

**The role of alcohol behavioral research
in the design of HIV prevention
interventions in Africa in the era of ART**

Conclusions

**We must closely attend to alcohol use
when designing HIV prevention
interventions in Africa in the era of ART**

Thank You

Targets for ending the AIDS epidemic

by 2020

90-90-90

Treatment

500 000

New infections among adults

ZERO

Discrimination

by 2030

95-95-95

Treatment

200 000

New infections among adults

ZERO

Discrimination

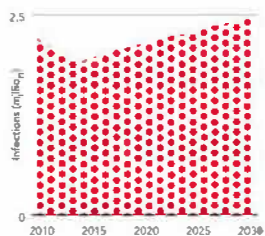
The Fast-Track

NO SCALE-UP—maintain 2013 coverage levels

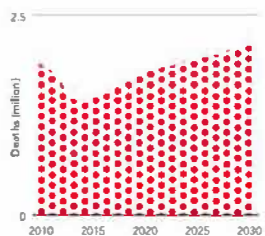


RAPID SCALE-UP—achieve ambitious targets

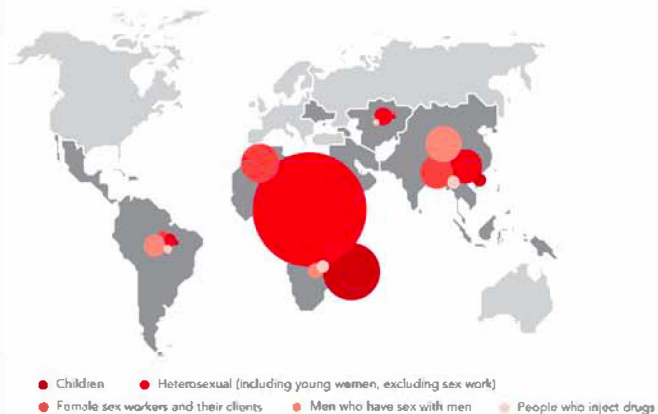
New HIV infections in low- and middle-income countries (millions)



AIDS-related deaths in low- and middle-income countries (millions)



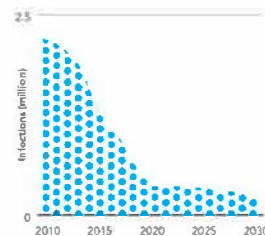
New HIV infections in different population groups, low- and middle-income countries, 2030



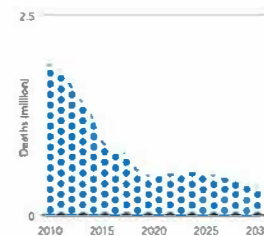
2030

Without scale-up, the AIDS epidemic will continue to outrun the response, increasing the long-term need for HIV treatment and increasing future costs.

New HIV infections in low- and middle-income countries (millions)



AIDS-related deaths in low- and middle-income countries (millions)



New HIV infections in different population groups, low- and middle-income countries, 2030



2030

Rapid scale-up of essential HIV prevention and treatment approaches will enable the response to outpace the epidemic.

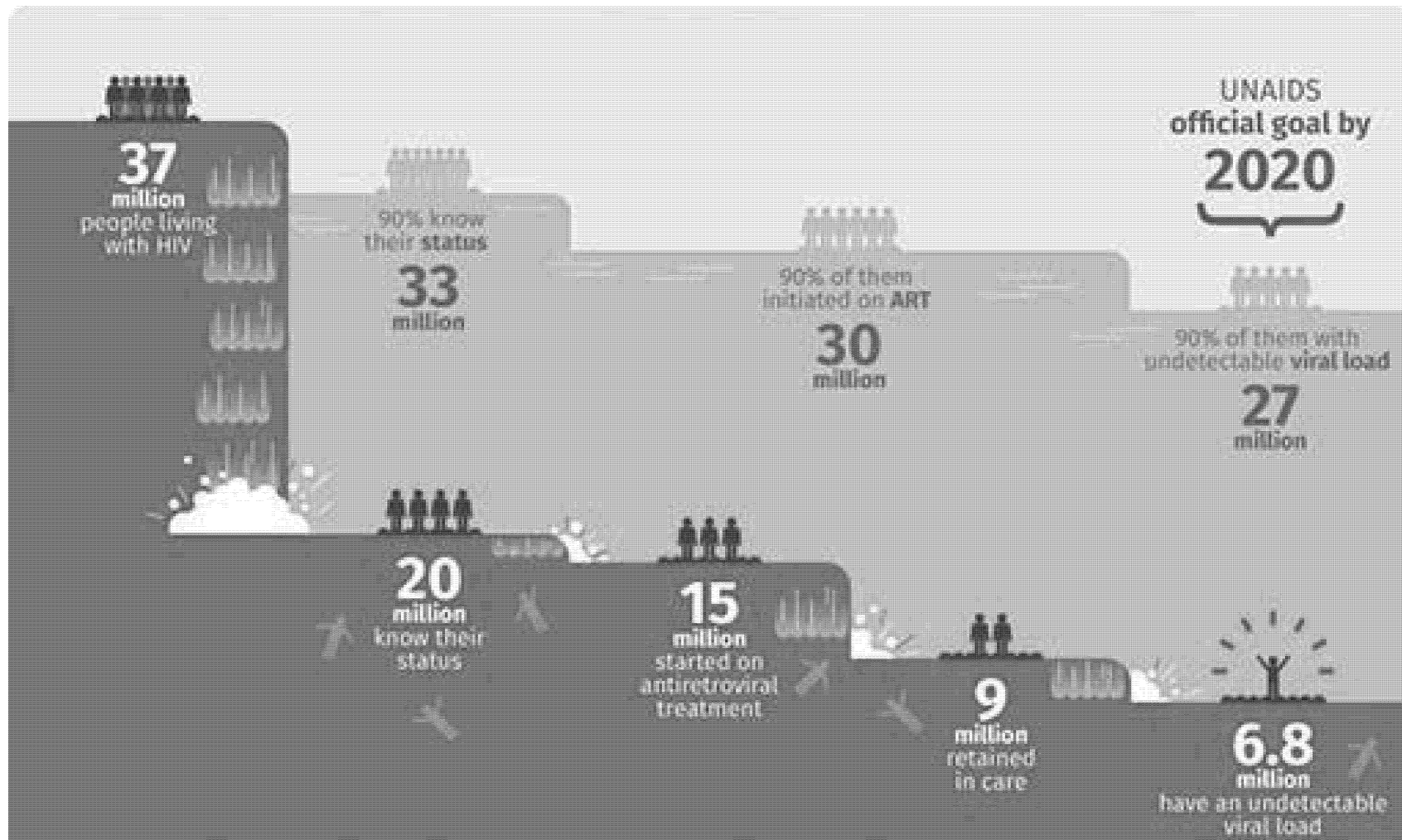
MAJOR BENEFITS:

21 MILLION
AIDS-related deaths averted by 2030

28 MILLION
HIV infections averted by 2030

5.9 MILLION
infections among children averted by 2030

15-FOLD
return on HIV investments

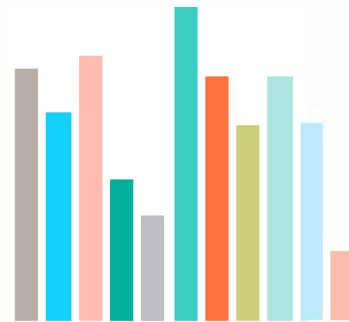


Successful HIV treatment, as measured by an undetectable viral load, not only ensures those living with HIV remain healthy but also plays a key role in limiting new infections.
 Reaching the 90:90:90 UNAIDS targets will require considerable future commitment and investment.



**UNAIDS tracks
country progress
toward achieving
its 90-90-90 goals
in detailed data-
driven analyses**

**UNAIDS
DATA
2017**



Country by Country Score Cards are Very Detailed and Include...

Epi data

Progress toward 90-90-90

HIV testing

ARV coverage

Viral suppression

Comorbidities (i.e., TB)

Prevention

Stigma

Policies

Injection drug use

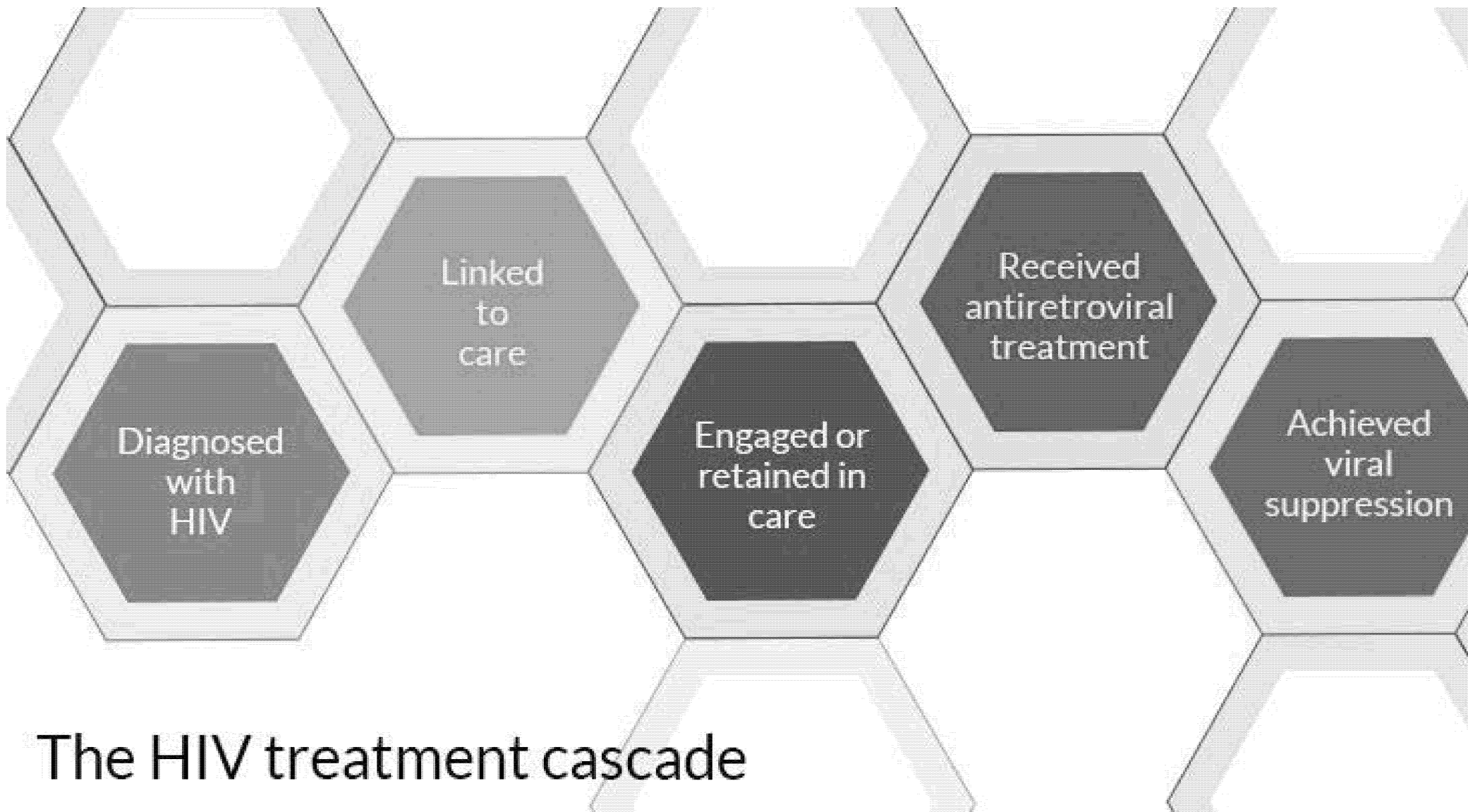
Expenditures

Populations

SOUTH AFRICA			
THE HIV EPIDEMIC			
	2011	2012	2013
New HIV infections	80 000	80 000	81 400
	(40 000-80 000)	(80 000-80 000)	(80 000-80 000)
HIV incidence per 1000 population	11.8	12.1	12.2
	(11.1-12.4)	(11.9-12.4)	(12.0-12.4)
AIDS-related deaths	21 000	21 000	21 000
	(20 000-21 000)	(20 000-21 000)	(20 000-21 000)
People living with HIV	3 100 000	3 100 000	3 100 000
	(3 000 000-3 100 000)	(3 000 000-3 100 000)	(3 000 000-3 100 000)
90-90-90			
		2013	
People living with HIV who are on ART	2 800 000	88%	(79%-95%)
People living with HIV who are on ART and have viral suppression	2 300 000	74%	(65%-83%)
People living with HIV who are virally suppressed	2 300 000	74%	(65%-83%)
CHILDREN AND PREGNANT WOMEN			
	2011	2012	
New HIV infections - children	2000	2000	
	(0-2000)	(0-2000)	
Children living with HIV who are on treatment	98%	98%	
Coverage of pregnant women living with HIV receiving antiretroviral treatment	98%	98%	
HIV COMORBIDITIES			
Estimated number of incident TB cases among people living with HIV (2012)	31 400		
	(30000-32800)		
Prevalence of people living with HIV who also have TB in HIV care	--		
Central cancer screening of women living with HIV	--		
HIV PREVENTION			
Knowledge of HIV prevention among young people (15-24)	95%		
Condom use of last higher risk sex (with a non-regular sex partner) (past 12 months)	--		
- Males	--		
- Females	--		
Women aged 15-24 who know their partner has family planning supplies with modern methods	--		
Men aged 15-24 who are circumcised	91.9%		
Male circumcision performed according to national standards (2012)	92.9%		
People on PMPODE	84		
STIGMA AND DISCRIMINATION			
People's respect for having discriminatory attitudes towards people living with HIV	--		
POLICIES AND REGULATIONS			
	2011		
Community strategy of treatment	Yes		
Law requiring parental consent for adolescents to access sexual and reproductive health services	--		
TBR facilities incorporated in national legislation	Yes		
LEGAL FRAMEWORK			
Law prohibiting arbitrary entry and residence of people living with HIV	Yes		
Recognition of same-sex partners as legal partners for purposes of HIV	Yes		
Standardised CD4 level for treatment initiation	500/600		
HIV EXPENDITURE			
	2011		
Total expenditure	144 000 000		
Domestic public expenditure	138 264 000		
Domestic private expenditure	--		
International expenditure	5 736 000		
KEY POPULATIONS			
SEX WORKERS			
Estimated size of population	--		
HIV prevalence	100%		
Condom use	100%		
Condoms distributed to sex workers enrolled in prevention programmes (2012)	--		
Coverage of HIV prevention programmes	--		
Availability of services due to stigma and discrimination	--		
PEOPLE WHO INJECT DRUGS			
Estimated size of population	--		
HIV prevalence	--		
Condom use	--		
Condoms distributed to sex workers enrolled in prevention programmes (2012)	--		
Coverage of HIV prevention programmes	--		
Availability of services due to stigma and discrimination	--		
TRANSSEXUAL PEOPLE			
Estimated size of population	--		
HIV prevalence	--		
Condom use	--		
Condoms distributed to sex workers enrolled in prevention programmes (2012)	--		
Coverage of HIV prevention programmes	--		
Availability of services due to stigma and discrimination	--		
PEOPLE WHO USE INJECTION DRUGS			
Estimated size of population	--		
HIV prevalence	--		
Condom use	--		
Condoms distributed to sex workers enrolled in prevention programmes (2012)	--		
Coverage of HIV prevention programmes	--		
Availability of services due to stigma and discrimination	--		
PEOPLE WHO USE INJECTION DRUGS			
Estimated size of population	--		
HIV prevalence	--		
Condom use	--		
Condoms distributed to sex workers enrolled in prevention programmes (2012)	--		
Coverage of HIV prevention programmes	--		
Availability of services due to stigma and discrimination	--		

Unless indicated otherwise, data are from the most recent survey available between 2011 and 2013. Prevalence data are generally being updated and may be updated. For updates, please see HIV Statistics Dashboard.

* The 100% population estimates were based on national census data.



The HIV treatment cascade



Alcohol & Your Health	Publications & Multimedia	Research	Research Training	Grants Funding	News & Events	About NIAAA
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HIV/AIDS

HIV/AIDS

Human immunodeficiency virus (HIV) targets the body's immune system and often leads to acquired immune deficiency syndrome (AIDS).

The [U.S. CDC](#) reported that in 2015, 39,513 people were diagnosed with HIV infection in the United States; more than 1.2 million people in the U.S. are living with HIV, and 1 in 8 of them don't know it.

Scientists have learned that alcohol misuse can contribute to the spread of HIV/AIDS and affect treatment for infected patients.

- Abusing alcohol or other drugs can impair judgment, leading a person to engage in risky sexual behaviors.
- People who drink heavily may delay getting tested for HIV and, if they do test positive, they may postpone seeking treatment.
- Alcohol misuse may make it difficult for infected patients to follow the complex medications regimen that is often prescribed to treat HIV/AIDS.
- Alcohol use disorder (AUD) can contribute to conditions such as liver disease and other disorders that have an impact on the progression of HIV infection.



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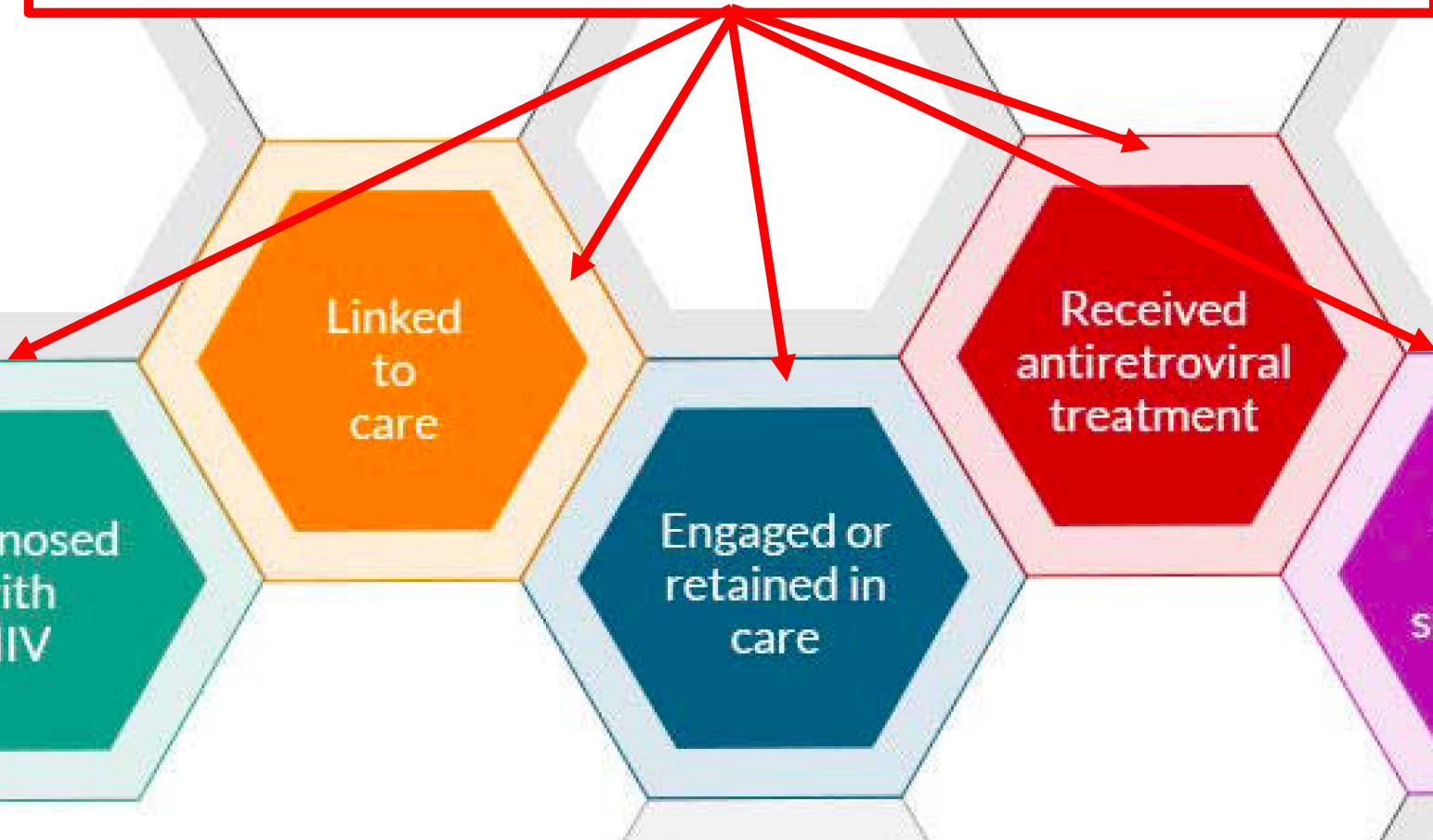
Diagnosed
with
HIV

Linked
to
care

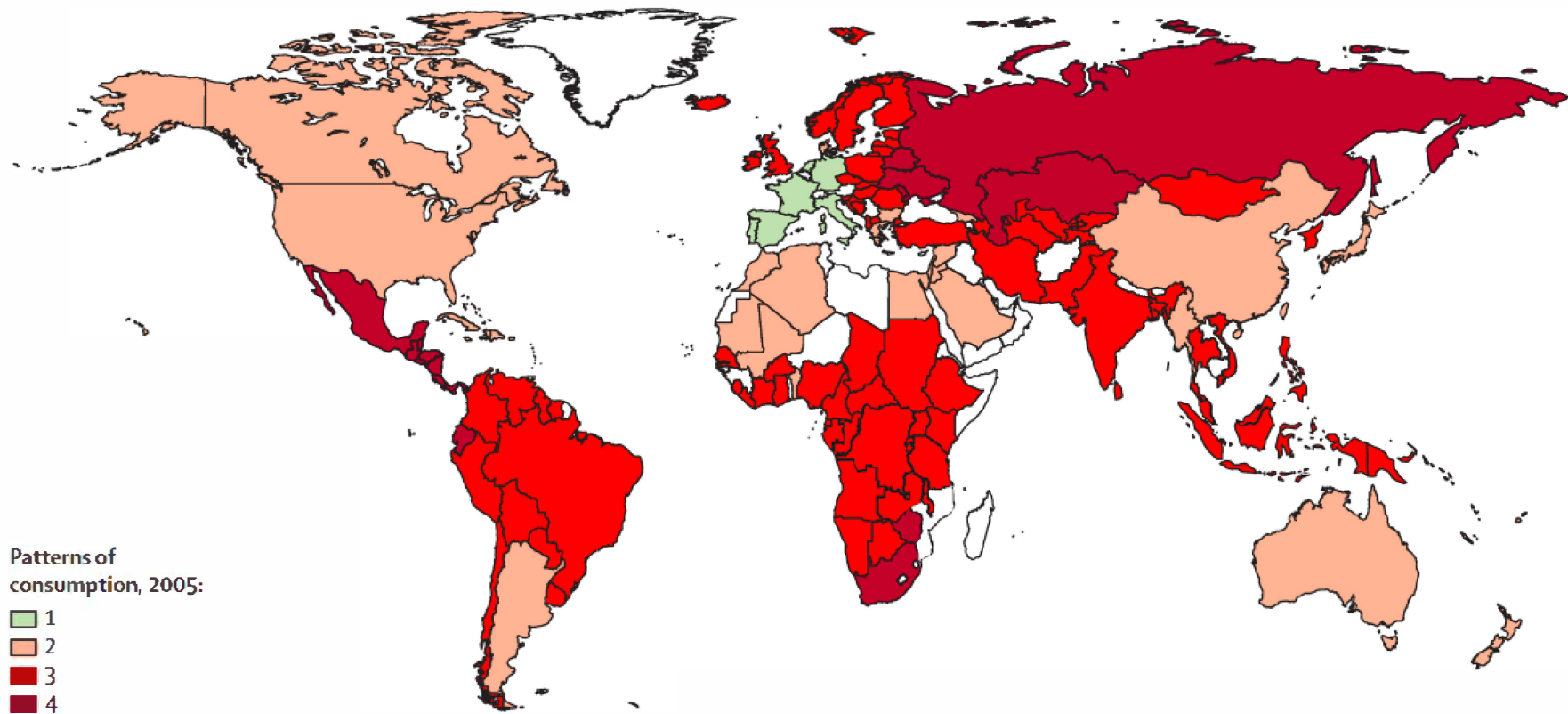
Engaged or
retained in
care

Received
antiretroviral
treatment

Achieved
viral
suppression

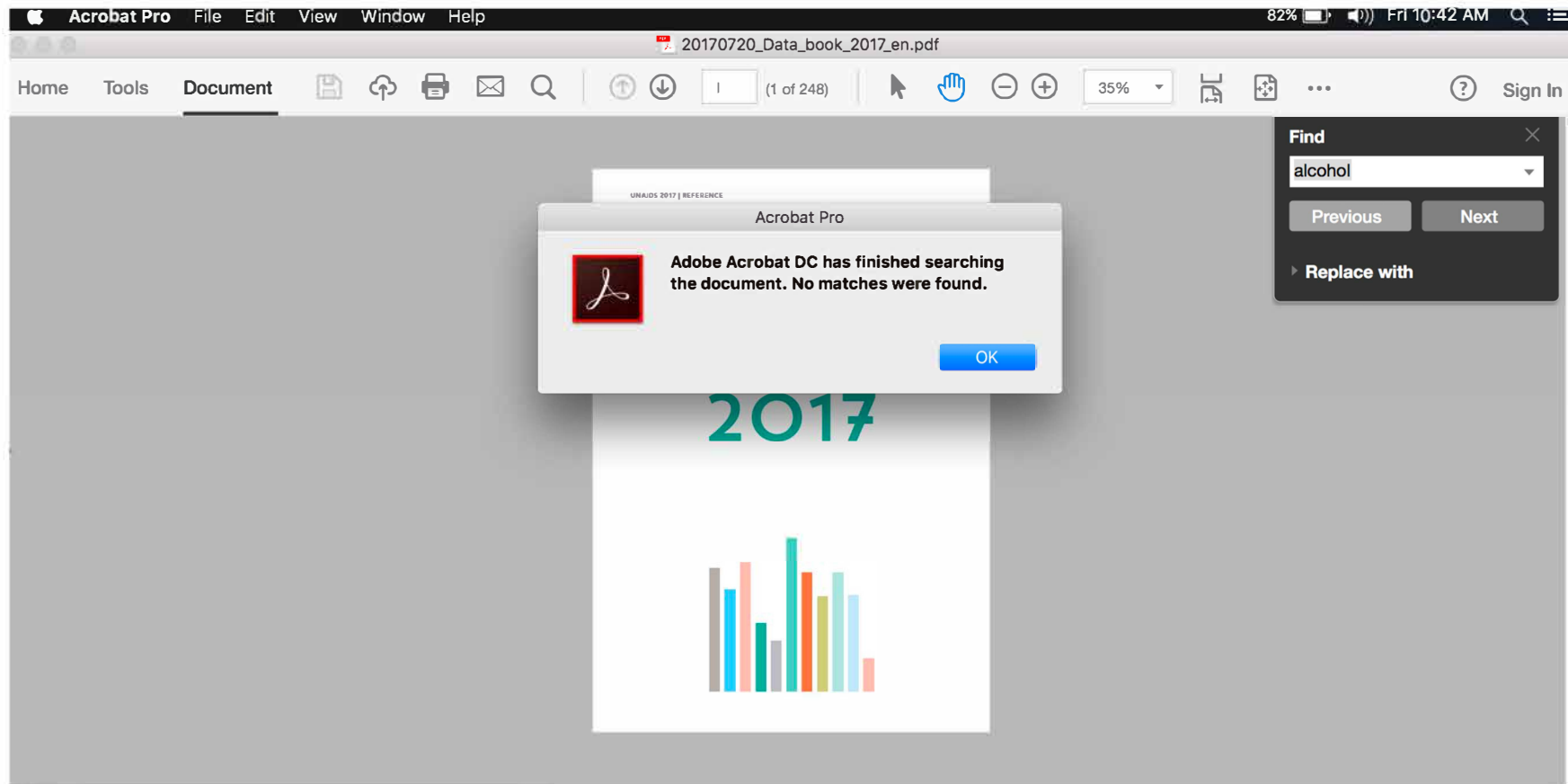


GLOBAL DISTRIBUTION OF HAZARDOUS DRINKING



1= least hazardous; 4 = most hazardous

UNAIDS does not monitor (or even mention) alcohol use in relation to the 90-90-90 goals



**To reduce new infections in the
Era of ART...**

Treatment as Prevention (TasP)

AND THEREFORE

Prevention is Treatment (PisT)[®]



Prevention is Treatment (PisT)[®]

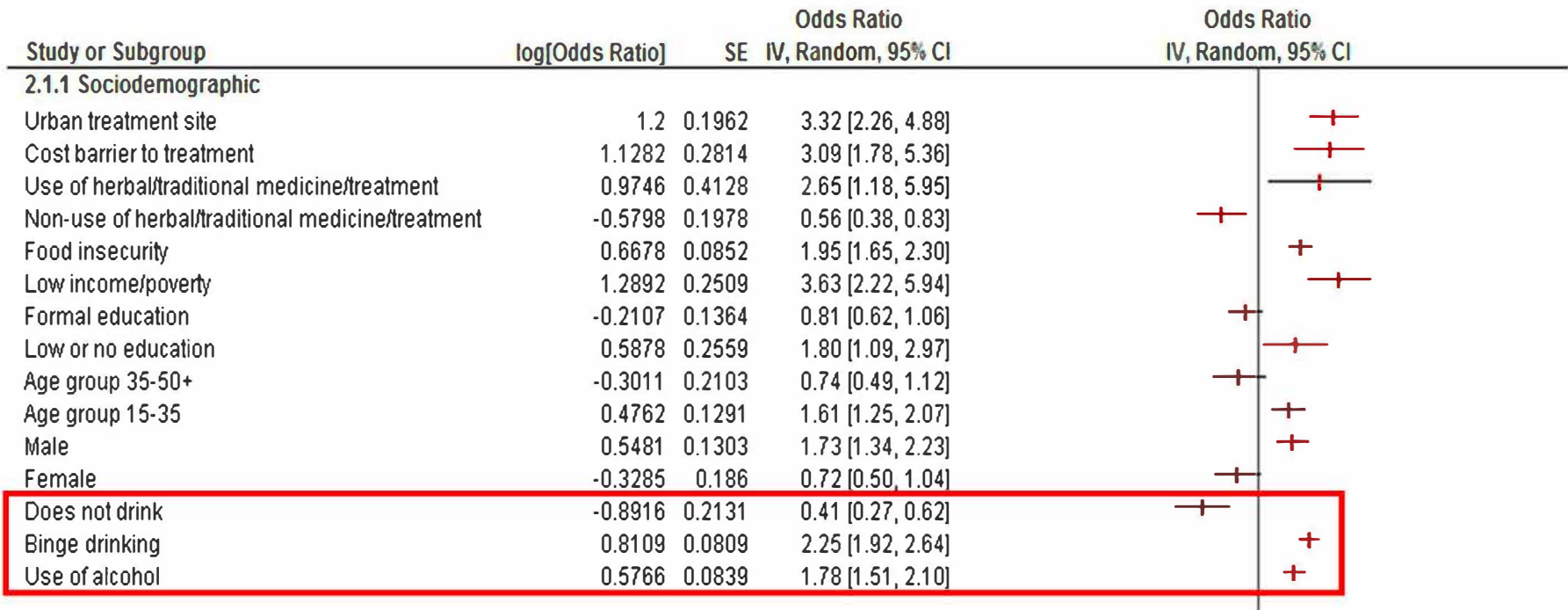
pist. Obsolete spelling of pissed; simple past tense and past participle of piss.

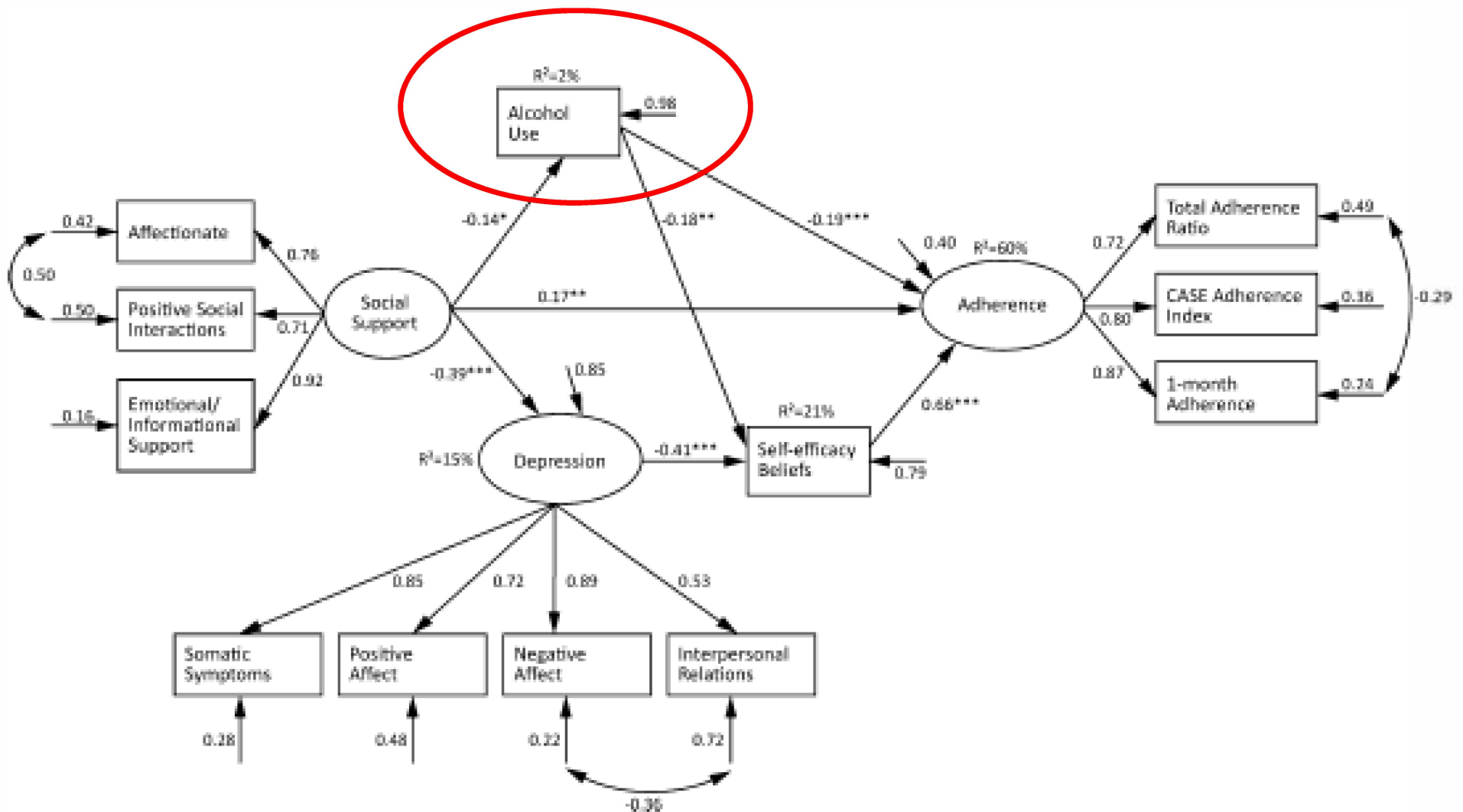


Alcohol Use is a
robust predictor of
non-adherence to
ART (see Lori)



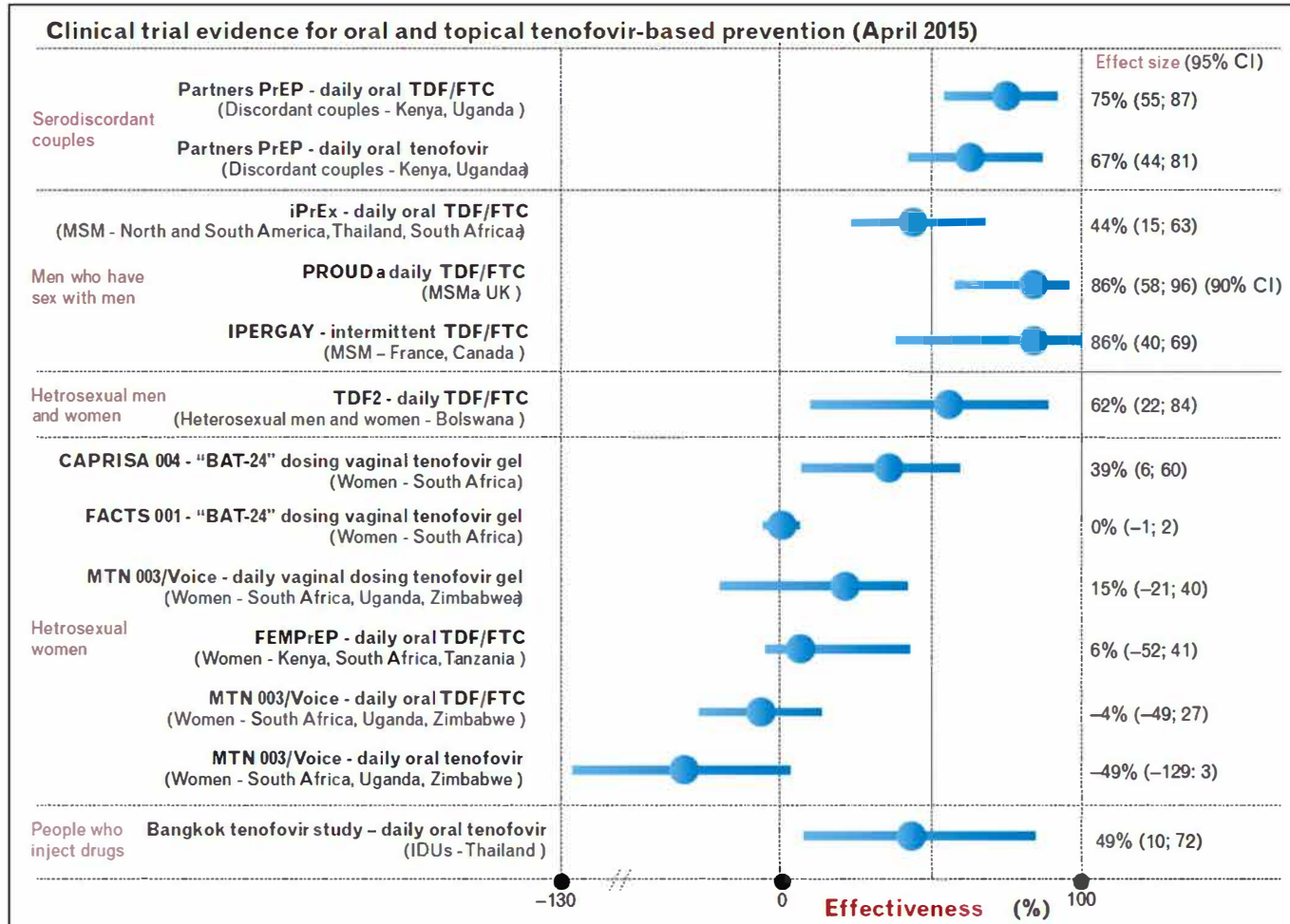
Forrest plot for determinants of non-adherence to ART in sub-Saharan Africa.





HIV Prevention
hinges on
adherence



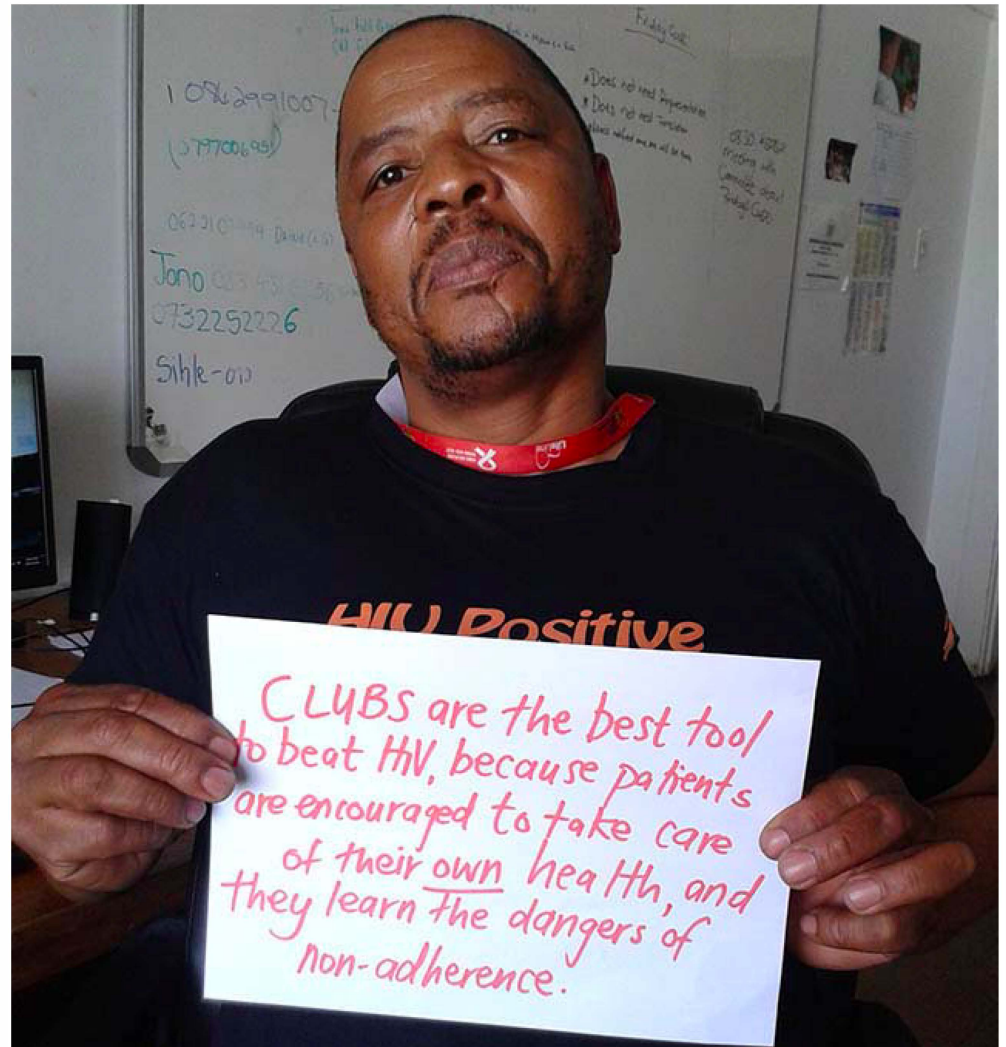


*Mayer KH, Ramjee G. The current status of the use of oral medication to prevent HIV transmission. Curr Opin HIV AIDS. 2015;10:226-232.

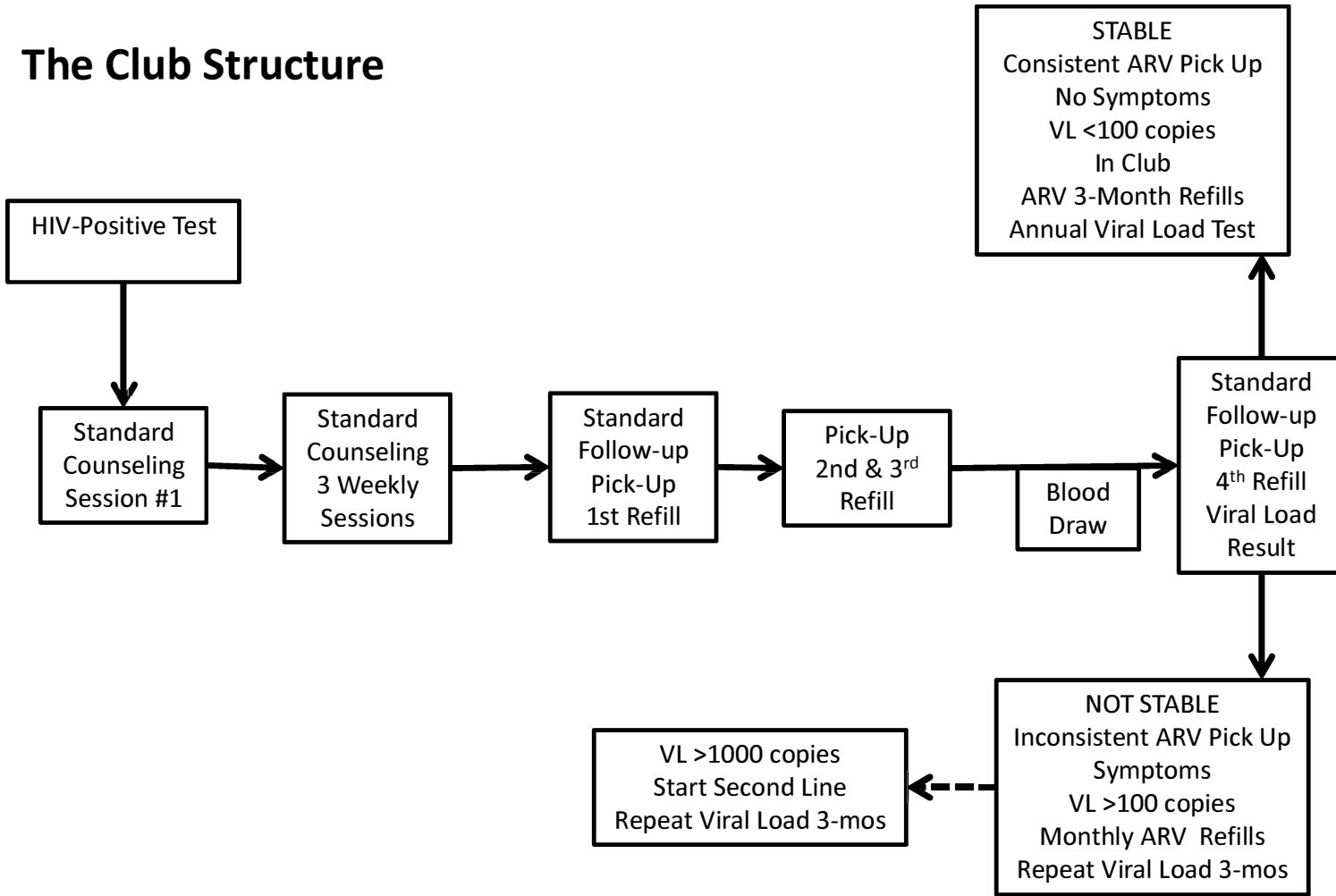
Major PrEP Trials

Clinical Trial	Participants	<u>Medication(s)</u>	mITT Efficacy % (CI)	Adjusted for Adherence % (CI)
Bangkok TDF	Injection drug users	TDF	49 (18-90)	74 (17-94)
Partners PrEP	Heterosexual discordant couples	TDF	67 (44-81)	86 (67-94)
		TDF/FTC	75 (55-87)	90 (58-98)
iPrEx	Men who have sex with men	TDF/FTC	44 (15-63)	92 (40-99)
Fem-PrEP	Heterosexual women	TDF/FTC	NS	
VOICE	Heterosexual women	TDF	NS	
		TDF/FTC	NS	

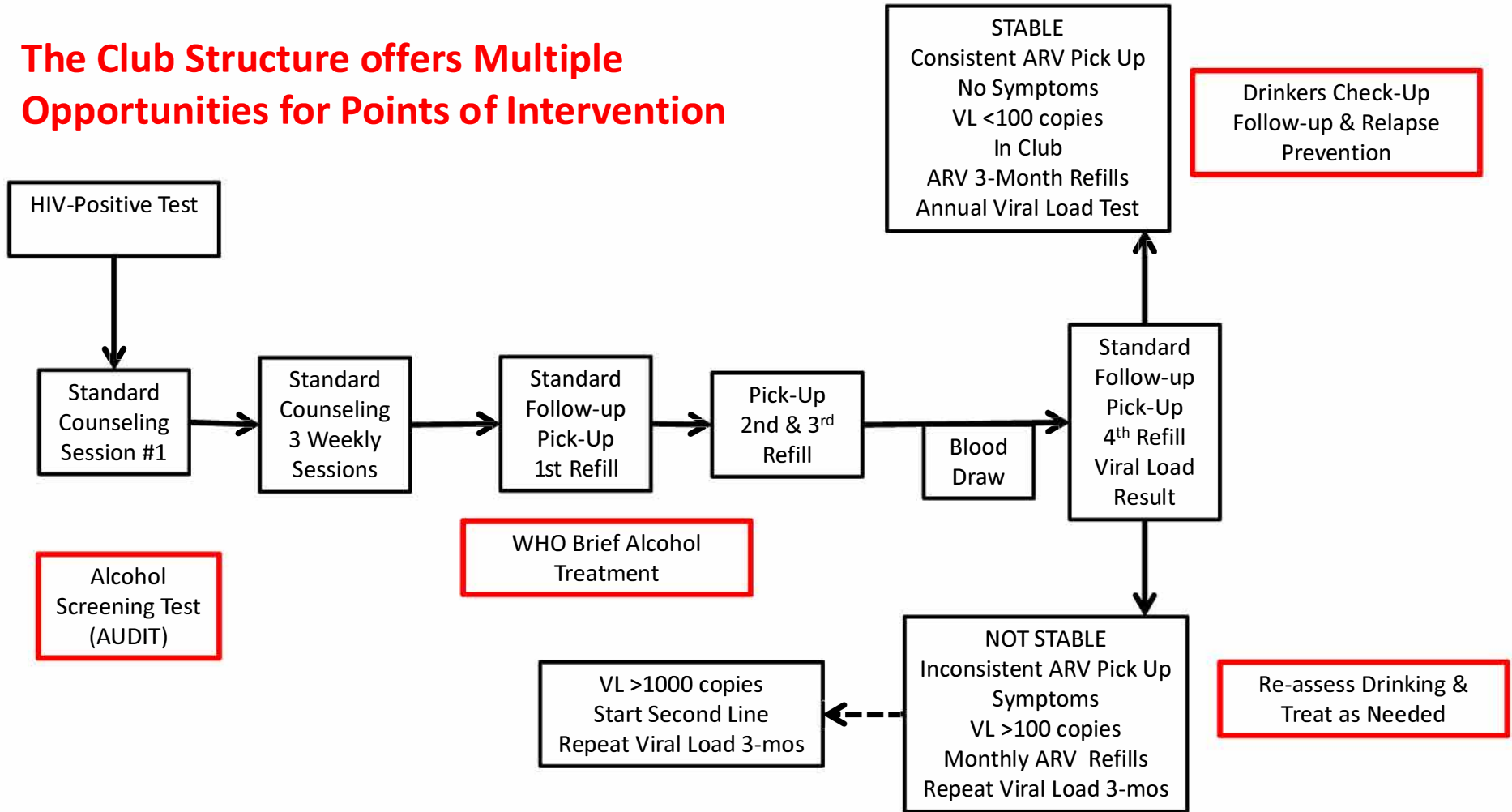
ART in southern
Africa occurs in a
context of task
shifting and
differential care



The Club Structure



The Club Structure offers Multiple Opportunities for Points of Intervention



Survey of Patients Receiving ART in a Cape Town Clinic

	Not in Club (N = 62)		In Club (N = 164)	
	N	%	N	%
Men	12	19	39	24
Women	50	81	127	76
Alcohol Use				
None	21	33	63	38
Monthly	17	27	49	29
Weekly +	24	40	52	33
Any alcohol use	41	67	101	62
Among Drinkers: Drink 6+				
< Monthly	20	48	55	54
Monthly +	21	52	47	46

**Alcohol-ART
Interactive
Toxicity
Beliefs**



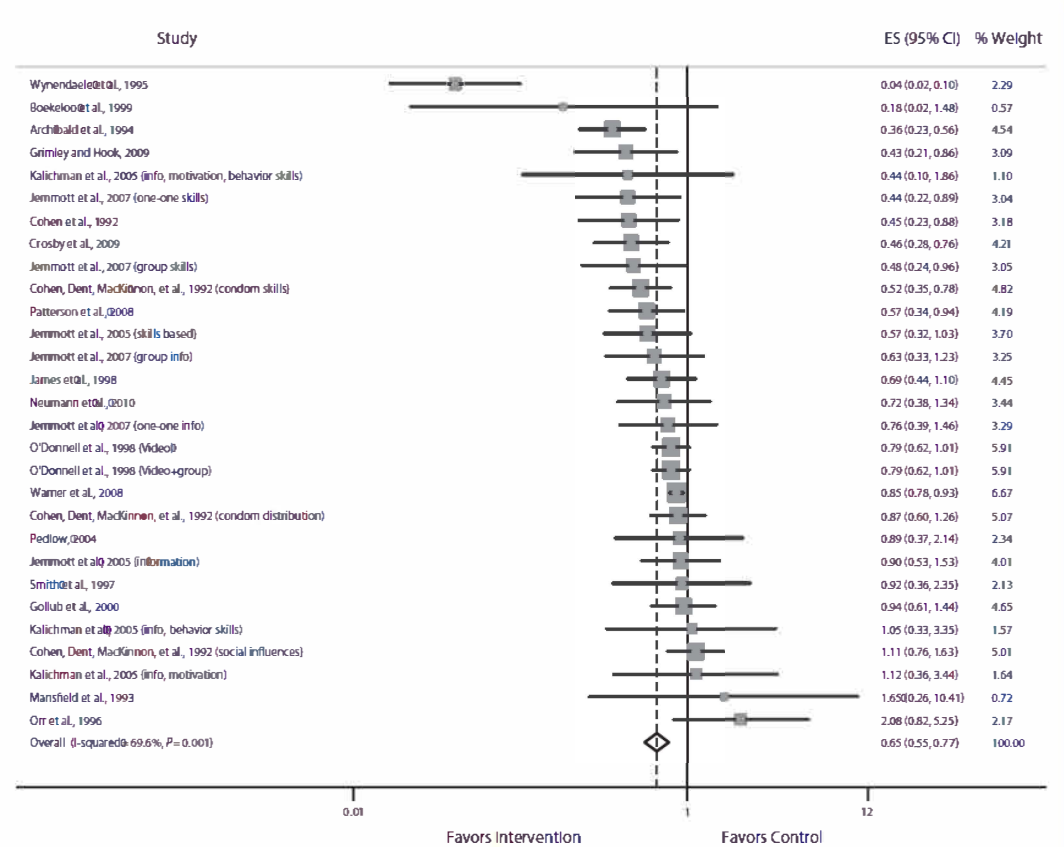
Survey of Patients Drink Alcohol and are Receiving ART in a Cape Town Clinic

	Not in Club (N = 41)		In Club (N = 101)	
	N	%	N	%
A clinic counselor or nurse has talked with you about drinking alcohol when taking ARV tablets	34	83	81	80
Alcohol and ARV tablets should never be mixed	36	88	78	77
A person should stop taking their ARV tablets if they are drinking alcohol	9	22	24	23
I skip taking my ARV tablets because I will be drinking alcohol	11	27	15	15

There are plenty of evidence-based brief alcohol interventions ready to enhance ART adherence



And plenty of evidence-based behavioral HIV prevention interventions



Note: CI = confidence interval; ES = effect size. The figure presents data as odds ratios and corresponding confidence intervals for each intervention. Weights are from random effects analysis. CIs represent the relative weight of the intervention on estimates. Larger confidence intervals correspond to less relative weight and smaller sample size while smaller confidence intervals correspond to greater relative weight and larger sample sizes. Effect sizes < 1 are indicative of fewer infections in the intervention group relative to the control group.

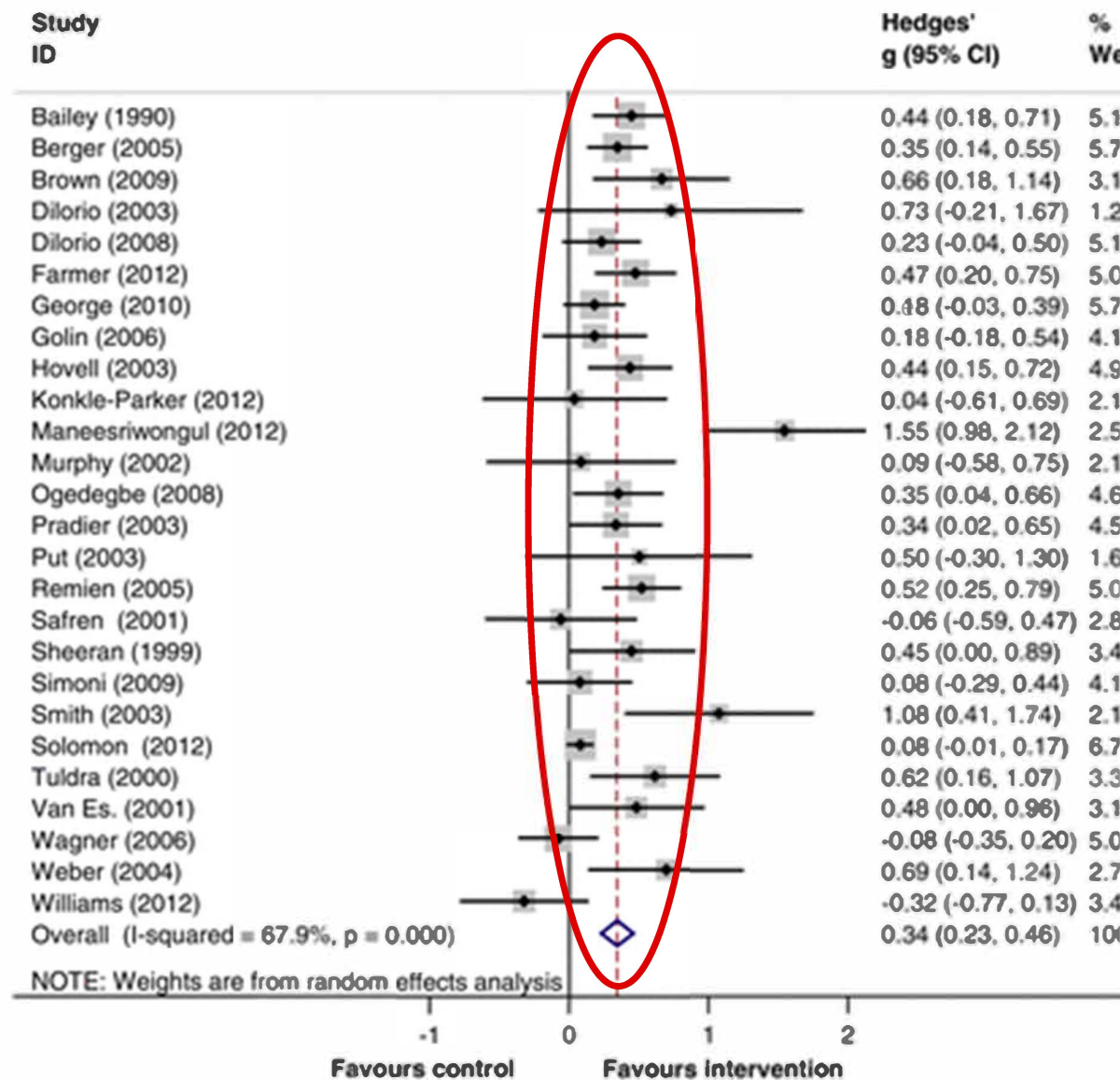
FIGURE 2—Forest plot of sexually transmitted infection incidence effect sizes (odds ratios), ordered by magnitude.

Eaton et al., 2012

And evidence-based
behavioral ART
adherence
interventions



Multi-component cognitive-behavioral interventions for adherence in chronic illness



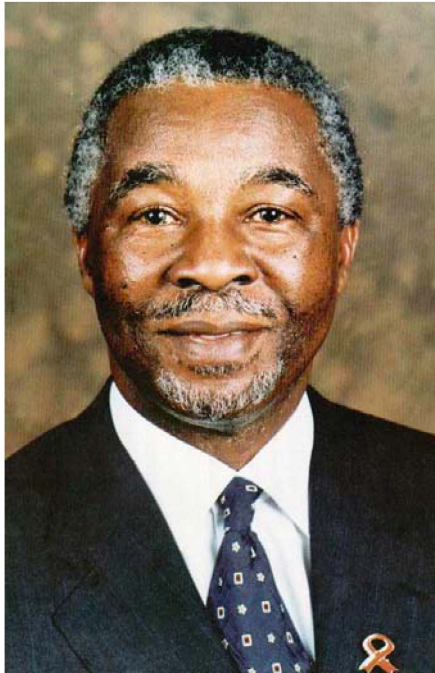
Easthall et al., 2014 *BMJ*

**What ever happened to
Combination Prevention?**

Emerging Issues

Medical Mistrust & the Legacy of AIDS Denialism





Former President Thabo Mbeki

300,000+ South Africans died as a result of failure to roll out HIV treatments

35,000+ South African pediatric HIV infections could have been averted



The Late Former Health Minister Manto Tshabalala-Msimang

Emerging Issues

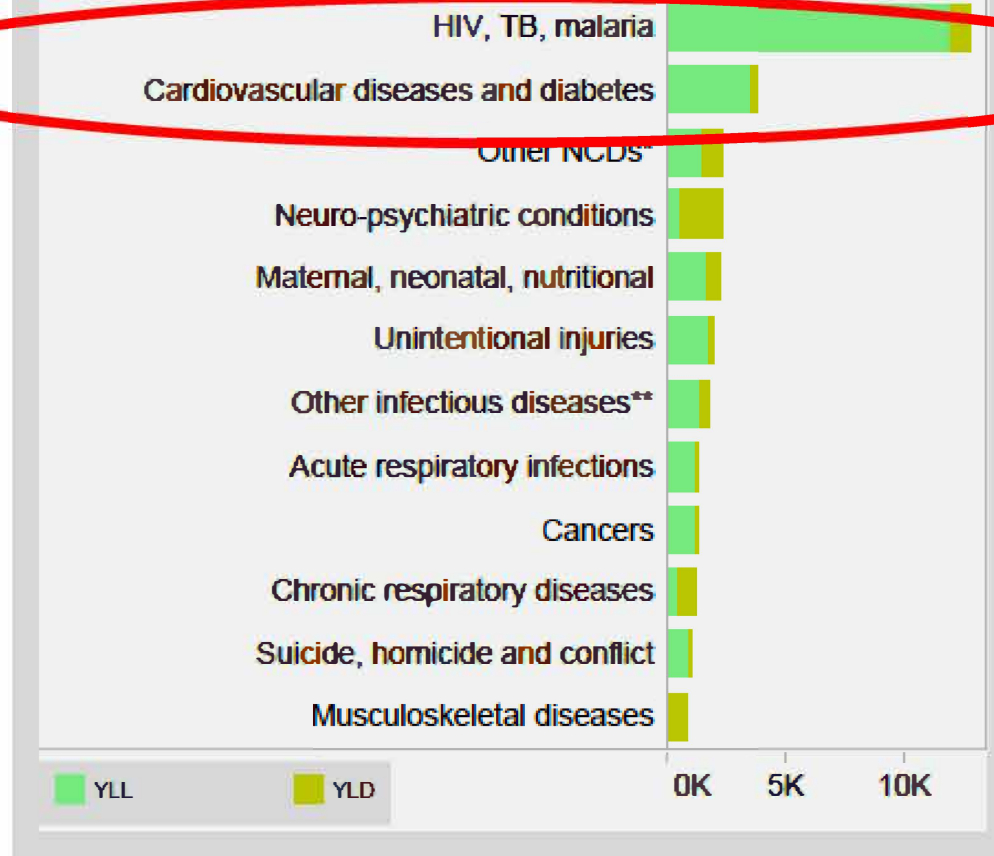
Alcohol complicates HIV-Comorbidities

Beyond TB



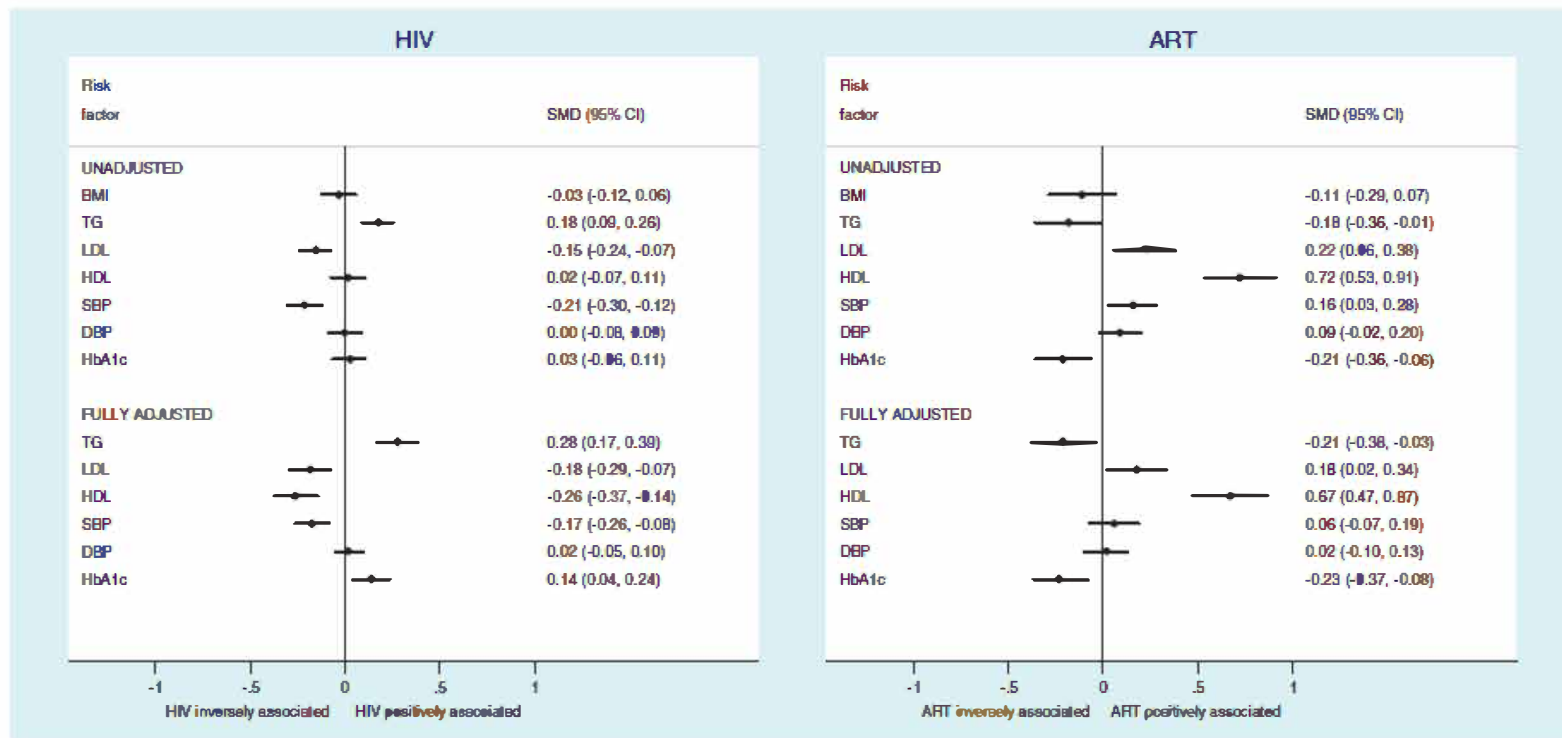
Alcohol impacts HIV disease progression, and metabolic conditions associated with obesity, with potentially synergizing effects (see Dominica)

Disease Burden, South Africa, 2012



Association of HIV and ART with cardiometabolic traits in sub-Saharan Africa: a systematic review and meta-analysis

David G Dillon,^{1,2} Deepti Gurdasani,^{1,2} Johanna Riha,^{1,2} Kenneth Ekoru,^{1,2,3} Gershim Asiki,³

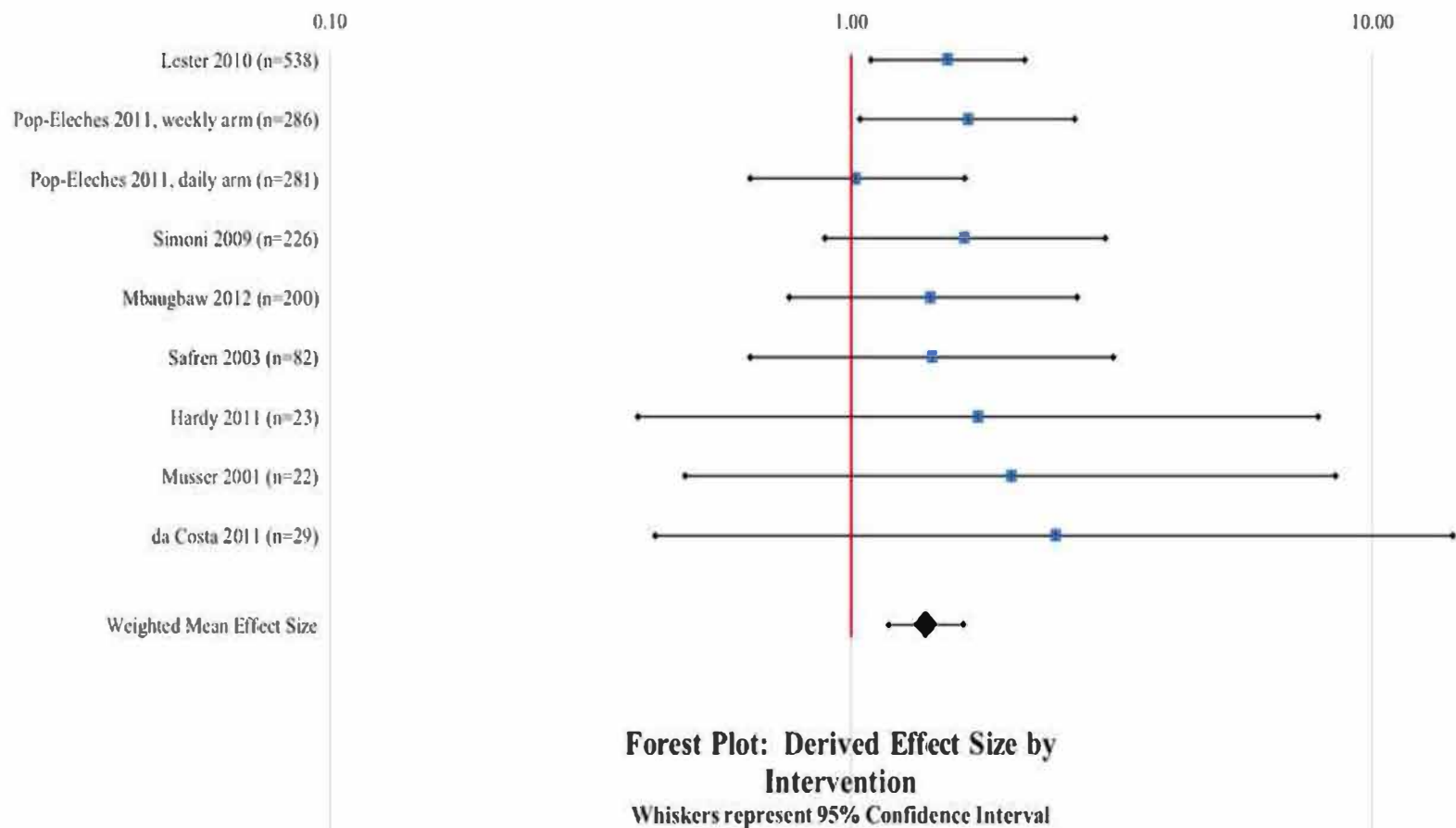


Emerging Issues

Mobile Technologies to Deliver HIV Cascade Interventions in Africa

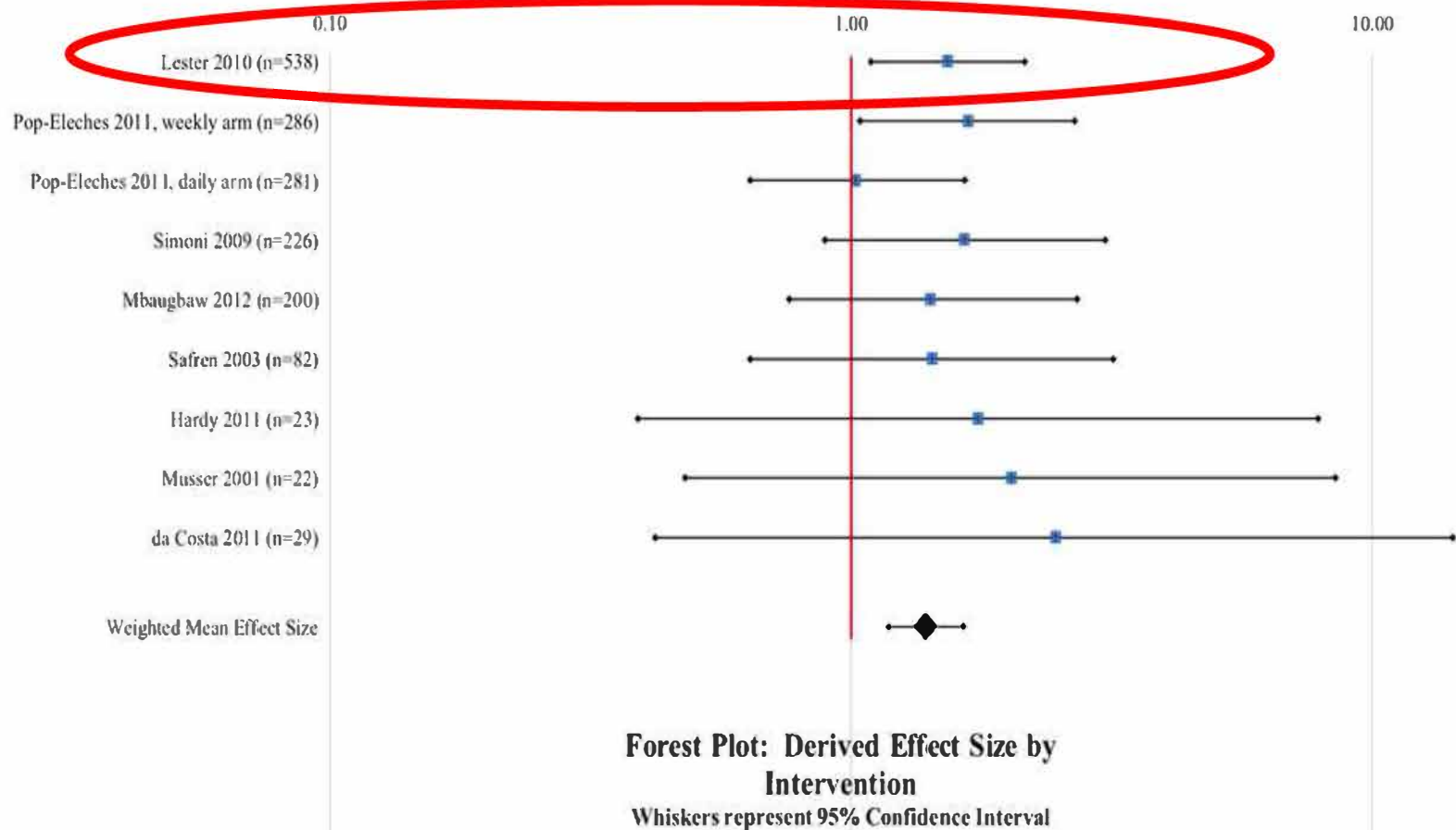


Text Message Interventions to Improve ART Adherence



Finitsis DJ, Pellowski JA, Johnson BT (2014) Text Message Intervention Designs to Promote Adherence to Antiretroviral Therapy (ART): A Meta-Analysis of Randomized Controlled Trials. PLoS ONE 9(2): e88166. doi:10.1371/journal.pone.0088166

Text Message Interventions to Improve ART Adherence



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	SMS group (number [%])	Control group (number [%])	RR (95% CI)*	p value
Primary outcome				
Intention-to-treat analysis†				
Self-reported adherence (>95%)	168 (62%)	132 (50%)	0.81 (0.69-0.94)	0.006
Viral suppression (<400 copies per mL)	156 (57%)	128 (48%)	0.85 (0.72-0.99)	0.04
Complete-case analysis‡				
Self-reported adherence§	168 (91%)	122 (91%)	1.00 (0.94-1.07)	0.94
Viral suppression¶	156 (75%)	128 (66%)	0.88 (0.77-1.00)	0.047
Secondary outcomes				
Total attrition (missing)	53 (19%)	61 (23%)	1.24 (0.82-1.89)	0.31
Loss to follow-up	17 (6%)	27 (10%)	1.69 (0.91-3.23)	0.094
Mortality	25 (9%)	30 (11%)	1.27 (0.72-2.22)	0.42
Withdrawal	7 (3%)	3 (1%)	2.26 (0.59-8.67)	0.34
Transfer out	4 (1%)	1 (0%)	0.25 (0.19-2.17)	0.38

Percentages do not add up to 100% in some cases because of rounding. *For non-adherence or virologic failure.

Emerging Issues

Importance of collaborations in alcohol research



**Collaborative Research on
Addiction at NIH (CRAN)**

The significance
of collaborative
drinking cannot
be overstated



Conclusions

**We must closely attend to alcohol use
when designing HIV prevention
interventions in Africa in the era of ART**

Thank You

Insert obligatory picture of NIAAA Program Officer visiting research site here





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