


Preventing pregnancy and sexually transmitted infections in women on antiretroviral therapy

– opportunities for integrated differentiated care –

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University of North Carolina at Chapel Hill

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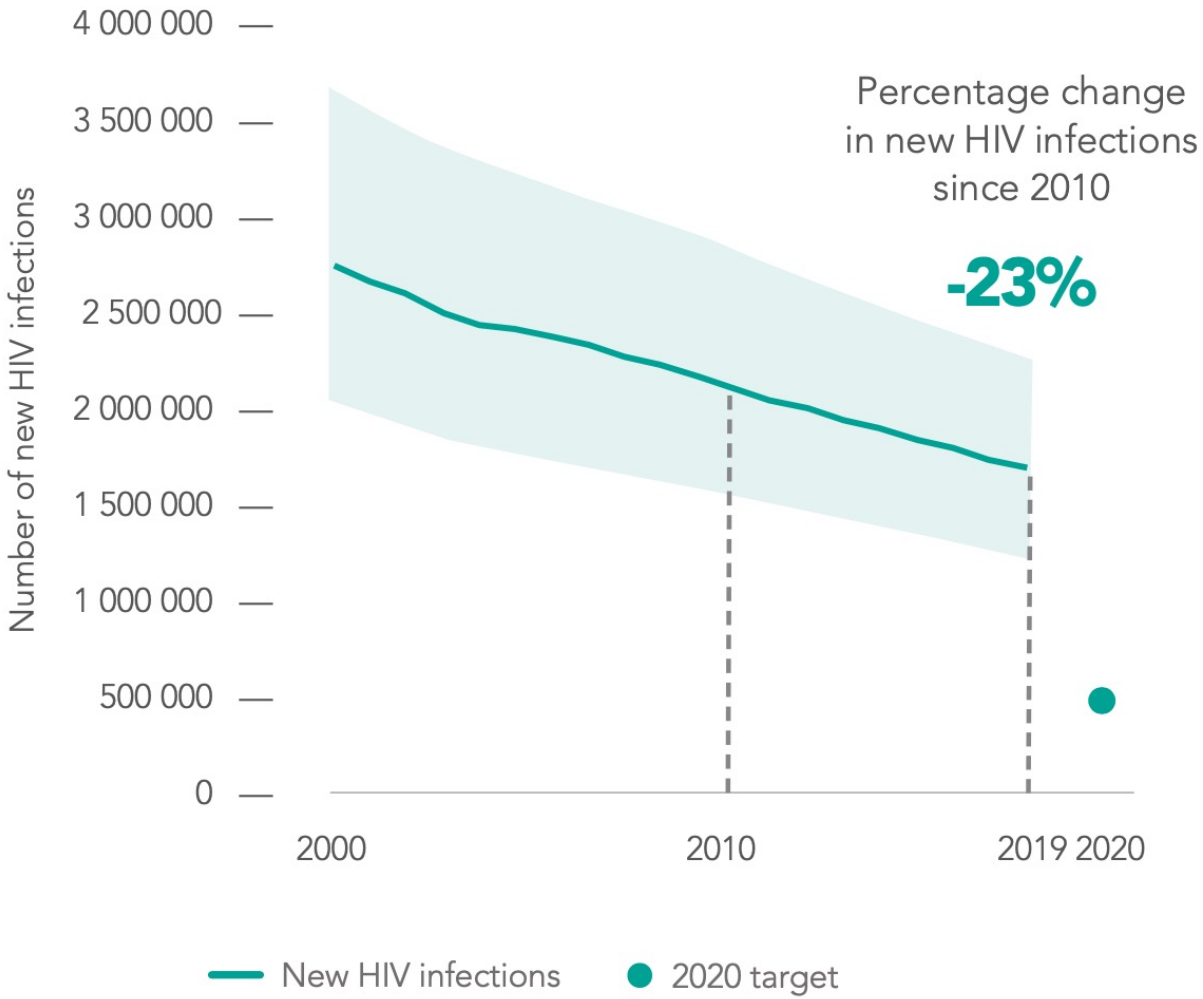
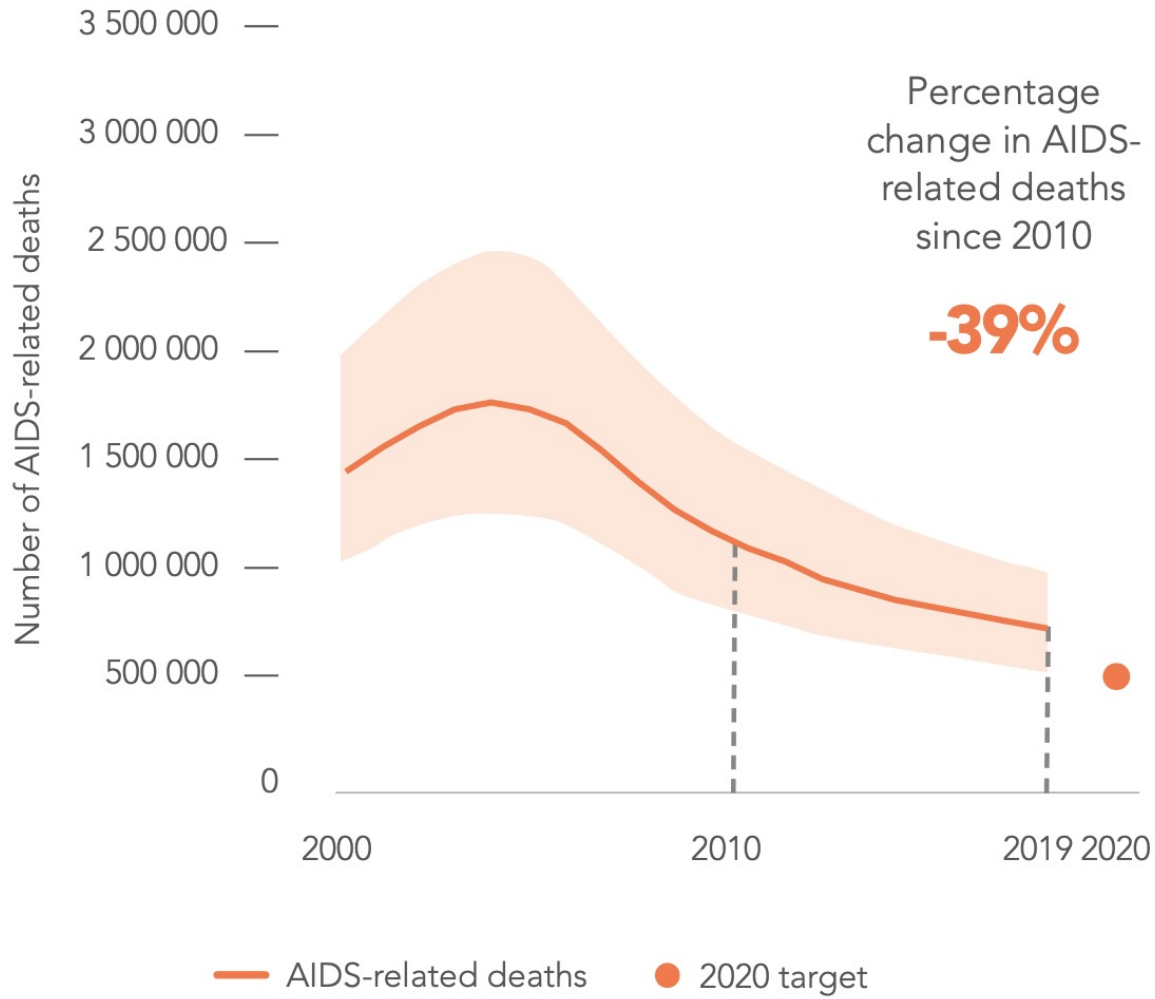
icap Global Health

HIV Learning Network
The CQUIN Project for Differentiated Service Delivery

The case for HIV-MCH differentiated care

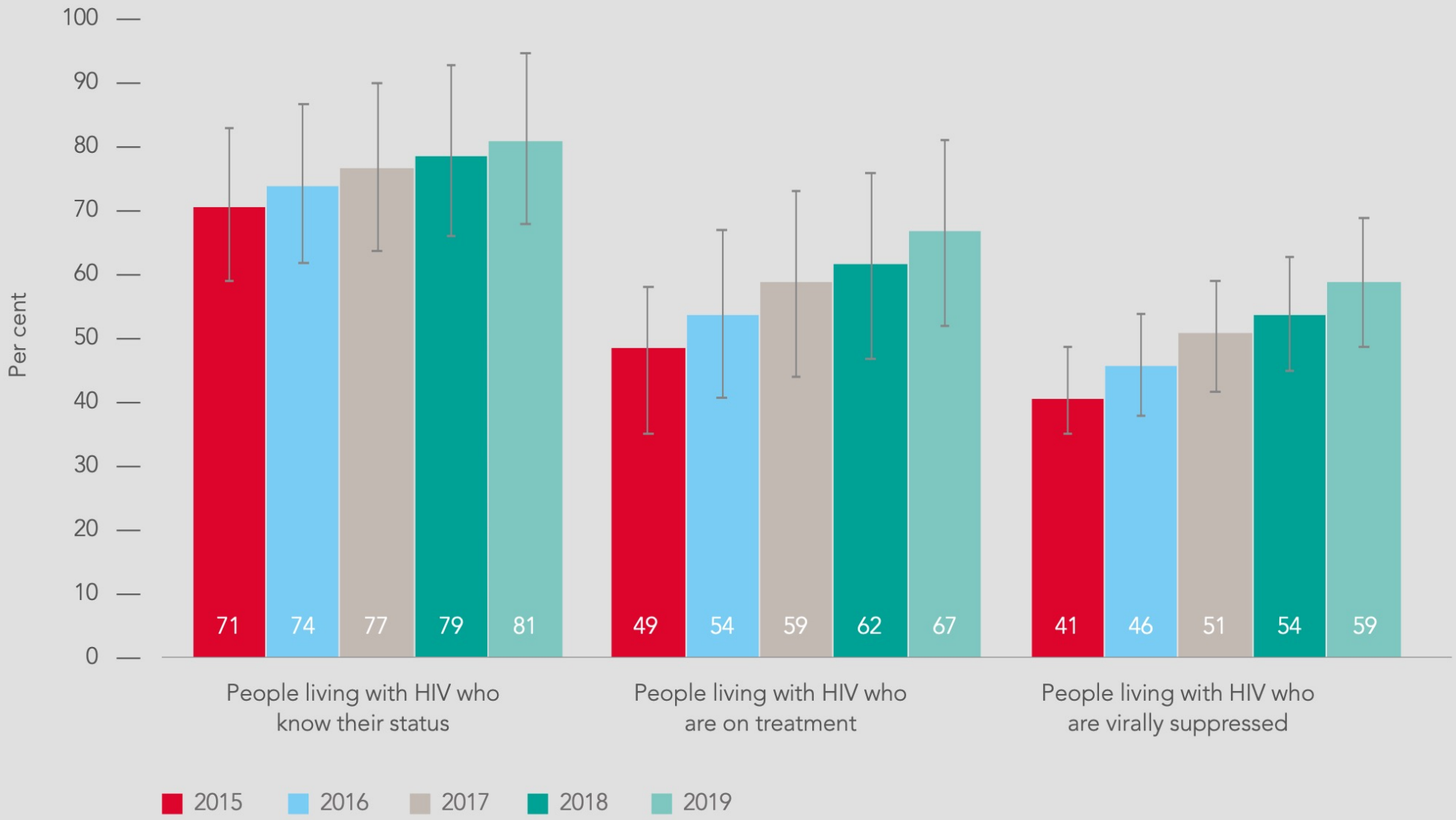
Number of new HIV infections and AIDS-related deaths, global, 2000–2019





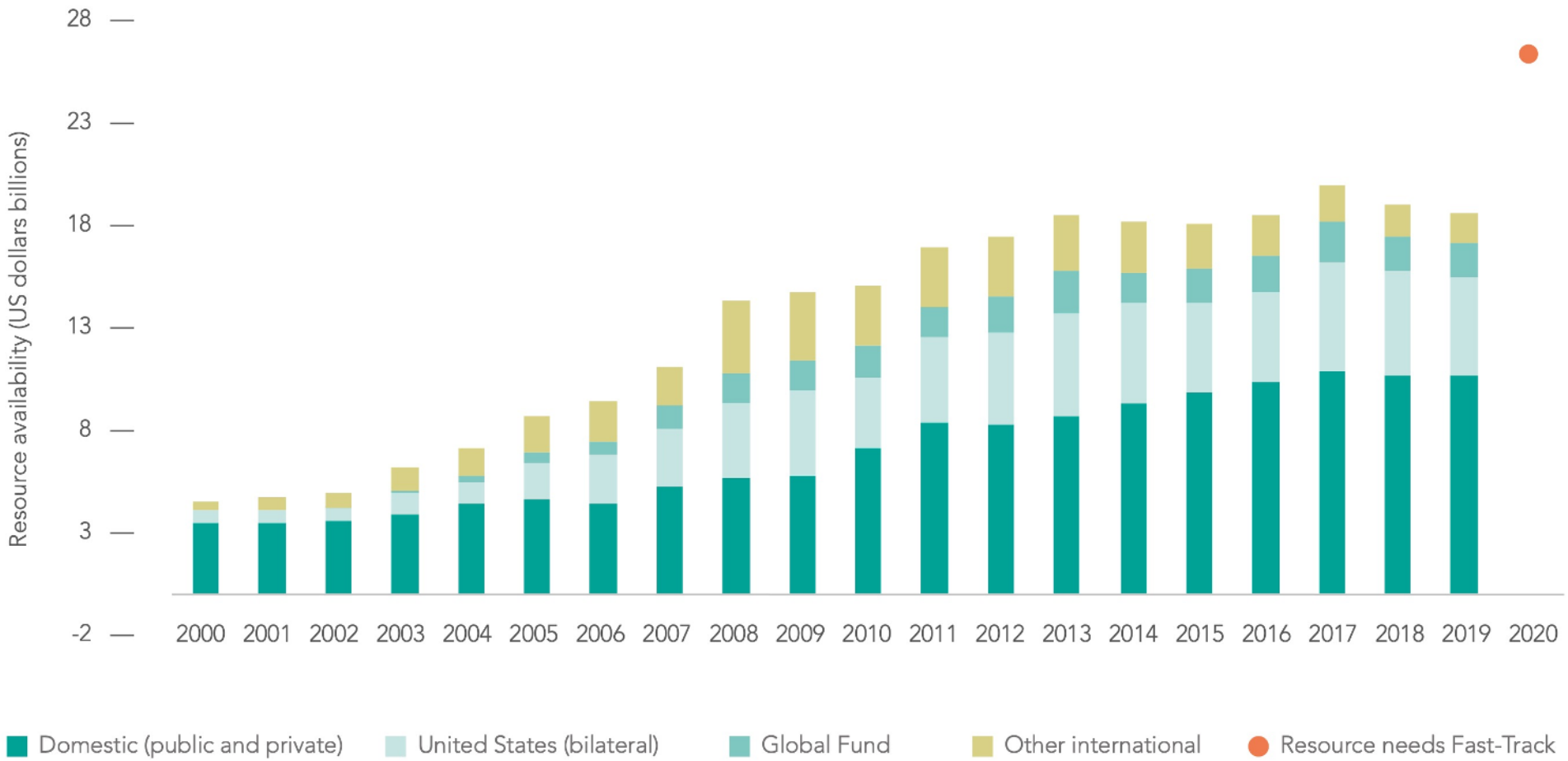
Source: UNAIDS epidemiological estimates, 2020 (see https://aidsinfo.unaids.org/).

HIV testing and treatment cascade, global, 2015–2019



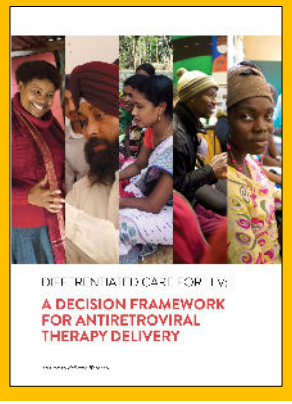
Source: UNAIDS special analysis, 2020 (see annex on methods).

Resource availability and key funding sources for HIV in low- and middle-income countries, 2000–2019, with 2020 target resource needs



Source: UNAIDS financial estimates, July 2020 (see http://hivfinancial.unaids.org/hivfinancialdashboards.html).

Note: Resource availability estimates are presented in constant 2016 US dollars to account for inflation and thus be comparable to the target that was set by the UN General Assembly in the 2016 Political Declaration on Ending AIDS.



Why should I keep taking treatment if I feel healthy and the clinic is full of people who are sick?

How am I going to provide quality care to 100 clients today?

Why must I queue to see a nurse and queue at the pharmacy if I'm only coming to collect my ART refill?

How can we support clients who are failing treatment if we are overwhelmed with adherent clients?

How will I keep my job if I have to spend a day a month at the clinic?

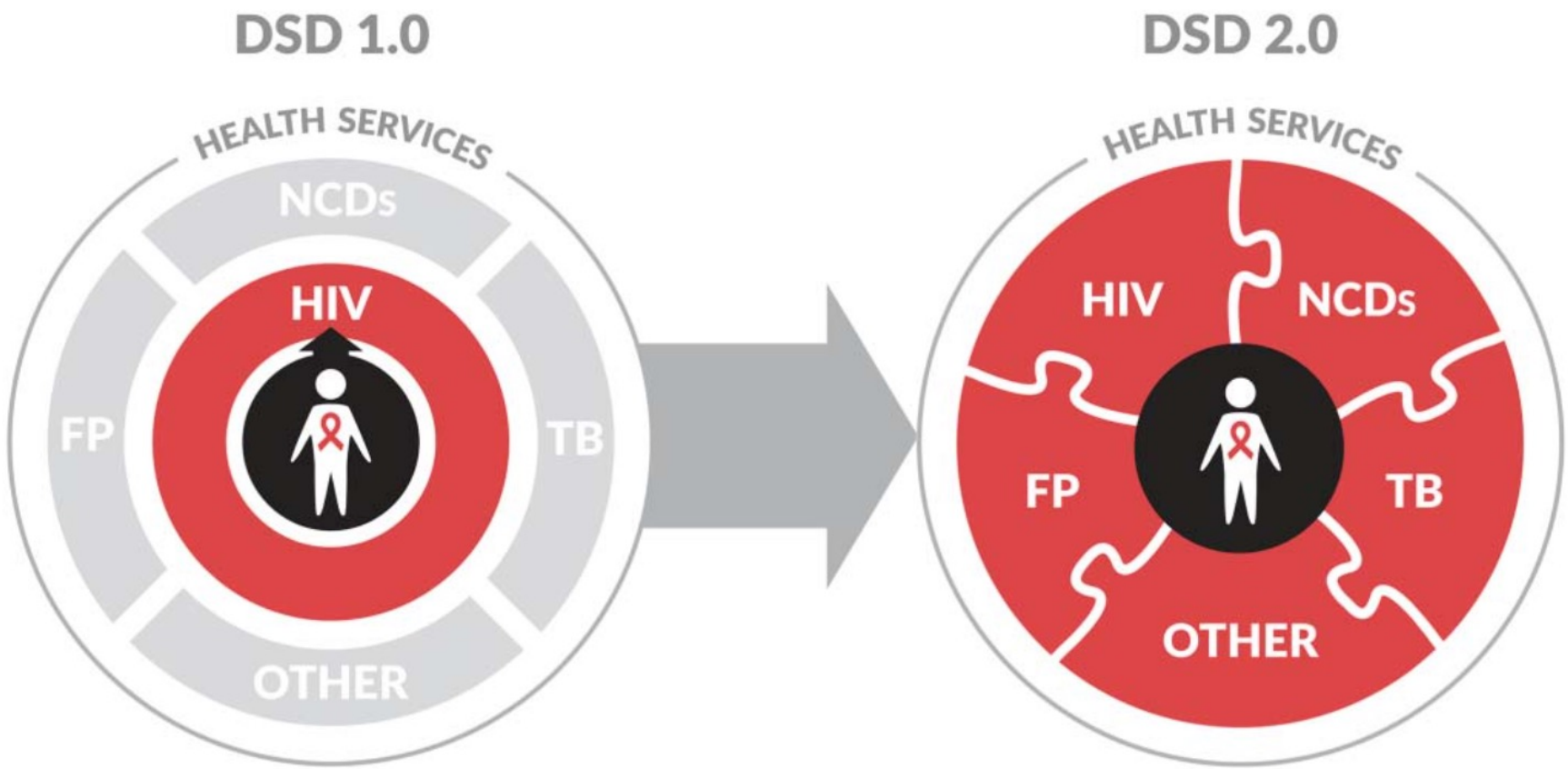
Why are new clients, sick clients and adherent clients all coming to the clinic at the same frequency?

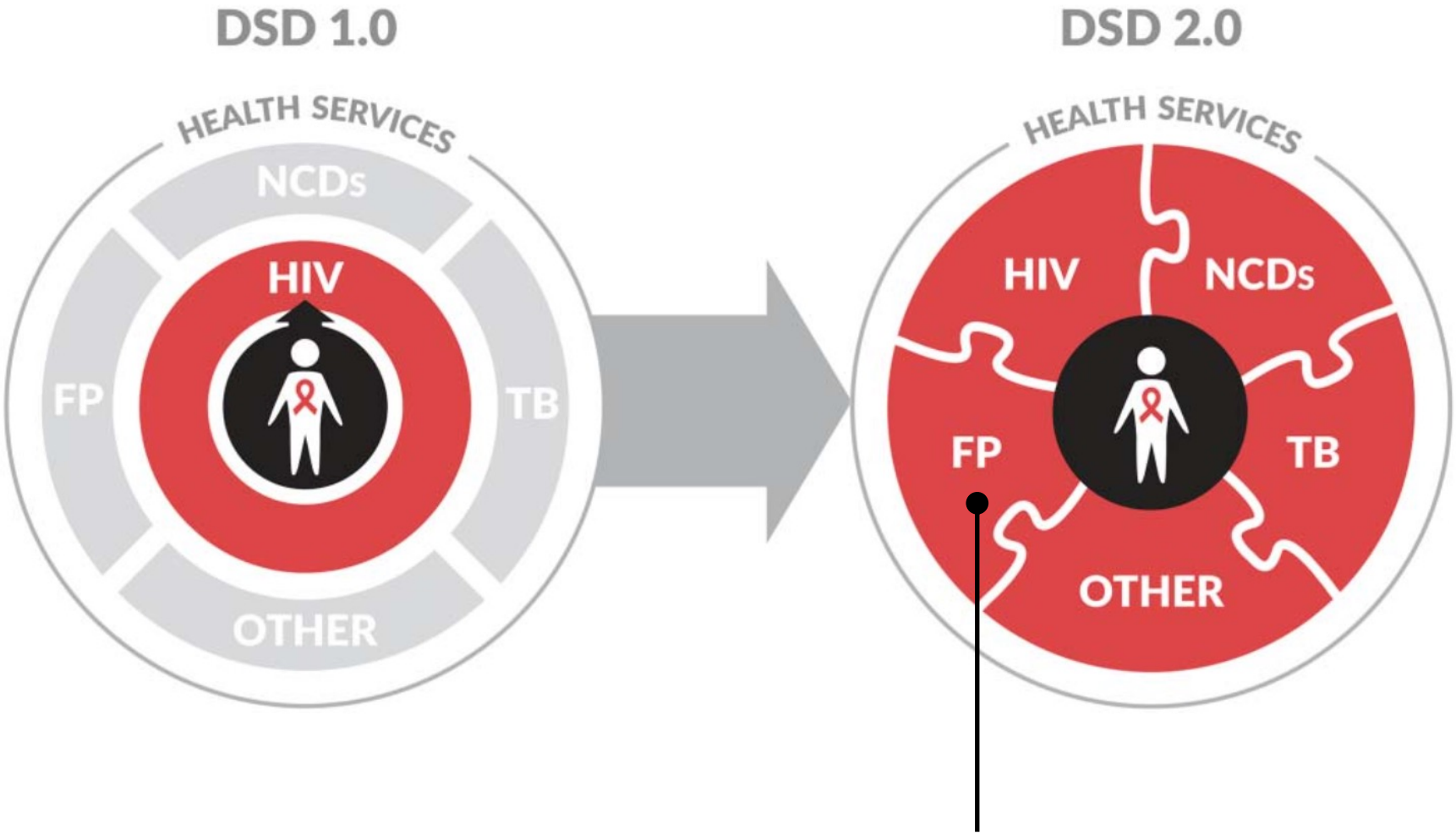
If I'm travelling so far to the clinic, why can't I collect treatment for others in my community?

How can we offer ART to all HIV-positive people if we don't get additional resources?

CLIENT PERSPECTIVE

HEALTH CARE WORKER PERSPECTIVE


DSD 1.0
HEALTH SERVICES
NCDs
HIV
FP
TB
OTHER
DSD 2.0
HEALTH SERVICES
HIV
NCDs
FP
TB
OTHER

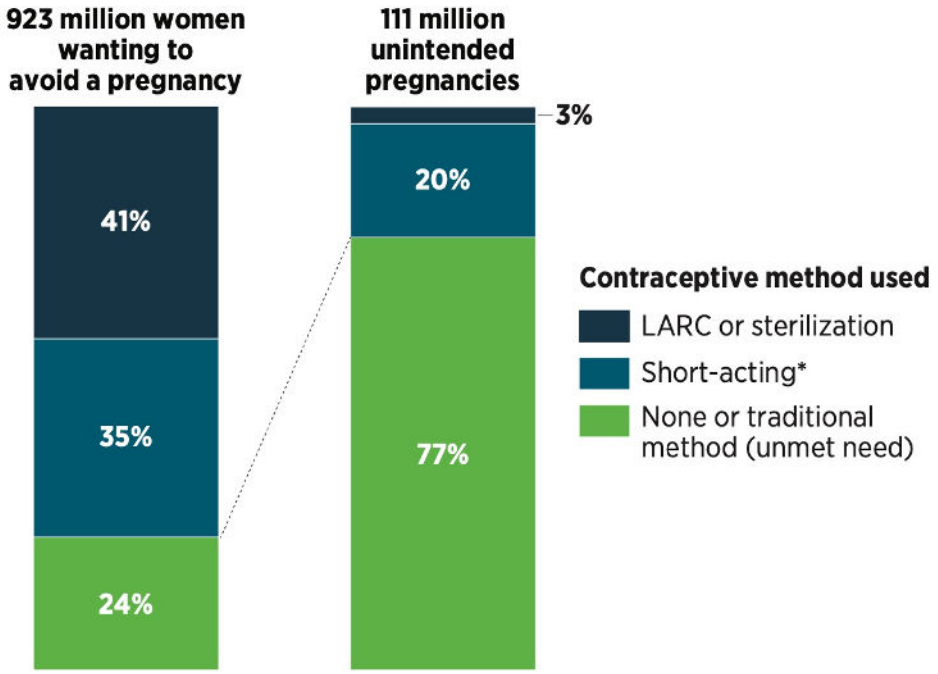


"Sexually transmitted infection (STI) and family planning services can be integrated within HIV care settings" (WHO 2016)

Preventing pregnancy
Preventing STIs
Preventing HIV

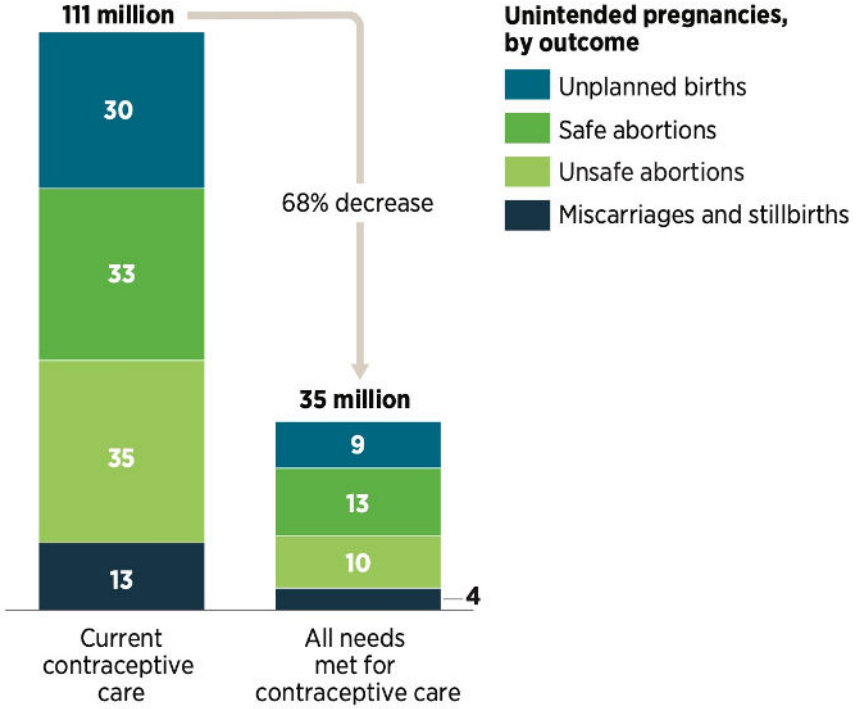
Preventing pregnancy

Women using no contraceptive method or a traditional method account for the vast majority of unintended pregnancies in LMICs.

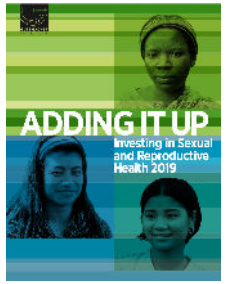


*Pill, condom, injectable, patch/ring, emergency contraceptive pills and other supply methods; lactational amenorrhea method; fertility-awareness–based methods. *Notes:* Estimates are for 2019. Percentages may not add to 100 because of rounding. LMICs=low- and middle-income countries (see Figure 1.1). LARC=long-acting reversible contraceptives (IUDs and implants). *Source:* reference 45.

Unintended pregnancies would drop by more than two-thirds if the need for modern contraceptive care were fully met in LMICs.



Notes: Estimates are for 2019. Definitions of abortion safety, miscarriage and stillbirth are in the footnotes to the left of this figure. Numbers may not add to totals because of rounding. LMICs=low- and middle-income countries (see Figure 1.1). *Source:* reference 45.



Guttmacher Institute, 2019

Key principles for program integration

1. Engage women and girls living with HIV
2. Utilize DSD referral and follow up as opportunities for continuity of family planning care
3. Promote use of long-acting reversible contraceptives among clients in DSD models for ART
4. Align contraceptive and ART resupplies in DSD models
5. Integrate family planning and ART care in facilities and communities

https://familyplanning2020.org/sites/default/files/resources/ECHO/DSD_FP_Supplement.pdf

What is the BEST WAY TO PROTECT from UNINTENDED PREGNANCY?

Without protection,
85 in 100 women* will get pregnant.
(in one year)

TYPE OF CONTRACEPTION	RISK OF GETTING PREGNANT** (in one year of use)
Withdrawal Calendar-based methods Female condom	1 in 5 WOMEN
Male condom	1 in 8 WOMEN
Oral pill	1 in 14 WOMEN
Injectables	1 in 17 WOMEN
More effective types of contraception	
IUDs	1 in 150 WOMEN
Female sterilization	1 in 200 WOMEN
Vasectomy	1 in 700 WOMEN
Implants	1 in 1000 WOMEN

*Sexually active women who are 15 to 49 years of age
**Risk of an unintended pregnancy with typical use of the contraceptive

Source: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project. Family Planning: A Global Handbook for Providers (2018 update). Baltimore and Geneva: CCP and WHO, 2018.

World Health Organization
Western Pacific Region


Lay Health Workers
Auxiliary Nurses
Auxiliary Nurse Midwife
Nurses
Midwives
Associate Clinicians
Advanced Level Associate Clinicians
Non-Specialist Doctors
Contraceptive delivery
1.1–1.13 Promotion of maternal, newborn and reproductive health interventions
12.2 Initiation and maintenance of injectable contraceptives – standard syringe
12.3 Insertion and removal of intrauterine devices
12.4 Insertion and removal of contraceptive implants
12.5 Tubal ligation
12.6 Vasectomy
Recommended
Recommended with monitoring and evaluation
Consider in context of rigorous research
Recommend against
Accepted as within competency
Accepted as outside competency

The Effectiveness of Community Based Distribution of Injectable Contraceptives using Community Health Extension Workers in Gombe State, Northern Nigeria

Rabiatu A. Abdul-hadi[1], Moyosola M. Abass[1], Bolatito O. Aiyenigba[1], Lolade O. Oseni[1], Solomon Odafe[1], Otto N. Chabikuli[1,4], Mohammed D. Ibrahim[1], Christoph Hamelmann[1], Oladapo A. Ladipo[3]*

	Funakaye LGA		Yamaltu/Deba LGA	
FP commodity	CBD n (%)	Facility n (%)	CBD n (%)	Facility n (%)
DMPA	465 (12%)	232 (30%)	557 (9%)	67 (37%)
Norethisterone enantate	551 (15%)	241 (32%)	525 (9%)	65 (36%)
Oral Pills	685 (18%)	250 (33%)	531 (9%)	39 (22%)
Male Condom	2,050 (54%)	0 (0%)	4,326 (71%)	10 (5%)
Female Condom	34 (1%)	40 (5%)	139 (2%)	0 (0%)
Total	3,785 (100%)	763 (100%)	6,078 (100%)	181 (100%)

	Mean CYP (C I), both LGAs combined		*p*
	Facility	Community	
All methods	2.86 (1.37-4.34)	11.65 (8.54-14.75)	<0.001
DMPA	7.21 (1.11-13.30)	25.72 (18.46-32.98)	<0.001
Norethisterone enantate	5.08 (1.47-8.69)	18.16 (12.29-24.03)	<0.001
Oral Pills	1.98 (0.34-3.61)	8.29 (5.95-10.62)	<0.001
Male condom	0.01(-0.01-0.03)	5.91 (3.97-7.85)	<0.001
Female condom	0.03 (-0.04-0.11)	0.15 (0.05-0.26)	0.060

Afr J Reprod Health, 2012

Community-based provision of injectable contraceptives in Madagascar: 'task shifting' to expand access to injectable contraceptives

Theresa H Hoke,[1]* Stephanie B Wheeler,[2] Kelsey Lynd,[3] Mackenzie S Green,[1] Bakolisoa Harimalala Razafindravony,[4] Eugénie Rasamihajamanana[4] and Paul D Blumenthal[3]

	ADRA Moramanga % (*n* = 95)	ASOS Moramanga % (*n* = 58)	ASOS Sud % (*n* = 150)	Total % (*n* = 303)
Injection technique				
Satisfied with way received injection	100	100	100	100
No problem with injection site	96	91	100	97
Interpersonal rapport				
CBD worker spoke in friendly way	97	98	97	97
Trusted CBD worker with private info	95	88	100	96
Counselling content				
CBD worker asked if menstruating	93	93	93	93
Was counselled on side effects	63	59	79	70
Amenorrhoea as possible side effect	26	26	48	37
Weight gain as possible side effect	4	2	17	11
Correctly recalled duration of pregnancy protection	86	86	89	88
Reported DMPA does not protect against STIs and AIDS	64	60	64	63

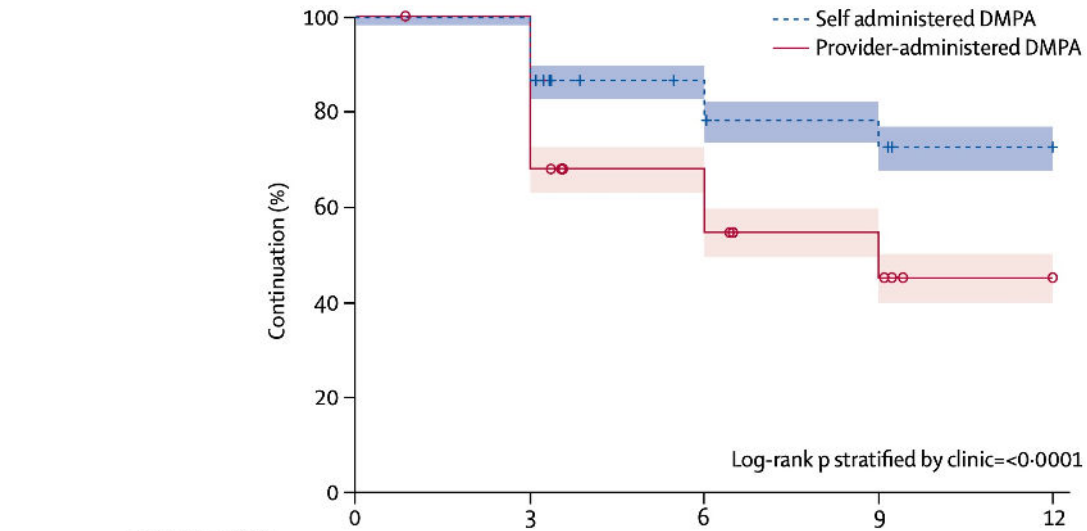
Health policy and planning, 2013

Subcutaneous DMPA

- Marketed as Sayana Press
- Pilot programs in 8 African countries (2014-2016), demonstrating safety and acceptability
- Cost of ~$0.85 per dose
- Expands access via HCW use and self-administration
- Registered for self-injection in over 50 countries

Effect of self-administration versus provider-administered injection of subcutaneous depot medroxyprogesterone acetate on continuation rates in Malawi: a randomised controlled trial

Holly M Burke, Mario Chen, Mercy Buluzi, Rachael Fuchs, Silver Wevill, Lalitha Venkatasubramanian, Leila Dal Santo, Bagrey Ngwira

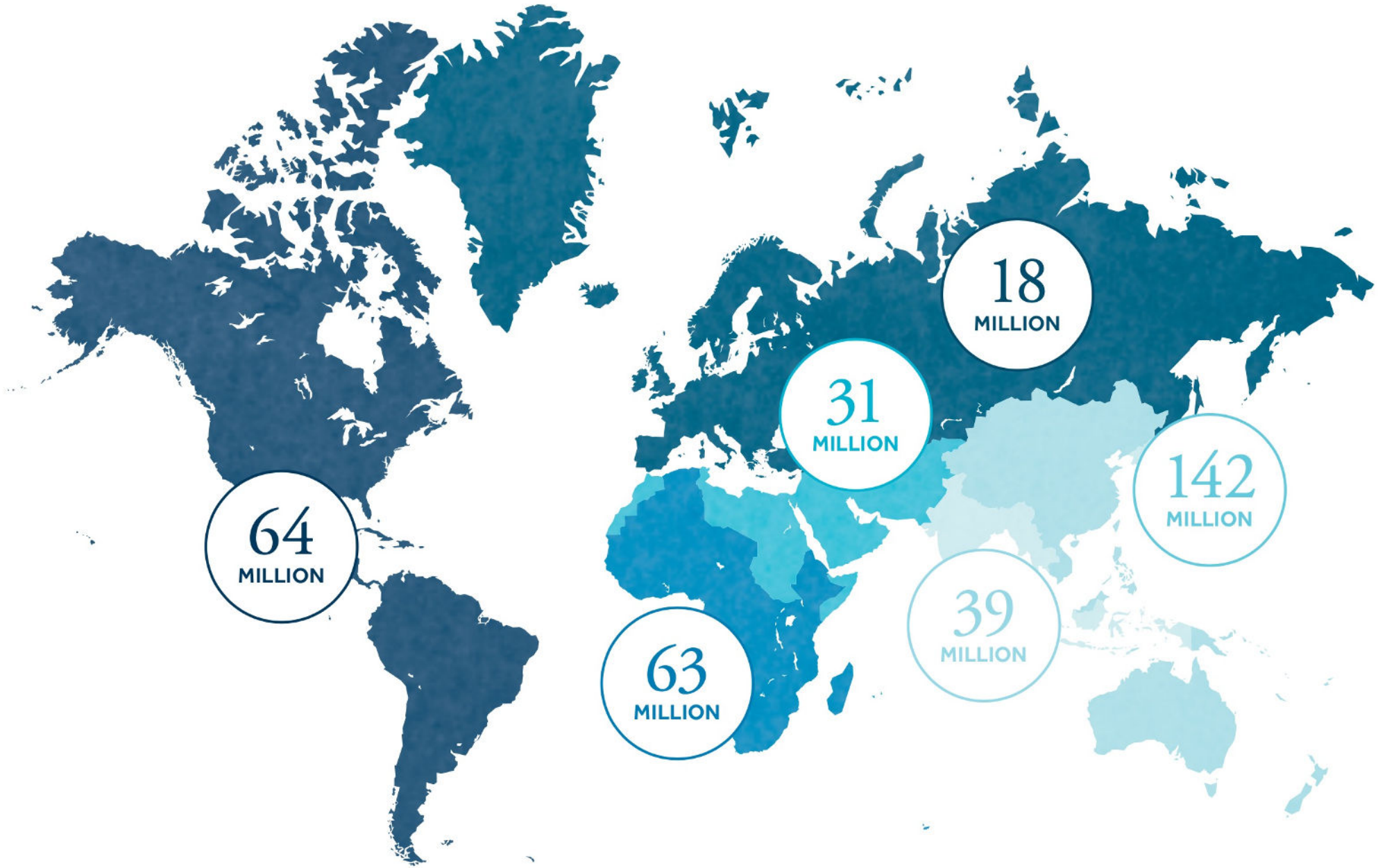


Number at risk (cumulative number of discontinuations)					
Self administered DMPA	364 (1)	363 (49)	309 (79)	278 (99)	256
Provider-administered DMPA	367 (0)	366 (117)	245 (165)	194 (199)	157

Burke, Lancet Global Health 2018

Preventing STIs

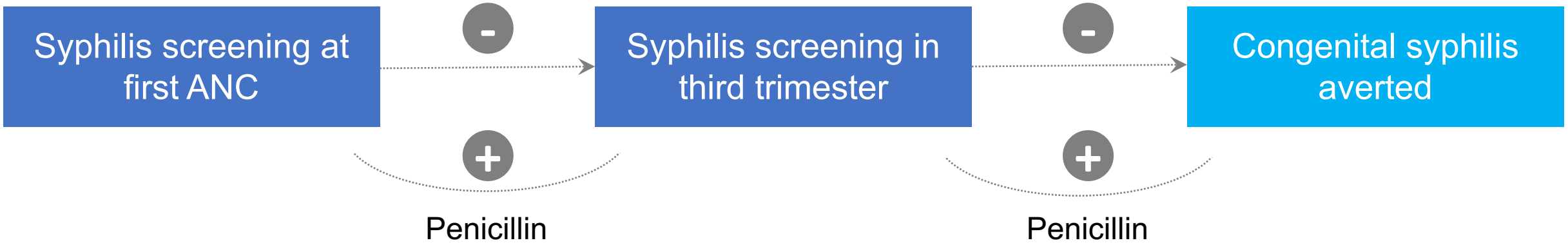
Curable STIs chlamydia, gonorrhoea, syphilis, trichomoniasis



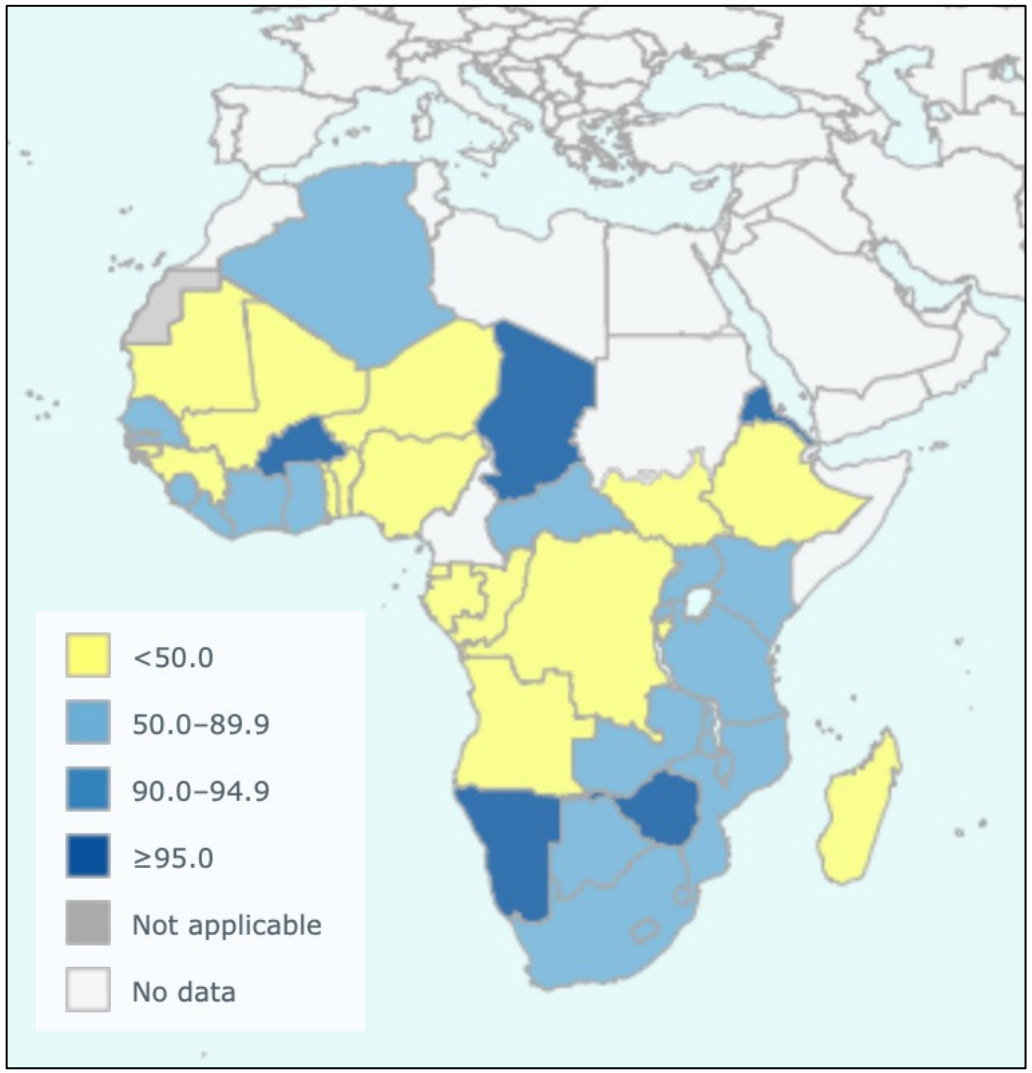
Indicators for certification on the path to EMTCT of HIV and/or syphilis (high-prevalence countries)

MATERNAL HIV PREVALENCE >2% MATERNAL SYPHILIS PREVALENCE >1%			
Process indicators		**Impact indicators**	
GOLD TIER	• Antenatal care (ANC) coverage (at least one visit) (ANC-1) of ≥**95%** • Coverage of HIV and/or syphilis testing of pregnant women of ≥**95%** • ART coverage of HIV-positive pregnant women of ≥**95%** • Treatment coverage of syphils-seropositive pregnant women of ≥**95%**	**HIV**	• MTCT rate of HIV of <**2%** in non-breastfeeding populations OR <**5%** in breastfeeding populations • A case rate of new paediatric HIV infections due to MTCT of ≤**250 cases per 100,000** live births
		Syphilis	• A case rate of congenital syphilis (CS) of ≤**250 per 100,000** live births
SILVER TIER	• ANC coverage (at least one visit) (ANC-1) of ≥**90%** • Coverage of HIV and/or syphilis testing of pregnant women of ≥**90%** • ART coverage of HIV-positive pregnant women of ≥**90%** • Treatment coverage of syphilis-seropositive pregnant women of ≥**90%**	**HIV**	• MTCT rate of HIV of <**2%** in non-breastfeeding populations OR <**5%** in breastfeeding populations • A case rate of new paediatric HIV infections due to MTCT of ≤**500 cases per 100,000** live births
		Syphilis	• A case rate of congenital syphilis (CS) of ≤**500 per 100,000** live births
BRONZE TIER	• ANC coverage (at least one visit) (ANC-1) of ≥**90%** • Coverage of HIV and/or syphilis testing of pregnant women of ≥**90%** • ART coverage of HIV-positive pregnant women of ≥**90%** • Treatment coverage of syphilis-seropositive pregnant women of ≥**90%**	**HIV**	• MTCT rate of HIV of <**2%** in non-breastfeeding populations OR <**5%** in breastfeeding populations • A case rate of new paediatric HIV infections due to MTCT of ≤**750 cases per 100,000** live births
		Syphilis	• A case rate of congenital syphilis (CS) of ≤**750 per 100,000** live births
Interventions to meet targets must have been met in a manner consistent with protecting human rights and ensuring gender equality and the engagement of civil society for certification in all tiers.			

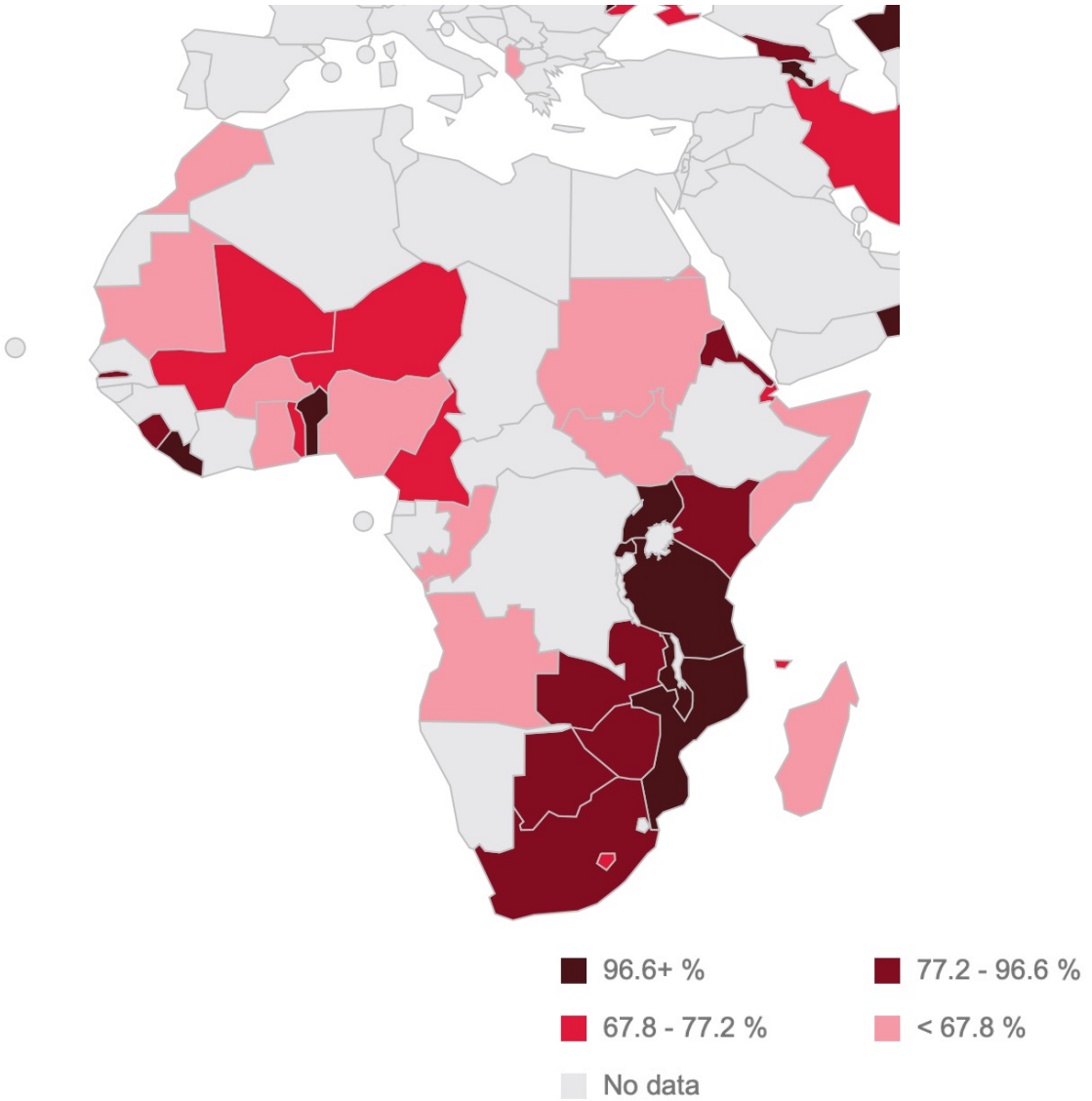
Source: World Health Organization, *Global Guidance on Criteria and Processes for Validation: Elimination of mother-to-child transmission of HIV and syphilis*, 2nd ed., WHO, Geneva, 2017, p. 23.

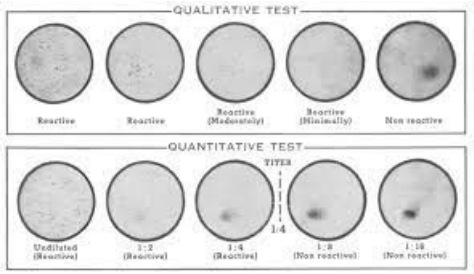

Syphilis screening at first ANC
-
Syphilis screening in third trimester
-
Congenital syphilis averted
+
Penicillin
+
Penicillin

Antenatal syphilis testing coverage



Antenatal HIV testing coverage





Rapid plasma reagin (RPR)

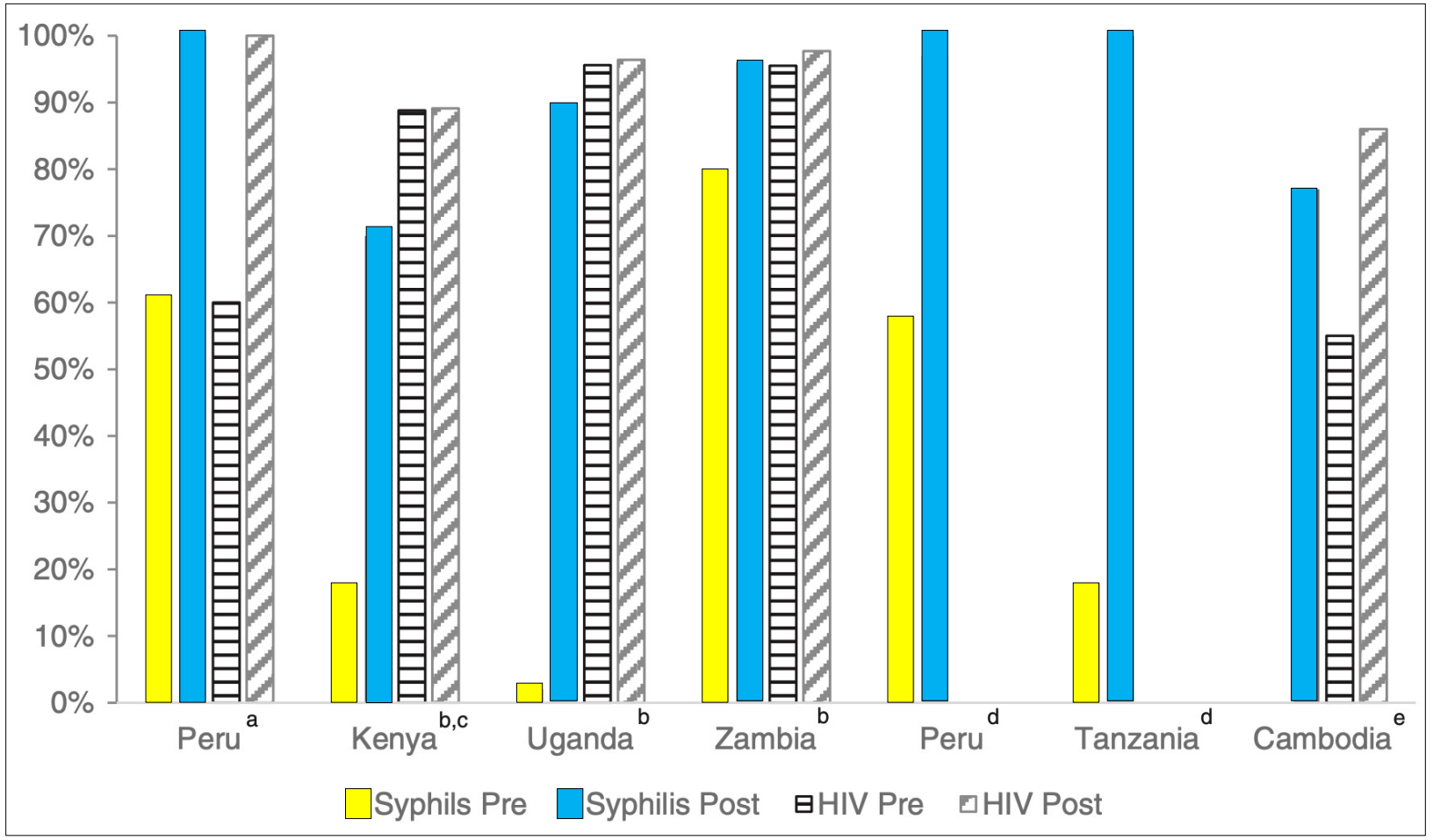
Syphilis rapid test

HIV-syphilis dual rapid test

SYSTEMATIC REVIEW

Introduction of rapid syphilis testing in antenatal care: A systematic review of the impact on HIV and syphilis testing uptake and coverage

Andrea Swartzendruber [a,*], Riley J. Steiner [a], Michelle R. Adler [b], Mary L. Kamb [c], Lori M. Newman [d]



Int Journal Gyn Obstet, 2015

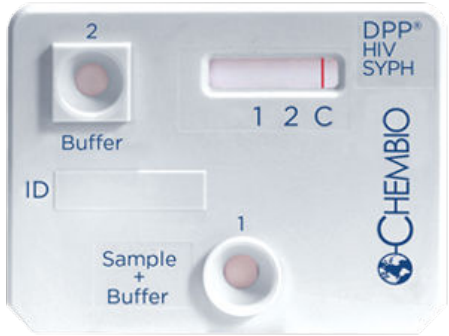
Laboratory assessment of SD Bioline HIV/Syphilis Duo Kit among pregnant women attending antenatal clinic Mayuge Health Center III, East central Uganda

Ivan Mugisha Taremwa[1*], Alupakusadi Twelwanike[1], Bashir Mwambi[1] and Christine Atuhairwe[2]

RDT	Infection	RDT result	Positive[a]	Negative[a]	Total
Diagnostic performance of HIV–Syphilis SD Bioline Duo Kit					
SD HIV/Syphilis Duo	HIV	Positive	7	0	7
		Negative	0	375	375
		Total	7	375	382
	Syphilis	Positive	8	0	8
		Negative	0	374	374
		Total	8	374	382
RDT	**Infection**	**% Sensitivity (95% CI)**	**% Specificity (95% CI)**		
Showing the operation performance of the HIV–Syphilis SD *Bioline* Duo Kit					
SD Bioline HIV–Syphilis Duo assay	HIV	100.0 (99.5 to 100.0)	100.0 (98.6 to 100.0)		
	Syphilis	100 (98.3 to 100.0)	100 (98.6 to 100)		

[a] The gold standard method for HIV was the Ministry of Health (Uganda) HIV testing Algorithm; while for Syphilis, it was the *Treponema pallidum* Hemagglutination Assay (TPHA)

BMC Research Notes, 2019



	Comparison with Determine[a]		Comparison with TPPA[b]	
Test type	**No. positive (sensitivity, %)**	**No. negative (specificity, %)**	**No. positive (sensitivity, %)**	**No. negative (specificity, %)**
Total (N=2121)				
Chembio	434 (90.6)	1686 (97.2)	204 (68.6)	1915 (98.5)
SD Bioline	434 (89.4)	1685 (96.3)	204 (66.2)	1914 (97.2)

	Comparison with active syphilis[a] (combinations of TPPA and RPR)
Brand of RDT	**No. positive (sensitivity, %)**
Chembio	98 (84.7)
SD Bioline	98 (81.6)

Kasaro, Int J STD AIDS, 2019

WHO FANC model	2016 WHO ANC model
First trimester	
Visit 1: 8–12 weeks	Contact 1: up to 12 weeks
Second trimester	
Visit 2: 24–26 weeks	Contact 2: 20 weeks Contact 3: 26 weeks
Third trimester	
Visit 3: 32 weeks Visit 4: 36–38 weeks	Contact 4: 30 weeks Contact 5: 34 weeks Contact 6: 36 weeks Contact 7: 38 weeks Contact 8: 40 weeks
Return for delivery at 41 weeks if not given birth.	

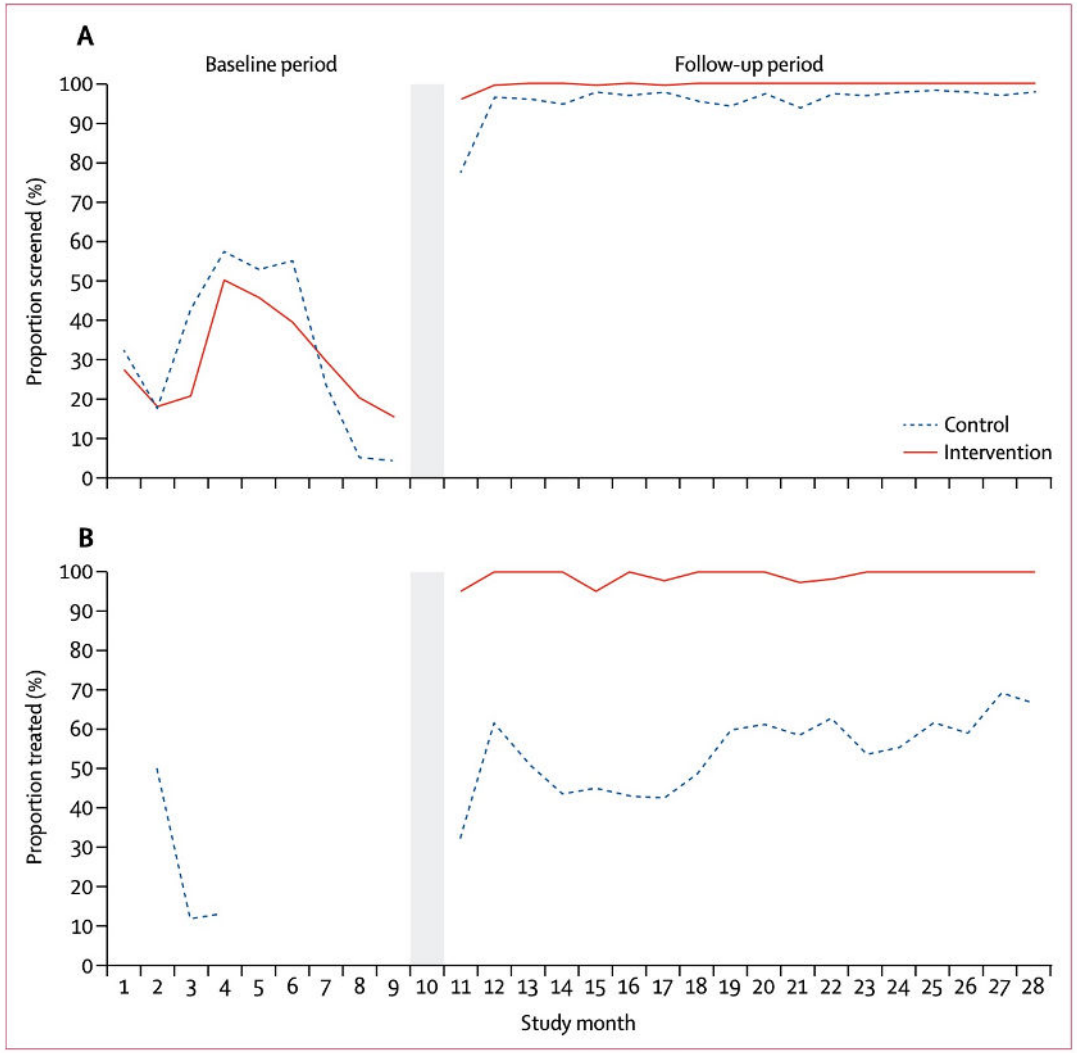
A multifaceted intervention to improve syphilis screening and treatment in pregnant women in Kinshasa, Democratic Republic of the Congo and in Lusaka, Zambia: a cluster randomised controlled trial

Cluster randomized trial of 26 urban ANC sites

- *Control arm:* supplies only
- *Intervention arm:* supplies + behavioral support (opinion leader selection, visits, reminders, audits/feedback, supportive supervision)

	Intervention group		Control group		Absolute difference between median proportions (95% CI)	p value*
	Women (n=18 357), n/N	Clinics (n=13), median proportion† (IQR)	Women (n=17 679), n/N	Clinics (n=13), median proportion† (IQR)		
Primary outcomes						
Women screened for syphilis	18 314/18 357	99·9% (99·0 to 100·0)	17 036/17 679	93·8% (85·0 to 98·9)	6·1% (1·1 to 14·1)	0·00092
Women treated (proportion of those positive for syphilis)‡	889/894	100·0% (99·7 to 100·0)	534/991	43·2% (2·6 to 83·2)	56·8% (12·8 to 99·0)	0·0028
Secondary outcomes						
Women screened for anaemia at their first clinic visit	8666/18 357	50·0% (22·3 to 75·8)	8097/17 679	57·0% (27·7 to 70·5)	−7·0% (−24·9 to 30·8)	0·72
Women screened for proteinuria at their first clinic visit	2171/18 355	0·8% (0·3 to 7·2)	1458/17 677	0·1% (0·0 to 1·8)	0·7% (−0·2 to 6·3)	0·22
Women screened for HIV at their first clinic visit	15 422/18 320	86·5% (78·1 to 90·5)	14 189/17 678	81·1% (68·4 to 84·8)	5·4% (−2·4 to 15·9)	0·10

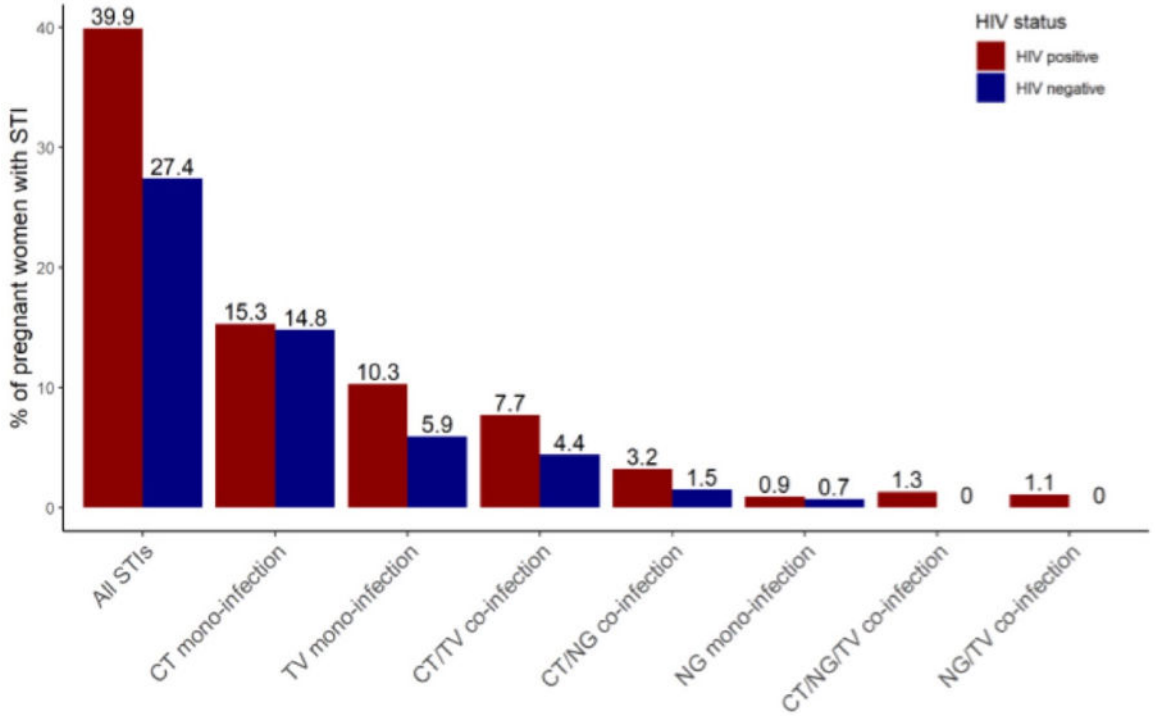
*Wilcoxon rank sum test. †The clinic is the unit of analysis. ‡For three clinics in the control group in the Democratic Republic of the Congo, the proportion of women screened positive for syphilis who were treated at the first visit could not be calculated because the clinic had no women who were positive for syphilis.



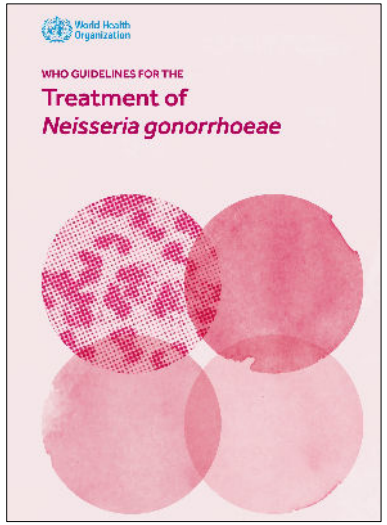
Althabe, Lancet Global Health, 2019

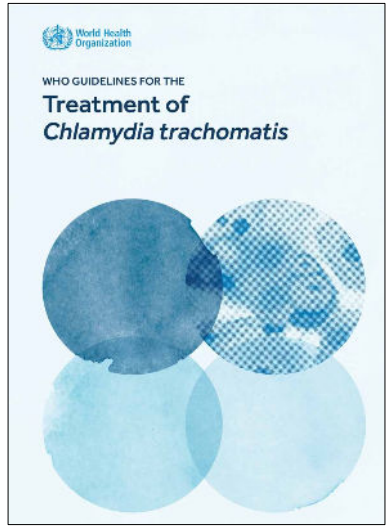
Prevalence, incidence and associated risk factors of STIs during pregnancy in South Africa

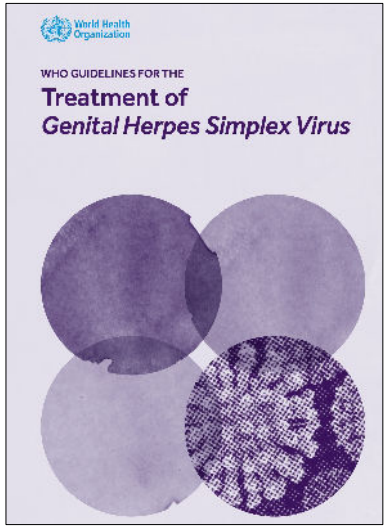
Dorothy Chiwoniso Nyemba ,[1,2] Andrew Medina-Marino,[3,4] Remco P H Peters,[4,5,6] Jeffrey D Klausner,[7,8] Phuti Ngwepe,[4] Landon Myer,[1,2] Leigh Francis Johnson,[2] Dvora Joseph Davey[1,7]



Prevalence of STIs by HIV status among 669 pregnant women at first ANC visit in Cape Town, South Africa, 2016-2019



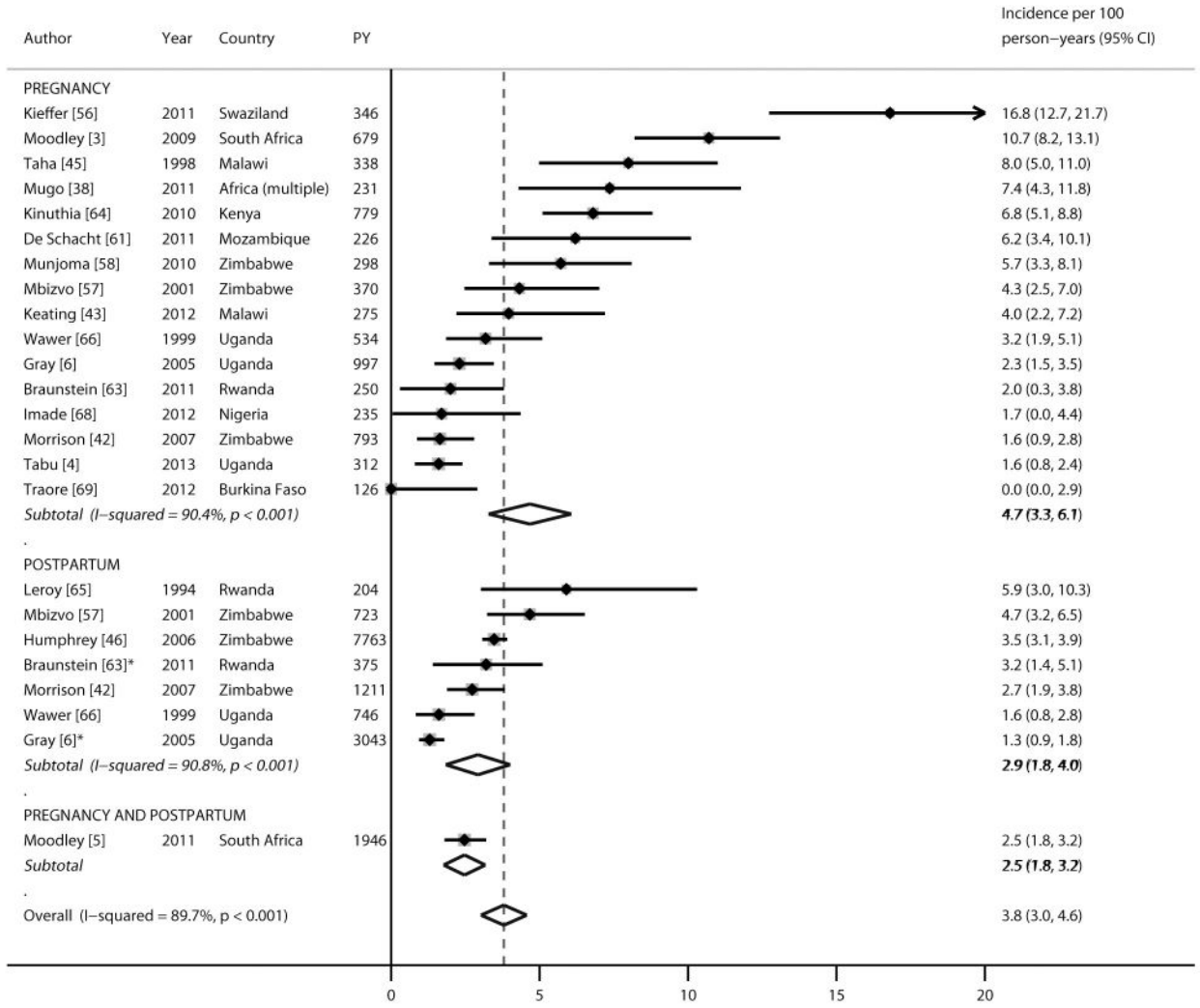




Sex Transm Infect, 2020

Preventing HIV

In sub-Saharan Africa, HIV incidence is high during pregnancy and breastfeeding



Meta-analysis of 19 cohorts (22,908 pys)

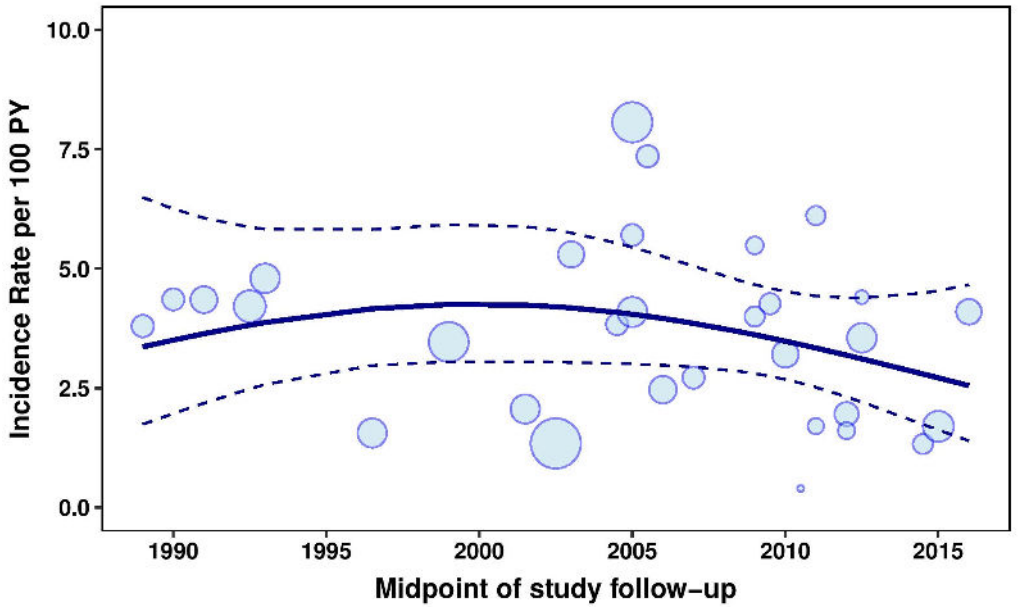
Cumulative HIV incidence: 3.8 per 100 pys (95%CI: 3.3–6.1)

Drake, PLOS Med 2014

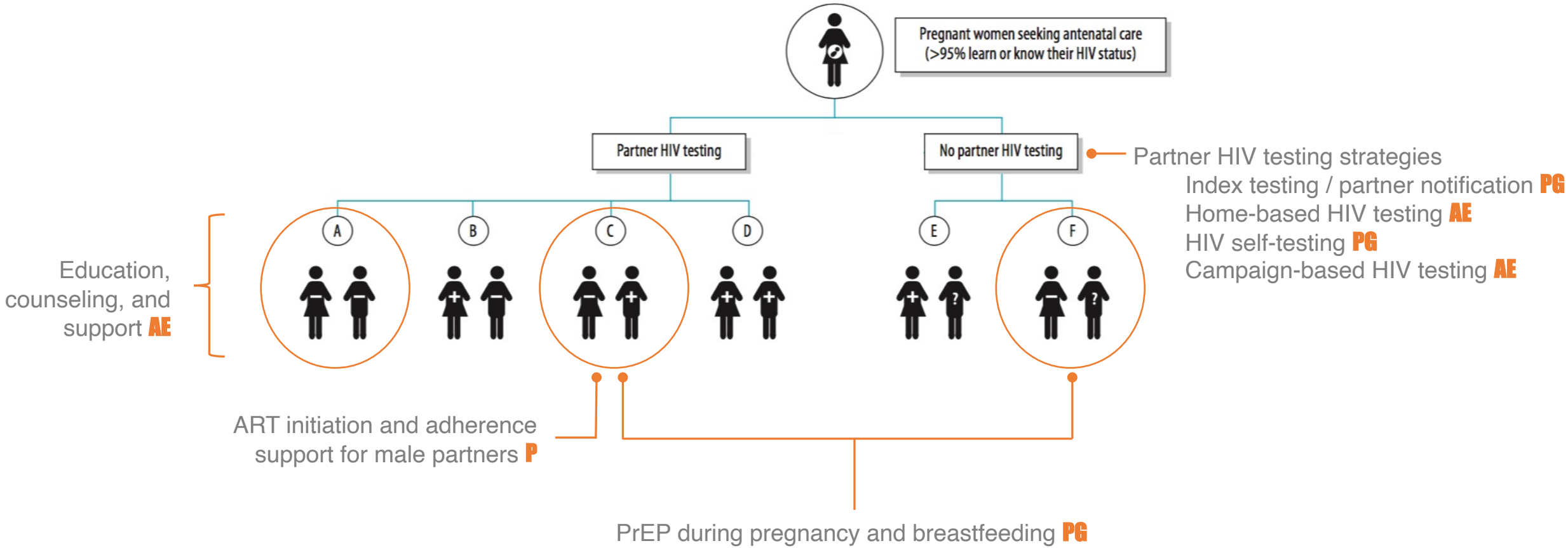
Meta-analysis of 37 cohorts (100,579 pys)

HIV incidence:

- Pregnancy only – 3.4 / 100 pys
- Breastfeeding only – 3.1 / 100 pys
- Pregnancy and breastfeeding – 3.6 / 100 pys



Graybill, AIDS 2020



Chi, Bulletin of WHO 2018

P promising strategy **AE** available evidence **PG** policy guidelines

Integrating preexposure prophylaxis delivery in routine family planning clinics: A feasibility programmatic evaluation in Kenya

Kenneth K. Mugwanya[1]*, Jillian Pintye[1], John Kinuthia[1,2], Felix Abuna[3], Harrison Lagat[3], Emily R. Begnel[1], Julia C. Dettinger[1], Grace John-Stewart[1,4,5,6], Jared M. Baeten[1,4,5], for the PrEP Implementation for Young Women and Adolescents (PrIYA) Program[¶]

Integration of PrEP Services Into Routine Antenatal and Postnatal Care: Experiences From an Implementation Program in Western Kenya

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Pre-exposure prophylaxis uptake and early continuation among pregnant and post-partum women within maternal and child health clinics in Kenya: results from an implementation programme

*John Kinuthia, Jillian Pintye, Felix Abuna, Kenneth K Mugwanya, Harison Lagat, Dickens Onyango, Emily Begnel, Julia Dettinger, Jared M Baeten, Grace John-Stewart, for the PrEP Implementation for Young Women and Adolescents (PrIYA) programme**

Conclusion

Summary

1. Platforms for integrated care exist in the prevention of pregnancy, sexually transmitted infections, and HIV
2. DSD models can enhance MCH and HIV services in a bi-directional manner
3. Approaches should consider the local context—including its needs and opportunities


IMMUNIZATIONS
SERVICES PROVIDED ON THE FOLLOWING DAYS
08:00 HRS — 12:30 HRS
14:00 HRS
MON: ANTENATAL REATTENDANCES — FAMILY PLANNING
• POSTNATAL
• CHILDREN'S CLINIC
TUE: ANTENATAL BOOKINGS — FAMILY PLANNING
• POSTNATAL
• OUTREACH
WED: ANTENATAL — FAMILY PLANNING
• POSTNATAL
THUR: ANTENATAL BOOKINGS — FAMILY PLANNING
• POSTNATAL
• OUTREACH
FRI: CHILDREN'S CLINIC — FAMILY PLANNING
• POSTNATAL, ANTENATAL/B