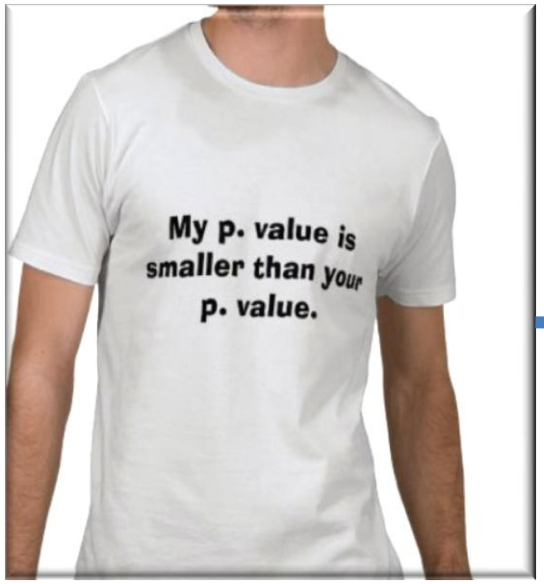
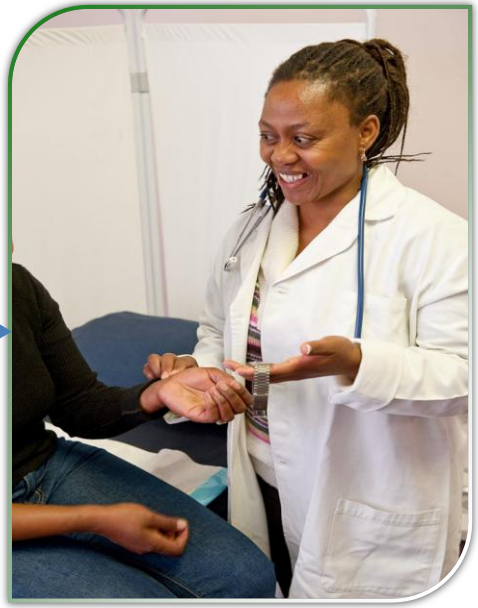
TasP and PrEP- Wishful thinking in the developing world?





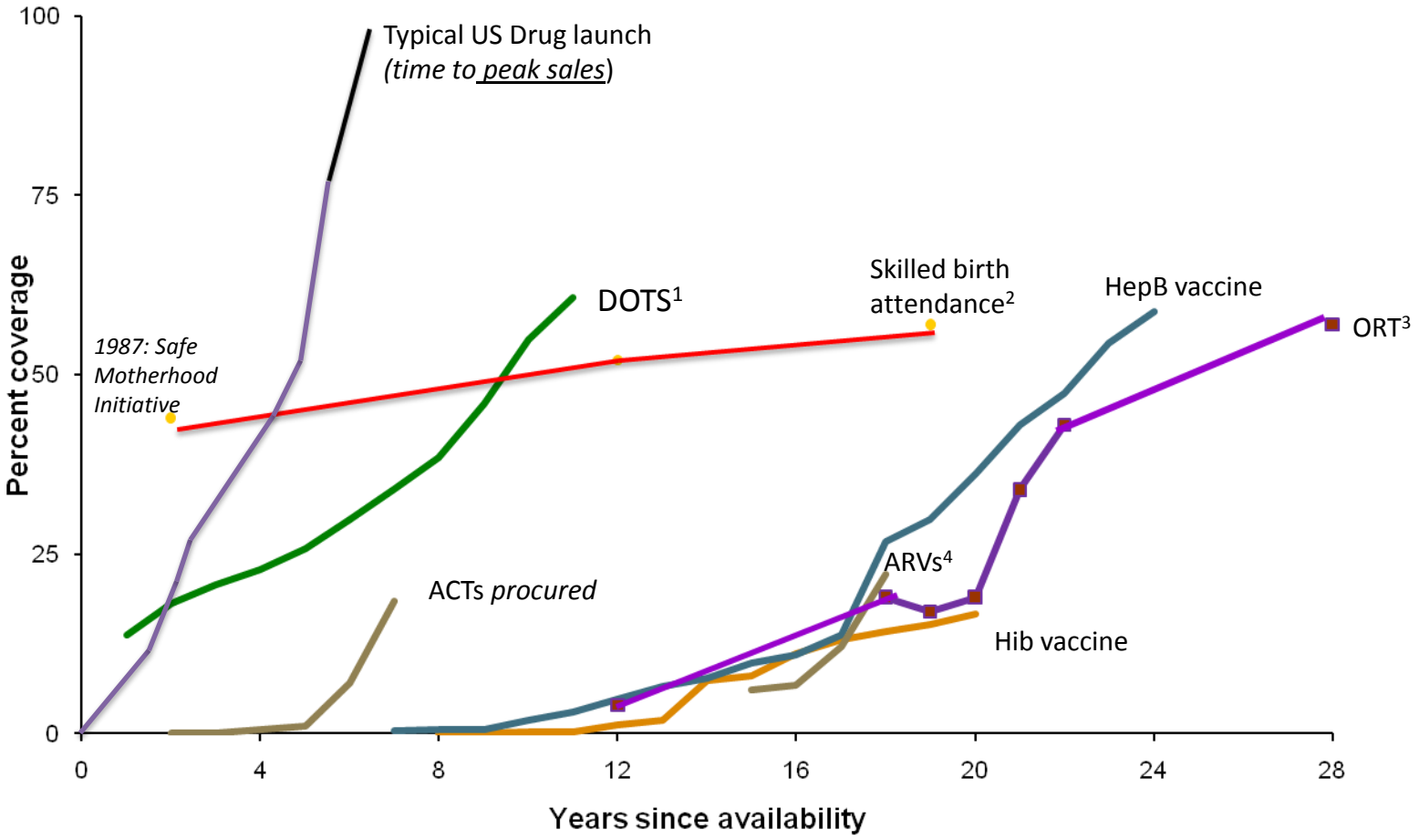
Professor Helen Rees

Executive Director, WRHI, Wits Reproductive Health and HIV Institute &

Ad Hominem Professor, Department of Ob/Gyn, University of Witwatersrand

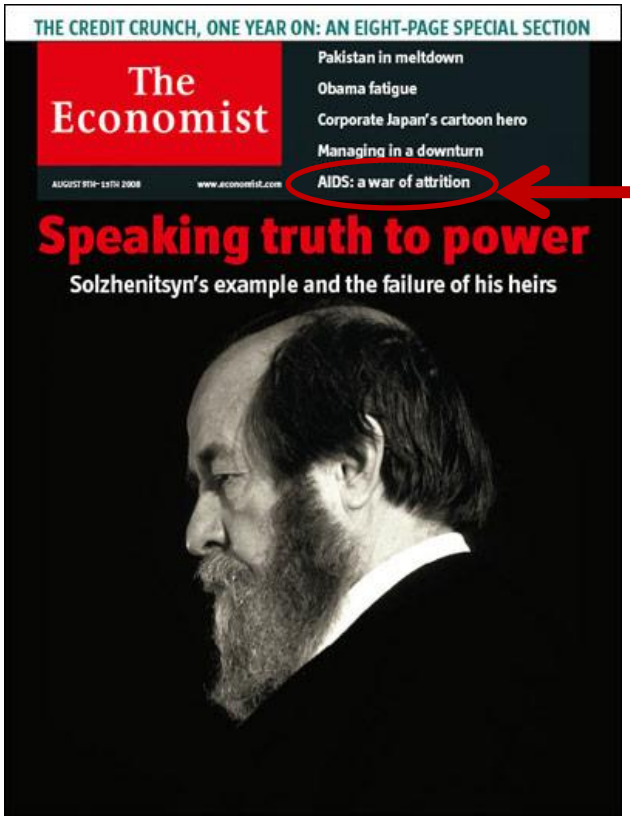
Honorary Professor, London School of Hygiene and Tropical Medicine

Historically, health interventions in LMICs have seen slow uptake and low coverage



Source: Guy Stallworthy, Gates Foundation

Global funding fatigue……



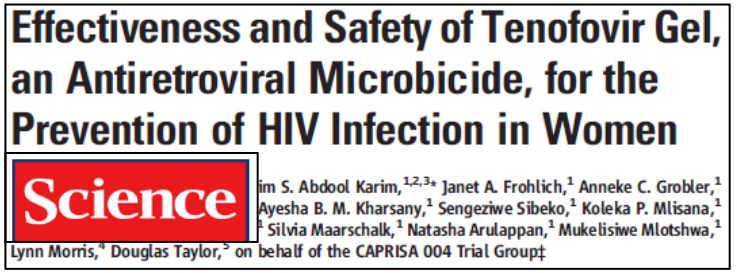
"As a result, taxpayers are accumulating an indefinite —and indefinitely growing— responsibility for keeping people alive. *Somehow, somebody has to work out how to stop the disease spreading*".

***The Economist,* 9 August, 2008**

2012: Economic crisis,

Reduction in PEPFAR, Global Fund and bilateral donor funding

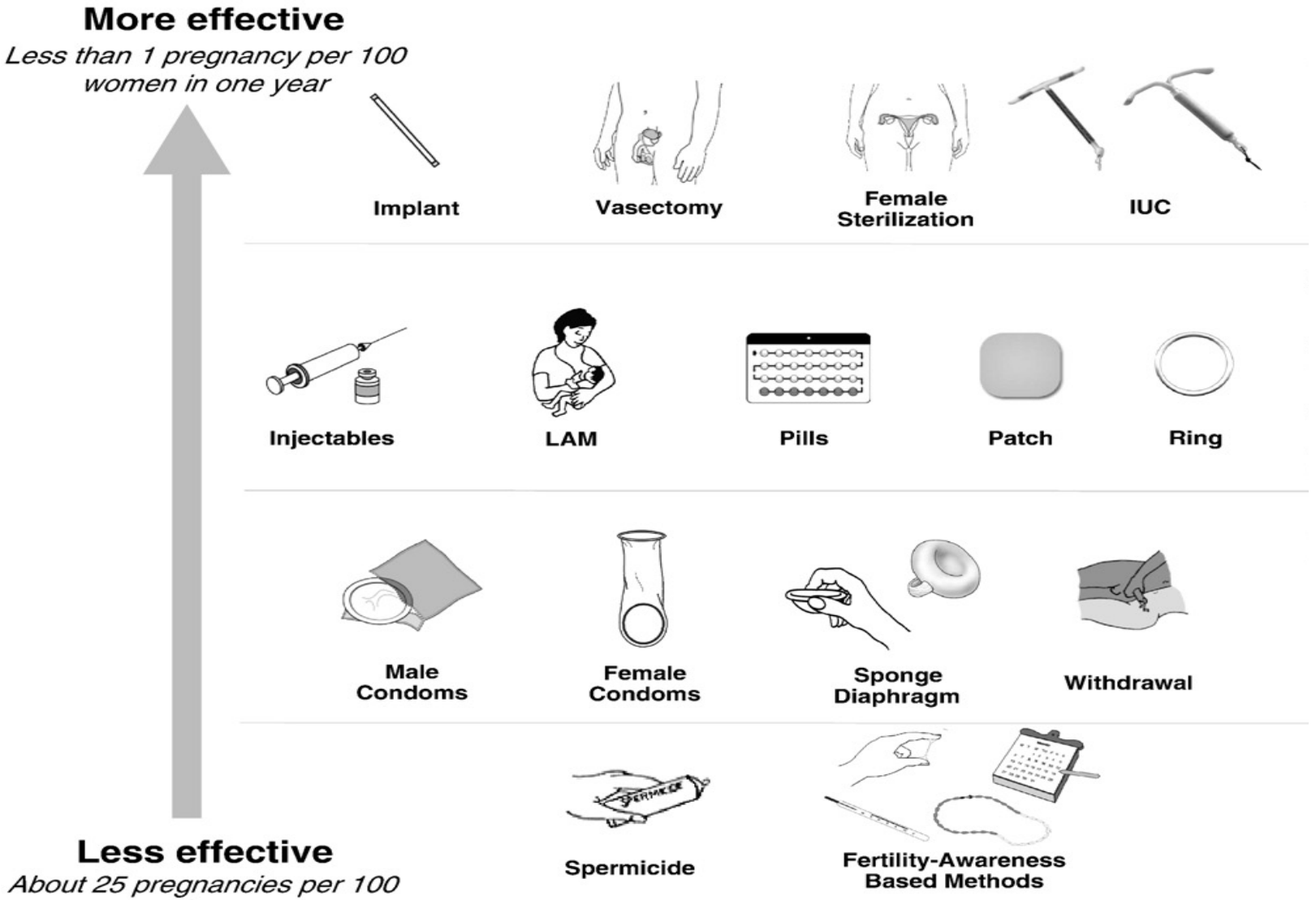
The need remains…….



	Tenofovir	Placebo
# HIV infections	**38**	**60**
Women-years (# women)	680.6 (445)	660.7 (444)
HIV incidence (per 100 women-years)	**5.6**	**9.1**

High incidence despite combination prevention targeting women in the trial

Lessons from contraception



Source: Adapted from WHO 2007 [2]

Adherence in contraceptive use

189 progestin injectable users followed up for 2 years in family planning clinic in Soweto

Status	1 year		2 years	
	(%)	n	(%)	n
Continued	42	79	**21**	39
Lost to follow up	30	57	35	67
Discontinued	28	48	41	78
Withdrew	2	5	2	5

Of those who discontinued:

- 40% 'taking a break'
- >50% complained of side effects

Beksinska, Rees et al. Contraception 64(2001)

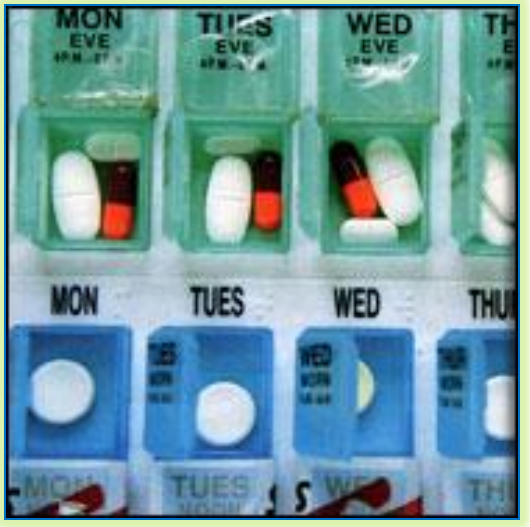
A systematic review and meta-analysis of misuse of antibiotic therapies in the community

Przemyslaw Kardas [a], Scott Devine [b,*], Amanda Golembesky [c], Craig Roberts [d]

[a] *Department of Family Medicine, Medical University of Lodz, 96 Narutowicza Str., 90-141 Lodz, Poland*
[b] *Apex Analytics, 101 Rayanne Ct, Apex, NC 27502, USA*
[c] *2017 Bayleaf Dr., Durham, NC 27712, USA*
[d] *Outcomes Research, Pfizer Inc., 235 East 42nd Street, New York, NY 10017, USA*

Received 27 January 2005; accepted 26 April 2005

Over one third (62%) of patients did not comply with antibiotic therapy, and one-quarter (29%) retained leftover antibiotics for future use



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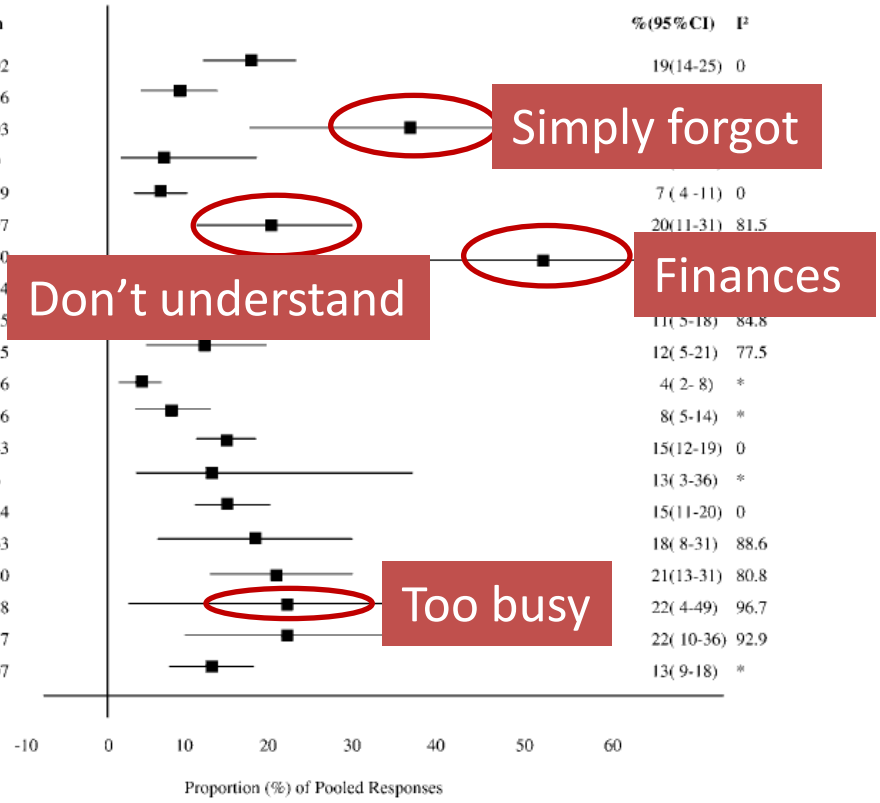
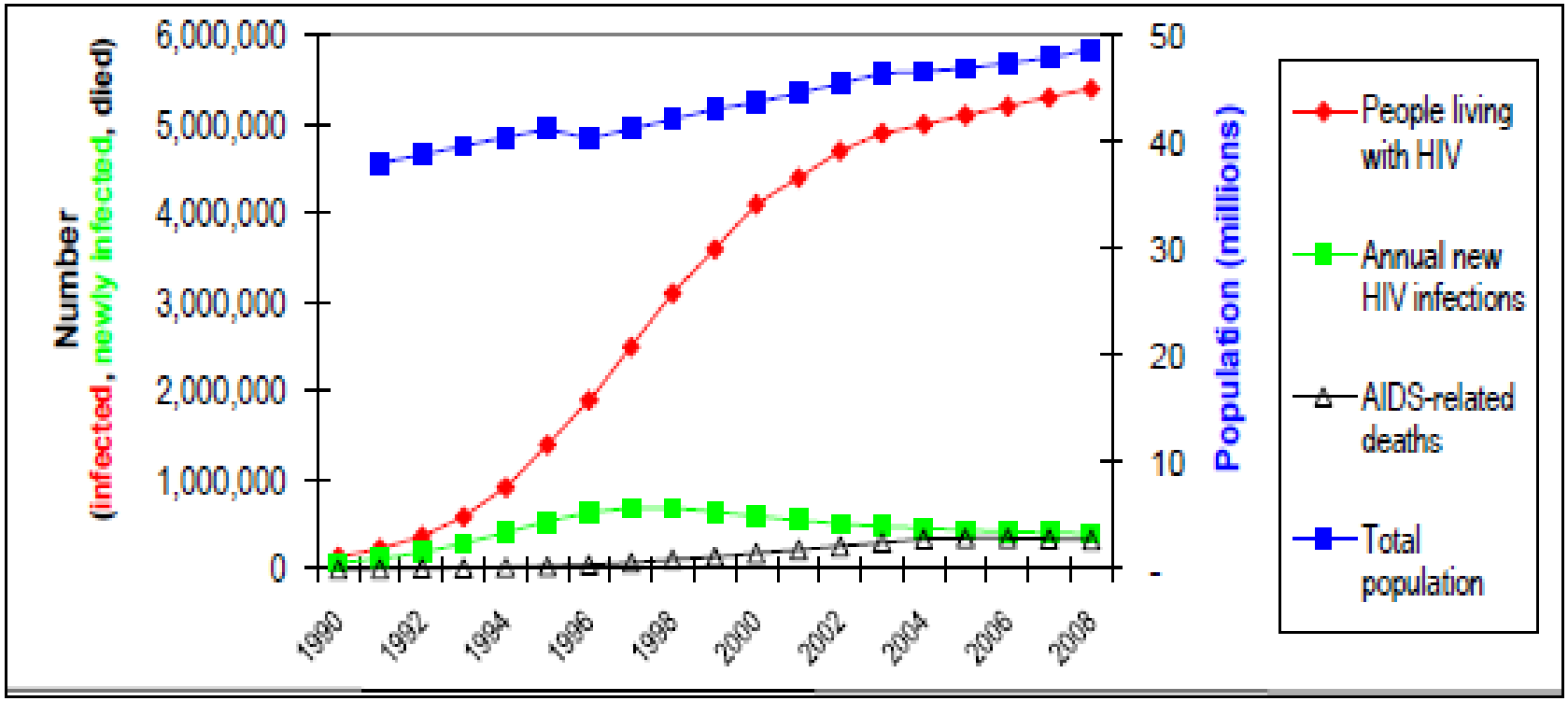
Adherence to HAART: A Systematic Review of Developed and Developing Nation Patient-Reported Barriers and Facilitators

Edward J. Mills[1*], Jean B. Nachega[1,2], David R. Bangsberg[3], Sonal Singh[1,2], Beth Rachlis[4], Ping Wu[5], Kumanan Wilson[1,6], Iain Buchan[7], Christopher J. Gill[8], Curtis Cooper[1,9]

Barriers	Total # of studies	# of pooled studies	n	%(95%CI)	I²
Fear of Disclosure	2	2	202	19(14-25)	0
Feeling overwhelmed	3	1	136		
Simply forgot	5	5	603		
Suspicious of treatment	1	1	40		
Want to be free of meds	2	2	179	7 (4 -11)	0
Don't understand treatment	4	4	397	20(11-31)	81.5
Financial constraints	2	2	240		
Homeless/Other Illness	1	1	134		
Side Effects	6	5	555	11(5-18)	84.8
Regimens too complicated	4	4	355	12(5-21)	77.5
Taste/size/freq. Of dosing	3	1	136	4(2- 8)	*
Felt fine/healthy	2	1	136	8(5-14)	*
Decreased quality of life	3	2	343	15(12-19)	0
Uncertainty	1	1	16	13(3-36)	*
Disruptions/chaotic routine	3	2	224	15(11-20)	0
Feel asleep	3	3	363	18(8-31)	88.6
Being away from home	6	5	440	21(13-31)	80.8
Too busy/distracted	3	3	358	22(4-49)	96.7
Pharmacy/Irregular supply	7	7	637	22(10-36)	92.9
Negative view of provider	1	1	207	13(9-18)	*



South Africa: A case study



Sources: Spectrum estimates and mid-year population estimates from www.statssa.gov.za

[2] The ASSA 2008 model also has revised assumptions about mortality rates in untreated HIV-infected individuals prompted by studies showing higher survival rates in African adults than had previously been assumed (ASSA, 2011).

South Africa: Reality check

- Condom coverage:
  - 30% decrease in new infections 2000 – 2009 primarily due to condoms
  - 16-24 year old men 1999: 20% 2009: 75%
  - Johannesburg 6 condoms per sexually active male per year *Johnson, SAMJ 2012*
- HCT
  - One million tests 2011
  - Very poor linkage to care

DIRECTOR GENERAL HEALTH
REPUBLIC OF SOUTH AFRICA

RE: ACCELERATING ACCESS TO ART SERVICES AND UPTAKE

The goal of the CCMT program is to identify people living with HIV through HCT and PICT. Clients who test HIV positive must be linked to care and initiated on treatment at CD4 of 350 or below.

It is common that HIV positive patients are not initiated on Anti-Retroviral Therapy (ART) early enough; in some instances they are delayed by the treatment literacy and adherence sessions or are not followed-up properly while in the Pre- ART program.

To address these delays in initiating patients on ART and reduce the missed opportunities to provide treatment early, the National Department of Health recommends that:

South Africa: Reality check

- PMTCT: transmission <3.5% but >20% of mothers started on treatment lost to follow up

Lessons from PMTCT

- Political leadership: Initial delays in implementing the science transformed into politically supported programme
- Willingness to continuously adapt guidelines with changing science
- Implementation assisted by using well established antenatal services
- Pregnant women have a higher degree of motivation
- Targeted programme: Vertical, training, community communication
- Adequate financing: National budgets, PEPFAR, Gobal Fund

South Africa: Reality check

- ART Services
  - **2004: 47,500 on Rx: 2011: 1.79 million on Rx**
  - **80% eligible at CD4 <200: 52% eligible at CD4 <350** *Johnson SAMJ 2012*
  - **61% women; 31% men; 8% children**
  - 20-30% patients on ART lost to follow up
  - PEP for sexual assault available but low usage
  - PEP for occupational exposure available but uptake <60% some areas

South Africa: Reality checks

- Weak health systems

If high coverage and adherence are pre-requisites for TasP and PrEP…..

By Risk Groups?

By High Prevalence Districts or Districts with high numbers of HIV +ve patients?

By services?

Who would we target?

Who	Services	
General population	HCT	HCT coverage increased to >1 million 2011 but poor linkages to ARV services

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Men	Which service?	Only 31% of people on ARVs men
Discordant couples	HCT?	In some areas >70% female headed households Migrant labour system Experience from clinical trials

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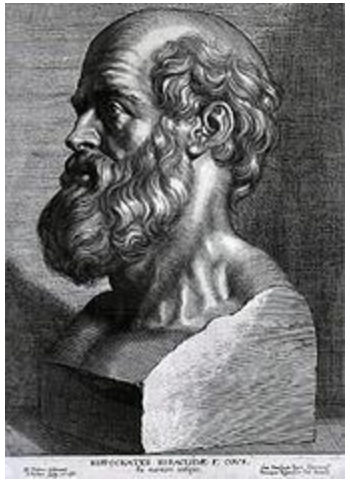
Patients with acute infections	STI services	Very hard to identify in clinical trials
Refugees	Not prioritised	Stigma Illegal

And the ethical issues?



Unmet needs of ART for HIV infected people in Low- and Middle-Income Countries

Tenofovir stockouts in 7 of the 9 South African provinces for the past three months resulting in ARV switching and dual therapy

Geographical region	As of December 2009		
	Number of people receiving antiretroviral therapy	Estimated number of people needing antiretroviral therapy, based on WHO 2010 guidelines [range][a]	Antiretroviral therapy coverage, based on WHO 2010 guidelines [range][b]
Latin America and the Caribbean	478 000	[illegible] [810 000-1 000 000]	[illegible] [46-59%]
Latin America	425 000	840 000 [700 000-940 000]	51% [45-61%]
Caribbean	52 400	110 000 [95 000-120 000]	48% [42-55%]
East, South and South-East Asia	739 000	2 400 000 [2 000 000-2 900 000]	31% [26-36%]
Europe and Central Asia	114 000	610 000 [550 000-710 000]	19% [16-21%]
North Africa and the Middle East	12 000	100 000 [88 000-120 000]	11% [10-14%]
Total	5 254 000	14 600 000 [13 500 000-15 800 000]	36% [33-39%]

Risk Compensation is adjusting behavior in response to perceived changes in risk. In other words individuals will behave less cautiously in situations where they feel "safer" or more protected.

Among 180 high-risk gay men in NYC regarding PrEP:

70% said they would use it if it were at least 80% effective.

However 35% said they would likely decrease condom use (condom migration).

Golub et al.JAIDS 2010

Some final thoughts

- The best is the enemy of the good
  - There is sufficient evidence that earlier treatment is beneficial for patients and contributes to HIV prevention, and we don't need to wait for further RCT data to motivate for this
  - Modelling suggests current ARV coverage in South Africa contributes to reduction in HIV incidence *(Hallett 2012)*
  - In developing countries earlier treatment and PrEP will have to be incrementally introduced and monitored for programmatic, clinical and funding reasons and prioritisation will be required

Some final thoughts

- Compared to sick patients or pregnant women, well people are less likely to consistently use ARVs including well HIV positive patients and HIV negative people
- Introduction of any new prevention technology may result in harm through risk compensation
- All proven technologies including TasP and PrEP, will be required if the vision to end the HIV epidemic is to be achieved

Spot the difference…..
2004 ARV rollout brings challenges……

- Which service outlet?
- Which providers?
- Screening for renal and hepatic problems
- Large scale and regular HIV testing
- Targeting populations
- Adherence
- Resistance
- Fear of drug toxicities
- Competing funding between treatment and other services

With thanks

Lynn Morris

Francois Venter