The future of HIV prevention

World Health Organization

Photo credit: Project PrEP - Unitaid

Presentation for: *Differentiated Service Delivery for Key Populations: Virtual Workshop*

25 August 2021

Robin Schaefer | Global HIV, Hepatitis and STIs Programmes | World Health Organization

www.who.int

Evolution of HIV prevention

Positive trials | Null trials | WHO recommendations

World Health Organization

1981 -1st case of rare cancers in NYC
1982 -The name AIDS

1981

1985
1st HIV tests

1987
WHO GPA

1994
ACTG 076 study
PMTCT

1995
Mwanza, Tanzania
STI program

1996
UNAIDS

1998
Rakai, Uganda
STI program

2000
WHO PMTCT rec

2001
GFATM

2003
PEPFAR

2004

2004
WHO NSP rec

2007

2007
SA, Kenya &, Uganda
VMMC

2007
WHO VMMC rec

2010
Iprex (multi site)
PrEP (MSM)

2010
CAPRISA 004
gel

2011
Fem-PrEP (SA, Kenya, Tanzania)
PrEP (♀)

2011
Partners (Kenya & Uganda
PrEP (SDC)
TDF2 (Bostwana)
PrEP (M&W)

2012

2012
HPTN 052
ART→96%↓ HIV

2012
WHO ART for prevention rec

2012-2015
WHO PrEP rec

2013
Voice
PrEP & gel
(♀)

2016
Aspire & Ring
DPV ring (♀)

2019

2019
Test &Treat
PopART (Zambia &SA)
BPCC (Botswana)
SEARCH (Uganda &Kenya)

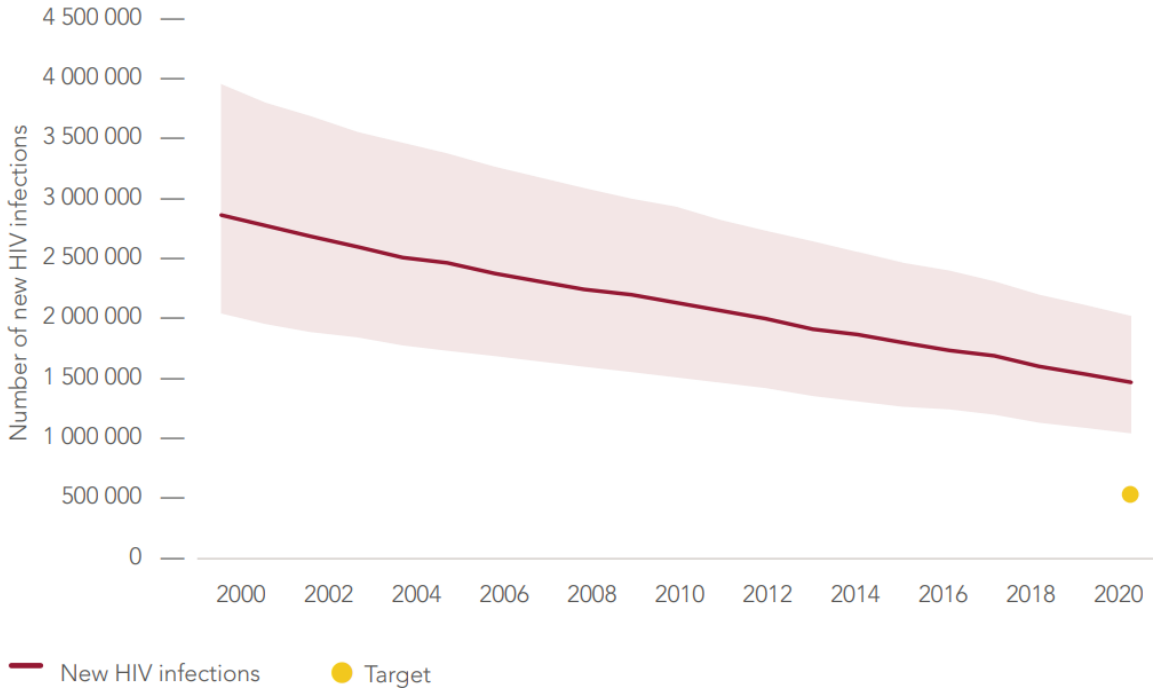
2020

2020
HPTN 083
CAB-LA
(MSM&TGW)
HPTN 084 (Women)

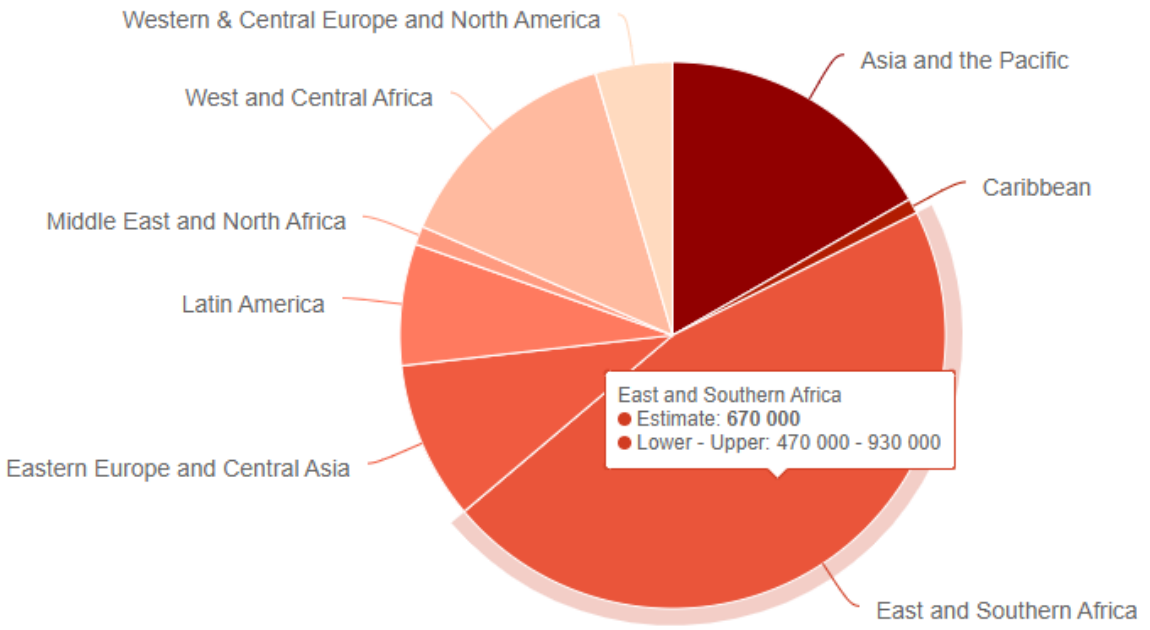
Continuing need for HIV prevention

Global 2020 target for reducing numbers of new HIV infections was missed

New HIV infections, all ages, global, 2000-2020



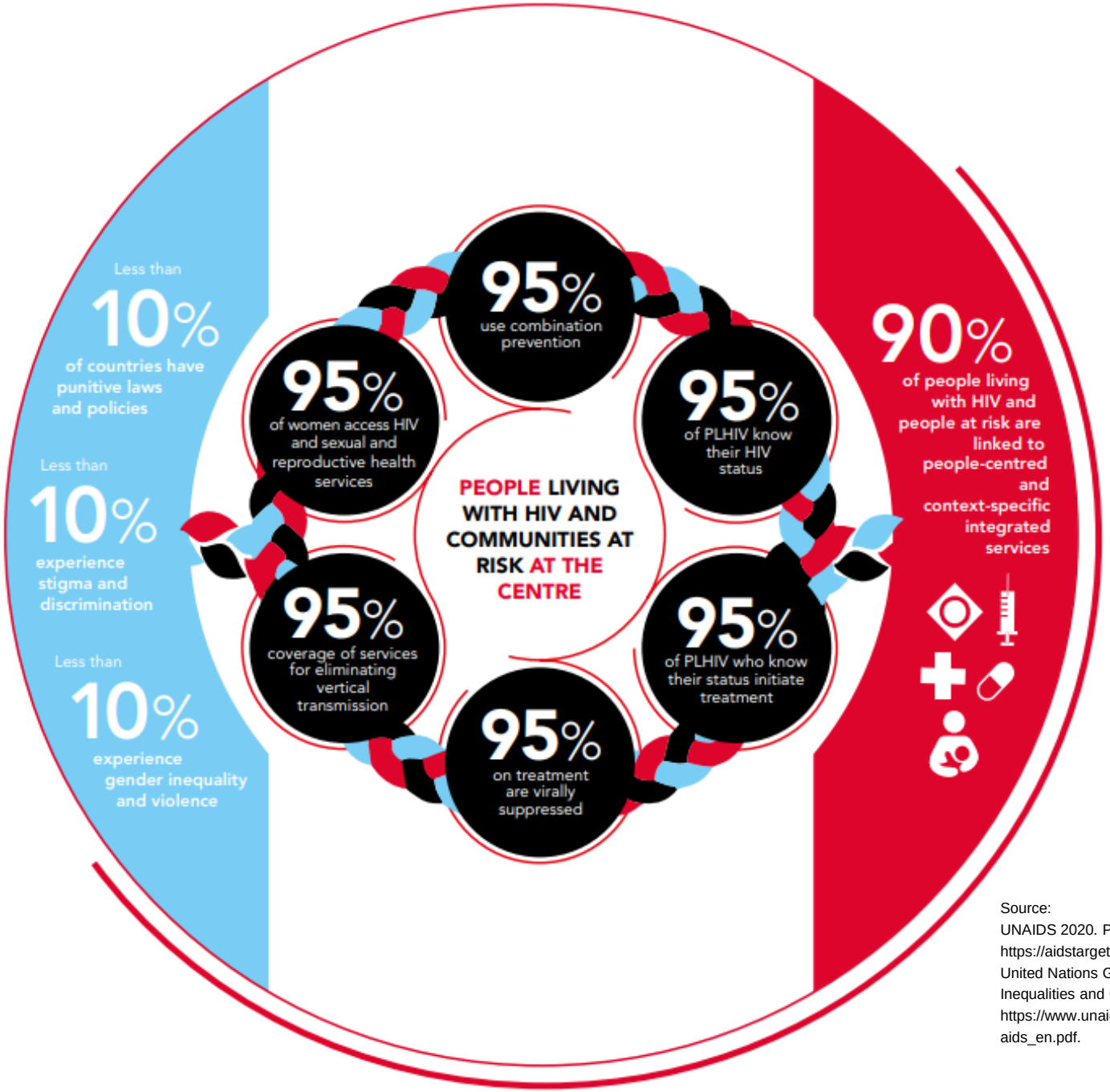
New HIV infections, all ages, by region, 2020



Source: UNAIDS 2021 epidemiological estimates

Global targets for 2025

World Health Organization

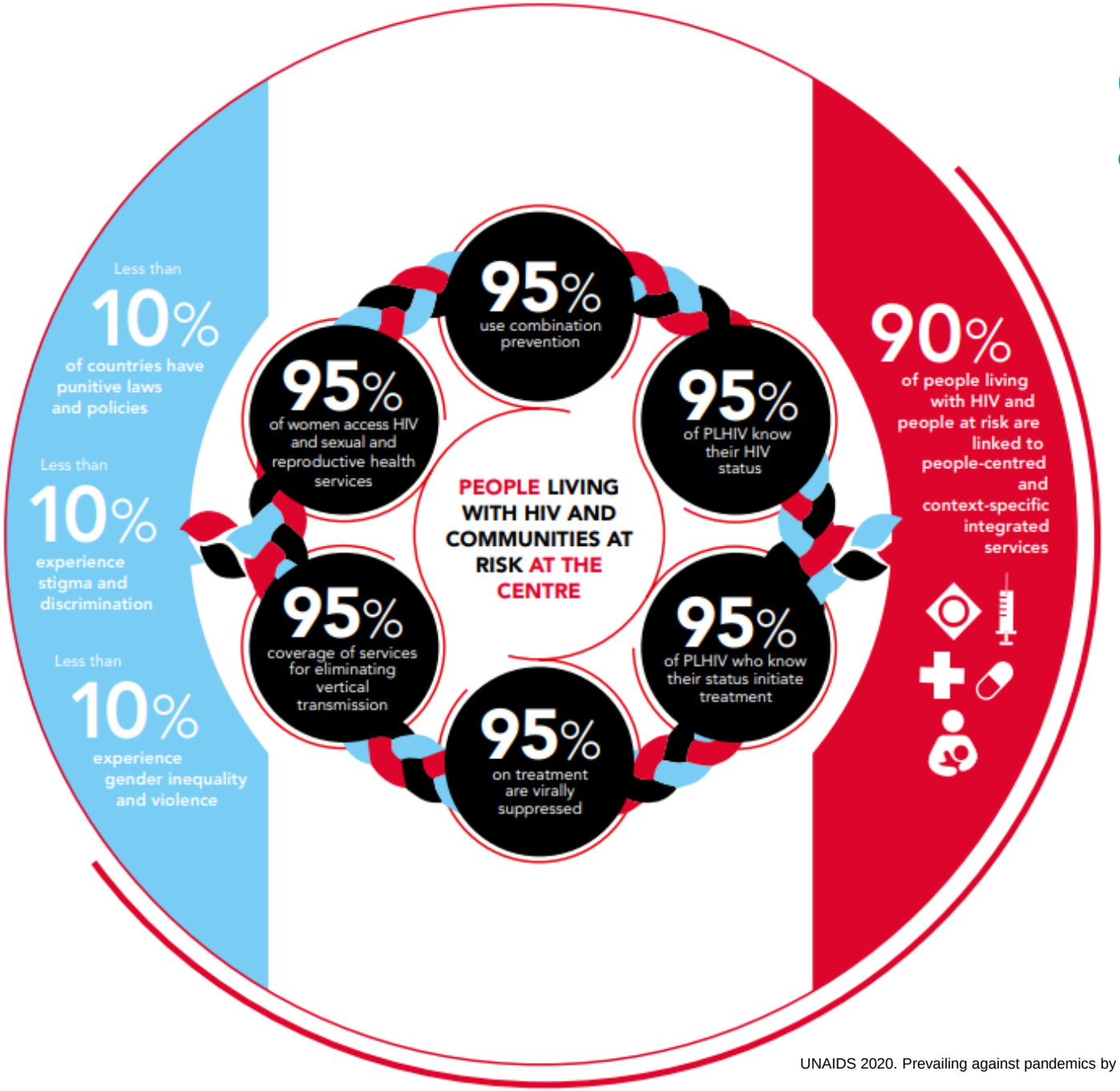


UNITED NATIONS
GENERAL ASSEMBLY

POLITICAL DECLARATION ON HIV AND AIDS: ENDING INEQUALITIES AND GETTING ON TRACK TO END AIDS BY 2030

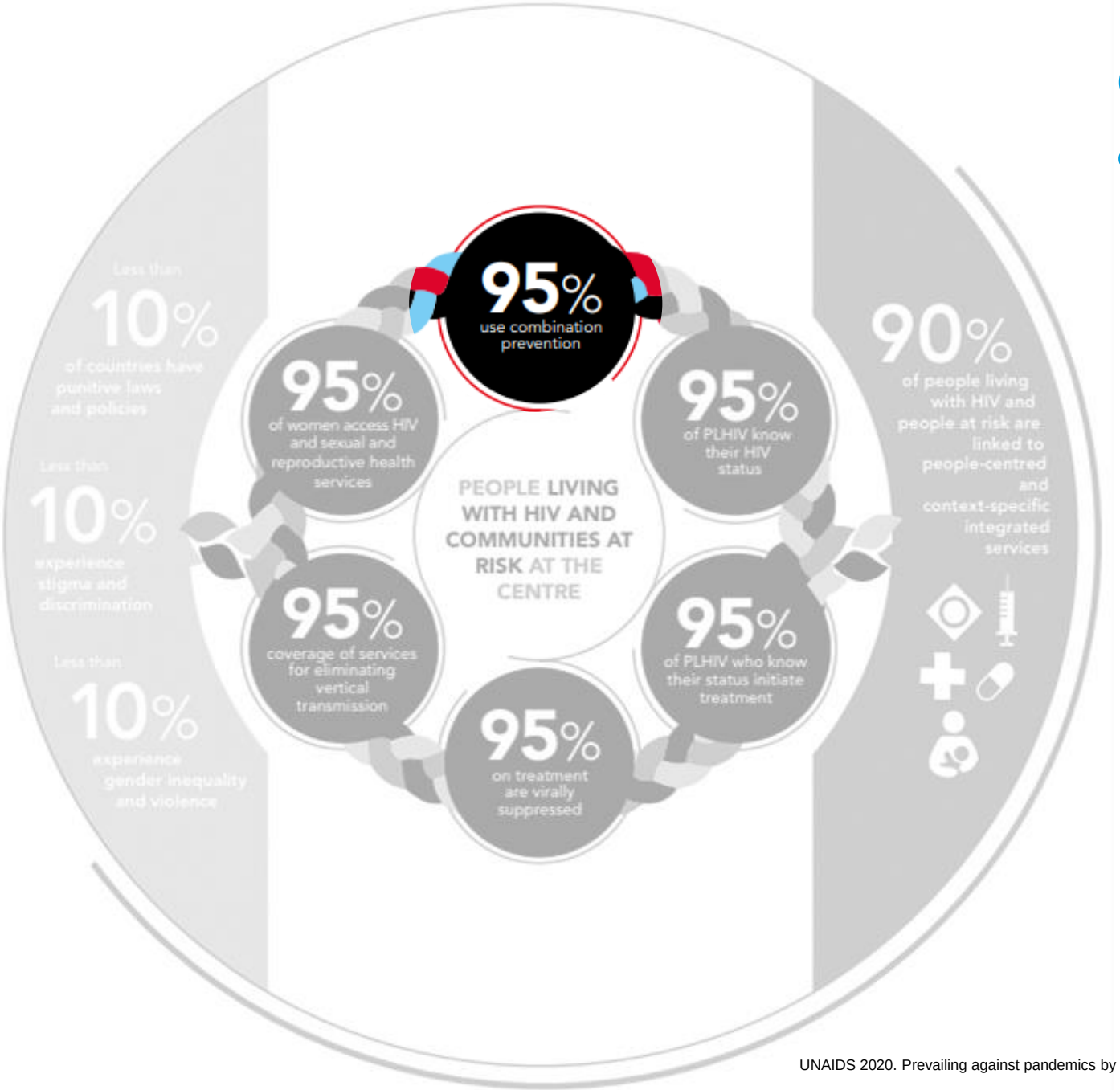
Source:
UNAIDS 2020. Prevailing against pandemics by putting people at the centre. https://aidstargets2025.unaids.org/assets/images/prevailing-against-pandemics_en.pdf
United Nations General Assembly 2021. Political Declaration on HIV and AIDS: Ending Inequalities and Getting on Track to End AIDS by 2030 A/res/75/284 (A/75/L.95). https://www.unaids.org/sites/default/files/media_asset/2021_political-declaration-on-hiv-and-aids_en.pdf.

Global targets and the future of prevention



UNAIDS 2020. Prevailing against pandemics by putting people at the centre. https://aidstargets2025.unaids.org/assets/images/prevailing-against-pandemics_en.pdf

Global targets and the future of prevention



95% of people at HIV risk use **appropriate**, **prioritized**, **person-centred**, and **effective** combination prevention **options**.

UNAIDS 2020. Prevailing against pandemics by putting people at the centre. https://aidstargets2025.unaids.org/assets/images/prevailing-against-pandemics_en.pdf

Global targets and the future of prevention

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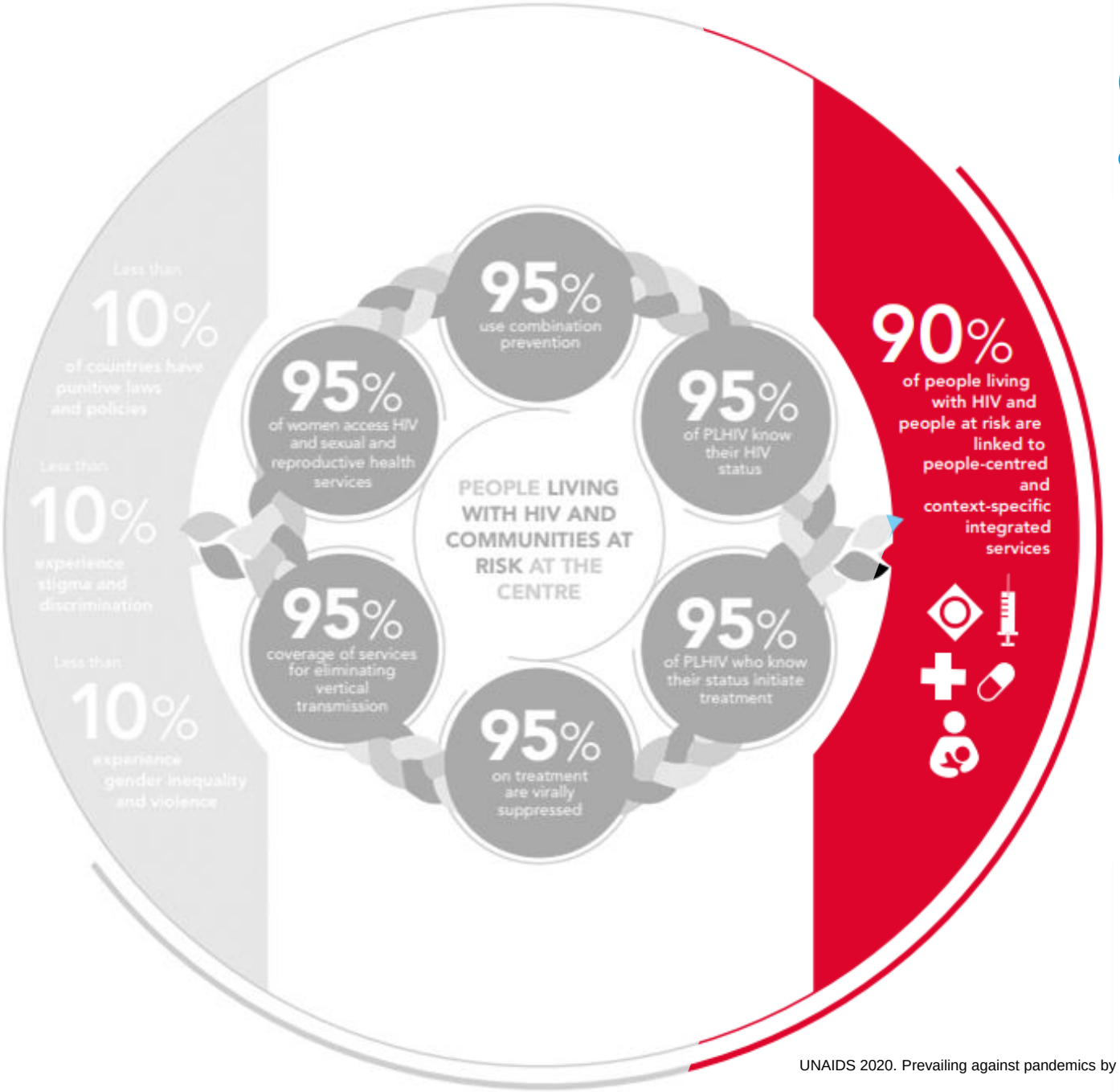
Global targets and the future of prevention



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95% of reproductive age women have **HIV** and **sexual and reproductive health** needs met.

Adoption of **people-centred** and **context-specific integrated approaches.** At least 90% individuals at heightened risk of HIV infection **linked to services** … they need for **overall health and well-being.**

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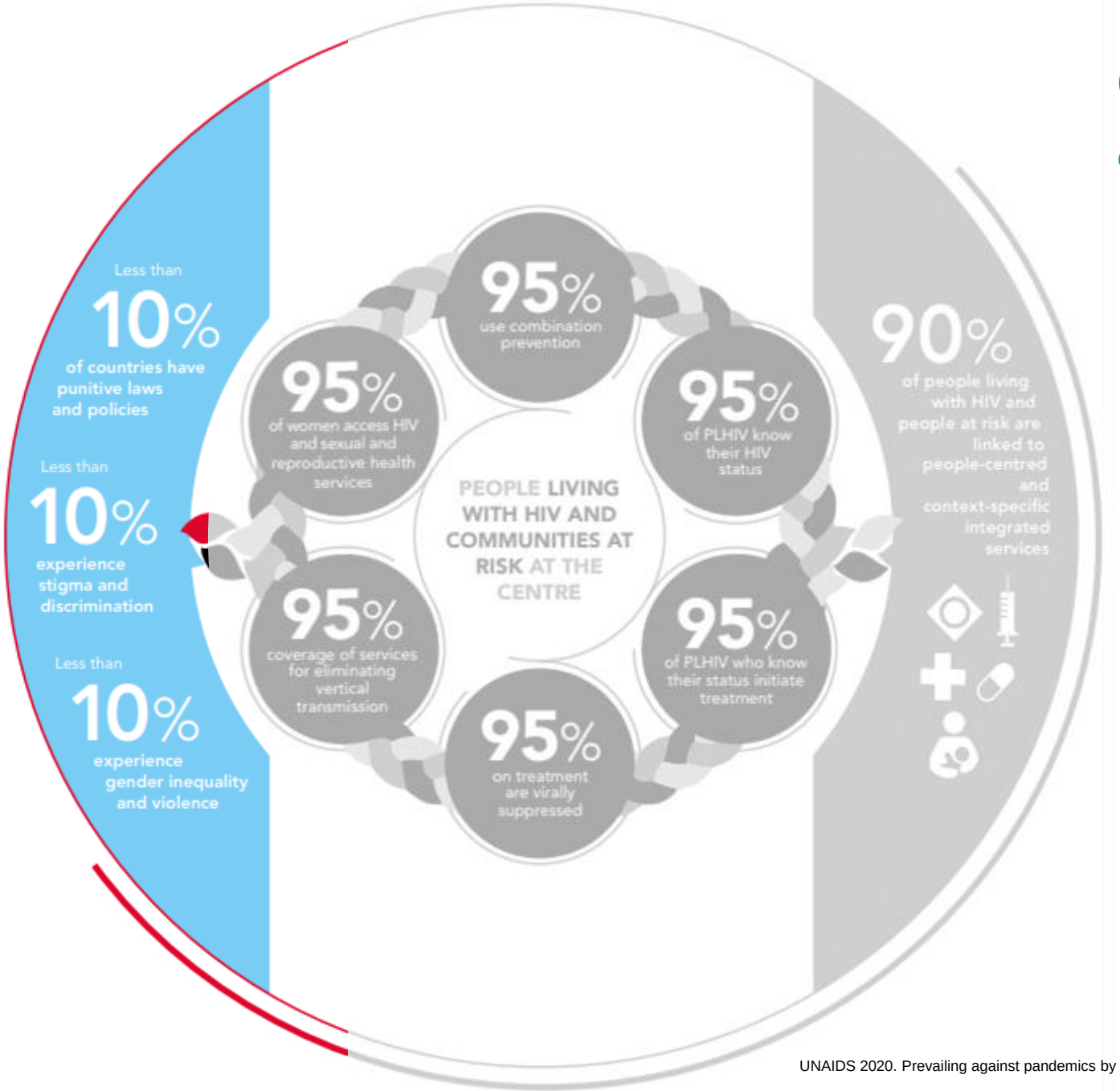


Global targets and the future of prevention

World Health Organization

95% of people at HIV risk use **appropriate**, **prioritized**, **person-centred**, and **effective** combination prevention **options**.

95% of reproductive age women have **HIV** and **sexual and reproductive health** needs met.

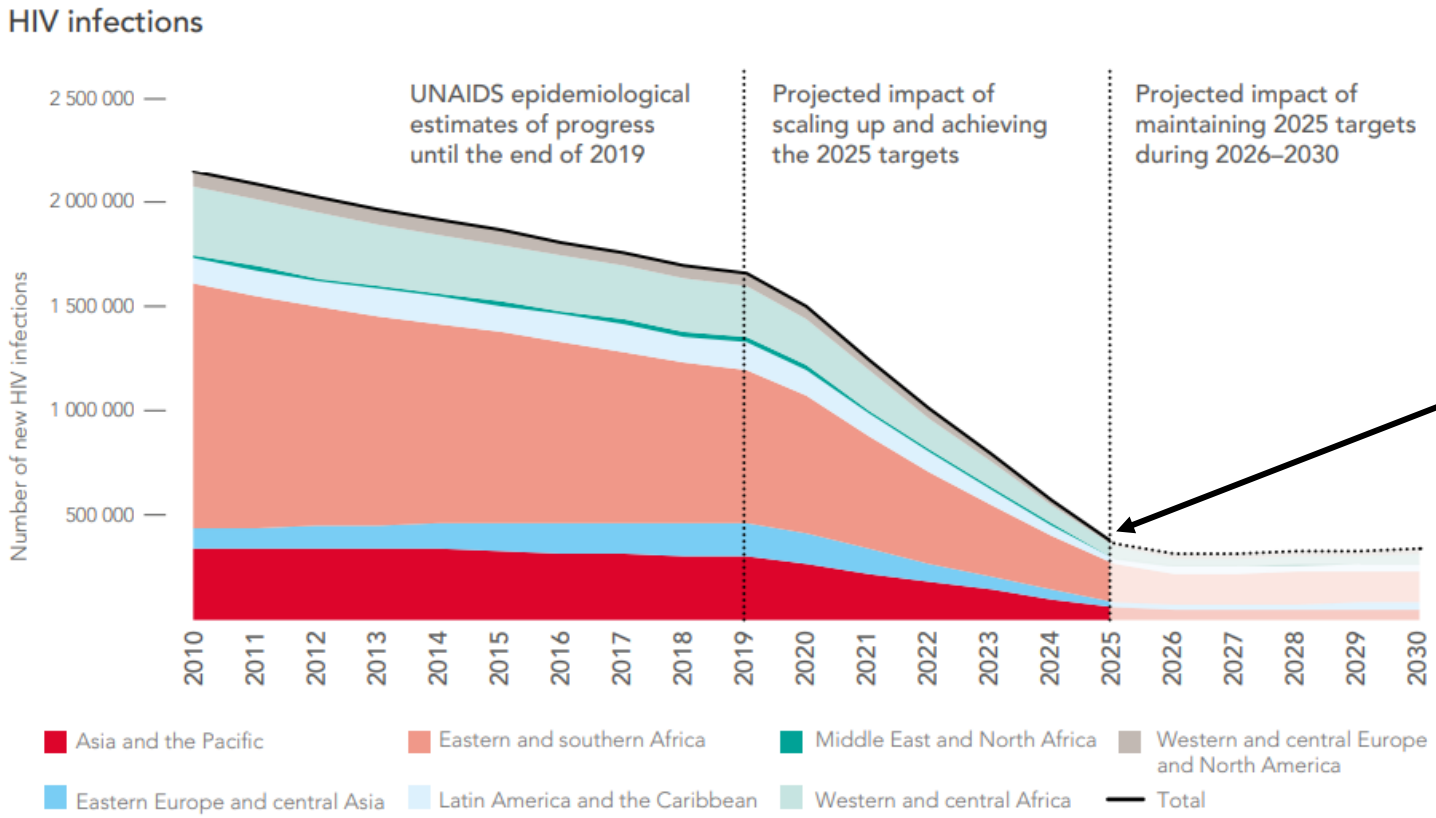
Adoption of **people-centred** and **context-specific integrated approaches.** At least 90% individuals at heightened risk of HIV infection **linked to services** … they need for **overall health and well-being.**

10–10–10 targets for removing **societal and legal impediments** to an **enabling environment** that limit access or utilization of HIV services.

UNAIDS 2020. Prevailing against pandemics by putting people at the centre. https://aidstargets2025.unaids.org/assets/images/prevailing-against-pandemics_en.pdf

Impact of the 2025 targets

Projected impact of reaching the 2025 targets



Global target of reducing annual new HIV infections to under 370 000

Source: UNAIDS 2020. Prevailing against pandemics by putting people at the centre. https://aidstargets2025.unaids.org/assets/images/prevailing-against-pandemics_en.pdf

Effective combination HIV prevention

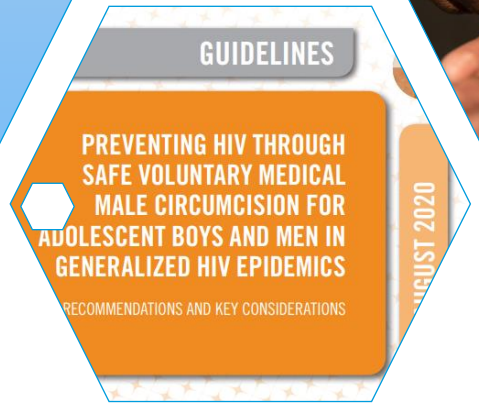
Photo credit: Project PrEP – Unitaid

Continue evidence-based and effective interventions

Harm reduction

Condoms and lubricants

VMMC

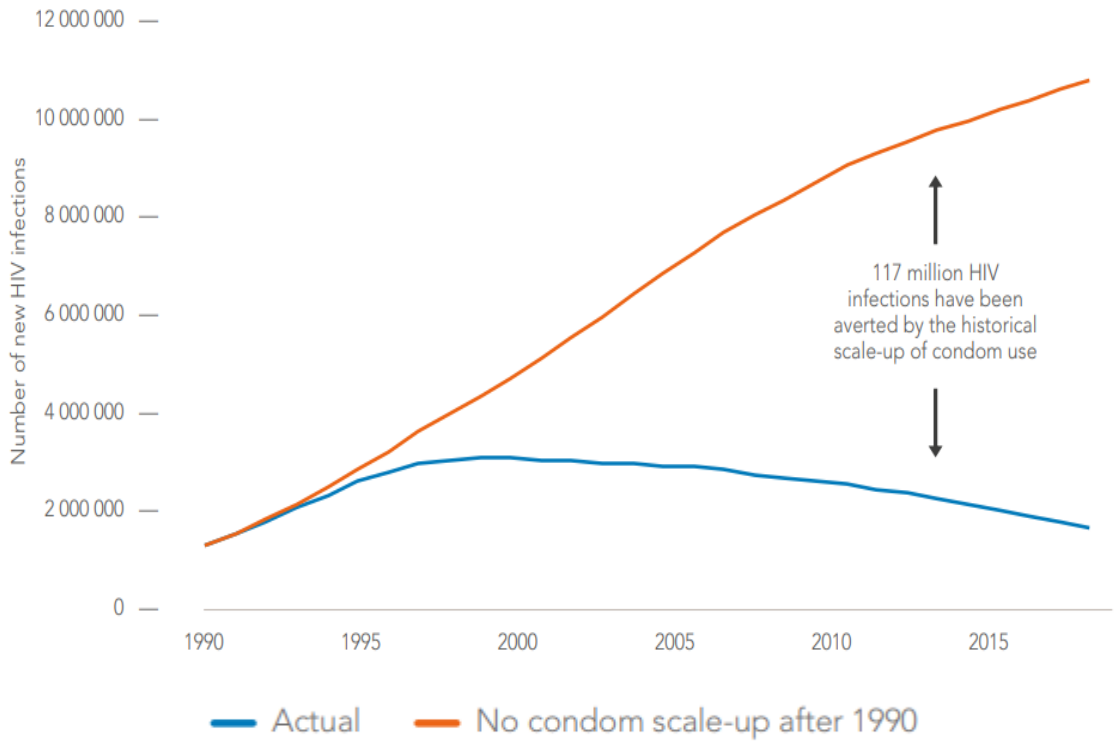


PrEP

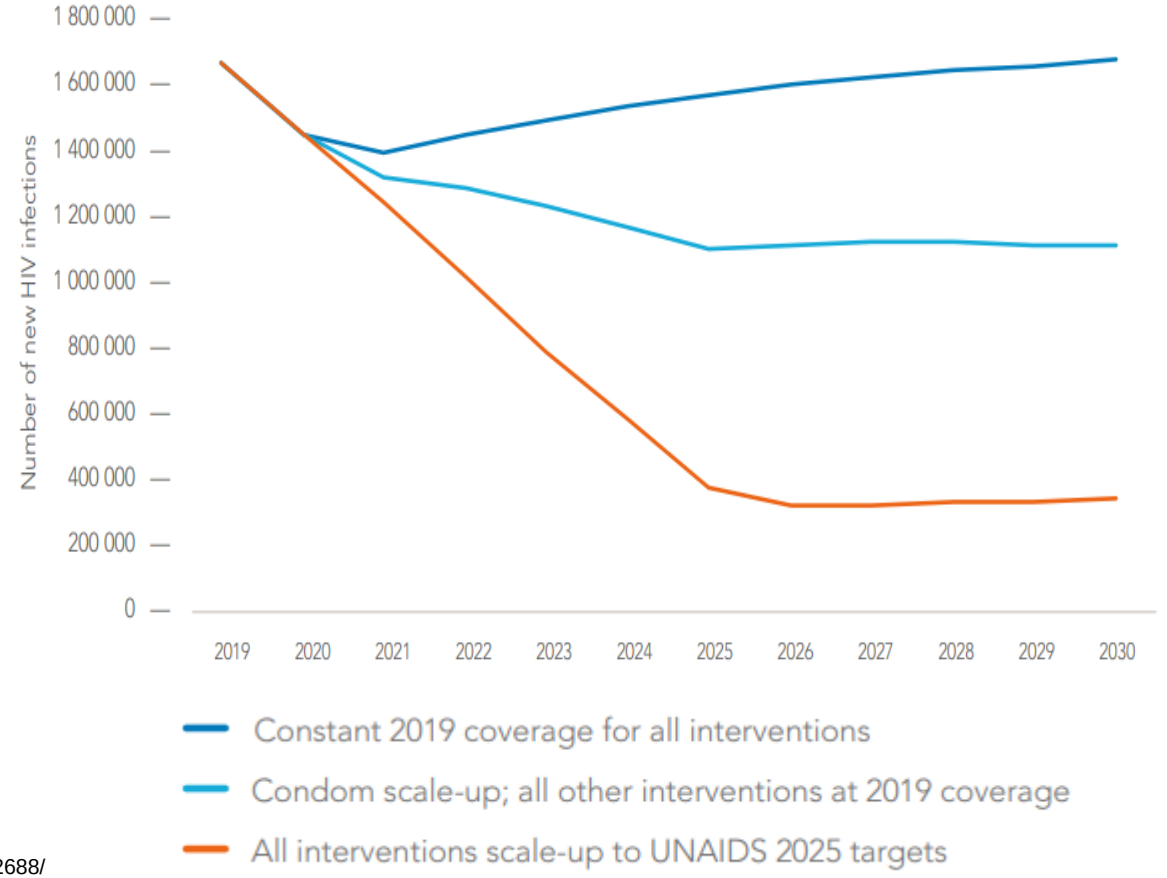
Condoms

Continue to be critical but declining distribution and demand

New HIV infections with and without scale-up of condom use, global 1990-2019



Impact of condom use on future HIV infections, global, 2019-2030

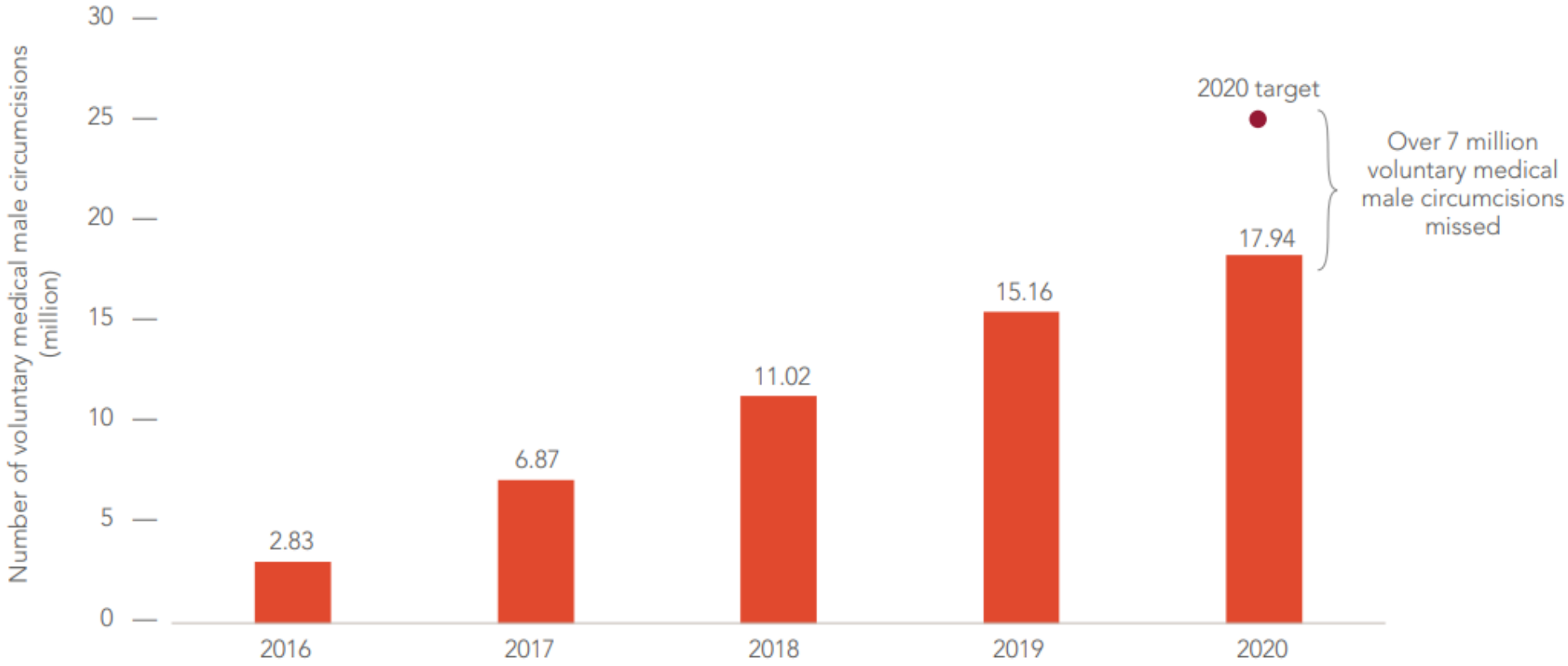


Source: Stover J, Teng Y. The impact of condom use on the HIV epidemic [version 1]. Gates Open Res. 2021;5:91. doi: 10.12688/gatesopenres.13278.1

VMMC

Unfinished agenda – major disruptions by COVID-19

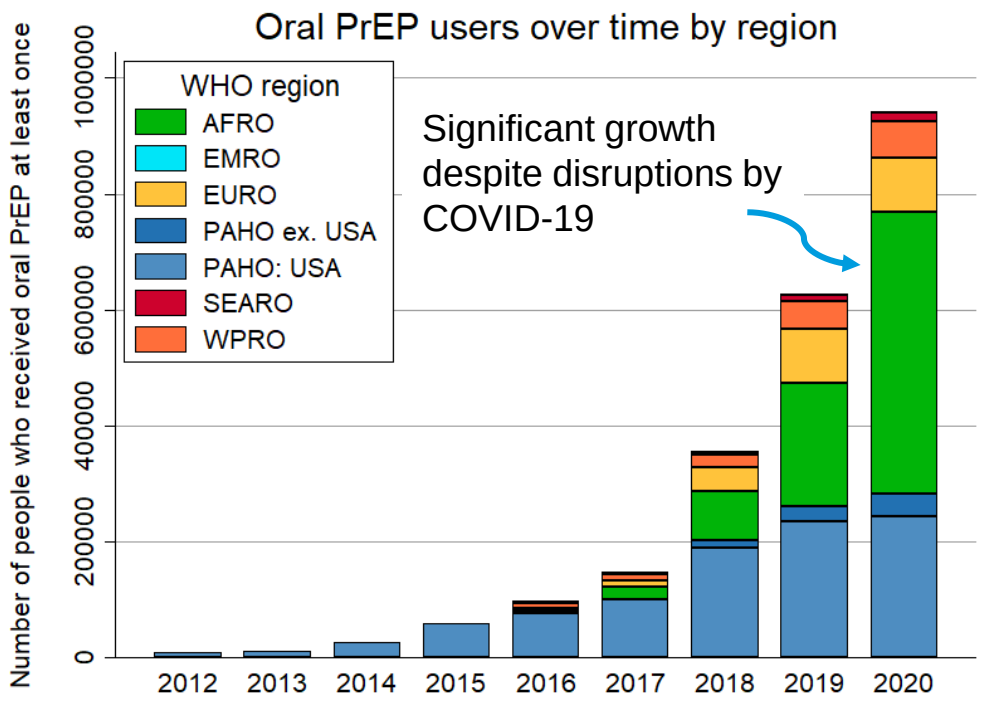
Cumulative number of VMMC towards 2020 target, 15 priority countries, 2016-2020.



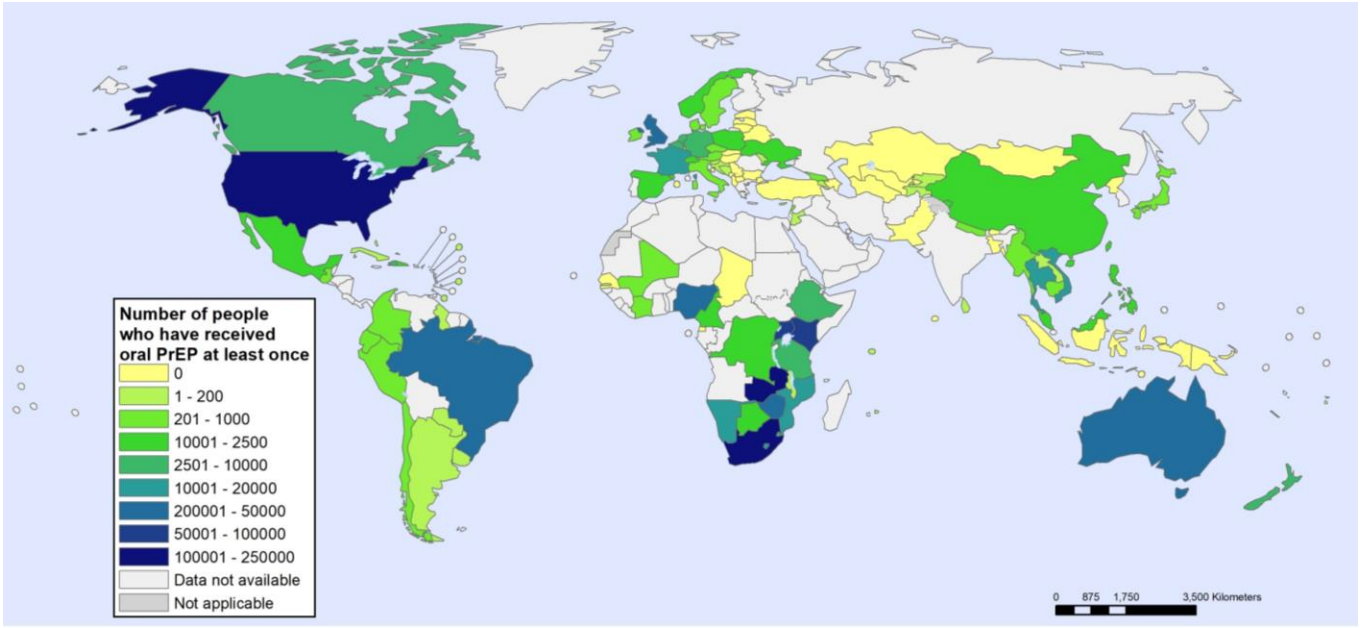
Source: UNAIDS Global AIDS Monitoring 2021. Note: The 15 priority countries are: Botswana, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, South Sudan, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe

Pre-exposure prophylaxis (PrEP)

Oral PrEP users, by region, 2012-2020



Oral PrEP use, globally, 2020



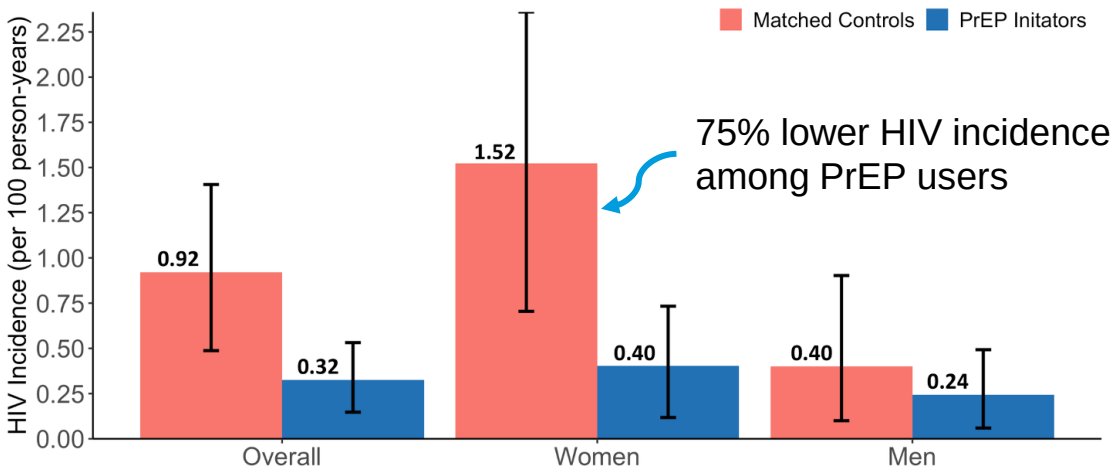
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO; GAM
Map Production: HQ UCN/HHS/TPP
World Health Organization

Source: Schaefer et al. 2021. Presentation at IAS 2021, for 2020 data. Schaefer et al. 2021. Lancet HIV, for detailed data and information

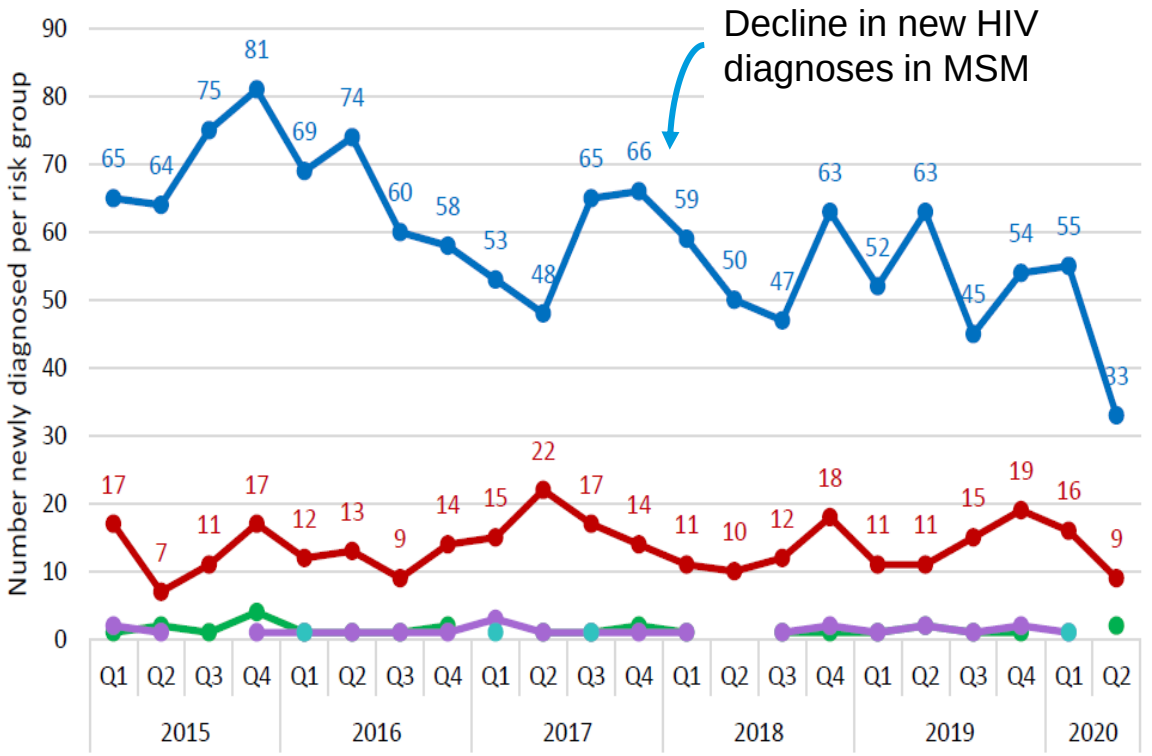
Pre-exposure prophylaxis (PrEP)

Large community-based PrEP study in Kenya and Uganda (2016-18)



	Overall	Women	Men
Incidence rate ratio (95% CI)	0.26 (0.09-0.75) p=0.013	0.24 (0.07-0.79) p=0.019	0.60 (0.12-3.05) p=0.54

Large-scale PrEP roll-out in New South Wales, Australia



Source: Koss et al. 2021. PLOS Medicine.

The biomedical prevention pipeline

TFD/FTC

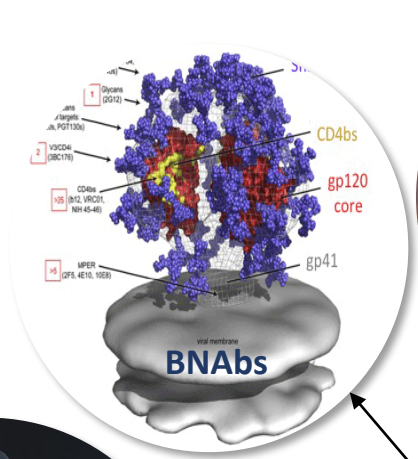
New products offer choice

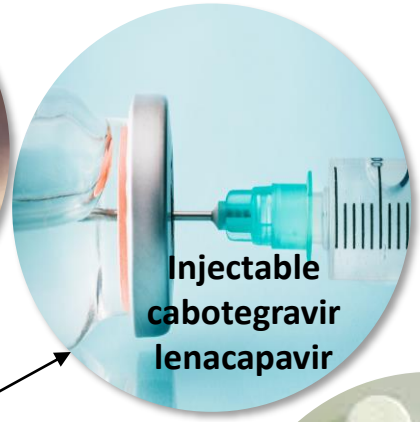
Overcome some oral TDF-FTC issues

- Continuation
- Adherence

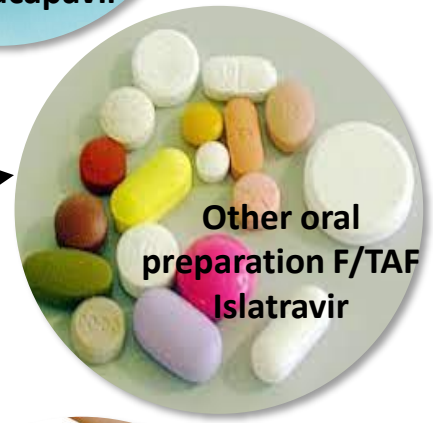
But have new challenges and unknowns

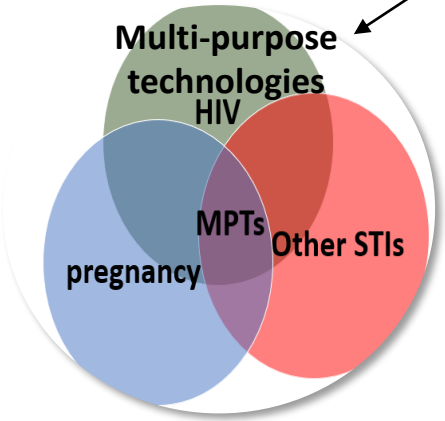
- Efficacy in real world setting
- Testing and DR
- Cost ……





Potential future prevention technologies





Rethinking service delivery

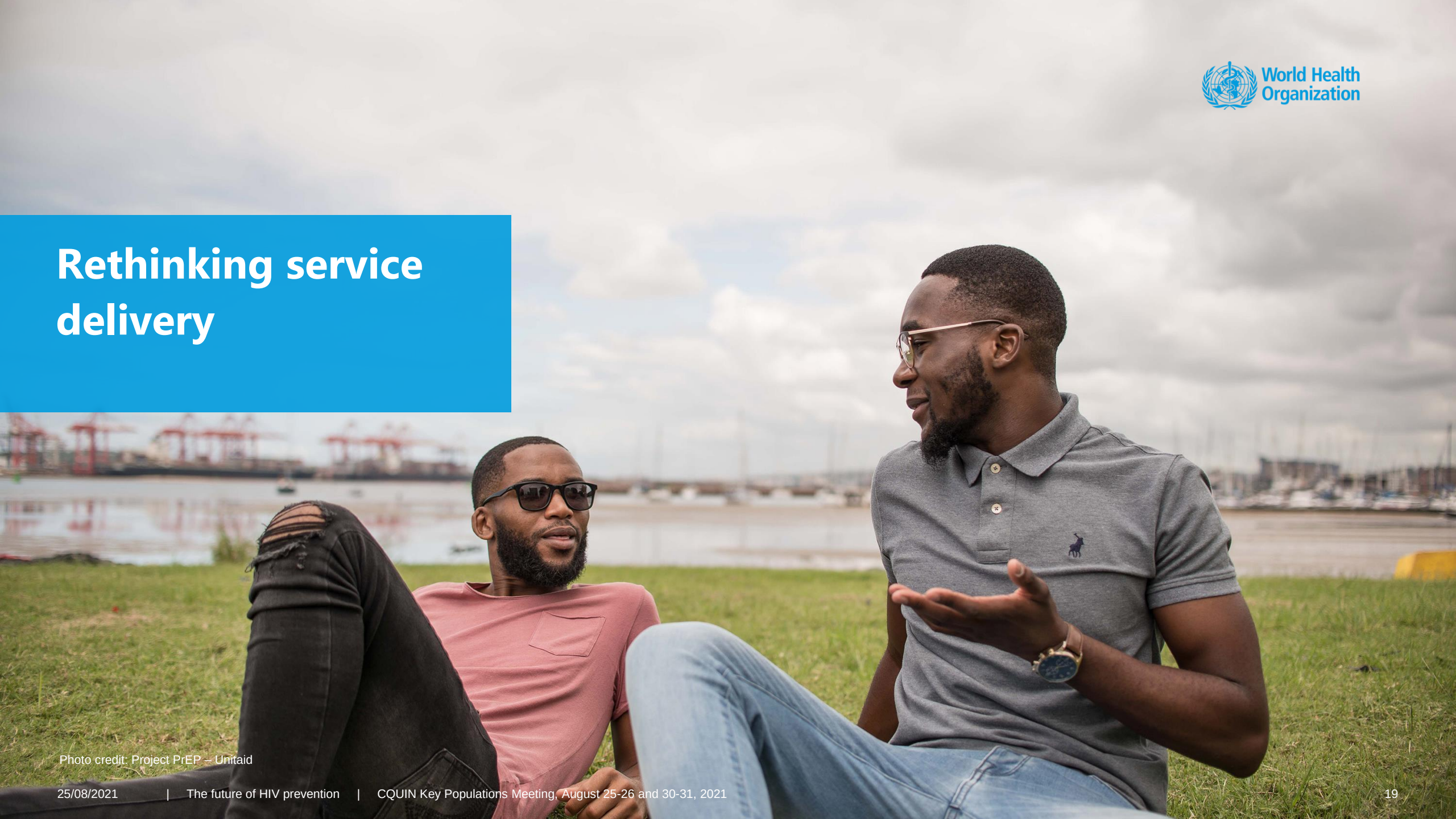


Photo credit: Project PrEP – Unitaid

Integrated and differentiated services

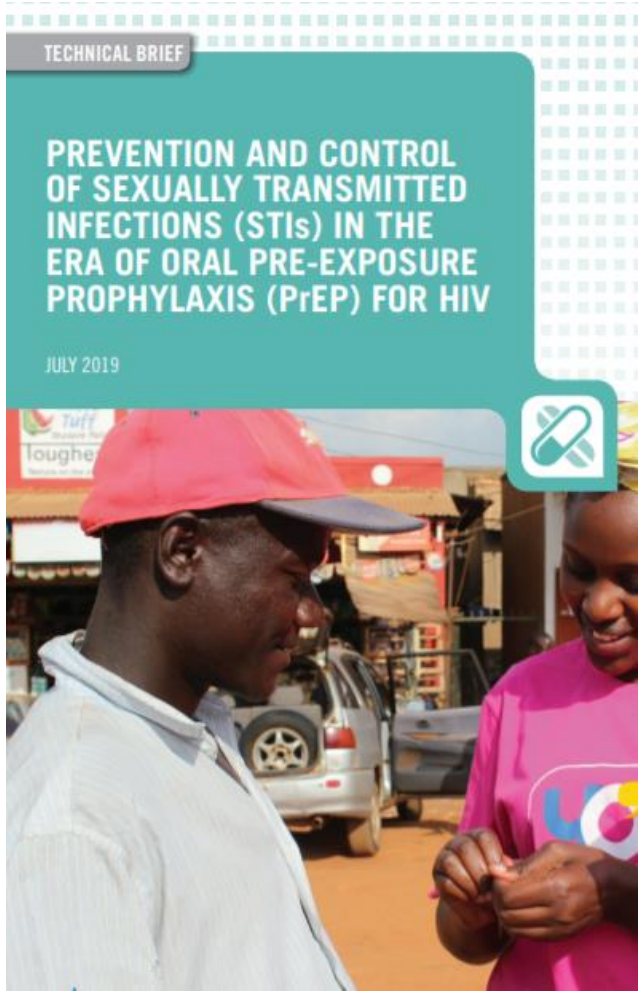
World Health Organization

High prevalence and incidence of STIs among people attending PrEP services

Table 3. Pooled Prevalence of STIs When Starting PrEP and Pooled Incidence of STIs, by Anatomical Site of Detection

	Prevalence					Incidence				
Pathogen	No. of Studies Pooled	Total Sample Size, No.	Prevalence (95% CI)	I^2 Statistic, %	*P* Value	No. of Studies Pooled	Total Sample Size, No.	Incidence per 100 Person-Years (95% CI)	I^2 Statistic, %	*P* Value
Chlamydia trachomatis										
Any site	12	4918	10.8 (6.4-16.1)	97	<.001	14	6756	21.5 (17.9-25.8)	97	<.001
Genital	6	1019	4.0 (2.0-6.6)	66	.01	9	1698	10.4 (9.2-11.8)	0	.78
Anorectal	8	1660	8.5 (6.3-11.0)	61	.01	11	2171	29.9 (24.1-37.1)	87	<.001
Oropharyngeal	5	939	2.4 (0.9-4.5)	63	.03	7	1237	4.6 (3.3-6.3)	46	.10
Neisseria gonorrhoeae										
Any site	14	6340	11.6 (7.6-16.2)	96	<.001	13	6462	37.1 (18.3-25.5)	96	<.001
Genital	6	2166	2.1 (0.9-3.7)	70	.01	8	1564	9.9 (8.3-11.8)	28	.20
Anorectal	8	1558	9.3 (4.7-15.2)	92	<.001	11	2171	21.6 (16.4-28.4)	90	<.001
Oropharyngeal	5	940	4.9 (1.9-9.1)	83	<.001	8	1646	19.7 (16.0-24.3)	76	<.001
Treponema pallidum [a]	22	9757	5.0 (3.1-7.4)	95	<.001	23	12 459	11.6 (9.2-14.6)	92	<.001
Hepatitis A virus	1	1049	5.4 (4.1-7.0)	NA	NA	NA	NA	NA	NA	NA
Hepatitis B virus	4	4370	1.3 (0.1-3.5)	95	<.001	2	1353	1.2 (0.6-2.6)	0	.53
Hepatitis C virus	4	2555	2.0 (0.8-3.7)	84	<.001	8	3786	0.3 (0.1-0.9)	87	<.001
Mycoplasma genitalium	1	198	17.2 (12.2-23.2)	NA	NA	NA	NA	NA	NA	NA
Trichomonas vaginalis	2	1379	5.9 (4.7-7.2)	NA	NA	1	50	0	NA	NA
Any *C trachomatis*, *N gonorrhoeae*, or *T pallidum*	16	8431	23.9 (18.6-29.6)	97	<.001	11	6301	72.2 (60.5-86.2)	95	<.001

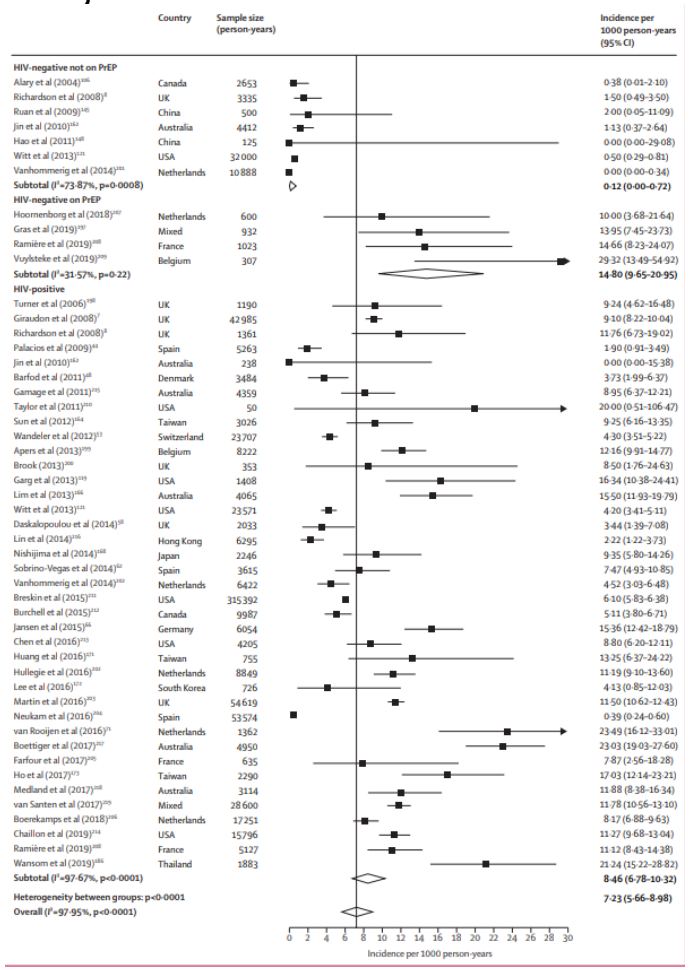
Ong et al. Global Epidemiologic Characteristics of Sexually Transmitted Infections Among Individuals Using Preexposure Prophylaxis for the Prevention of HIV Infection. A Systematic Review and Meta-analysis. JAMA Network Open; 2019.



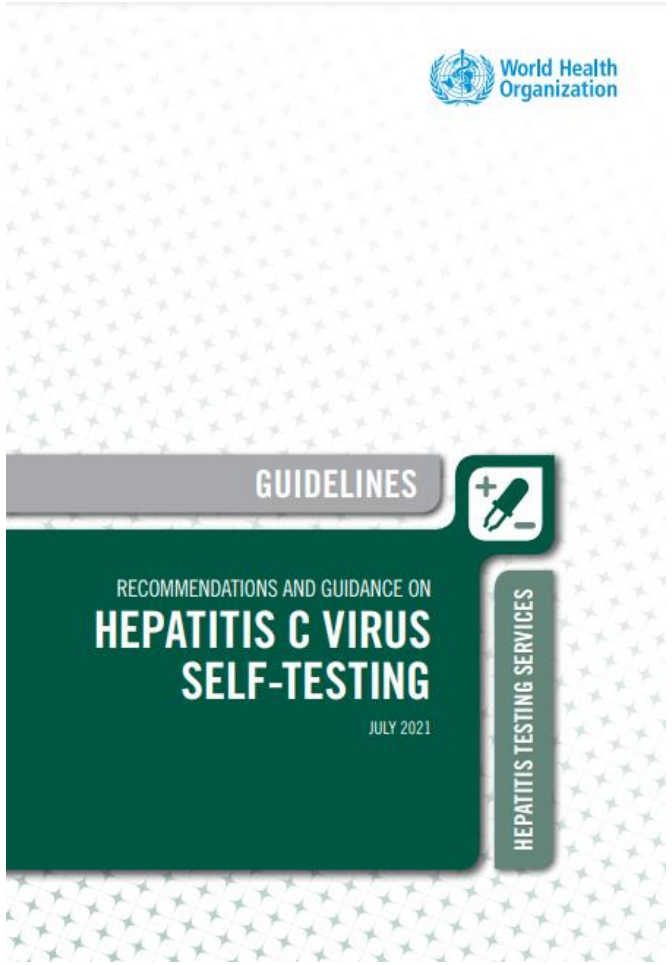
WHO 2019. Prevention and control of sexually transmitted infections (STIs) in the era of oral pre-exposure prophylaxis (PrEP) for HIV.

Integrated and differentiated services

High prevalence and incidence of hepatitis C in MSM and people who inject drugs



Jin et al. Prevalence and incidence of hepatitis C virus infection in men who have sex with men: a systematic review and meta-analysis. Lancet Gastroenterol Hepatol. 2021.



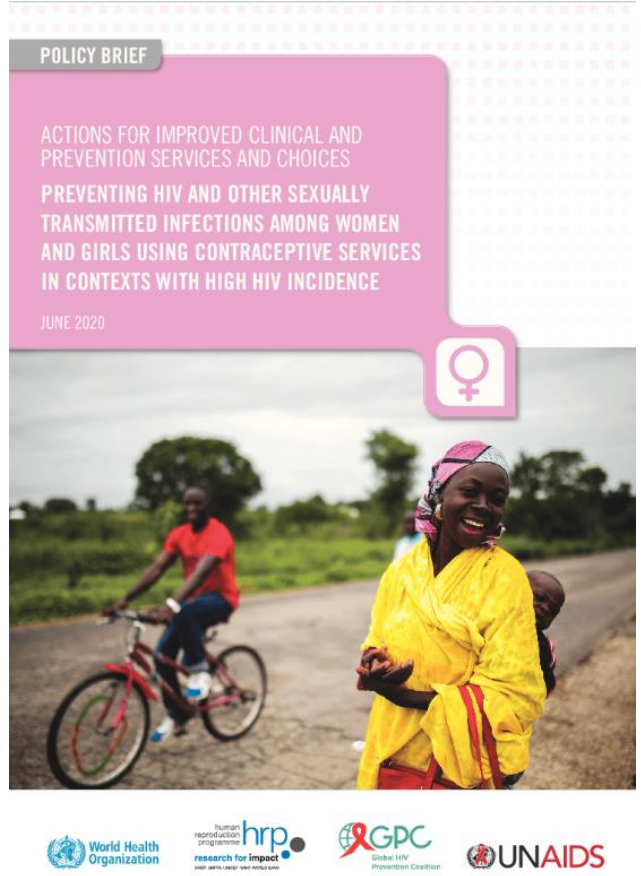
WHO 2021. Recommendations and guidance on hepatitis C virus self-testing

PrEP services are an opportunity to address hepatitis B and C as a public health issues

Integrated and differentiated services

High prevalence and incidence of HIV/STIs among women attending contraceptive services

		HIV prevalence among adult women*			
		Low (<1%)	Medium (1–5%)	High (5–20%)	Extremely high (>20%)
General approach to integrating HIV services into contraceptive services		Likely only a few changes needed; key population focus Mix of referral & on-site integration	Part of SRH–HIV programme development Mix of referral & on-site integration	Rapid action (change operating procedures) On-site integration where possible	Immediate action (executive orders, change operating procedures) Immediate on-site integration
Offer as part of contraceptive service delivery	Male and female condoms and lubricant	**YES**	**YES**	**YES**	**YES**
	HIV risk assessment	**YES** Focused offer	**YES** Routine offer	**YES** Routine offer	**YES** Routine offer
	STI risk assessment	**YES** Focused offer (routine offer if high STI prevalence)	**YES** Focused offer (routine offer if high STI prevalence)	**YES** Routine offer	**YES** Routine offer
	Condom promotion & skills building	**YES** Focused offer	**YES** Routine offer	**YES** Routine offer	**YES** Routine offer
	HIV prevention & risk reduction counselling	**YES** Focused offer	**YES** Routine offer	**YES** Routine offer	**YES** Routine offer
	HIV testing services (including self-test) + ART	**YES** Focused offer	**YES** Focused offer	**YES** Routine offer	**YES** Routine offer
	STI diagnosis & treatment of asymptomatic women (including partner STI services)	**Focus on key populations**	**Focus on key populations**	**YES** Focused offer (routine offer if high STI prevalence)	**YES** Routine offer
	STI diagnosis & treatment of symptomatic women (including partner STI services)	**YES**	**YES**	**YES**	**YES**
	Partner HIV testing (for example, invitation letter + self-test) + ART	**Referrals for partners** of HIV-positive women	**Referrals for partners** of HIV-positive women	**YES** Routine offer	**YES** Routine offer
	Community outreach for HIV prevention for women using contraception and their partners	**Focus on key populations**	**Focus on key populations**	**YES** Focused outreach	**YES** **Expanded outreach**
	Pre-exposure prophylaxis	**NO** (but referrals for women at higher risk)	**NO** (but referrals for women at higher risk)	**YES** Focused offer	**YES** Routine offer



Source: WHO 2020. Preventing HIV and other Sexually Transmitted Infections among Women and Girls Using Contraceptive Services in Contexts with High HIV Incidence.

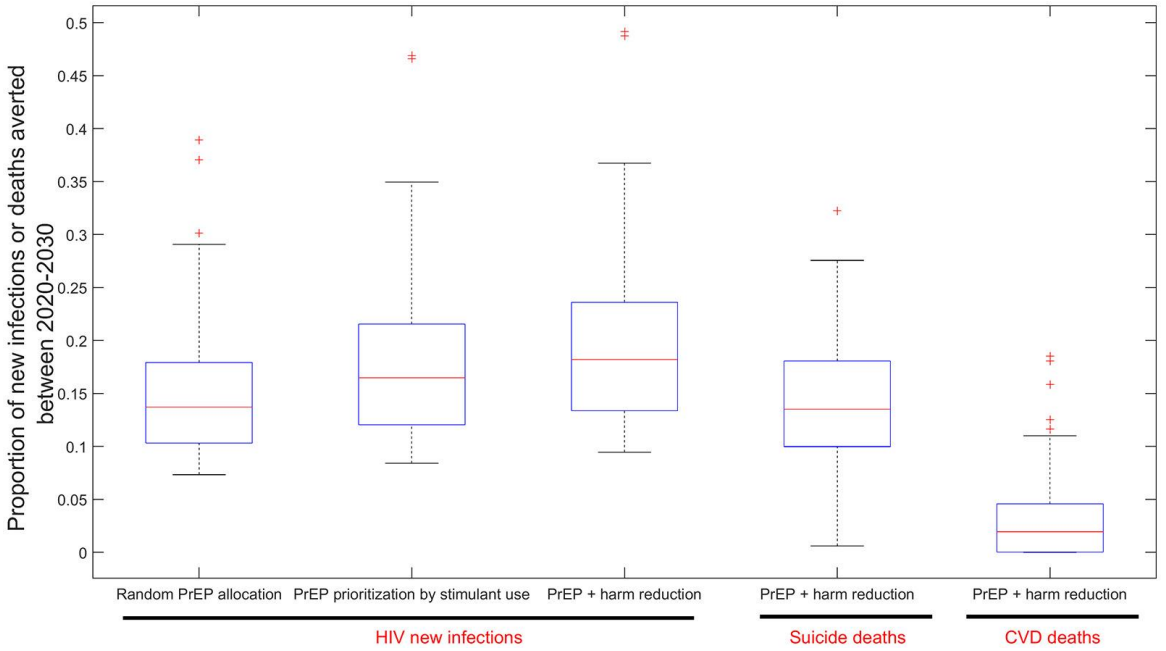
Integrated and differentiated services

Opportunities to integrate HIV prevention and harm reduction services

Mobile buprenorphine clinic for people dependent on opioids, USA

Dono et al. 2019: Implementation of a Mobile Buprenoprhine Clinic. Presented at ASAM 4-7 April 2019.
https://www.eventscribe.com/2019/posters/ASAM/SplitViewer.asp?PID=MzcwNzM5NjIxMTY
Photo credit: Greater Lawrence Family Health Center.

Integrating harm reduction and PrEP can reduce HIV infections, suicides, and CVD



Bórquez et al. Integrating HIV pre-exposure prophylaxis and harm reduction among men who have sex with men and transgender women to address intersecting harms associated with stimulant use: a modelling study. JIAS; 2020.

Community-based services

Mobile PrEP services, South Africa

Photo credit: Project PrEP – Unitaid

Tele-health, Brazil

Photo credit: Project PrEP1519 – Unitaid

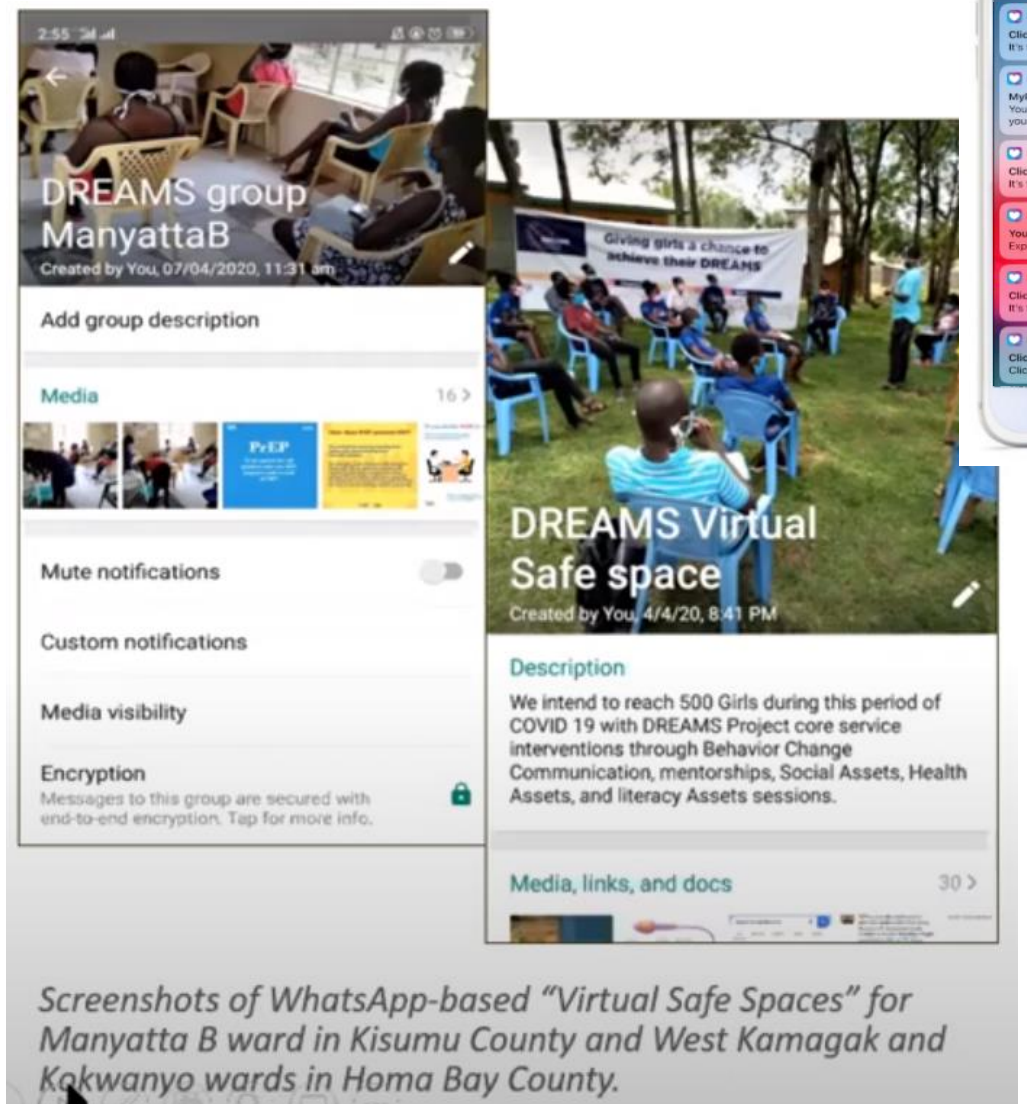
Home PrEP delivery, Thailand

Photo credit: Mplus Foundation, Chiang Mai

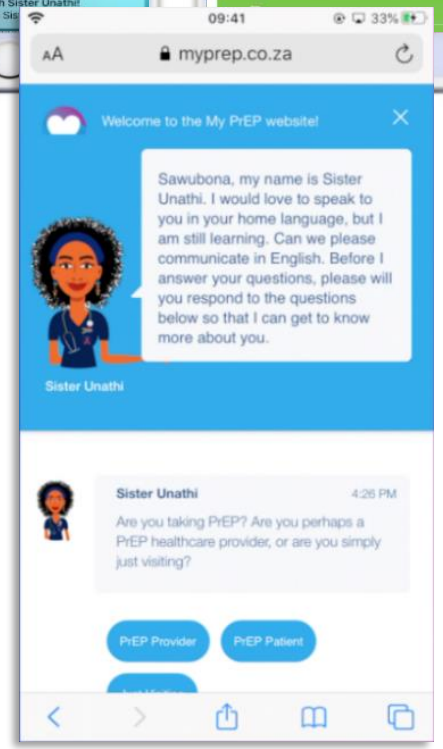
Pharmacy PrEP, USA

Photo credit: Washington University in St. Louis.
https://sites.wustl.edu/prep/services/pharmacy-program/

Virtual interventions



Screenshots of WhatsApp-based "Virtual Safe Spaces" for Manyatta B ward in Kisumu County and West Kamagak and Kokwanyo wards in Homa Bay County.

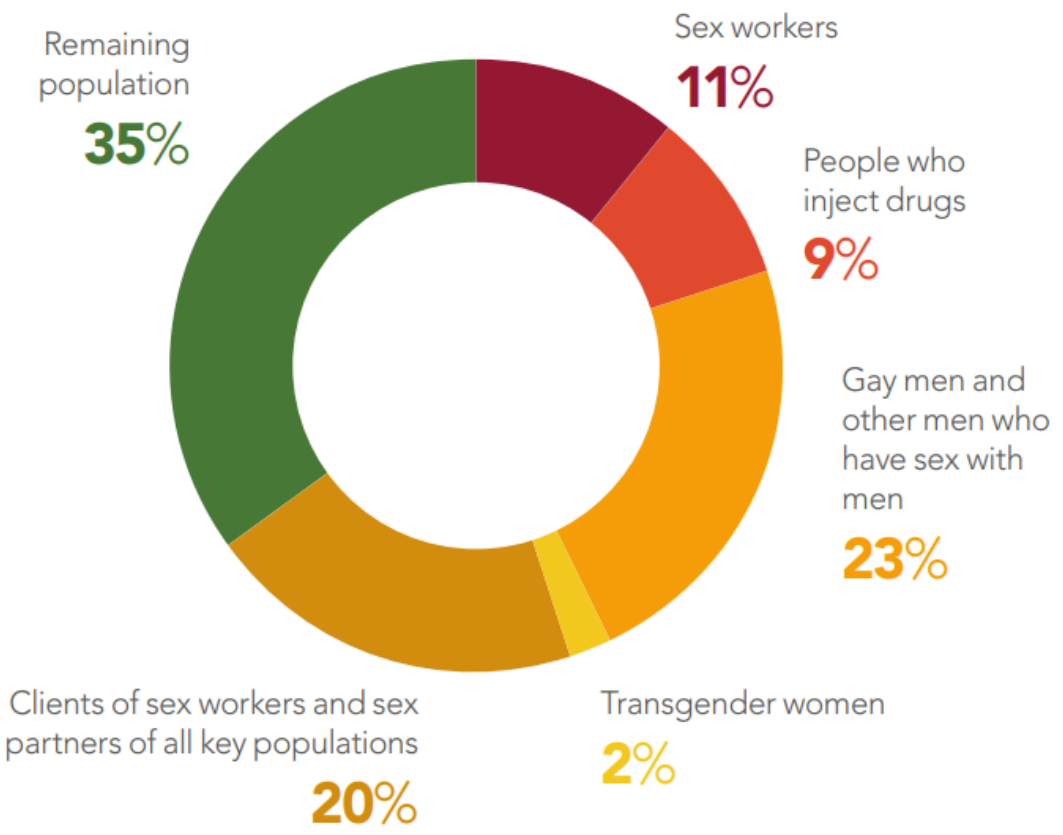


World Health Organization

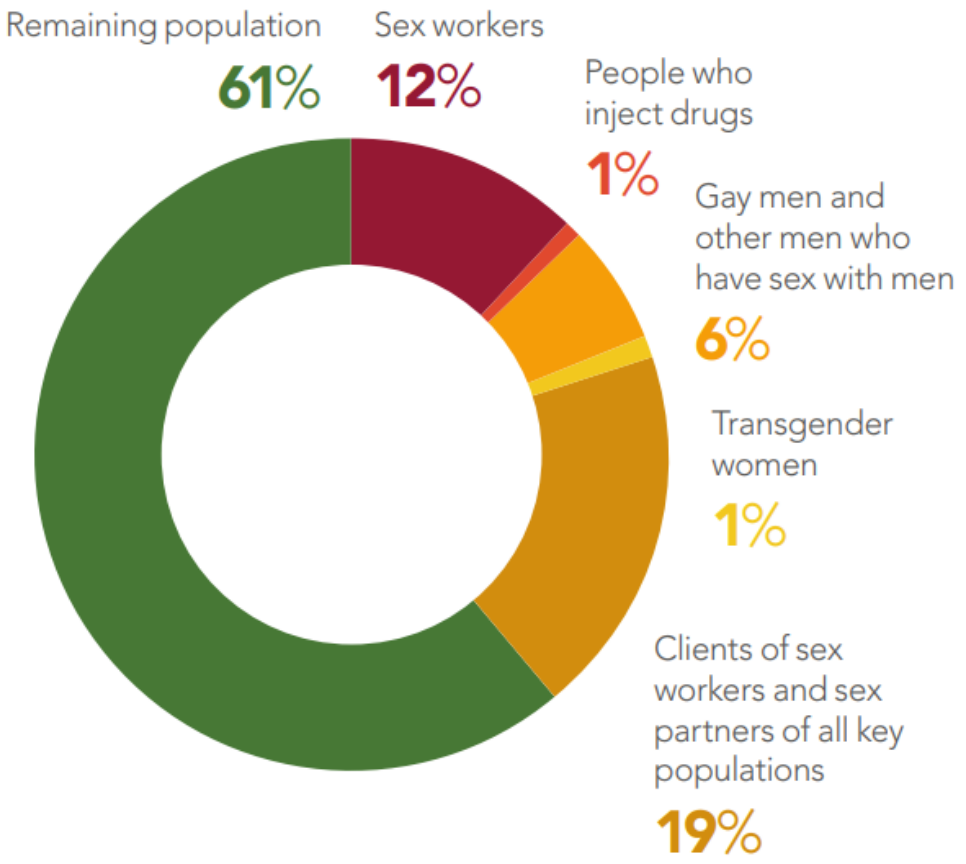
Need to focus on key populations

Key population are particularly vulnerable to HIV infection in every region of the world

Distribution of HIV infections, by population, global, 2020



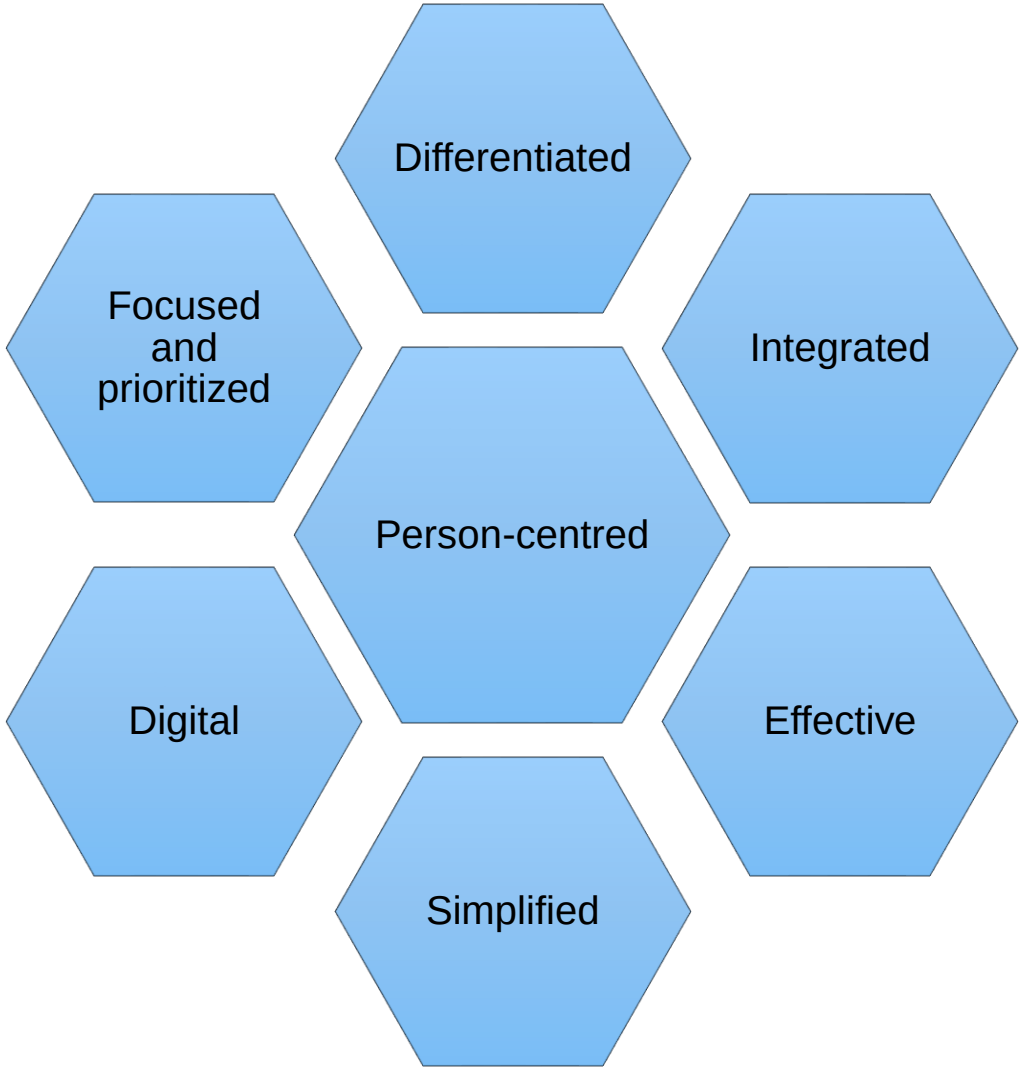
Distribution of HIV infections, by population, sub-Saharan Africa, 2020



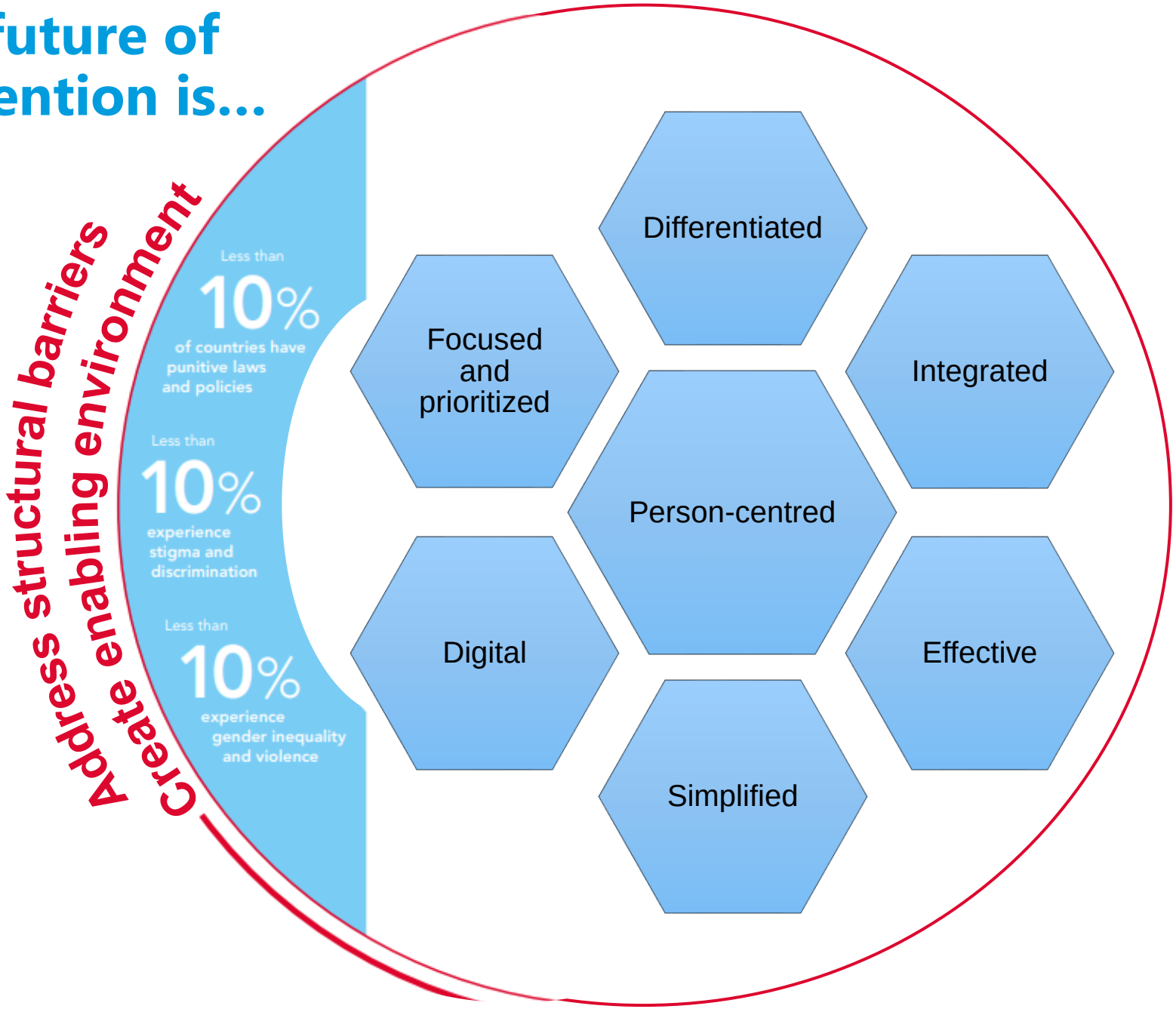
Update of WHO consolidated guidelines on services for key populations in 2021

Source: UNAIDS 2021 epidemiological estimates

The future of prevention is…

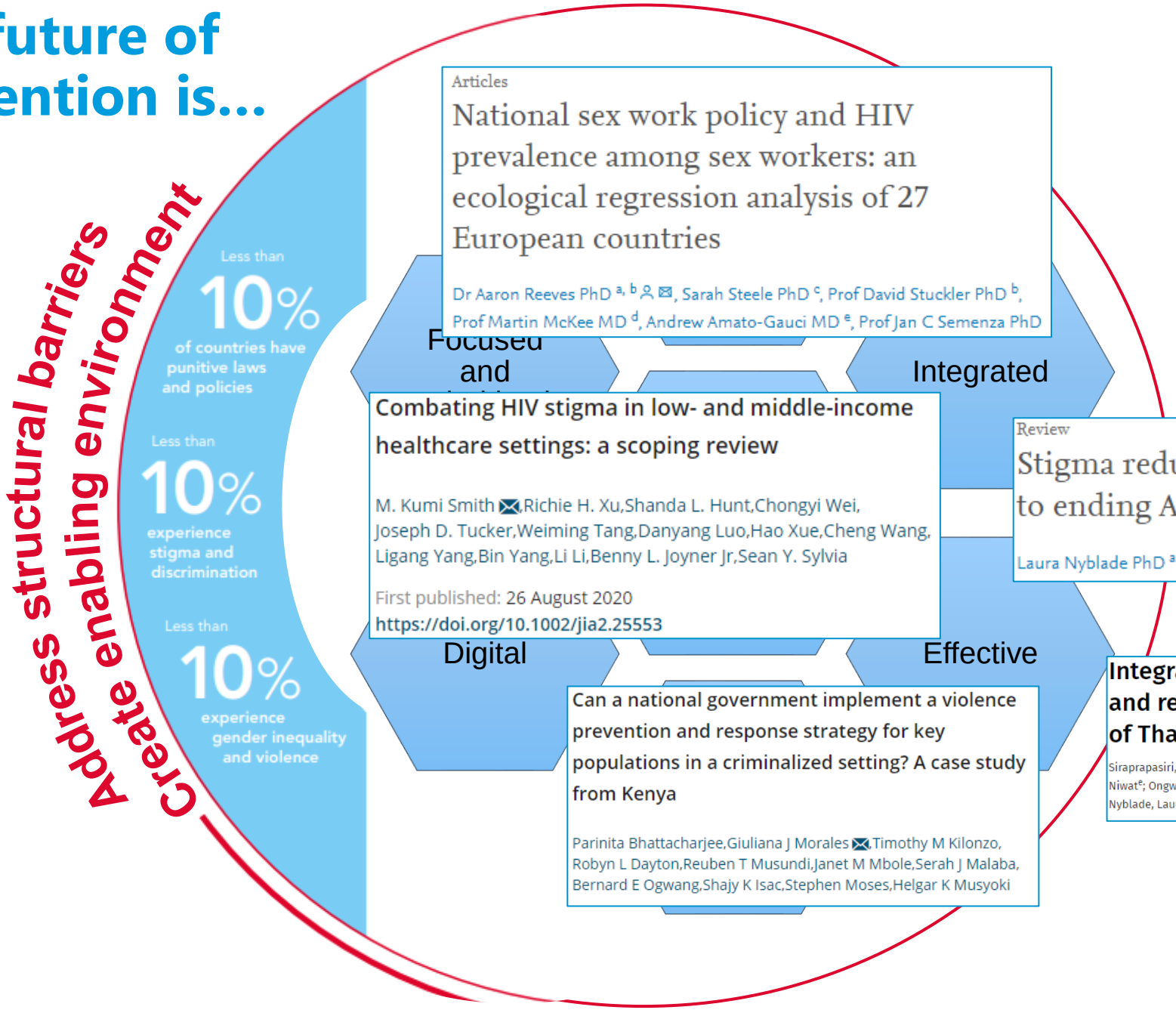


The future of prevention is…



World Health Organization

The future of prevention is…



Articles

National sex work policy and HIV prevalence among sex workers: an ecological regression analysis of 27 European countries

Dr Aaron Reeves PhD [a, b], Sarah Steele PhD [c], Prof David Stuckler PhD [b], Prof Martin McKee MD [d], Andrew Amato-Gauci MD [e], Prof Jan C Semenza PhD

Feature

Drug legislation may be key to ending HIV epidemic

Ed Holt

Combating HIV stigma in low- and middle-income healthcare settings: a scoping review

M. Kumi Smith, Richie H. Xu, Shanda L. Hunt, Chongyi Wei, Joseph D. Tucker, Weiming Tang, Danyang Luo, Hao Xue, Cheng Wang, Ligang Yang, Bin Yang, Li Li, Benny L. Joyner Jr, Sean Y. Sylvia

First published: 26 August 2020
https://doi.org/10.1002/jia2.25553

Review

Stigma reduction: an essential ingredient to ending AIDS by 2030

Laura Nyblade PhD [a] … Melissa A Stockton PhD [b]

Can a national government implement a violence prevention and response strategy for key populations in a criminalized setting? A case study from Kenya

Parinita Bhattacharjee, Giuliana J Morales, Timothy M Kilonzo, Robyn L Dayton, Reuben T Musundi, Janet M Mbole, Serah J Malaba, Bernard E Ogwang, Shajy K Isac, Stephen Moses, Helgar K Musyoki

Integration and scale-up of efforts to measure and reduce HIV-related stigma: the experience of Thailand

Siraprapasiri, Taweesap[a]; Srithanaviboonchai, Kriengkrai[b,c]; Chantcharas, Parichart[d]; Suwanphatthana, Niwat[e]; Ongwandee, Sumet[f]; Khemngern, Porntip[d]; Benjarattanaporn, Patchara[g]; Mingkwan, Pia[h]; Nyblade, Laura[h]

The future of prevention is…

Thank you!

I thank the **Testing, Prevention, and Populations** team for contributions to this presentation.

Contact me for questions or comments: Robin Schaefer, **schaeferr@who.int**

WHO Global HIV, Hepatitis and STIs Programmes:
https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/overview