DTG/TDF/FTC and 3.3kg for EFV/TDF/FTC.
- ▶ 29% of the DTG/TAF/FTC group developed clinical obesity, compared with 21% taking DTG/TDF/FTC and 15% taking EFV/TDF/FTC.
- ▶ 43% of women taking DTG/TAF/FTC developed clinical obesity compared with 27% taking DTG/TDF/FTC and 20% taking EFV/TDF/FTC.
- ▶ 20% of women and 7% of men taking DTG/TAF/FTC developed metabolic syndrome.

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- ▶ Integrase inhibitors and TAF appear to be associated with larger weight gains than other HIV medications, particularly for people starting treatment with a low CD4 count.
- ▶ Weight gain is also associated with age, genetic factors, sex, food intake and exercise.
- ▶ There may be an association between integrase inhibitors, weight gain and adipose tissue dysfunction and inflammation.



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Long-acting injectable HIV treatment in practice

- ▶ Long-acting injectable HIV treatment could enable discreet, less frequent dosing and could be targeted at people who have difficulty with adherence to oral medication.
- ▶ Barriers to uptake include frequent clinic visits, injection-site reactions and drug interactions. It also cannot be withdrawn if there is toxicity.
- ▶ At a system level, there are likely to be fewer treatment failures and hospitalizations and lower healthcare costs. However, there will be training requirements for staff, increased medication costs and the need for cold storage.

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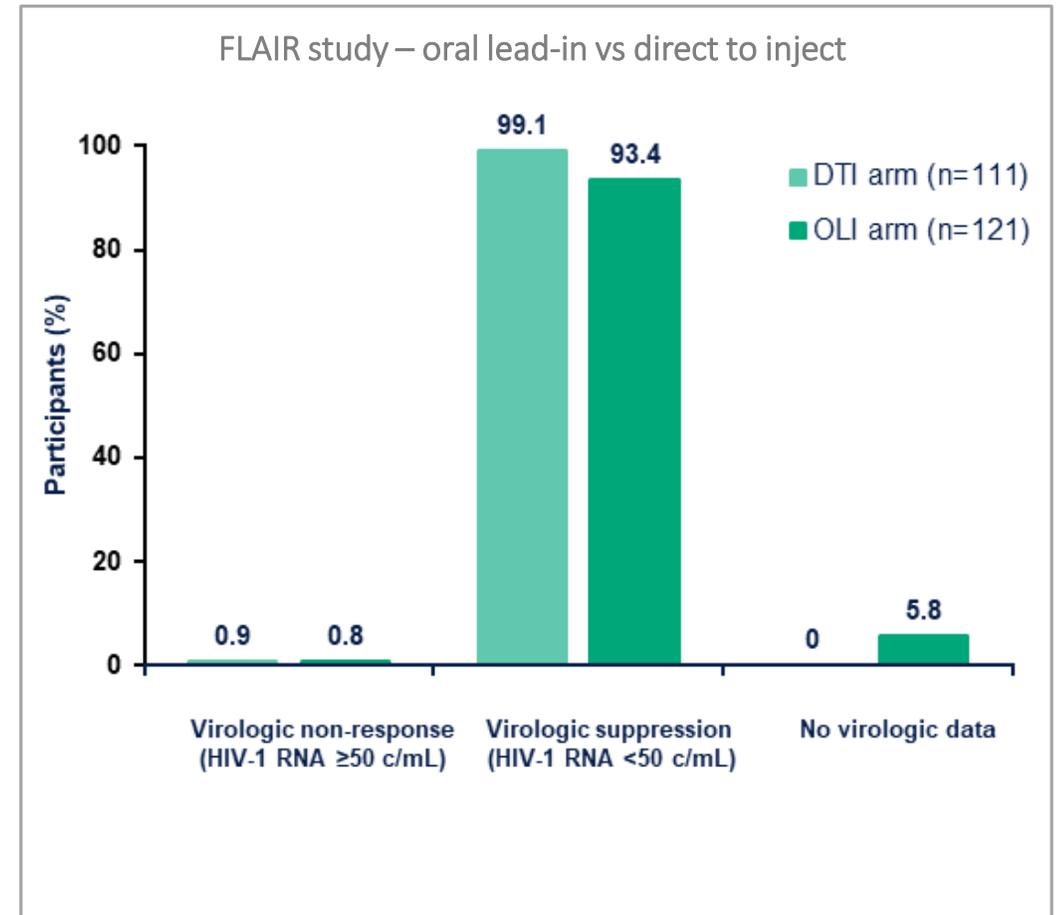
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- ▶ Some populations may particularly benefit from long-acting treatment, including people with psychiatric conditions, people in prison or care settings, and homeless people.
- ▶ There are few data available on the expectations of these populations.
- ▶ Some studies are underway, looking at implementation of long-acting treatment in real-world settings and among people who are not yet virally suppressed.
- ▶ Pedro Cahn told the conference: “Nobody should be left behind in this new treatment paradigm.”

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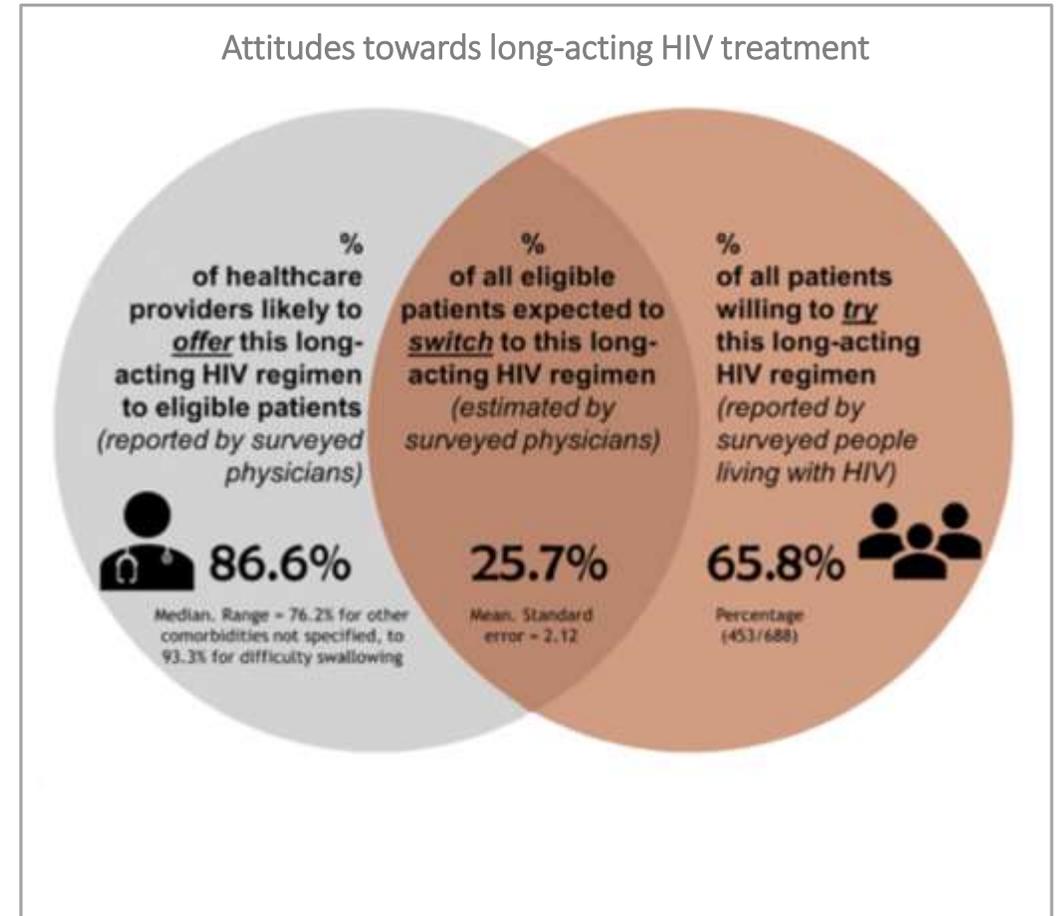
- ▶ Data show good viral suppression with long-acting cabotegravir and rilpivirine.
- ▶ Factors in treatment failure are rilpivirine resistance, A6/A1 sub-type and BMI over 30.
- ▶ FLAIR study shows starting treatment directly with injectables is non-inferior and as safe as starting with oral lead-in.



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- ▶ A survey showed 66% of people living with HIV would try long-acting treatment and 86% of healthcare workers would offer it.
- ▶ Factors that motivate switching from pills include pill fatigue, a need for daily adherence, unintended disclosure and daily reminder of HIV.
- ▶ Affordability is the most significant barrier to global implementation; no generic long-acting treatment is currently available.

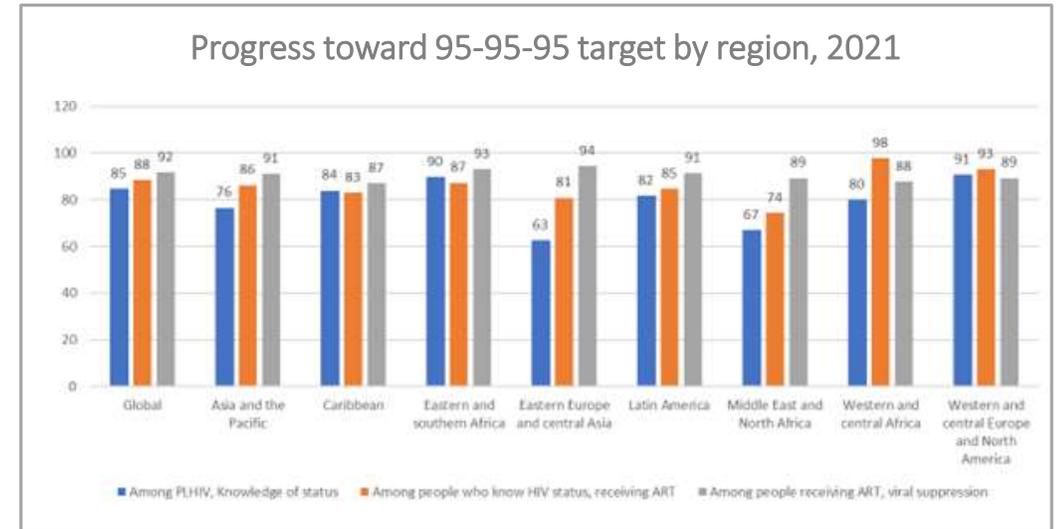


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Priority actions to end the HIV epidemic

- ▶ When scaling up HIV prevention and treatment, we also have to look at gender equity, human rights, community leadership, integration and investment.
- ▶ There have been successes, but there are serious gaps where we are missing key targets.
- ▶ No region has so far achieved the 95-95-95 targets or, indeed, the 90-90-90 targets.



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- ▶ The Global AIDS Strategy emphasizes communities being at the centre of the AIDS response.
- ▶ UNAIDS also introduced the 30-80-60 targets around community leadership.
- ▶ By 2025, ensure that community-led organizations deliver:
 - 30% of testing and treatment services
 - 80% of HIV prevention services for populations at high risk of HIV infection
 - 60% of programmes to support the achievement of societal enablers.

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- ▶ Ending AIDS- and HIV-related inequalities will require political courage.
- ▶ Legal reform is happening, but too slowly.
- ▶ Stigma and discrimination still block the way forward.
- ▶ We need:
 - A new push for HIV prevention
 - To realize human rights and gender equality
 - To support and effectively resource community-led responses
 - To ensure sufficient and sustainable financing.

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Fifth person free of HIV after stem cell transplant

- ▶ The “City of Hope patient” is named after the cancer centre in Duarte, California, where he was treated.
- ▶ He received a stem cell transplant from a donor with the rare delta-32 CCR5 mutation to treat leukaemia.
- ▶ There have been four previous cases of cure following stem cell transplants: Timothy Ray Brown (Berlin); Adam Castillejo (London); “Marc” (Düsseldorf); the “New York patient”.



Jana Dickter of the City of Hope cancer centre at AIDS 2022.
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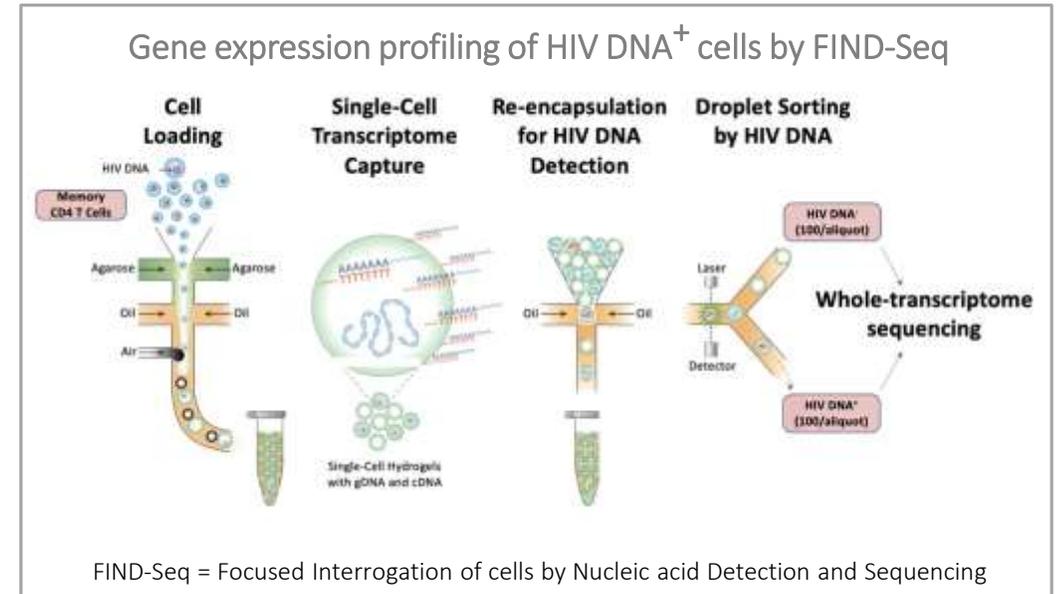
- ▶ In comparison with the four previous cure cases, he is the oldest (66 years), has been living with HIV the longest (32 years), and has the lowest CD4 nadir (<100).
- ▶ He was diagnosed with leukaemia in 2018; stem-cell transplant in 2019.
- ▶ He received a milder “conditioning” regimen (immune-suppression against host immune system) than other transplant recipients due to his age.
- ▶ He had mild graft-versus-host disease.
- ▶ He achieved 100% chimerism (replacement of host cells with transplanted immune cells).
- ▶ His last detectable HIV RNA or DNA was 18 months after transplant; stopped ART two years after transplant.
- ▶ There were no detectable HIV T cell responses; HIV antibody level has declined over time.
- ▶ He also had chronic hepatitis B and still has hepatitis B virus antibodies, even though donor did not have HBV.

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Towards a cure: New assay finds hidden HIV DNA

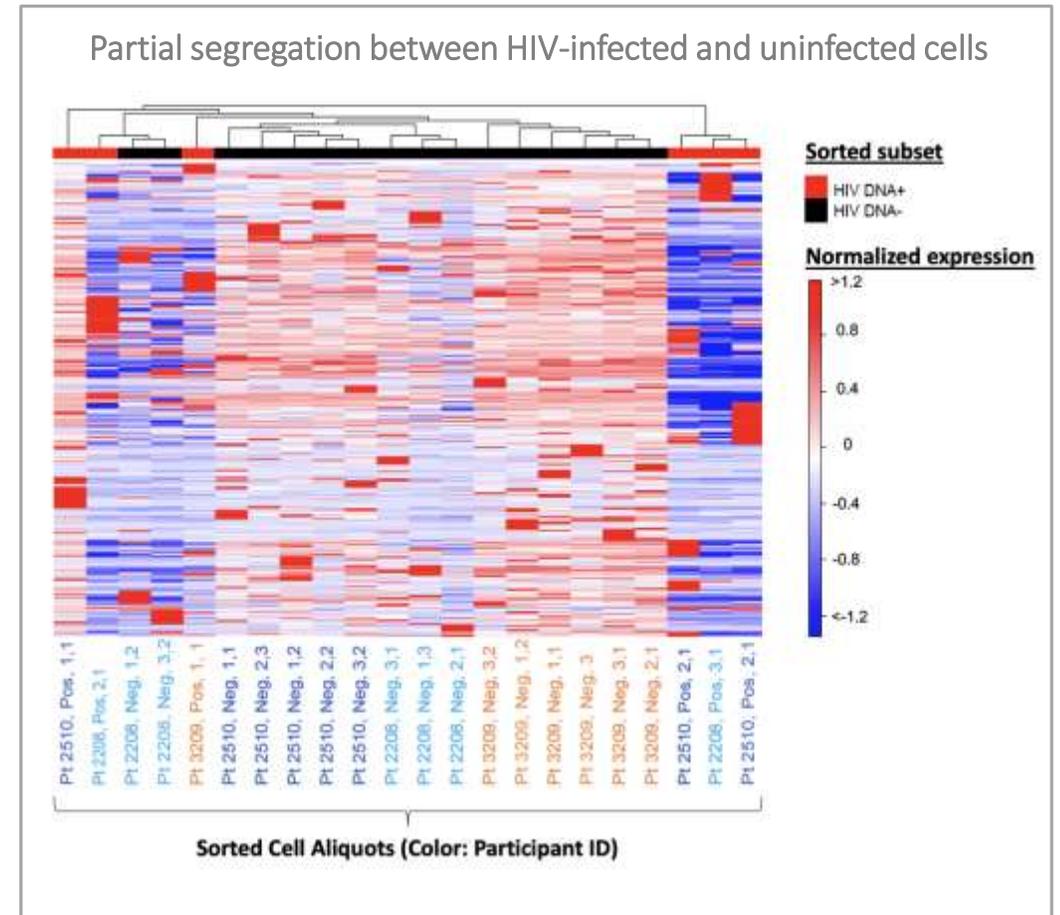
- ▶ HIV infection is lifelong due to viral DNA in “reservoir” cells hidden from immune surveillance.
- ▶ We don’t know where the cells are, what genetic characteristics they have, how many cells house intact HIV, what signals cause them to be reactivated, etc.
- ▶ New microarray assay, “FIND-Seq”, separates CD4 cells and restimulates memory cells to display genetic contents.
- ▶ Those displaying HIV sequences are detected by bouncing laser light off them.



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- ▶ Inspecting their genetic content found that cells containing HIV are more likely to have clusters of certain host genes activated.
- ▶ These included genes perpetuating the lifetime of cells, genes repairing DNA damaged by viruses, and genes that “turn off” cells that are virally infected.
- ▶ Assay will make the development of drugs targeting reservoir cells and processes within them easier.



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