



CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA



CAPRISA IS A UNAIDS
COLLABORATING CENTRE FOR
HIV RESEARCH AND POLICY

The HIV Epidemic: Progress & Challenges

Southern African HIV Clinicians Society Conference
26 September 2014, Cape Town

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Director: CAPRISA

Chair: UNAIDS Scientific Expert Panel

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Professor in Clinical Epidemiology, Columbia University

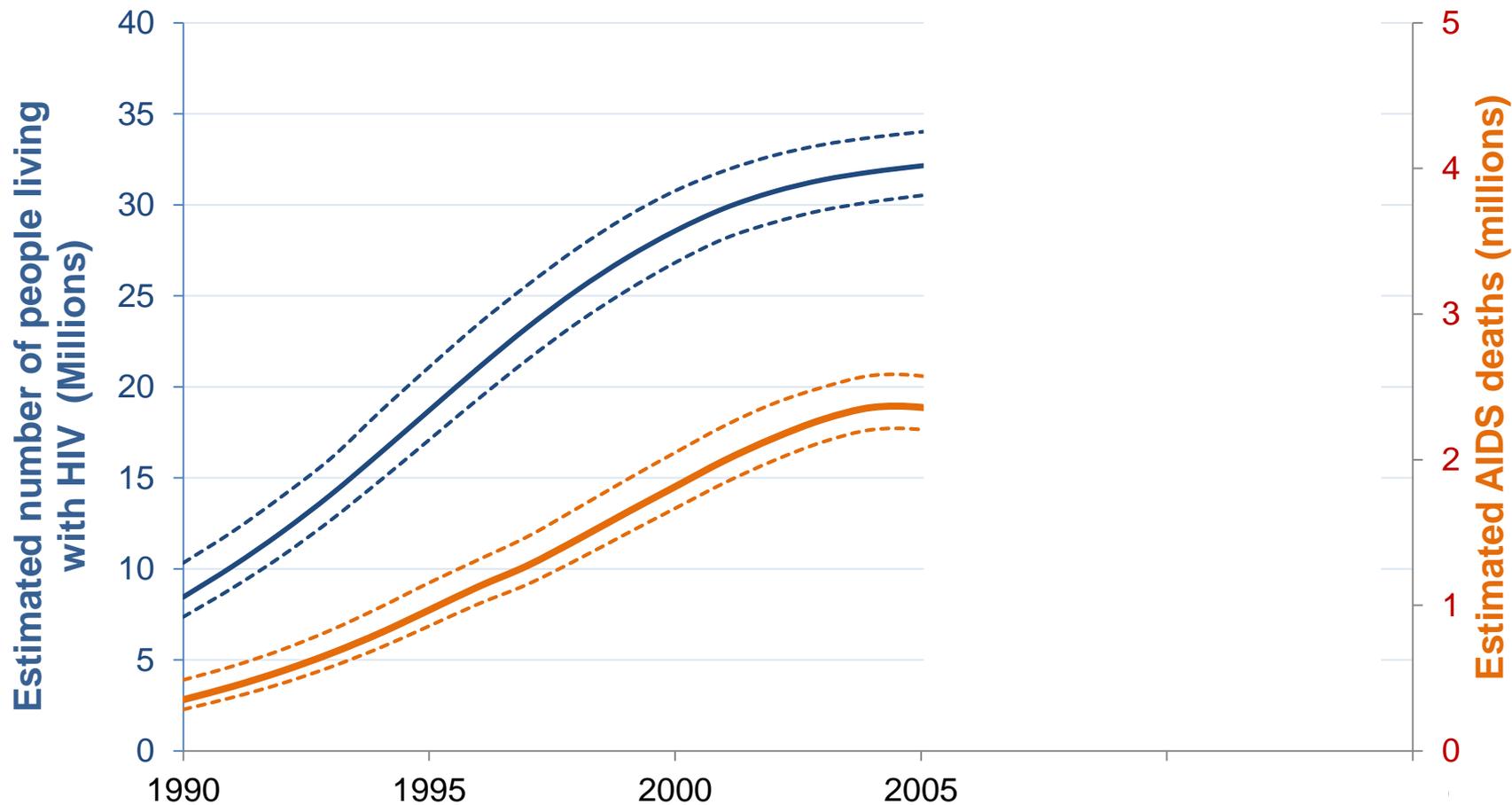
Adjunct Professor of Medicine, Cornell University

Associate, Ragon Institute of MGH, MIT and Harvard

Overview

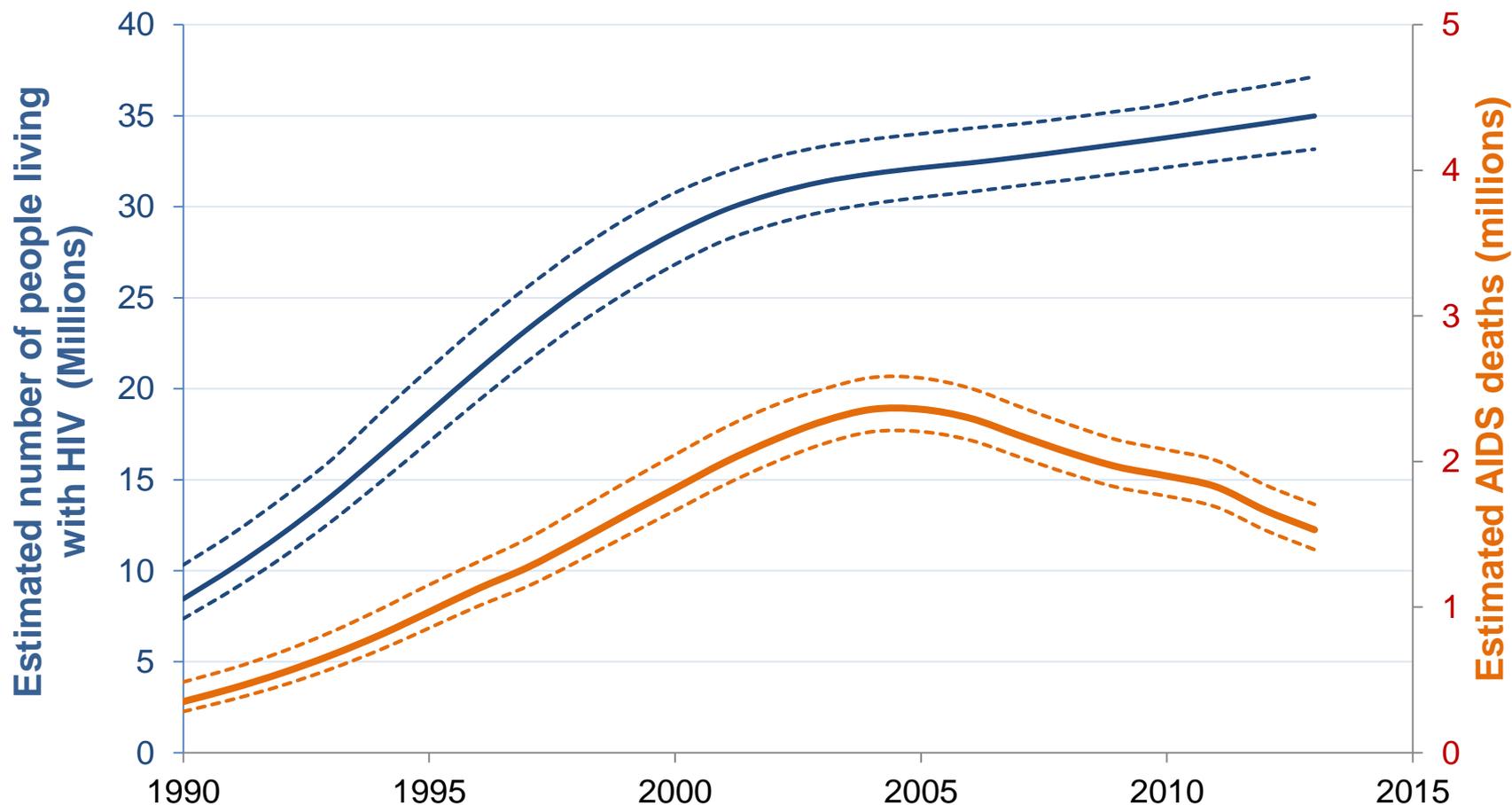
- **The first 25 years of HIV/AIDS...**
- **A changing HIV/AIDS epidemic: Recent trends**
- **Two key factors impacting HIV epidemiology:**
 - Series of new HIV prevention research results
 - Growth in resources for treatment & prevention
- **Ongoing challenges in South Africa**
 - high HIV burden in young women
- **Envisioning a future...**
- **Conclusion**

The first 25 years of HIV: Global number of people living with HIV & number of HIV-related deaths: 1990-2005



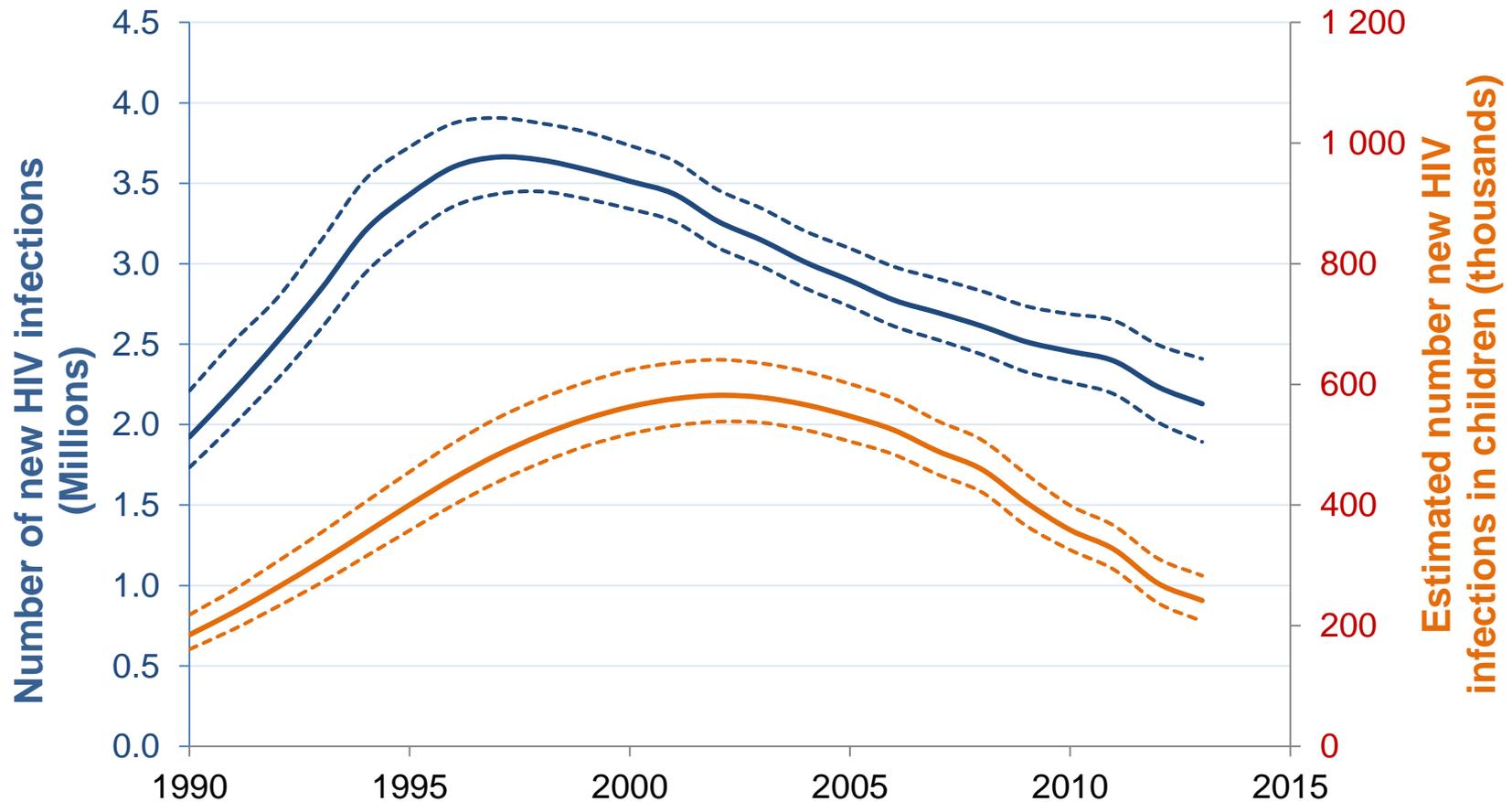
Source: UNAIDS Global Report 2014

Global number of people living with HIV & HIV-related deaths: Changes post-2005



Source: UNAIDS Global Report 2014

Global number of new HIV infections in adults & children: 1990-2013

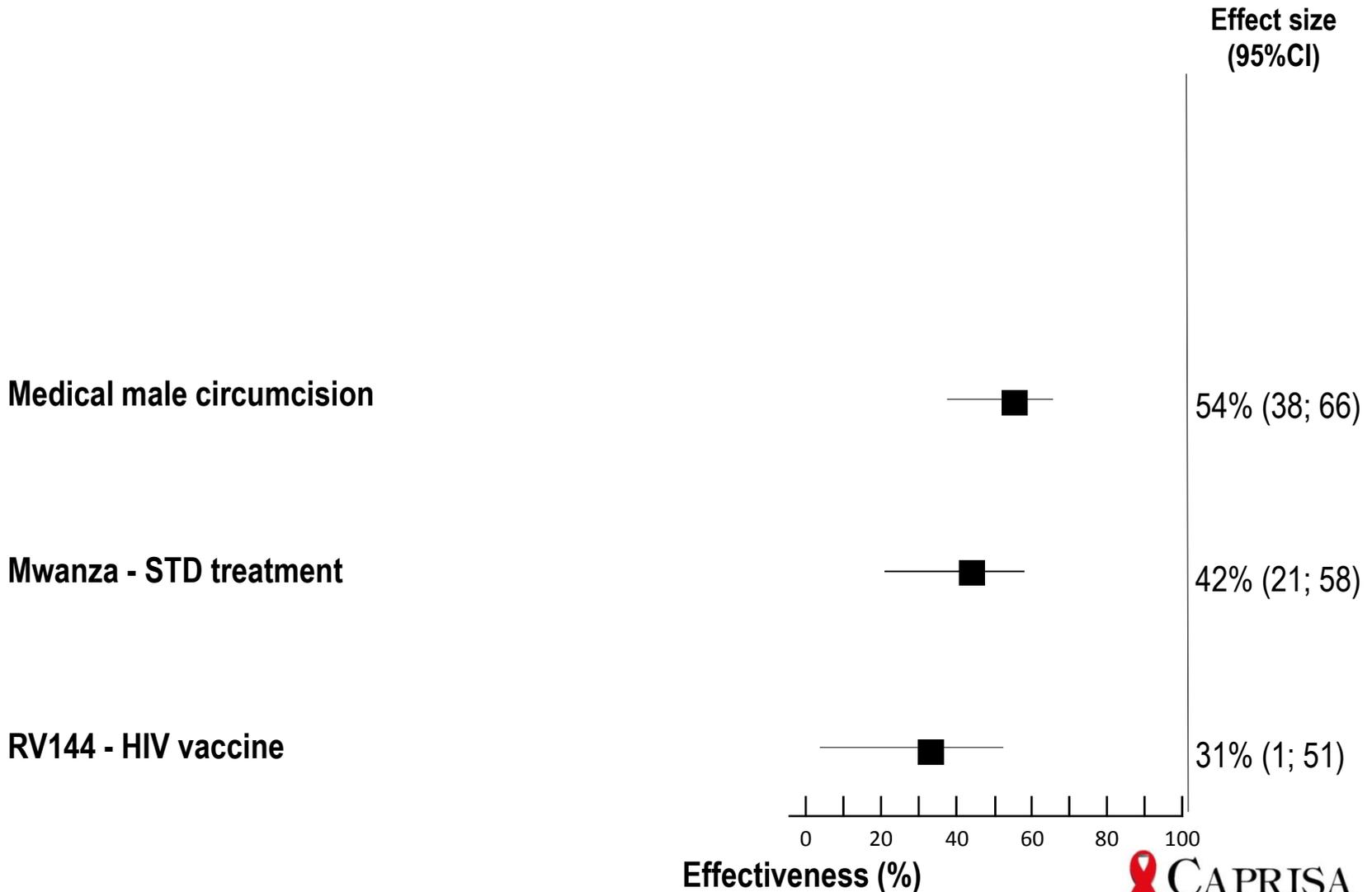


Source: UNAIDS Global Report 2014

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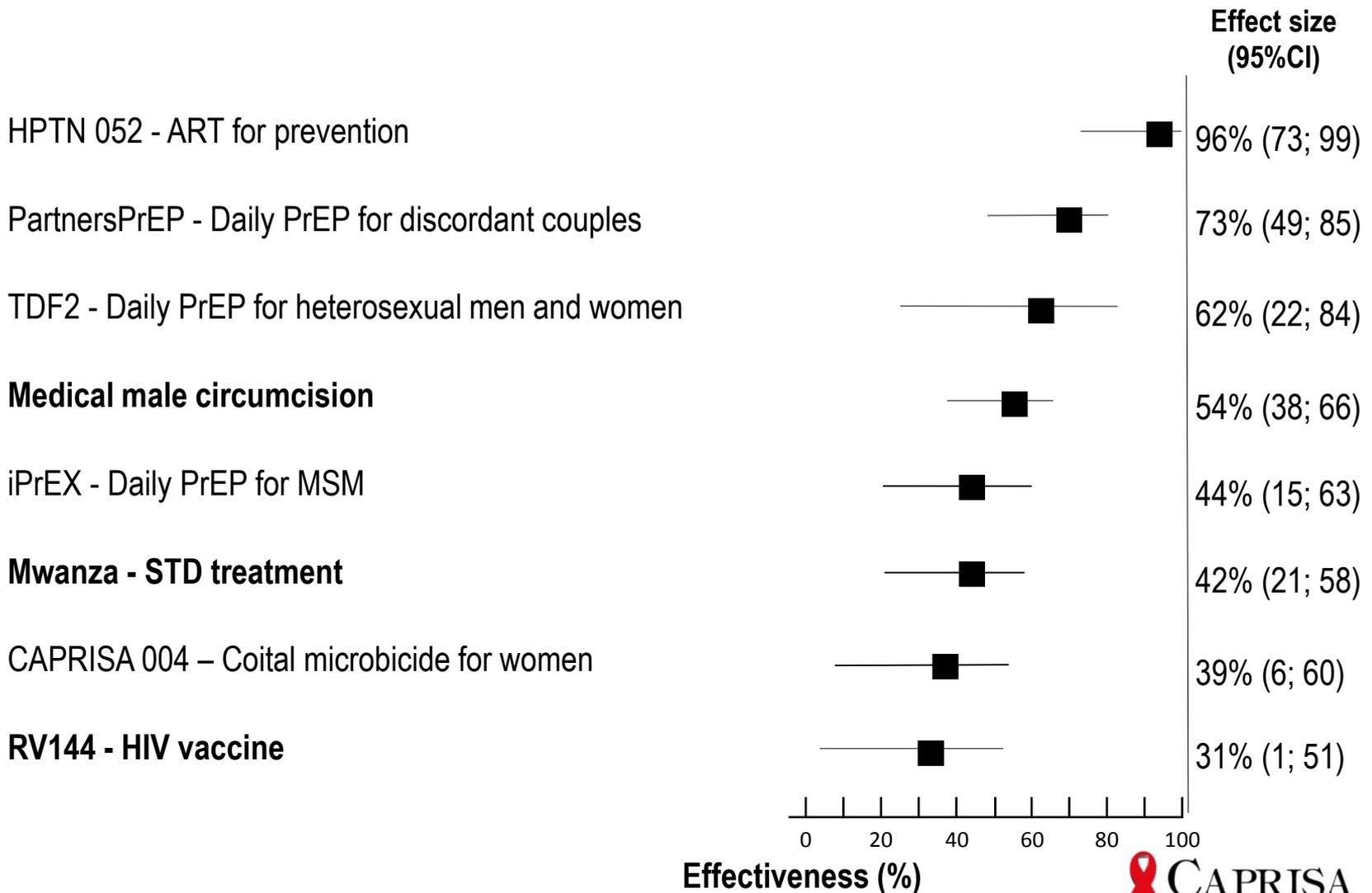
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Clinical trial evidence for preventing sexual HIV transmission – July 2010



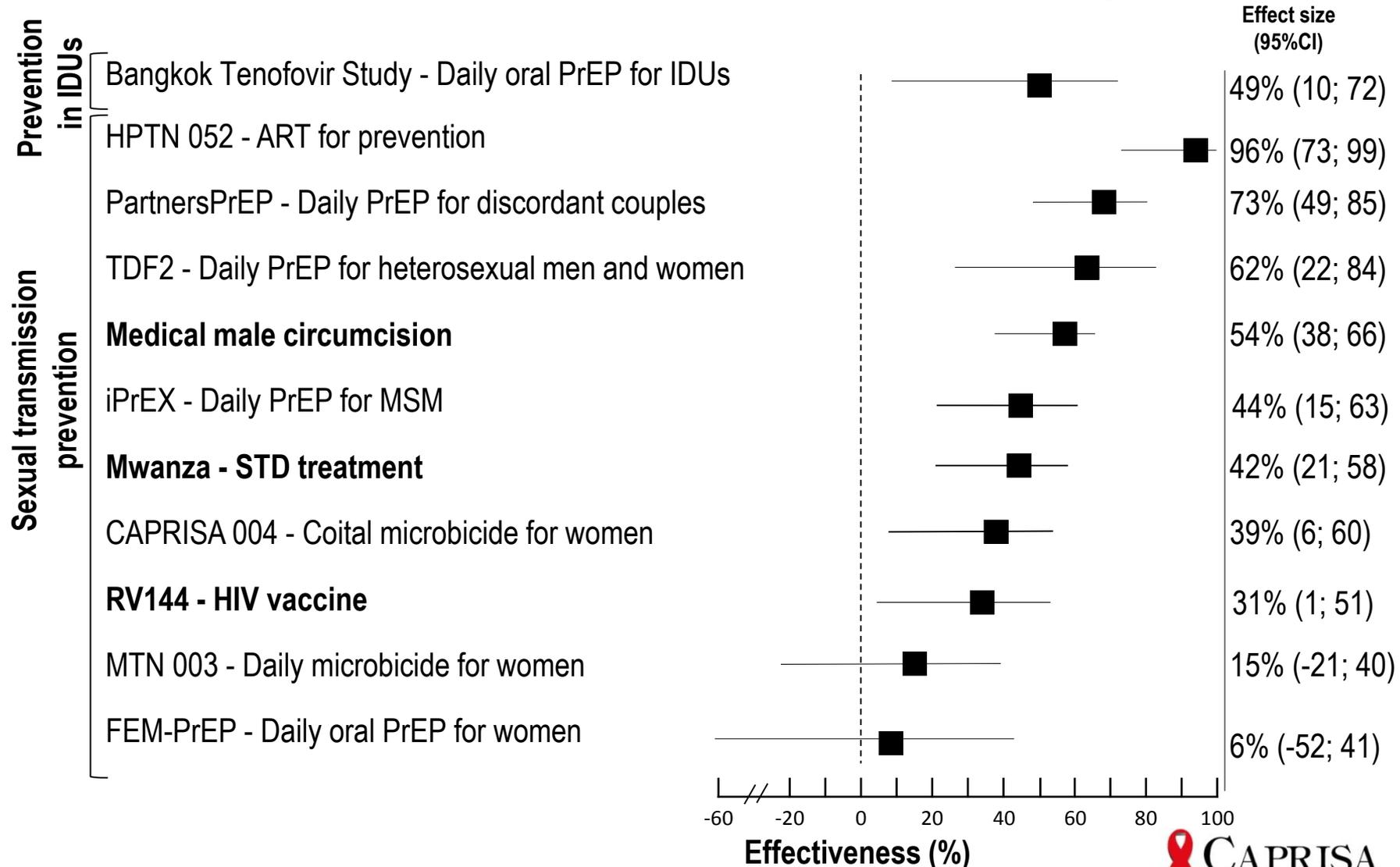
Source: Adapted from Abdool Karim SS & Abdool Karim Q. Lancet 2011

Clinical trial evidence for preventing sexual HIV transmission – July 2011



Source: Adapted from Abdool Karim SS & Abdool Karim Q. Lancet 2011

Clinical trial evidence for preventing sex/IDU HIV transmission – July 2013



Source: adapted from Abdool Karim SS. Lancet 2013

**ARV
prophylaxis**

**Male
circumcision**



Auvert B, PloS Med 2005
Gray R, Lancet 2007
Bailey R, Lancet 2007

**Treatment of
STIs**



Grosskurth H, Lancet 2000

Female Condoms



Male Condoms



**HIV Counselling
and Testing**



Coates T, Lancet 2000
Sweat M, Lancet 2011

**Behavioural
Intervention**

- **Abstinence**
- **Be Faithful**



**Treatment for
prevention**



Cohen M, NEJM, 2011
Donnell D, Lancet 2010
Tanser, Science 2013



**Microbicides
for women**

Abdool Karim Q, Science 2010

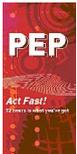
**Oral pre-exposure
prophylaxis**



Grant R, NEJM 2010 (MSM)
Baeten J, NEJM 2012 (Couples)
Thigpen M, NEJM 2012 (Heterosexuals)
Choopanya K, Lancet 2013 (IDU)

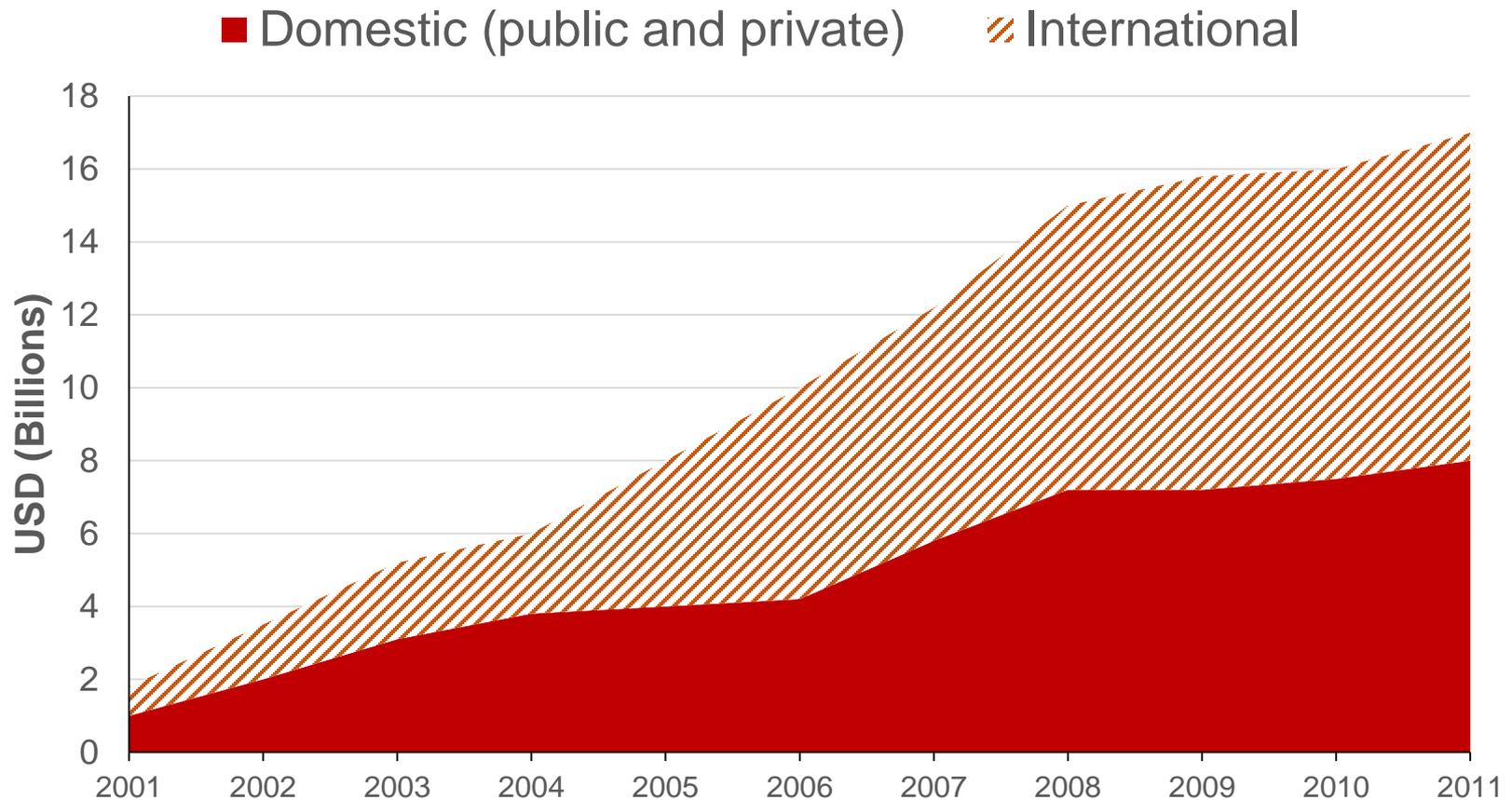
**Post Exposure
prophylaxis (PEP)**

Scheckter M, 2002



Note: PMTCT, Screening transfusions, Harm reduction, Universal precautions, etc. have not been included – this is on sexual transmission

Total annual resources for AIDS in low and middle income countries

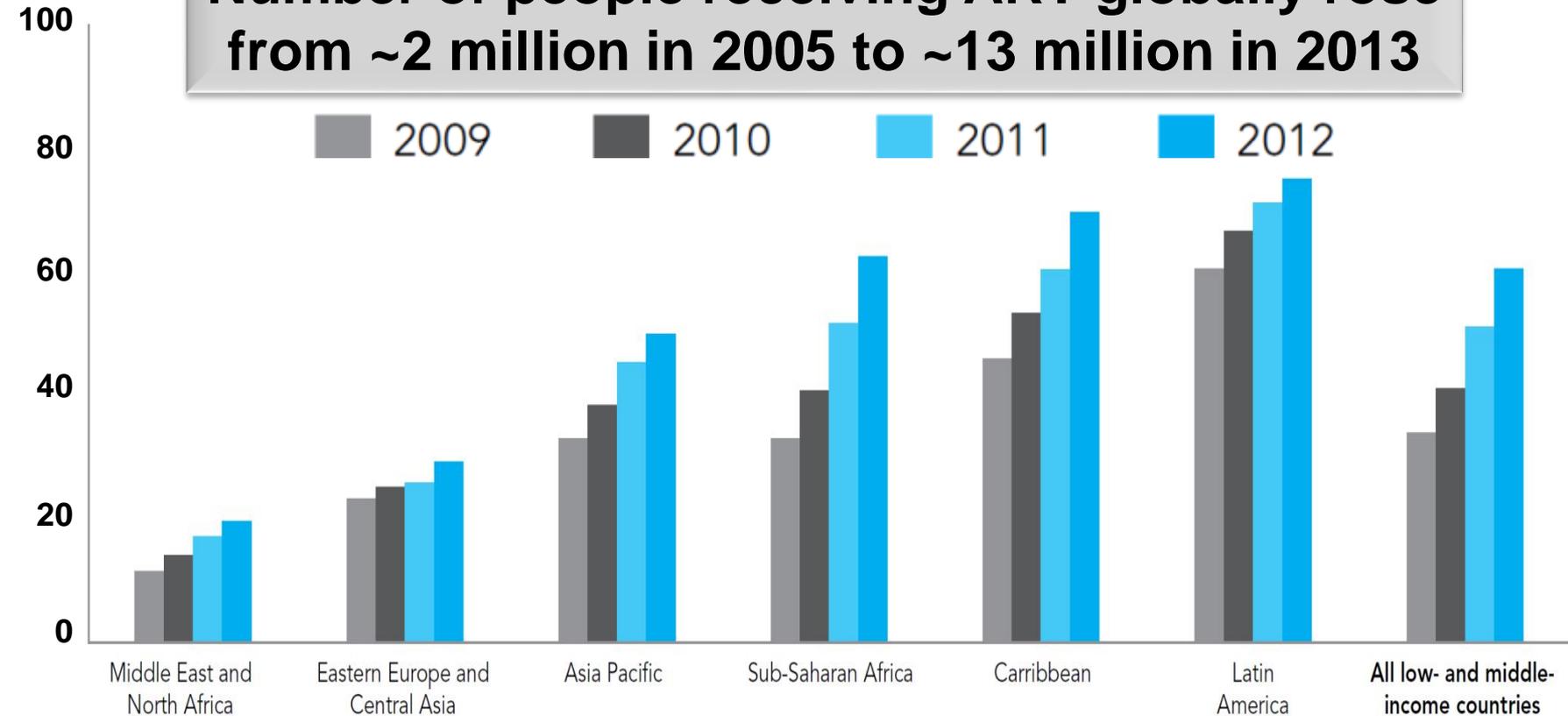


Source: UNAIDS 2012. Together we will end AIDS

Increasing antiretroviral therapy coverage by region

% ART coverage

Number of people receiving ART globally rose from ~2 million in 2005 to ~13 million in 2013



**% of people eligible who are receiving ART
(based on 2010 WHO guidelines)**

Source: UNAIDS Global report 2013

South Africa's response to HIV post-2009

- **↑ funding:** R4.5 billion in 2009 to R8.4 billion in 2011
- **HIV testing campaign:** 13 million HIV tests
- **Male circumcision:** 250,000 in 2011 (50-fold ↑ since 2008)
- **ART scale-up:** largest ART programme in the world, with ~ 2.6 million people estimated to be on ARVs in 2014
- **pMTCT:** 92% HIV+ mothers get ART; MTCT rate = 2.7% (2011)
- **Life expectancy:** ↑ by 6 years (60 years in 2011)



**Despite impressive progress,
the spread of HIV has yet to be controlled!**

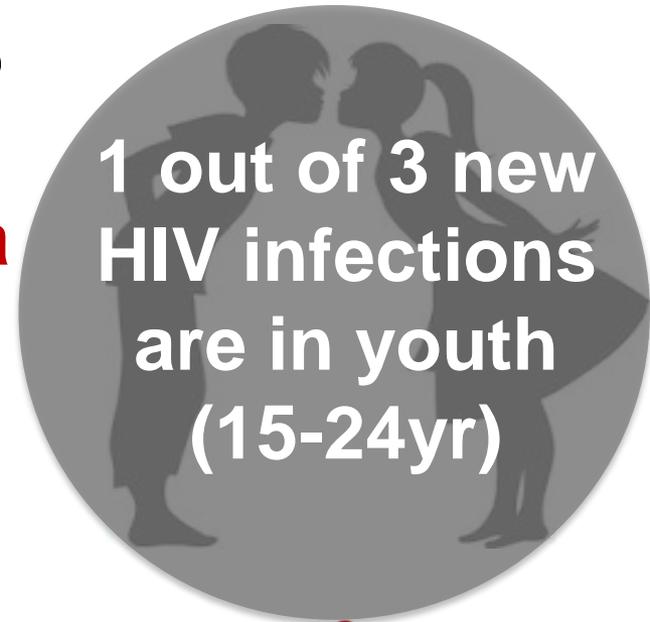
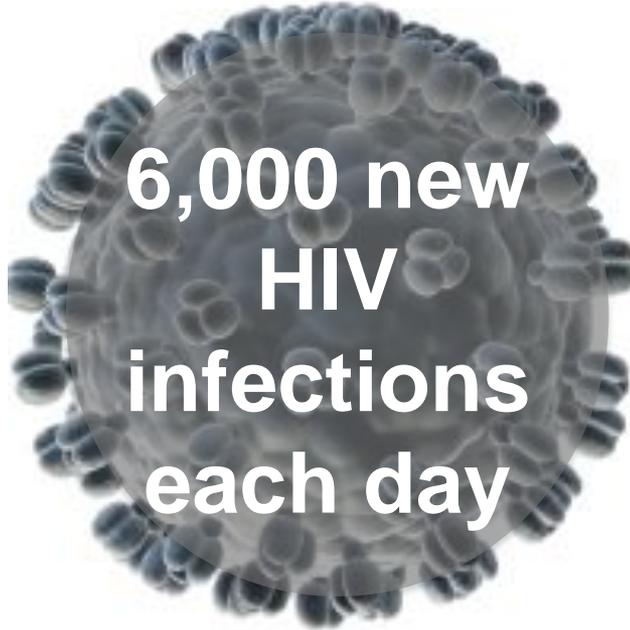
In 2013, worldwide there were:

1.5 million HIV deaths

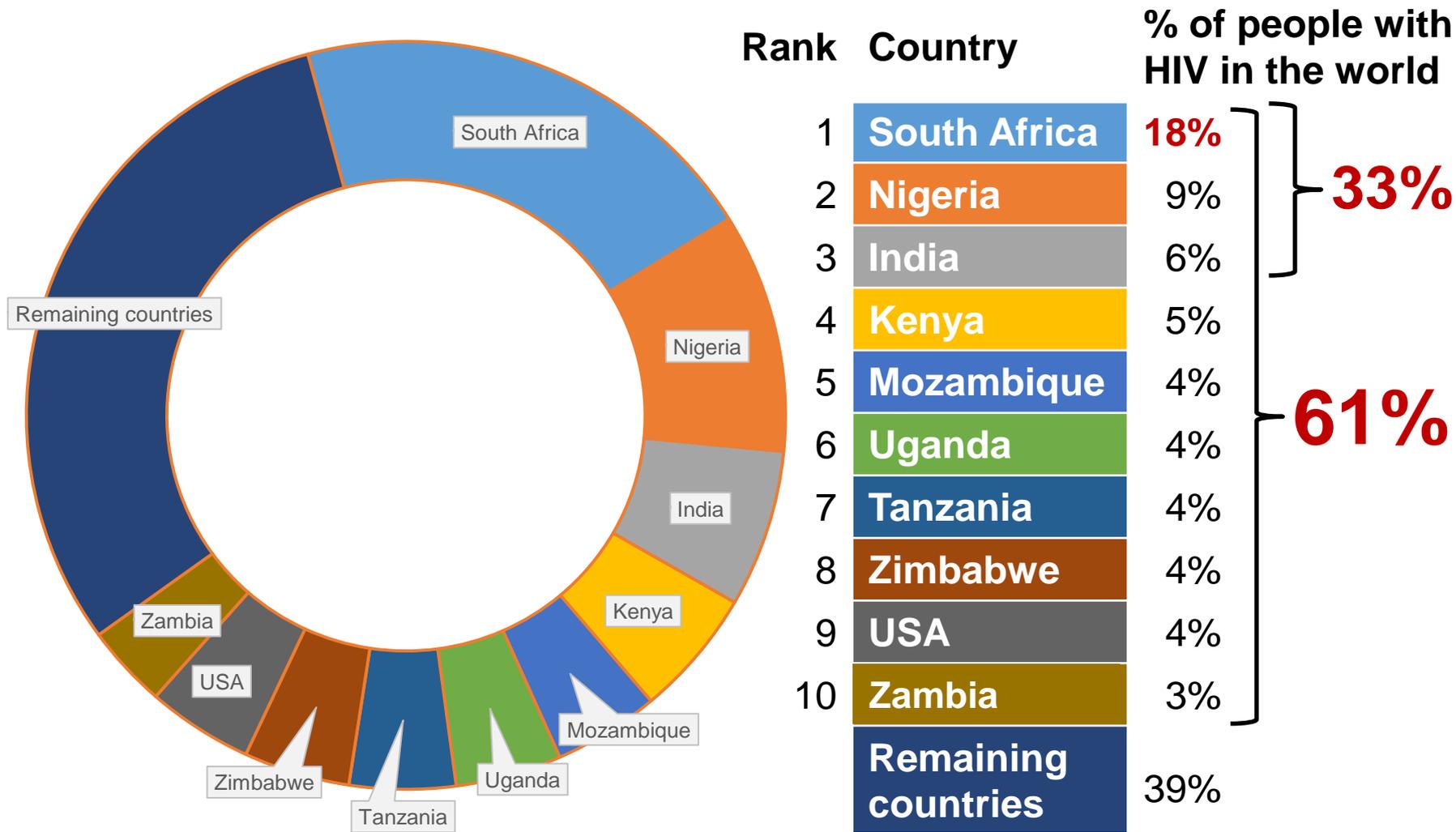
35 million living with HIV

2.1 million new infections

2013 Global HIV epidemic at a glance



Top 10 countries: People living with HIV

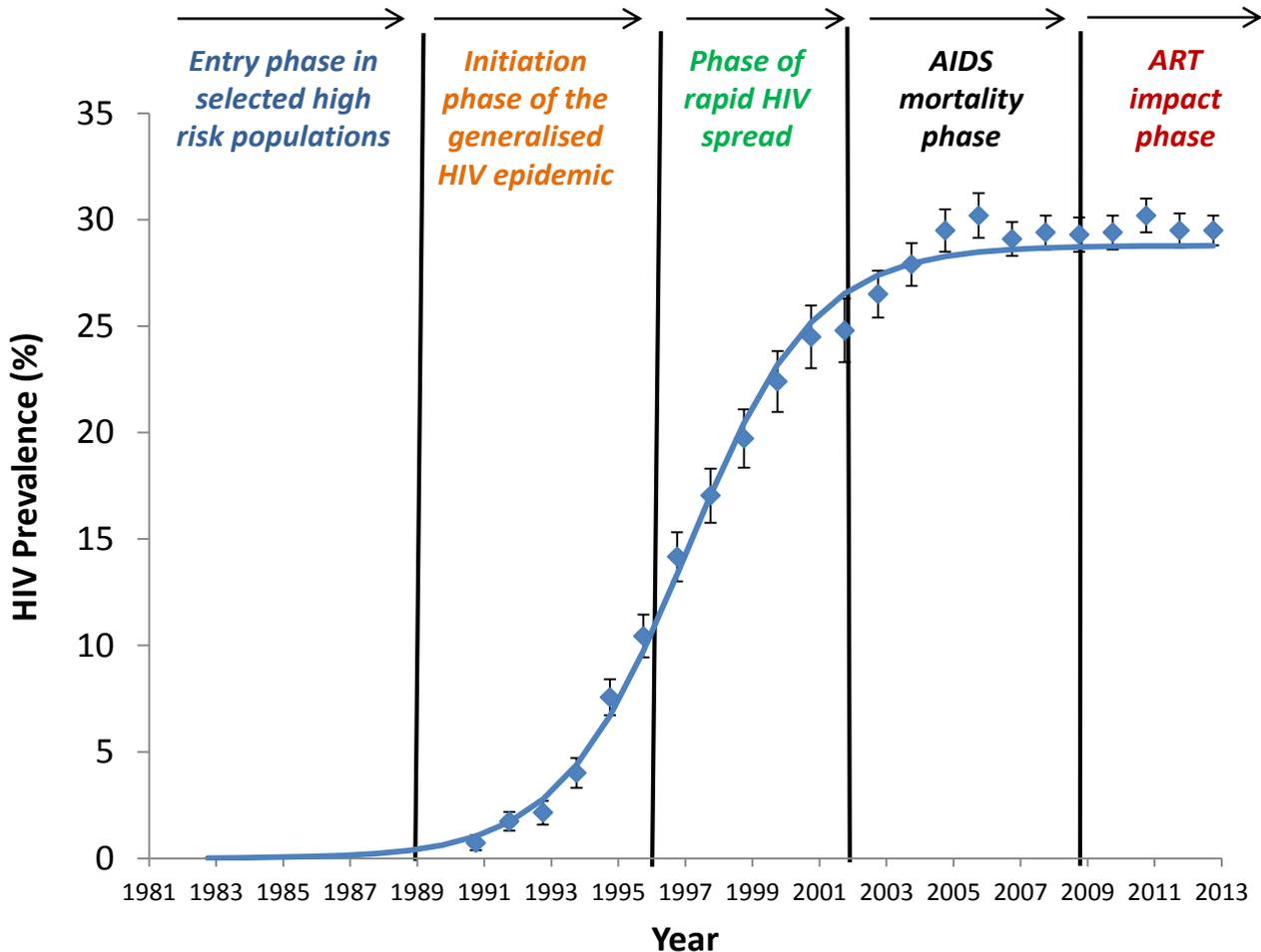


Source: UNAIDS Global Report 2014

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The HIV epidemic in South Africa: HIV in pregnant women & ART scale-up



Year	HIV Prevalence (%)	
	National	Estimated number on ART
2004	29.5	47,500
2005	30.2	110,900
2006	29.2	235,000
2007	29.4	382,000
2008	29.3	588,000
2009	29.3	912,000
2010	29.4	1,287,000
2011	30.2	1,793,000
2012	29.5	2,010,340

Sources: Data from South African Department of Health Antenatal Surveys. www.doh.gov.za

Global report: UNAIDS report on the global AIDS epidemic 2013

Johnson L. Access to antiretroviral treatment in South Africa, 2004 – 2011. *The Southern African Journal of HIV Medicine* March 2012: 22-27.

**HIV incidence in 18-35
year women in this
community:**

9.1%

**9.1 per 100 women-yrs
(95% CI: 7 - 12)**

Source: Abdool Karim Q et al, Science 2010

**HIV prevalence in
young pregnant
women in rural
South Africa (2009-2012)**

Age Group (Years)	HIV Prevalence (N=1029)
≤16	8.4%
17-18	18.6%
19-20	25.4%
21-22	32.8%
23-24	44.8%

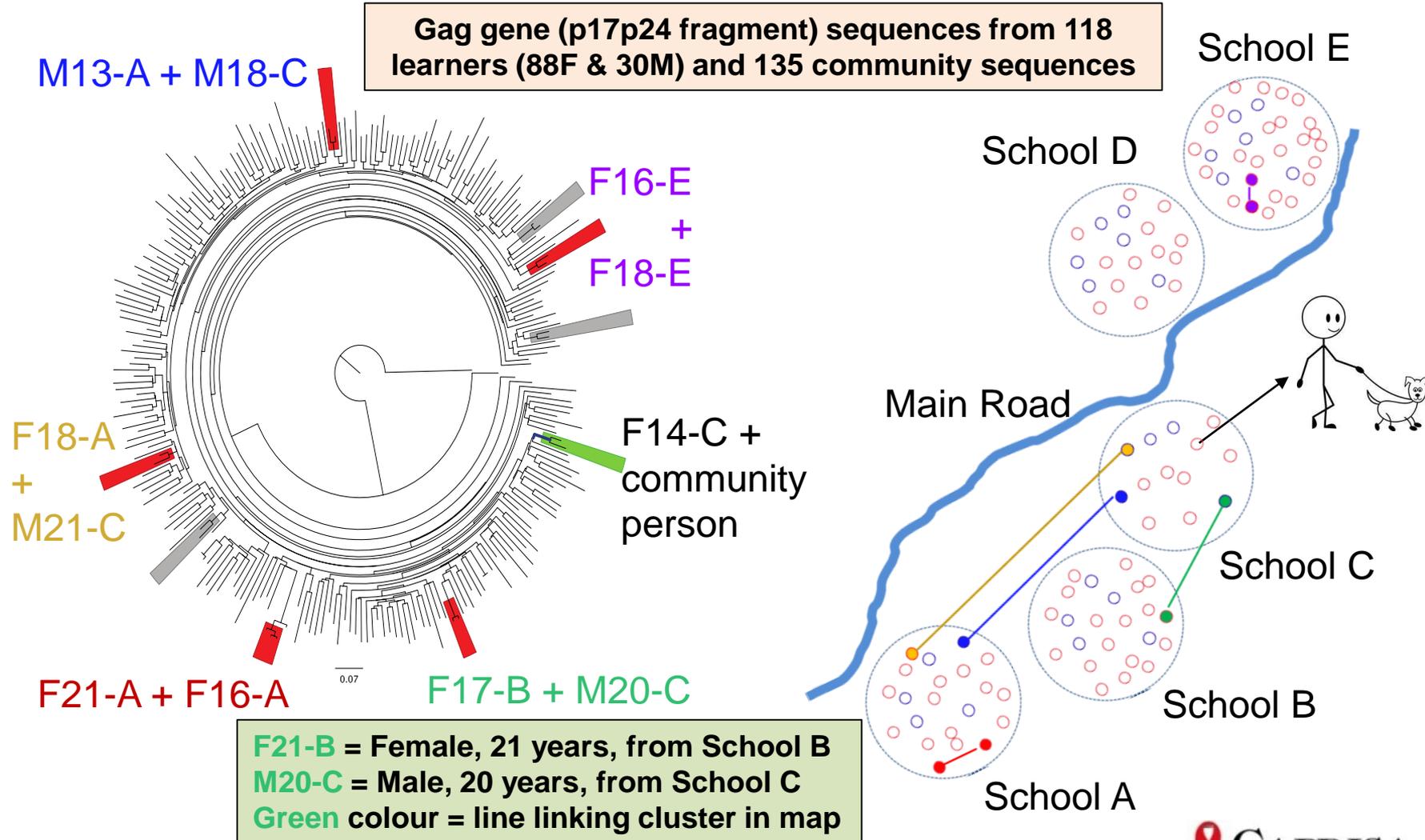
Source: Abdool Karim Q, 2014

HIV prevalence in school boys & girls in rural South Africa (Grades 9 & 10)

Age Group (years)	HIV Prevalence (2010) % (95% Confidence Interval)	
	Male (n=1252)	Female (n= 1423)
≤15	1.0 (0.0 - 2.2)	2.6 (1.2 - 4.0)
16-17	1.1 (0.2 - 2.0)	6.1 (2.6 - 9.6)
18-19	1.5 (0 - 3.7)	13.6 (9.0 - 18.1)
≥20	1.8 (0 - 3.9)	24.7 (6.3 - 43.1)

Source: Abdool Karim Q, et al Sex Transm Infect 2014

Phylogenetic analysis to identify HIV transmission networks in rural SA schools



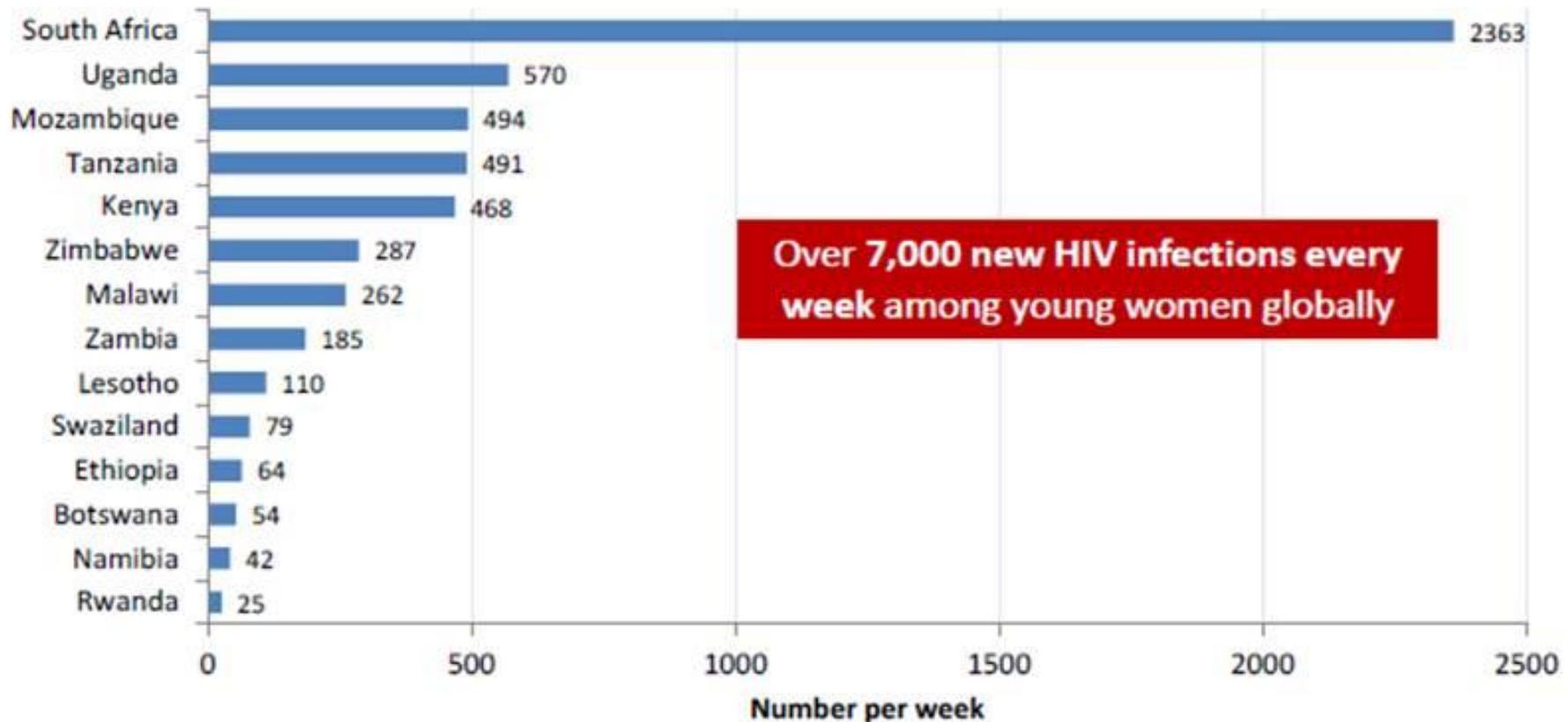
Source: Kharsany et al. *AIDS Research & Human Retroviruses* 2014

HIV Incidence among Young Women

More than 1/3 New HIV Infections Globally Occur among Young Women in Africa

Estimated number of new HIV infections *per week* among young women aged 15-24 years in East and Southern Africa, 2012

Data source: UNAIDS 2013



One of every 3 HIV infections in young women occurs in SA

Overview

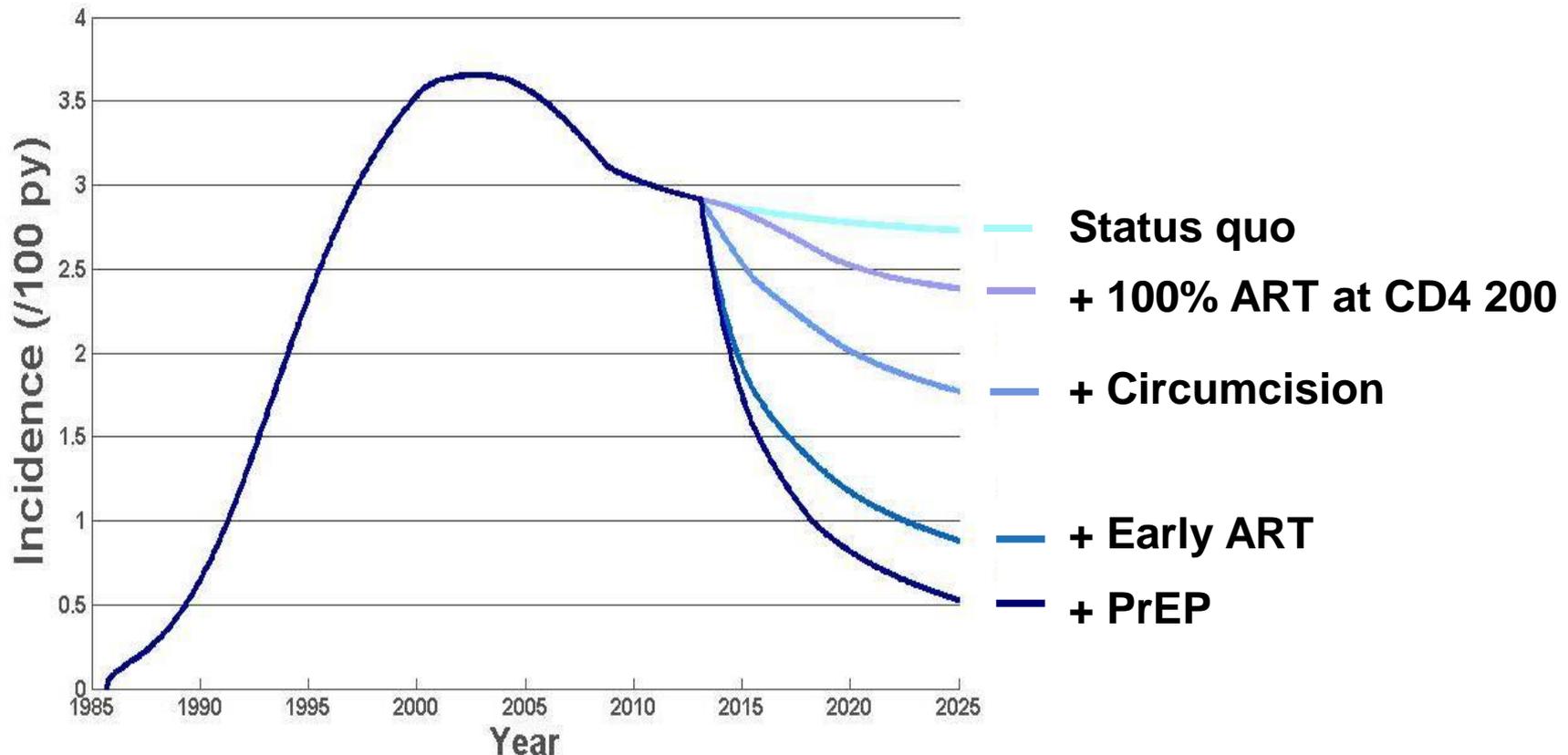
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Choosing a future for AIDS in South Africa

Africa

- “The End of AIDS” is an aspirational vision
- Epidemiological concepts of *elimination* and *eradication* not readily applicable to AIDS as millions are living with HIV and no cure available
- Key step to “The End of AIDS” is *epidemic control*
 - Epidemic control - Reduction of disease incidence, prevalence, morbidity or mortality to a locally acceptable level as a result of deliberate intervention measures
 - Point where HIV no longer represents a public health threat and no longer among the leading causes of Gauteng’s disease burden
 - Mathematically defined as the point at which the reproductive rate of infection (R_0) is below 1

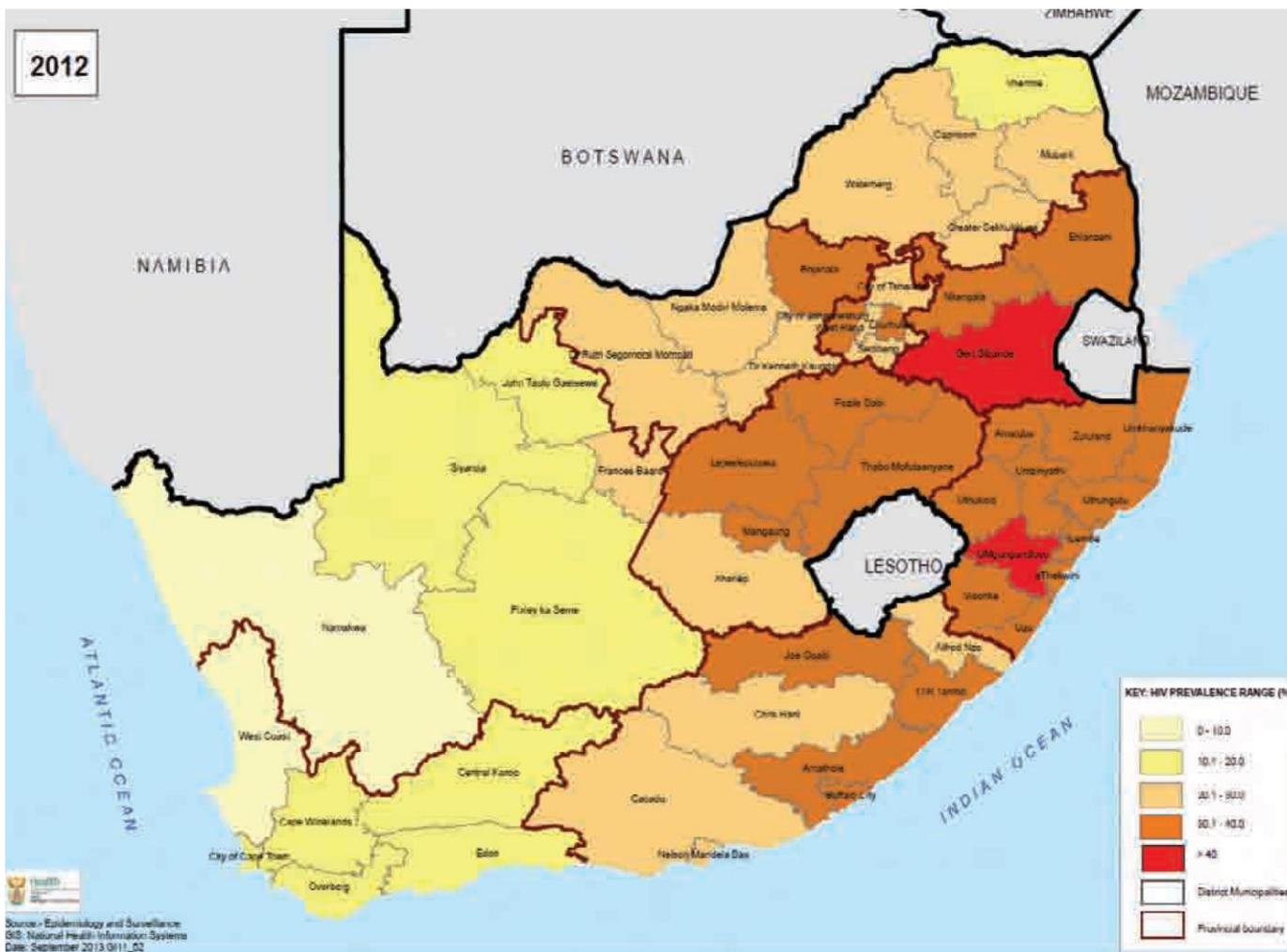
Is HIV epidemic control achievable? Without a vaccine or cure?



Yes, HIV epidemic control is achievable!
However, a vaccine or cure is essential for elimination

Know your epidemic!

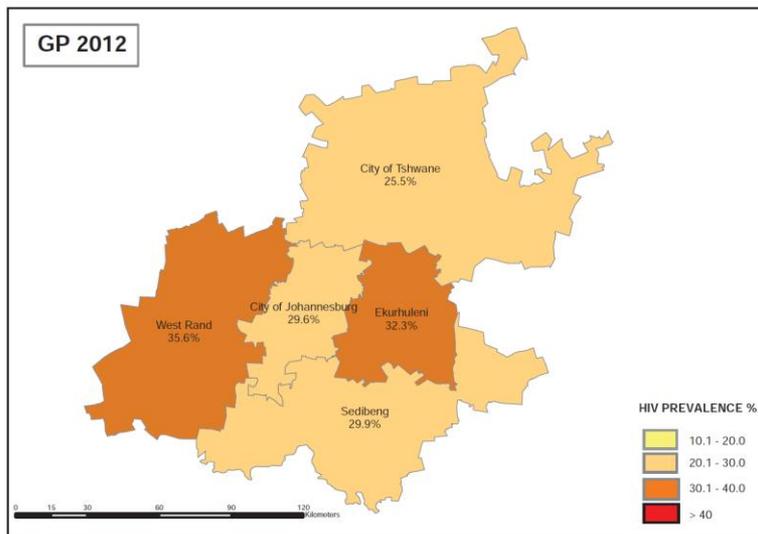
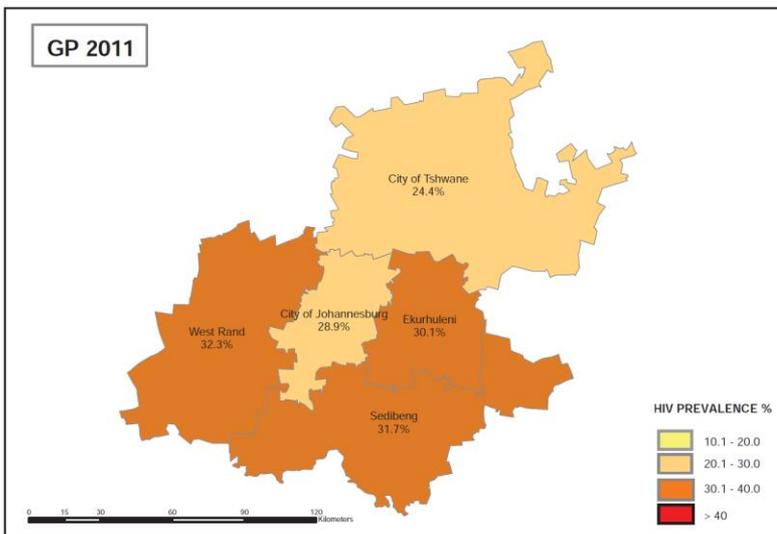
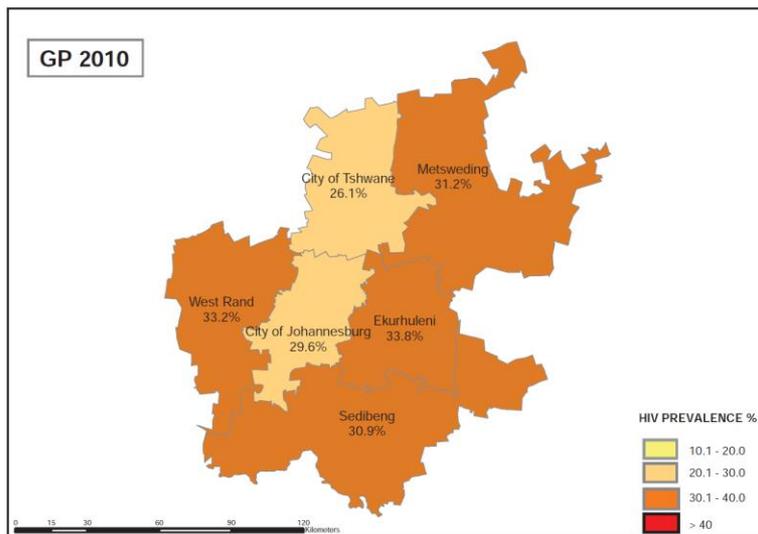
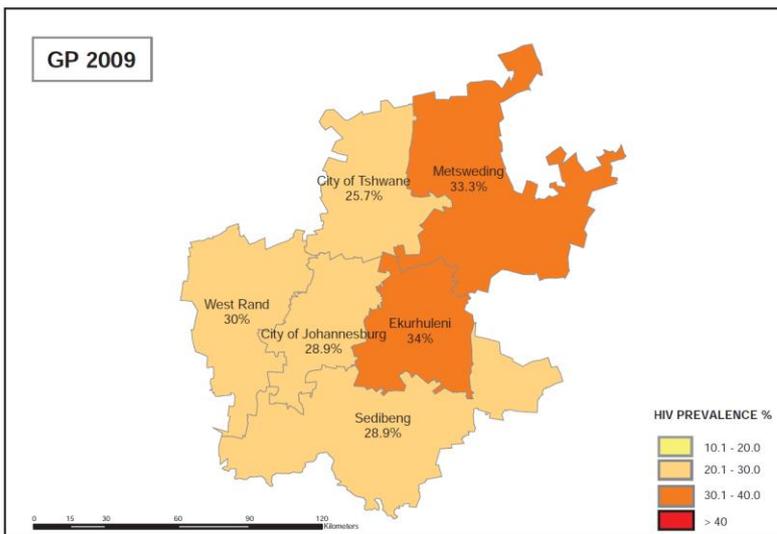
Know your hotspots & high risk populations in South Africa



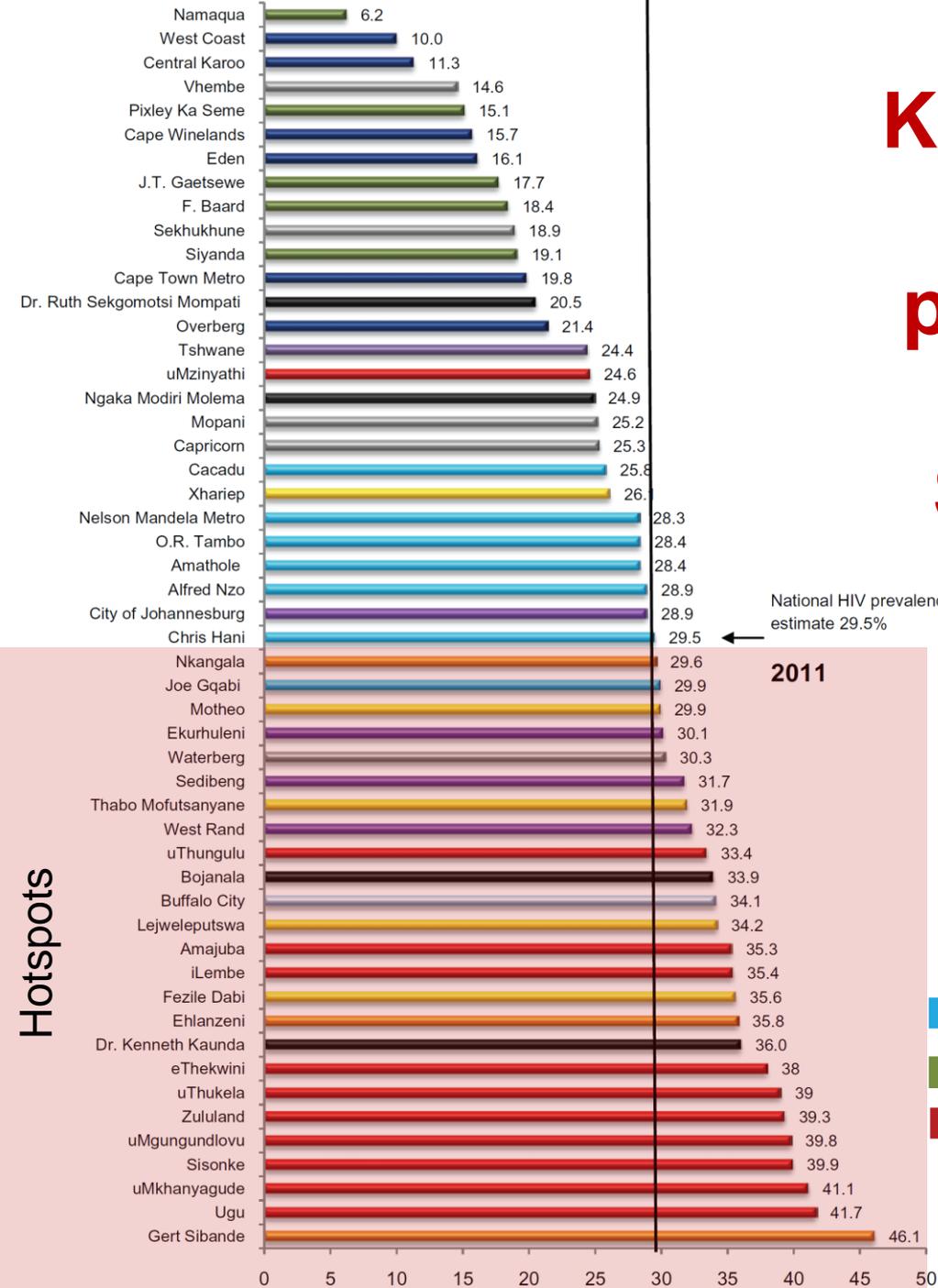
Know your local epidemic!

Know your hotspots & High risk populations at provincial & district level

HIV Prevalence in Gauteng: 2009 - 2012



Know your hotspots: HIV prevalence in pregnant women by district in South Africa, 2012



What will it take to reach the ambitious target of epidemic control?

- Act on knowledge of detailed local epidemiology
- Build on successes
 -learn from failures
 -implement to scale
- As the HIV epidemic changes – so too should our programs & interventions. Adapt with the changes!
- Focused effort on young women – will need combinations of appropriate prevention strategies
- Deal with underlying drivers such as stigma & social norms simultaneously
- Continued funding & greater program efficiency
- Biomedical, socio-behavioural and implementation research, incl. new innovations – vaccine and cure

Conclusion

- **Impressive progress in scientific discovery, resource mobilisation, political commitment & implementation:**
 - **created a favourable global HIV trajectory**
 - **South Africa needs to join this trend**
- **Focused effort on young women needed**
- **South Africa cannot afford to miss this historic “tipping” point & risk losing momentum against AIDS**
- **There are many challenges but it should not deter us!**
- **We won't end AIDS tomorrow....**
 - but it has to be part of our long-term vision**

i can make a pledge and change the world.

Could it really be that simple? We think so.

Your words count. Your actions matter. And even small changes can have a great impact in the lives of our patients.

Out of this philosophy comes the concept of 'i can ngingakhona' a grassroots movement where we ask you to join us in committing to making small changes in the way we approach our work in health care – not just for one day but every day. It's simple. Just think of one thing you can do differently in every day practice, and then make it official by submitting it as a pledge. Whether you vow to smile more, no matter how long and tiring your day has been, or promise to be more conscientious about submitting paperwork on time, your pledge is a personal reminder to yourself of why we do what do.

Based on the UK National Health Services' "Change Day" initiative, the campaign I can ngingakhona aims to gain as much momentum in South Africa. In the UK, almost 1 million NHS staff members have submitted their pledges to making a difference through their everyday actions. The result has been

a passionate and inspired social movement that is changing the status quo within their health system.

A joint initiative by the Southern African HIV Clinicians Society and The Aurum Institute, i can ngingakhona is being launched during the 2014 SA HIV Clinicians Society Conference. Already, many of the conference speakers and honoured guests have made their pledges – and now we invite you to make yours. Simply find our stand no 3 in the Ballroom and have a picture taken with your pledge. In March 2015 we will be hosting a national i can ngingakhona event, where we will follow up with pledge makers to find out how their actions have affected others around them. And we will be handing out materials to help you take i can ngingakhona back to your facility, to inspire others to get involved and join the movement.

And remember that when it comes to making a difference - i can ngingakhona.

i can
ngingakhona

i can
ngingakhona



an aurum and sahvivoc quality improvement initiative

