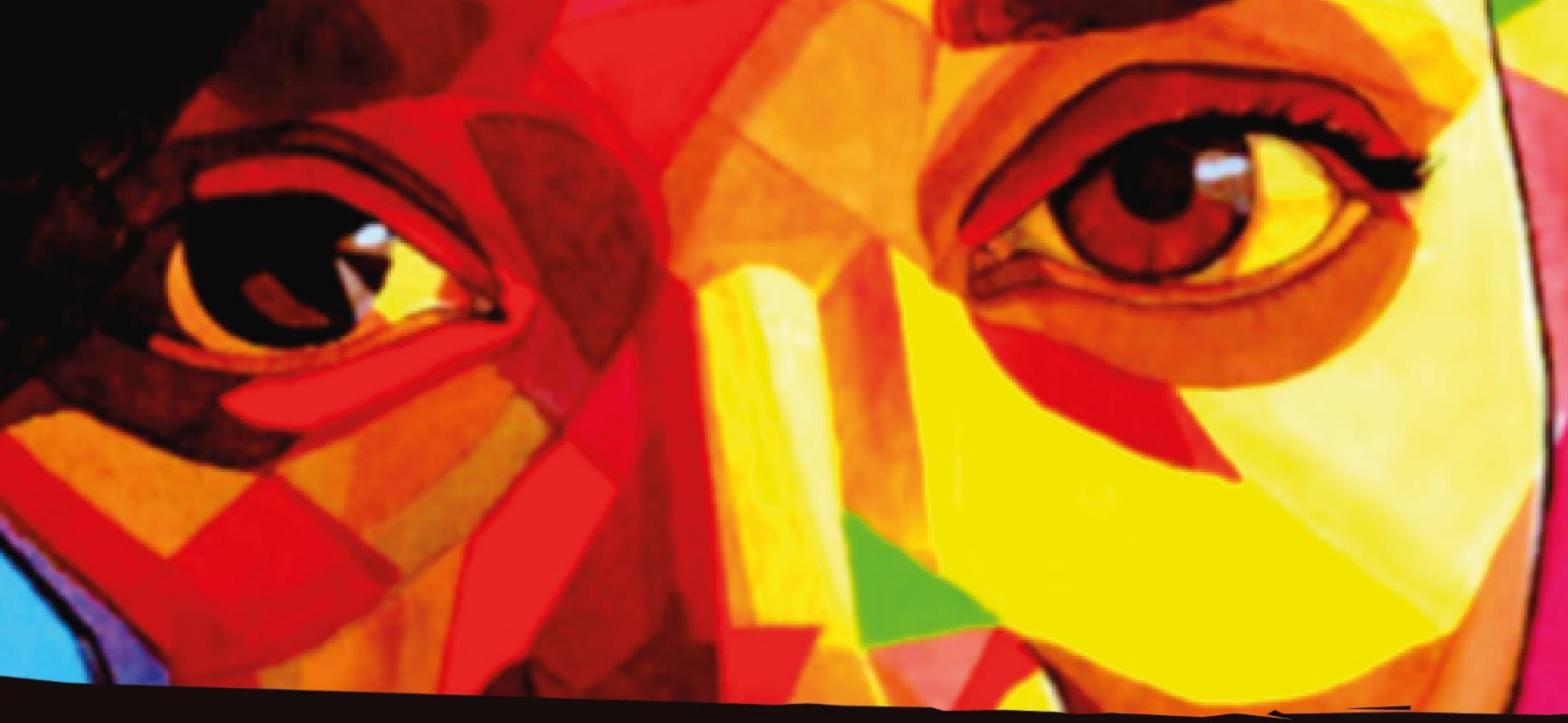

FROM EVIDENCE TO ACTION

The 2016 HIV/TB Colloquium:

Feedback from the 2016
International
AIDS Conference
and TB pre-conference.

REPORT

USAID
FROM THE AMERICAN PEOPLE

FPD

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Content

Introduction

The 2016 HIV/TB Colloquium was held on 25 August, 2016, at the Protea Manor Hotel in Pretoria. The event was hosted by the Foundation for Professional Development (FPD) and was attended by representatives from the National Department of Health (NDOH), the Department of Public Service and Administration (DPSA), the National Health Laboratory Service (NHLS), USAID, CDC, HEAIDS, SANAC, UNAIDS, the World Health Organization (WHO), PEPFAR District Support Partners (DSPs), PEPFAR Prevention Partners. Additionally, there were attendees from development partners active in the HIV prevention, care and treatment arena, academia and research, and representatives of civil society.

The objectives of the colloquium were:

- To present research and findings from the South African context as presented at the 2016 International AIDS Society (IAS) Conference in Durban;
- To discuss and brainstorm strategies and best practices to increase efficiencies and improve the South African health system's performance in order to reach 90-90-90 HIV cascade targets

The format of the colloquium was a twenty minute oral presentation summarizing key South African presentations from the IAS 2016 followed by an interactive brainstorming and discussion session, circa thirty minutes. The presentation and discussion was structured according to the following topic areas:

- Setting the scene: 90-90-90 current analysis (presented by Dr. Yogan Pillay, NDOH)
- TB pre-conference (presented by Dr Kavindhran Velen, Aurum Institute)
- HIV Prevention (presented by Prof James McIntyre, Anova)
- 1st 90 – 90% of People living with HIV will know their status (presented by Thato Farirai, FPD, and Thato Chidirakire, NDOH)
- 2nd 90 – 90% of people living with HIV will receive sustained antiretroviral therapy (presented by Dr. Andrew Black, Right To Care)
- 3rd 90 – 90% of people receiving ART will have durable viral suppression (presented by Prof Wendy Stevens, NHLS)

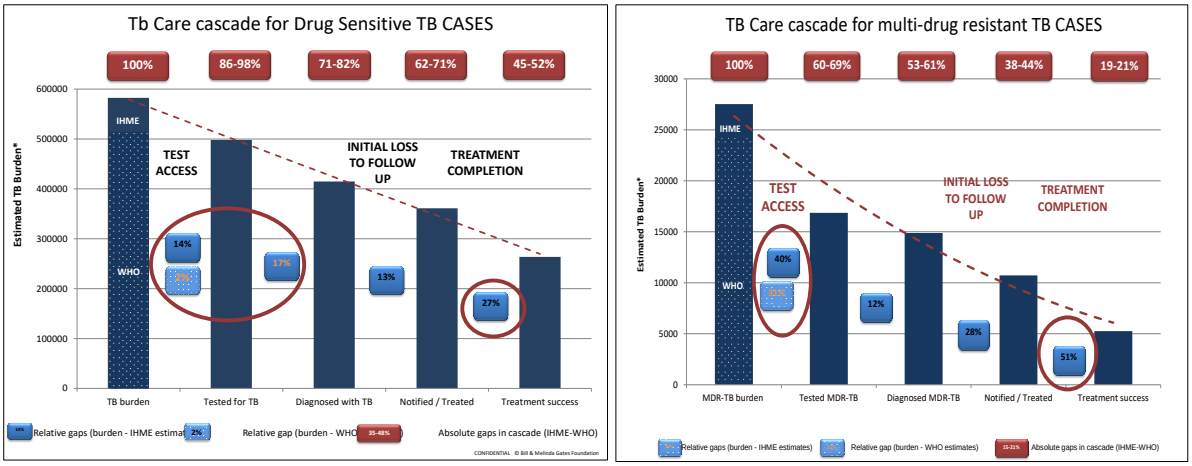
The following report provides an overview of the presentations as per topic area and briefly summarises key points of discussion, issues and recommendations stemming from the ensuing discussions and brain storming. Gaps, issues, missed opportunities, priorities and/or recommendations for strategic interventions are summarised as identified over the course of the colloquium. The issues and recommendations emerging from the discussion/brain storming sessions have been organised in terms of target audience for the recommendation: Department of Health (DOH), Donors, and Implementing Partners, and "other" for ease of reference. All presentation slides are included in the appendices of the report. Abstracts are available for download from IAS's website and the video recordings of the presentations are available on FPD's website via the following link: www.foundation.co.za.

1 Setting the scene: 90-90-90 Current Analysis

Dr Yogan Pillay opened the colloquium with a presentation giving an overview of key issues from the 2016 TB pre-conference, key issues from the 2016 IAS conference and an update on the current progress towards the 90-90-90 goals in South Africa.

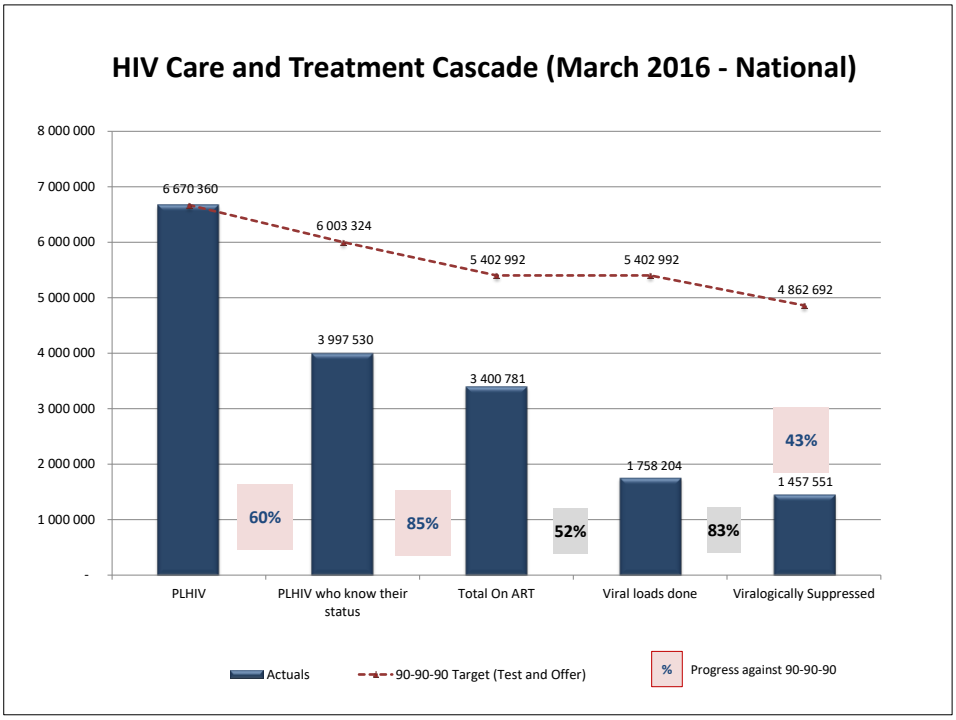
Regarding TB, he stressed the need to maintain focus on tuberculosis (TB), not only HIV, by highlighting gaps in the cascade for drug sensitive TB which shows that less than half of the TB cases achieve treatment success, and the even more severe gaps in cascade for multi-drug resistant TB with only 19% of cases reaching treatment success (Figure 1). Resources and efforts should *focus for impact* on high burden districts: just the seven metros account for nearly 40% of notified TB cases, and 29 districts account for 80% of notified TB cases. Key priorities are: ensuring delivery of TB via patient centred programmes, increasing civil society participation, optimal use of GeneXpert, and going back to the TB basics (intensified case finding, early treatment initiation, and treatment success). Innovations in the TB programme were presented, including the introduction of the LAM rapid test for detecting TB in HIV positive patients, the new 9 month MDR-TB treatment regimen, and use of new TB drugs.

Figure 1. TB Care Cascades for Drug Sensitive and Multi-drug Resistant TB Cases



Regarding HIV, an estimated 7 million people are living with HIV in South Africa in 2016. Since 2000, the number of new infections in children has reduced drastically from 79 000 to 5 100. And although the rate of new infections has also dropped substantially among both adult men and women since 2008, the absolute number of new infections has continued to rise slowly and steadily. The national HIV care and treatment cascade shows that as of March 2016, 60% of people living with HIV (PLHIV) know their status, 85% of PLHIV with known status were on ART, and 43% of those on treatment were documented as virally suppressed (Figure 2). Estimated population ART coverage is at 48% and varies substantially between different populations with an estimated ART coverage of 74% amongst kids, 53% amongst women.

Figure 2. National HIV Care and Treatment Cascade (March 2016)



Regarding HIV Prevention, South Africa needs to combine treatment with tailored combination prevention and needs to build understanding in terms of how to implement combination prevention (e.g. condoms, PrEP, self testing for HIV). South Africa also needs to better understand sexual and gender issues in HIV transmission and prevention, as well as to better understand HIV transmission pathways. At the IAS conference activists and youth criticized program people for not listening and hearing their target populations and taking these recommendations into account for program design, implementation and review.

Program people don't understand or listen to the target pops (e.g. Andile Mthombeni)

Regarding 909090 key issues, Dr Pillay made a call to action for all stakeholders to focus on: UTT; mitigating gaps in testing to linkage to adherence; increasing attention to HIV drug resistance; ensuring complete TB/HIV integration; developing and implementing different models for different populations and ensuring differentiated care for paediatrics, adolescents, pregnant women, men, key populations; designing programs which tailor services to the individual (PrEP, ART); strengthen the health system and ensure integration (HIV, TB, SRH/FP, maternal health, mental health) treating ART patients as "chronic" patients; strengthening the role of community and community partnerships and integration with Community Health Workers (CHW). He also highlighted gaps in knowledge in the SA context in terms of understanding the role of microbicides in the SA prevention agenda, including reasons for suboptimal effectiveness, as well as TasP's experience whereby the population prevention benefit was not obvious.

1.1 Summary of Recommendations

Table 1 909090 Action Items and Responsible role player(s)

Recommendation	DOH	Donors	Partners	Other
Prioritise getting new TB drugs	X			
Expand PoC TB diagnostics	x			X (NHLS)
Go back to basics for the TB program	X		X	
Focus on stopping leakages from testing to linkage to adherence	X		X	
Focus on HIV drug resistance (M&E and timely intervention)	X	X	X	X (NHLS)
Do sincere consultation with target populations and design interventions in consultation and in partnership with target beneficiaries	X		X	
Invest in better & more tolerable medicines & long acting injectables	X			
Review cascade at every meeting and focus on leakages and action plans to fix the leakages	X	X	X	

2 Tuberculosis Pre-conference report back

Dr Kavindhran Velen presented feedback from the 2016 Tuberculosis pre-conference to IAS. A major focus of the conference was around the recently adopted 90-90-90 targets for TB, which are:

- 90% of all people with TB diagnosed and put on appropriate treatment
- 90% of the most vulnerable (TB key populations) reached
- 90% treatment success

Globally, treatment success for drug susceptible TB is at 86%, close to the 90% target; however, detection of drug susceptible TB is at 63%, demonstrating the need for intensified case finding. The gaps for drug resistant TB are much greater with only 23% of cases detected and 50% treatment success. Studies that were highlighted during the presentation include TB Fast Track, which evaluated the effect of point-of-care TB test-and-treat on early mortality in people with HIV accessing ART, and the RAFA trial, which compared early vs. late ART initiation in TB/HIV co-infected patients.

2.1 Discussion session 1: Tuberculosis

Much of the discussion focused on doing the basics of the TB programme correctly beginning with **intensified case finding**. In order to use resources efficiently, targeting TB key populations for intensified case finding was proposed, with the acknowledgement that key populations for TB are different than for HIV, and include mine workers, prison populations, children, people living with HIV, and people who smoke or abuse alcohol. A study in which clients attending facilities screened positive but were not subsequently tested for TB highlighted the issue of missed diagnostic opportunities due to health care workers not following protocols. The second issue to address was the substantial proportion of individuals who test positive for TB but are never initiated on treatment. Unless this problem is addressed, intensified case finding will not make a difference to the epidemic. Proposed solutions included strengthening clinic-lab interface so that lab results are properly utilised and deploying community health workers into communities to trace TB positive patients who need to initiate treatment and do active case finding from TB index patient. A point was made that because there are so many roads that are unnamed in South Africa, it is often difficult to locate individuals. In addition to applying political pressure to get roads named, a free geolocation app called "What 3 Words" was proposed as a potential tool for locating individuals without street addresses.

There was also discussion around the low **treatment success rate for MDR TB**, which is currently at 43% nationally. The success of an in-facility file review activity conducted by representatives from the NDOH MDR TB sub-programme in Eastern Cape was reported. From reviewing patient folders, it was clear that in many cases, patients had successfully adhered to treatment and had three negative cultures, but their cases were never followed up and recorded as treatment success. By addressing these issues in results management and data recording, the Eastern Cape MDR TB treatment success rate rose from 43% to 47%. The same exercise will be repeated in KZN next, and it's anticipated that the efforts in Eastern Cape and KZN will bring the national MDR TB treatment success rate up to 50%. The CDC also proposed scaling up an electronic app and decentralized MDR TB treatment model that is currently being piloted, as it could help with clinic-lab interface, treatment initiation, and patient management.

In terms of **TB prevention**, South Africa has one of the biggest IPT programmes in the world, but targets are still not being met. There is a need for better monitoring and documentation of individuals on IPT. Lifelong IPT for PLHIV was proposed. TB research questions focus on transmission (capability of transmission), diagnosis (why latent to active for some), treatment (failure from host or bug), vaccine (which holds the most promise)

2.2 Summary of Recommendations

Table 2 TB Action Items and Responsible role player(s)

Recommendation	Govt	Donors	Partners	Other
Conduct in-facility mentoring on results management and data recording, particularly focusing on MDR TB	X		X	
Convene group at NDOH to develop interventions to improve DRTB treatment success rate (NDOH)	X			
Develop interventions to strengthen interface between NHLS and facilities	X		X	X (NHLS)
Leverage community health workers to trace patients who need to initiate treatment	X			
Focus intensified case finding on TB key populations: Mine workers; Prison populations; PLHIV; People with behavioural risk factors (smoking, drinking); Children	X		X	
Evaluate the electronic application and decentralized model for MDR TB treatment, and consider scale up if model is effective in addressing MDR TB cascade gaps		X (CDC)		
Pilot "What Three Words" app (person locator) for improving tracing of TB suspects and patients by Community Health Workers				X
Revise of IPT guidelines to include lifelong IPT for HIV positive individuals	X			
Consider adopting "integration 90" targets (90% of those tested for TB also tested for HIV; 90% of those HIV tested screened for TB) to strengthen HIV/TB service integration	X	X		
Ensure drug tenders include TB-friendly anti-retroviral drugs & paediatric formulations	X			

3 Prevention

The presentation on prevention by Prof James McIntyre highlighted findings presented at the 2016 AIDS conference on microbicides, pre-exposure prophylaxis (PrEP), voluntary male medical circumcision (VMMC), prevention of mother to child transmission of HIV (PMTCT), condoms, adolescent-focused prevention, and the role of the vaginal flora in HIV transmission and prevention. STI screening and treatment seen as a key opportunity for care and entry into PrEP. PMTCT data highlighted gaps in counselling and support for women: ½ didn't want treatment, less than 50% wanted to start after just one counselling; 66% per-partum VLS, 22.8% had high Viral Load and 24.3% of mothers on exclusive breastfeeding had high viral load. 39% of MTCT is postpartum. The youth bulge was highlighted as a major concern with roughly 30% more AGYW today than at the beginning of the epidemic.

3.1 Discussion session 2: Prevention

Although no new prevention “game changers” came to light at AIDS 2016, there is evidence that the available prevention commodities can be used more effectively. More research is needed on how to effectively implement combination prevention in South Africa and how to design differentiated packages for diverse populations. The best way to find out will be to engage with the populations who will be using the prevention packages and determine their preferences. For example, prevention commodities are generally only available through facilities, but young people don’t go to facilities. If prevention services are to reach young people, we need to determine how and where they would prefer to get them. Criticism was levied that “community engagement” has become a catch phrase and that current community engagement tactics like community dialogues do not appear to be very effective because the audience has a tendency to tune out when messages are delivered using this platform. Smaller platforms (e.g. religious or household) may be more effective at getting audiences to internalize messages and turn them into actions.

Several points were raised about targeting prevention to young people, particularly young women. Although there were a few studies looking at PrEP acceptability for young people in South Africa, more research is needed on PrEP for young women. Young people have shown interest in participating in the development of health services and complain that often times they are asked only for their views and then are delivered programmes they had no involvement in developing. Operational research is needed to determine how to make young people an integral part of programme development. Strategic use of social media was proposed as a way to continuously get input from young people. A programme for young people like Vitality, in which users get points that earn valuable benefits, was proposed at HIV Think Tank and could increase health service uptake by young people. Studies on transmission dynamics have shown that young women are infected by older male partners, who are usually infected by their age counterpart women. Most effort around age-disparate relationships has focused on getting the young women to change their behaviour, while insufficient attention has been given to the role of older men. However, transmission to young women could also be prevented by getting older HIV negative men on PrEP and older HIV positive men into treatment.

3.2 Summary of Recommendations

Table 3 HIV Prevention Action Items and Responsible role player(s)

Recommendation	Govt	Donors	Partners	Other
Conduct operational research on differentiated combination prevention packages and patient-centred delivery of prevention services	X	X	X	
Integrate strong focus on counselling and adherence as part of PMTCT program	X		X	
Conduct operational research on PrEP rollout to adolescent girls and young women including integration into SRH/FP programs and focus on what AGYW want "now"	X	X	X	
Consider role of older men when designing interventions targeting age-disparate relationships (stop focusing solely on young women; PrEP or ART for older male partners)	X	X	X	
Pilot "on-demand" PrEP for areas of need (partners of migrant workers; couples until VLS, etc)		X		
Include a strategic social media platform managed by a young person for all campaigns and programmes with a focus on two-way conversation to rapidly pick up questions & concerns	X			X
Raise awareness of and increase access to post-exposure prophylaxis (PEP)	X	X	X	
Develop new models for community engagement	X	X	X	X

4 First 90

Feedback from the AIDS 2016 conference on the First 90 was presented by Mrs. Thato Chidarikire and Mrs. Thato Farirai. When developing strategies for reaching the First 90, focus should be placed on the right people (adolescent girls and young women) and the right places (informal settlements and urban areas). Implementing a combination of testing modalities based in communities and at facilities helps to maximise testing uptake among different segments of the population. The new HIV Testing Services (HTS) policy endorses use of all community based testing modalities and promotes couples counselling. HIV self testing as an HIV screening test (would require confirmation test by finger prick test) showed high acceptability, relatively low cost for distribution, low risk of interpersonal violence through HIV self test, and increased uptake of HCT by some key populations.

4.1 Discussion session 3: First 90

A major theme that came from the discussion on the First 90 was the need to refocus on the human element, both in terms of the people providing services and those receiving services. There is a diverse set of effective diagnostic tools and testing modalities that can be implemented in South Africa, but the challenge remains in reaching those who need them in an efficient manner. Another consideration is the need to determine which modalities newly diagnose the most PLHIV in different sub-populations. For example, more men may be diagnosed using workplace mobile testing than home-based testing or in the evenings and on weekends. However, home based testing in an informal settlement may diagnose more PLHIV than a mobile unit stationed at a suburban shopping centre. Additionally, certain modalities require more resources than others, so it is necessary to analyse data to establish which are most cost effective. Inadequate DOH funding and/or posts for counsellors, and specifically the Gauteng interim removal of counsellors from health facilities, has resulted in decreased in-facility testing capacity.

In terms of how to reach more men with testing, the SEARCH trial in Uganda and Kenya found that setting up a men's tent at community health fairs was very effective. Information on many topics of interest to men's health were discussed (e.g. hypertension, diabetes, sexual and reproductive health), with HIV testing only being one component. The SEARCH trial also used radio advertising, advertising at football matches, motorcycle mobilizers, men's raffles with prizes, and testing at workplace or outside of working hours to be effective in getting more men to test. In the South African context, Aurum's Executive Club for Men is also quite effective at engaging men in health care.

Evidence from the First Things First programme showed that 93% of 180 000 people surveyed attending Technical Vocational Education and Training colleges (TVETs) and Higher Education Institutions (HEIs) across South Africa, the majority aged 15-24 years, indicated that they preferred peer-to-peer testing that was brought to them (i.e. mobile testing) as opposed to going to a facility to be tested. The importance of true peer-to-peer interaction was highlighted: peers need to not only be the same age, but from a similar location and

background. For students in basic education, it appears that progress is being made towards getting permission and mandate for HIV testing into schools. The Department of Basic Education has developed a new TB/HIV strategic plan, which includes the provision of services in schools. The task team has identified 10 schools in each province with the highest prevalence of HIV and pregnancy where services will first be implemented and operational plans for these schools are currently in development.

Finally, there was a brief discussion about the regulations for HIV self-testing. Currently, all HIV test kits are pre-qualified by WHO and then quality assured by NICD, which is the reference laboratory for South Africa. In future, SAPRA will serve as the national regulatory body that approves all medical devices, including HIV test kits.

4.2 Summary of Recommendations

Table 4 HTS Action Items and Responsible role player(s)

Recommendation	Govt	Donors	Partners	Other
Analyse data on testing modalities to determine: 1. Which modalities yield the most new HIV diagnoses? 2. Which modalities are the most cost effective?			X (FPD)	
Pilot/adopt SEARCH trial strategies to access men for HIV testing in South African context			X	
Fund inclusion of other health services as part of HTS to promote uptake by targeted populations (e.g. men's health, Non-communicable Diseases, etc)		X		
Link DSPs with DBE to support implementation of school TB/HIV services	X			
Review and uptake DOH organograms/funding structures to invest in lay counsellors for HTS and linkage support & prepare for PEPFAR transition	X			

5 Second 90

Feedback from the 2016 AIDS conference related to achieving the second 90 in South Africa was presented by Dr Andrew Black. The contrast in outcomes of two community-level studies, the SEARCH trial in Kenya and Uganda and the Treatment as Prevention (TasP) trial in KZN, were explored. The SEARCH trial was able to achieve all three 90s over the course of two years, whereas the TasP trial only achieved 40.2% and 42.4% viral load suppression in the control and intervention arms, respectively. The biggest gap in the TasP trial was in reaching the second 90: less than half of those newly diagnosed with HIV initiated ART, even though 93% of participants indicated that they would want to start ART as soon as possible if they were diagnosed HIV positive. It was posited that patients were unwilling to start treatment because it was offered through trial clinics, and trial clinics only dispensed ART; therefore, any individual seen attending a trial clinic could be identified as HIV positive. In contrast, the

SEARCH trial used a more holistic approach to health care, using a patient-centred approach to care and a multi-disease chronic care model in health facilities. Distinguishing characteristics of the SEARCH program was inclusion of a multi-disease campaign as part of package (including water filters and mosquito nets) and linkage same day to a disclosed diagnosed peer for linkage support for the same disease (e.g. HIV, diabetes) and substantial investment in "community involvement" to build trust in the program. The following influences can act as barriers to 2nd 90: *Contextual influences*: family & community relations, socio-economic circumstances, distance (>2 km there was a problem); *Quality of Health Care services*: poor provider client relationships, mistrust, perceived lack of efficacy of ART; *Individual agency:* tired of taking chronic meds, alternative treatments, only sick people need medicine; *Other factors*: age (15-24), alcohol or substance abuse, GBV, CD4 (Decrease uptake with increasing CD4 (9% decrease with every 50-cell increase). Combination of linkage interventions result in best linkage outcomes, including multiple follow-ups, reminders, patient escorts, non-cash incentives, accelerated access and strong engagement with traditional leaders, religious leaders, CCG and traditional healers to support community education on benefits of ART.

5.1 Discussion 4: Second 90

Although there was consensus around the need for patient-centred, differentiated models of care, it was also acknowledged that there is a gap in knowledge around what these models would look like in South Africa. Evidence suggests that integrated services are preferred by patients, but research is often conducted on single diseases and in controlled settings, which makes it challenging to translate findings into the health facility. Furthermore, treatment research often focuses on adults, even though adolescents struggle with adherence and there is little evidence regarding the best way to transition adolescents from paediatric to adult treatment programmes. There was also recognition that the health system needs to work with traditional healers, instead of viewing them as competition, since they are often viewed as respected elders in communities. For example, a convent worked with traditional healers to set up a referral system, in which patients were referred to traditional healers for psychosocial support, and traditional healers agreed to refer patients who needed medical treatment to the clinic.

There was also a brief conversation around new drugs and drug stock outs. With regards to dalrutegravir, the NDOH is waiting for a fixed dose combination before widely rolling it out because of a concern around adherence to multiple pills. However, clinicians may prescribe it for individual patients if they feel it is a better option for them. A recommendation was made to ensure that any new ARVs that are introduced are compatible with TB drugs through robust trials. The NDOH has introduced the Stock Visual system to help prevent stockouts, though problems with stockouts have improved over time. In order for early warning systems to work, those using them must not be intimidated from using them.

5.2 Summary of Recommendations

Table 5 ART Action Items and Responsible role player(s)

Recommendation	Govt	Donors	Partners	Other
Conduct operational research on patient-centred models of care to inform best practice		X	X	
Conduct operational research on differentiated care for paediatrics, adolescents, and adults and transition from paediatric to adult care		X	X	
Facilitate relationships between traditional healers and health facilities (e.g. referral systems) and stronger engagement for community education and mobiliation	X		X	
Strengthen support from district departments of health for early warning systems for stock outs (e.g. Stock Visibility Systems)	X		X	

6 Third 90

Feedback from AIDS 2016 on the Third 90 was presented by Dr Wendy Stevens. Topics covered included adherence, retention, drug resistance, and viral load monitoring. Viral Load remains the best marker as to whether the ART programme is working. Non-facility-based methods of delivering treatment and supporting adherence, including community and facility based adherence clubs (AC) and community based adherence groups (CAGs) showed promise. Adherence continues to be a challenge for HIV-positive adolescents. National VLS is 78%, but varies drastically across districts (47%-87%), revealing the need for focused interventions to achieve the last 90. Poor performing facilities get masked by averages. To achieve the 3rd 90 focus must be to improve usage of the viral load and optimise use of the NHLS data. NHLS could be the command centre for linkage to care using probabilistic matching to improve system-wide retention monitoring.

6.1 Discussion session 6: Third 90

Other issues that were raised during discussions included:

- The need to monitor resistance to first line drugs, particularly NNRTIs, that will grow quickly among 15-24 year olds because of poor adherence and could be accelerated by test and treat policy
- Potential to use dried blood spots for viral load monitoring instead of relying on blood draw
- Integration of data systems, including the NHLS Corporate Data Warehouse (CDW), tier.net, etr.net, etc.

- Improving messaging around viral load monitoring to help patients understand its importance, the way that calling CD4 cells "soldiers" has helped for messaging around CD4 counts

Two examples of best practices for viral load monitoring and reporting were put forth. In Greater Sekhukhune district, district management teams conducted viral load road shows in each sub-district presenting lists of outstanding viral loads to facility managers and giving them a week to address problems. Simultaneously, early warning indicators were being implemented appropriately and championed by district management. Because accountability was assigned at the correct levels, viral loads were completed and recorded, resulting in the viral loads done increasing from 29% to 70% over the course of a year. Partner support from Aurum and FPD was acknowledged.

Right to Care reported that they use temporary Direct Service Delivery (DSD) teams, generally staffed by retired nurses, to identify problems related to viral loads at facilities and resolve the issues accordingly, whether it is drawing bloods, results management, or data recording. A skills transfer has been conducted so that the facilities are able to do the work of the DSD teams if the DSP phases out of the district.

Though data from AIDS 2016 shows that adherence clubs provide adherence support and alleviate pressure on facilities by providing an alternate mode of treatment provision, there are a few issues in practice that need to be addressed. One is that facility managers argue that their budgets are tied to patient head count, so decanting patients to adherence clubs or other treatment programmes outside of facilities may lead to budget cuts for them. Another issue is that there is no framework for coordinated partnerships between government and civil society at a national level, which creates difficulty when developing community-based adherence clubs.

6.2 Summary of Recommendations

Table 6 VLS Action Items and Responsible role player(s)

Recommendation	Govt	Donors	Partners	Other
Secure access to DSPs to NHLS's Corporate Data Warehouse (CDW) to help monitor viral load completion in districts	X			X (NHLS)
Support development of routine/standard reports & dashboards to support program improvement		X		X (NHLS)
Pilot DBS for viral load measurement in facilities	X			X
Increase focus on monitoring rising ART resistance	X	X	X	X

7 Other points of discussion

7.1 Management of District HIV and TB programmes

A discussion arose about the role of the district HAST managers and their relationships with DSPs. HAST managers are responsible for ensuring that guidelines are implemented, programmes are running smoothly, and that data is collected and reported accurately. They also coordinate drug availability with pharmacists, submit quarterly reports to NDOH, and develop, plan, and implement programme plans. Complexity of the position was highlighted with the need to ensure adequate support, supervision and accountability for the HAST manager to ensure success of the programme. Often it is difficult for one person to cover all of these responsibilities, which is where the DSP fits in. The HAST manager can use the DSP mentor teams that are not available through the DOH to investigate issues at individual facilities. The DSP can fill in gaps where there are shortages. The performance of the HAST manager has a cascading effect down to facility performance, resulting in districts with good management performing well and those with poor management struggling. Districts with weak management structures need to be handled differently, but the first step is to identify which districts they are. The recommendation was made to develop an evaluation to identify which districts have effective management structures and which do not, at least in the 27 districts with PEPFAR partner support, and inform how to use DSP support most appropriately.

7.2 National Strategic Plan

Over the course of the colloquium, a number of recommendations were made with regards to the next National Strategic Plan (NSP), which is currently in development:

- Include combination prevention packages and consider how these packages could be tailored to meet the needs of different communities
- Focus on the needs of 15-24 year-old females, both because of the youth bulge and because they are getting infected with HIV at the highest rate, but also their male sex partners
- Develop framework for creating coordinated partnerships between government and civil society
- Quickly conduct research to generate information on:
    - More effective strategies of community engagement
    - Models of patient centred care

7.3 Cross-cutting Gaps

Several major gaps were identified that applied across the HIV and TB cascades, from prevention to treatment:

- There is a lack of operational research that is truly applicable to the realities of the health system

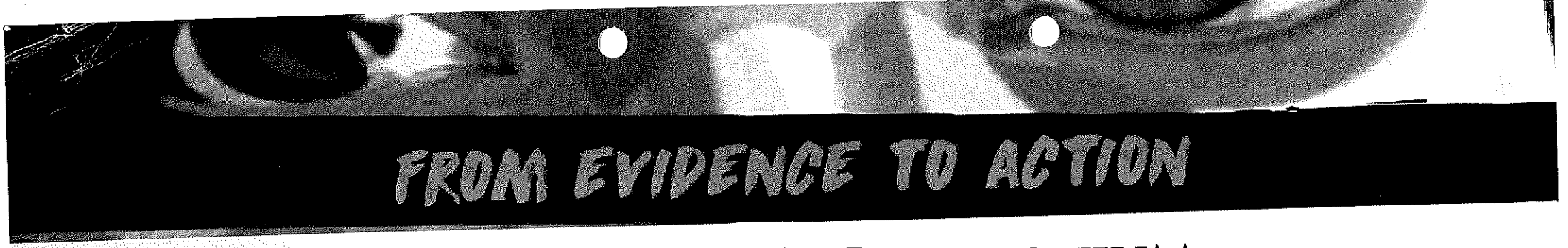
- Operational research and routine data needs to be reviewed, interpreted, and applied on an ongoing basis
- Models of patient-centred care need to be tested and evaluated, including prevention packages/services, HTS, linkage to care, treatment services, adherence support, etc.
- How can the government develop real partnerships with communities, beyond "community dialogues"?
- How can HIV services be successfully integrated with other services (TB, NCDs, MCH)?
- For optimal task shifting there needs to be a more stable lay person workforce within DOH to support HTS, linkage and adherence

7.4 Summary of Recommendations

Table 7 Other Points of Discussion Action Items and Responsible role player(s)

Recommendation	DOH	Donors	Partners	Other
Conduct an evaluation of district HIV/TB programme management (i.e. HAST managers) at least in the 27 PEPFAR supported districts			X	
Develop different strategies for districts with weaker management structures	X		X	
Develop & implement operational research projects to test various models of patient-centred care	X	X		X (HSRC)
Conduct unit expenditure analysis for task shifting		X		X

Appendix 1 Attendance register



THE 2016 HIV/TB COLLOQUIUM:

FEEDBACK FROM THE 2016 INTERNATIONAL AIDS CONFERENCE AND TB PRE-CONFERENCE.

	Title	Name	Surname	Organisation	MP/HPCSA No.	Signature
1	Mr	Monaledgo	Sebola	Sefako Makgatho Health Sciences University	N/A	
2		Steven	Smith	US Embassy		
3		Yogan	Pillay	NDOH		
4	Mrs	Hanlé	Koppe	FPD/HEAIDS		
5	Mrs	Ernesha	Maunyo	FPD		
6	Prof	Ameena	Goga	SAMRC	0384593 ✓	
7	Dr	Gustav	Wolvaardt	FPD	MP0270709	
8	Dr.	Nancy	Knight	CDC		
9	DR.	GEMMA	OBERTH	SANAC	—	
10	Mr	Kavindhran	Velen	Aunum	—	

	Title	Name	Surname	Organisation	MP/HPCSA No.	Signature
11	MR	SANELE	AMUSENDE	TB/HIV CARE ASSOCIATION		
12	Dr	Caroline	Maluleka	NHLS/SAMA	MP0576093 ✓	
13	Prof	Wendy	Stevens	NHLS	MP0352829 ✓	
14	Ms	Suzanne	Johnson	FPD		
15	Dr	Margot	CNS	FPD	MP303666 ✓	
16	Dr	JANET	MCINTYRE	ANOVA	MP2673,1 ✓	
17	Mr	Piotr	Hippner	Aurum	—	
18	Ms	Alexandra	Mumbauer	FPD		
19	MS	KERRY	PELEMAN	VSMD	—	
20	MR	DEREK	SEDLACEK	VSMD	—	
21	Dr.	Chris	Ullis	FPD	MP0489721 ✓	
22	Dr	Ashley	Greenwood	Khethimpilo	MP0204933 ✓	
23	Dr	Sam	Johnson	Genesis		
24	Ms	Romy	Oosthuizen	FPD	—	
25	Ms	SUKAYA	DAWAD	NDOH	—	

	Title	Name	Surname	Organisation	MP/HPCSA No.	Signature
26	Ms	Julia	Hill	MSF	—	Julia Hill
27	MRS	ELSIE	Raphela	NDOH	—	
28	Dr	Zuki	Pinini	NDOH	MP0341666 ✓	
29	Mr	Joe	Rossouw	TB HIV Care		
30		Eva	Kiwango	UNAIDS		
31	MRS	Ruth	Mulube	FHI360		
32	Ms	Mary-Ann	Richards	BRITC		Richards
33	Ms	Thato	Chadarikiro	NDOH		
34	MR	DAVID	MAMETJA	NDOH		
35	DR	Andrew	Black.	WRHI	MP0431029 ✓	
36	Dr	O/a	Olaloyinsu	USAID	MP0752665	
37	MS	Robin	Ogle	TB HIV CARE		
38		Mariette	Slabbert	SANAC		
39	DR	PUMLA	LUPONDWANA	FHI360	MP0481572 ✓	
40	MS	Thato	Farrai	FPD		

	Title	Name	Surname	Organisation	MP/HPCSA No.	Signature
41	Dr	BATANAYI	MUZAIA	ICAP	—	[illegible]
42	Ms	Nomeei	MASIHLEHO	USAID		[illegible]
43		Witness	Chimhola	MRC		[illegible]
44	DR	Qondisa	Qina	TB/HIV Care Association	MP0562653	[illegible]
45	PROF	HARRY	HAUSLER	TB/HIVCARE	MP0481637	[illegible]
46	Dr	Norbert	NDJEKA	NDOH	MP0362409	[illegible]
47	MR	DUMISANI	GANDHI	CANADIAN HIGH COMMISSION		[illegible]
48	Dr	Augustini	Nhilwamunda	WHO		[illegible]
49	Dr	Nom	[illegible]	Provide	MP0262692	[illegible]
50	~~Ms~~	~~Nkhensani~~	~~Shivambu~~	~~City of Tshwane~~		[illegible]
51		[illegible]	Bereda Gadabiat	CCI	—	[illegible]
52	Dr	Nkhensani	Nkhwash	APD		[illegible]
53	Ms	NomonDE	ROZANI	NDOH Consultant		[illegible]
54	Dr	Ganizani	Mlawad	Right to Care	MP0735876	[illegible]
55		Nomawakazi	Sogaula	ICAP	—	[illegible]

	Title	Name	Surname	Organisation	MP/HPCSA No.	Signature
56		Ramnek	Anderson		0625199.	
57		STEVE	LOTSOE	SANAC		
58		SIPHO	SONDABO	DPSA	MP0464345	
59		ERIC	BUCH	SANAC NSP		
60						
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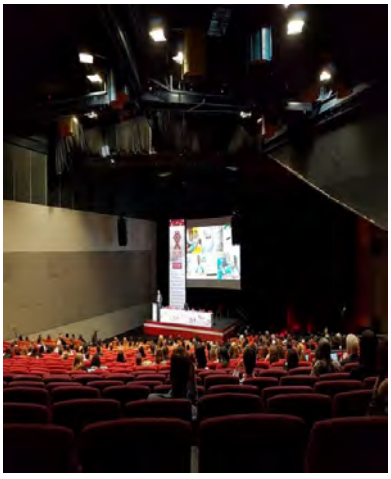
Appendix 2: Presentations

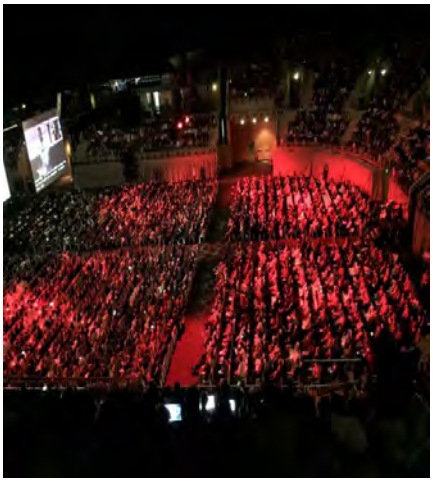
OVERVIEW OF KEY ISSUES FROM THE TB/AIDS 2016 CONFERENCES

YOGAN PILLAY

25 AUGUST 2016

Spot the Difference!



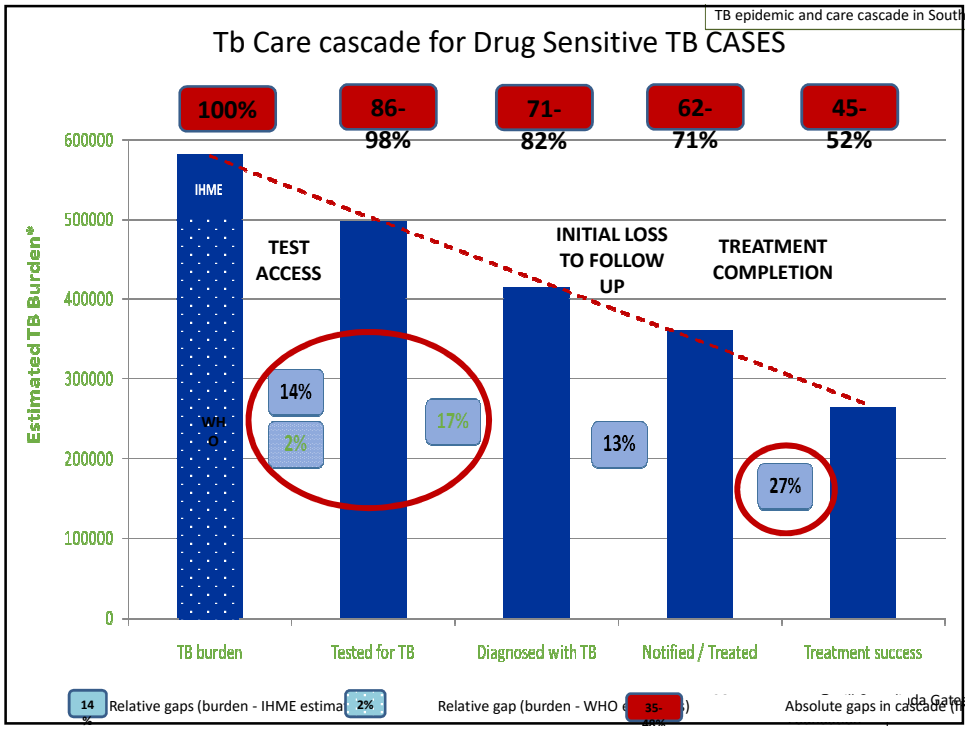


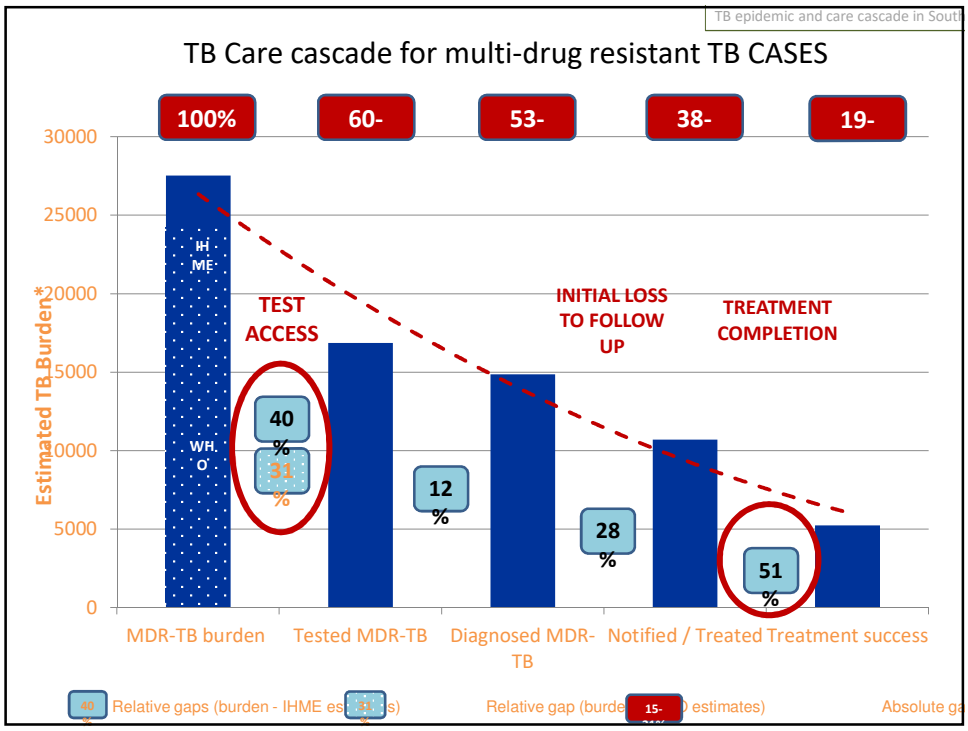
Nelson Mandela, Bangkok, 2004

"The world has made defeating AIDS a top priority. This is a blessing. But TB remains ignored. Today we are calling on the world to recognize that we can't fight AIDS unless we do much more to fight TB as well."

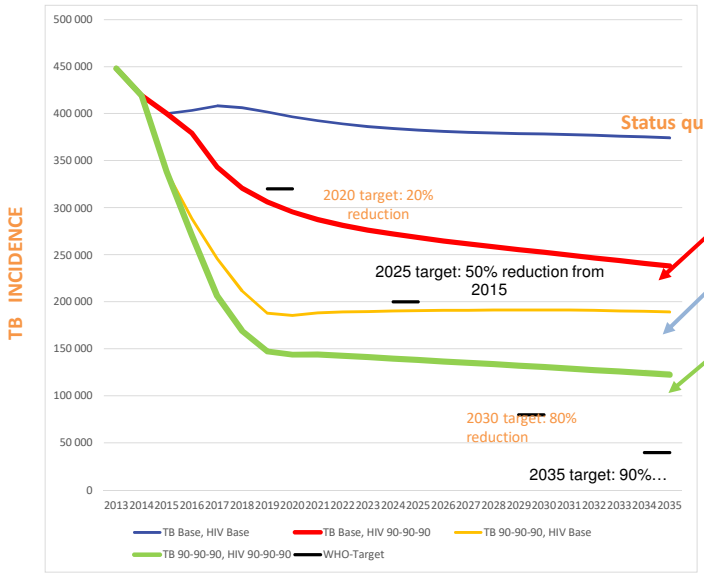
Key issues for TB

- Patient centred programmes
- Increased civil society participation
- Do the basics
  - Intensified case finding
  - Early initiation of treatment
  - Treatment success
- Better use of GeneXpert
- Introduction of LAM
- Move to 9 month MDR-TB regime
- Use of new TB drugs


TB epidemic and care cascade in South
Tb Care cascade for Drug Sensitive TB CASES
100%
86-98%
71-82%
62-71%
45-52%
600000
500000
400000
300000
200000
100000
0
Estimated TB Burden*
IHME
WHO
TEST ACCESS
INITIAL LOSS TO FOLLOW UP
TREATMENT COMPLETION
14%
2%
17%
13%
27%
TB burden
Tested for TB
Diagnosed with TB
Notified / Treated
Treatment success
Relative gaps (burden - IHME estima
Relative gap (burden - WHO
Absolute gaps in cascade

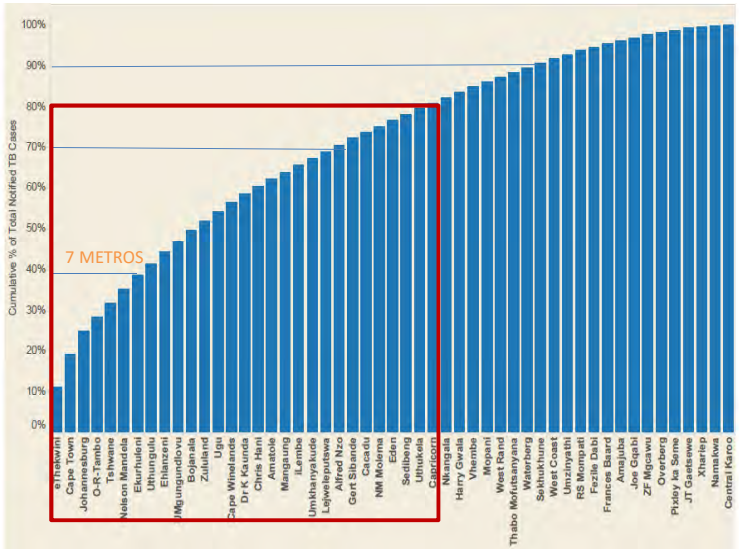

TB epidemic and care cascade in South
TB Care cascade for multi-drug resistant TB CASES
100%
60-
53-
38-
19-
30000
25000
20000
15000
10000
5000
0
Estimated TB Burden*
IHME
WHO
TEST ACCESS
INITIAL LOSS TO FOLLOW UP
TREATMENT COMPLETION
40%
31%
12%
28%
51%
MDR-TB burden
Tested MDR-TB
Diagnosed MDR-TB
Notified / Treated
Treatment success
Relative gaps (burden - IHME es
Relative gap (burde
estimates)
Absolute ga

To have significant impact: TB and HIV programs must be scaled up



Distribution of TB burden enables focusing our efforts

- **Pareto Curve of Total TB Notifications by District**
- 80% of TB cases are notified in 29 districts



Source: ETR/DHB 2013

What is the situation with HIV?

People living with AIDS (UNAIDS, 2016)

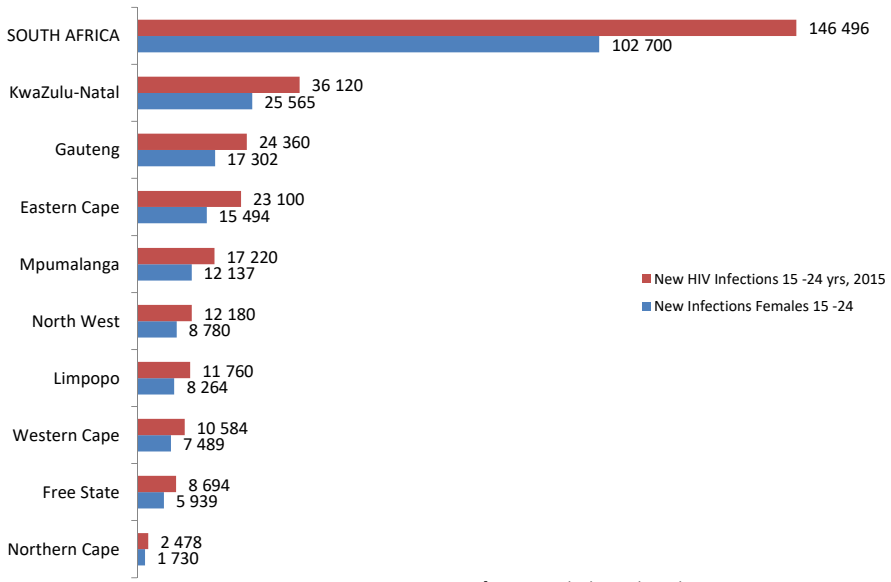
	(Children, ages 0-14)	(Women, ages 15+)	(Adults, ages 15+)	(All ages)
	Estimate	*Estimate*	*Estimate*	*Estimate*
2000	200 000	2 900 000	5 100 000	5 300 000
2001	230 000	3 200 000	5 500 000	5 800 000
2002	260 000	3 300 000	5 900 000	6 100 000
2003	290 000	3 500 000	6 100 000	6 400 000
2004	320 000	3 500 000	6 200 000	6 500 000
2005	340 000	3 600 000	6 200 000	6 500 000
2006	350 000	3 500 000	6 100 000	6 500 000
2007	360 000	3 500 000	6 100 000	6 500 000
2008	370 000	3 500 000	6 000 000	6 400 000
2009	360 000	3 500 000	6 000 000	6 400 000
2010	340 000	3 500 000	6 000 000	6 400 000
2011	320 000	3 600 000	6 100 000	6 400 000
2012	300 000	3 700 000	6 200 000	6 500 000
2013	280 000	3 800 000	6 400 000	6 600 000
2014	260 000	3 900 000	6 500 000	6 800 000
2015	240 000	4 000 000	6 700 000	7 000 000

10

Year	ESTIMATED NEW HIV INFECTIONS (Children, ages 0-14)	(Women, ages 15+)	(Adults, ages 15+)	(All ages)
	Estimate	*Estimate*	*Estimate*	*Estimate*
2000	79 000	400 000	710 000	790 000
2001	84 000	360 000	640 000	730 000
2002	88 000	320 000	570 000	660 000
2003	88 000	280 000	500 000	590 000
2004	85 000	240 000	440 000	520 000
2005	80 000	220 000	390 000	470 000
2006	74 000	190 000	350 000	420 000
2007	64 000	180 000	330 000	390 000
2008	58 000	170 000	320 000	370 000
2009	32 000	170 000	310 000	340 000
2010	16 000	180 000	330 000	350 000
2011	16 000	190 000	340 000	360 000
2012	15 000	190 000	350 000	370 000
2013	7200	200 000	360 000	370 000
2014	5900	200 000	370 000	380 000
2015	5100	200 000	370 000	380 000

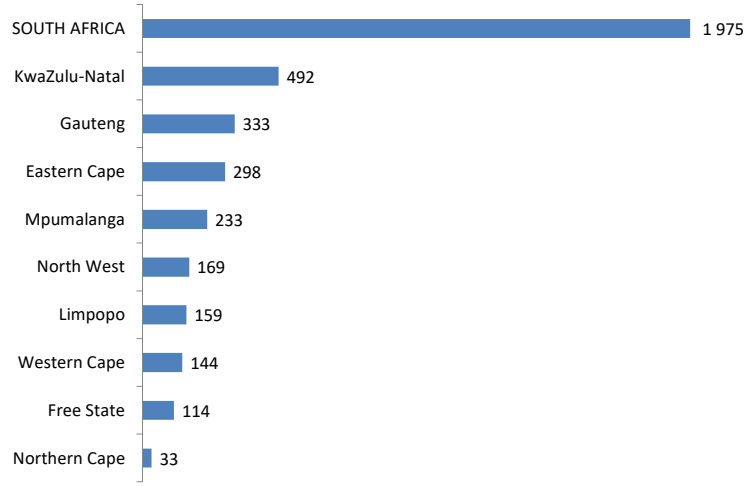
11

Estimated annual new HIV infections among young women (15 -24 years) by Province, South Africa - 2015



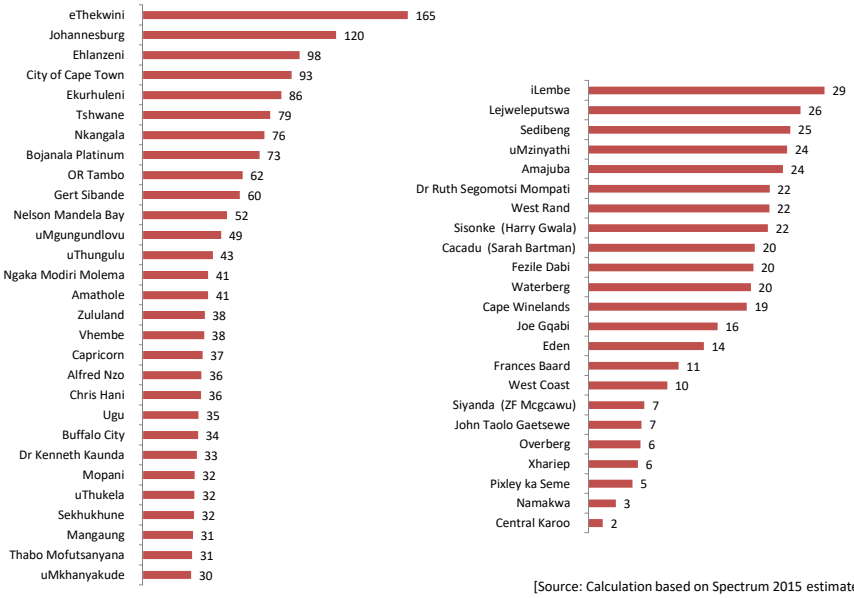
[Source: Calculation based on Spectrum 2015 estimates]

Estimated Weekly new HIV infections among young women (15 -24 years) by Province, South Africa - 2015



[Source: Calculation based on Spectrum 2015 estimates]

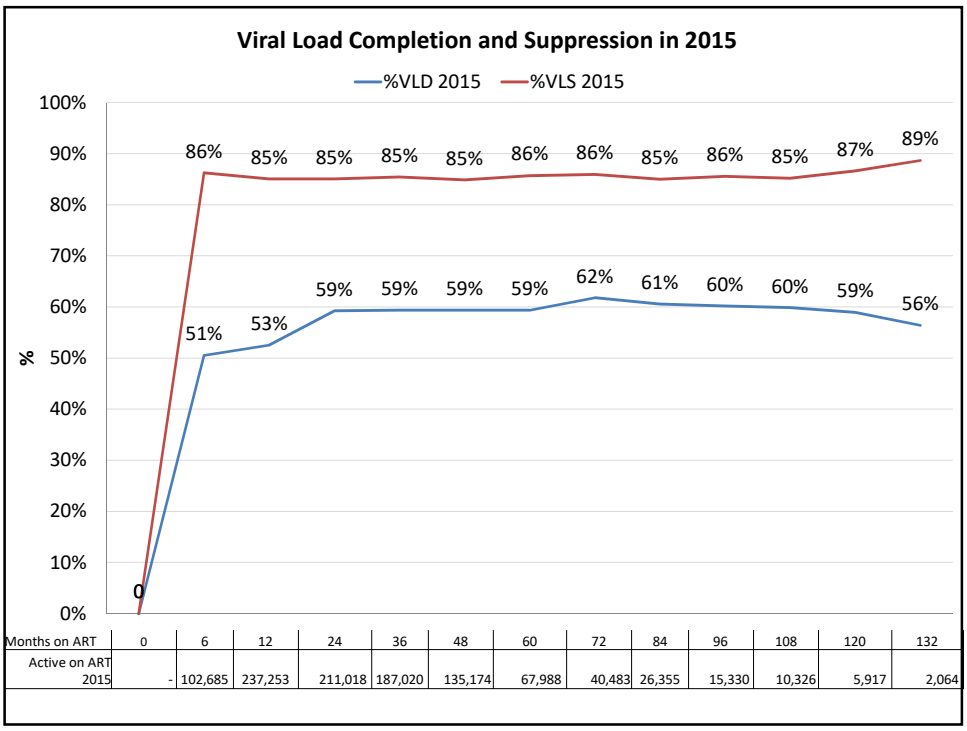
Estimated Weekly New HIV infections among young women (15 -24 years) by district, South Africa - 2015



[Source: Calculation based on Spectrum 2015 estimates]

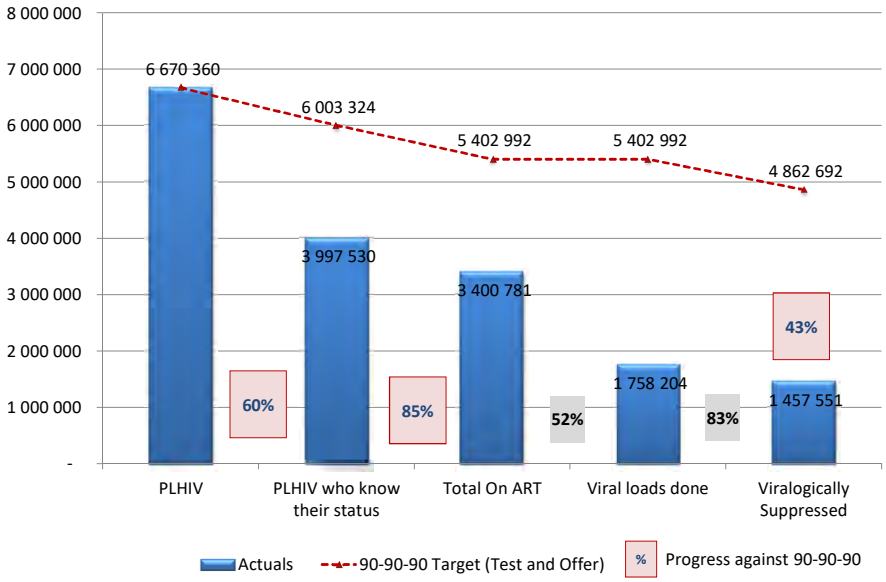
	ESTIMATED COVERAGE (%) OF PEOPLE LIVING WITH HIV RECEIVING ANTIRETROVIRAL THERAPY			
	(Adults, ages 15+)	(Women, ages 15+)	(Children, ages 0-14)	(All ages)
Year	*Estimate*	*Estimate*	*Estimate*	*Estimate*
2000	0	0	0	0
2001	0	0	0	0
2002	0	0	0	0
2003	0	0	1	0
2004	1	1	1	1
2005	2	2	3	2
2006	3	3	5	3
2007	5	6	10	6
2008	9	10	15	9
2009	13	15	23	14
2010	19	21	33	19
2011	26	29	44	27
2012	33	37	53	34
2013	39	44	62	40
2014	44	49	69	45
2015	48	53	74	48

15



Months on ART	0	6	12	24	36	48	60	72	84	96	108	120	132
Active on ART 2015	-	102,685	237,253	211,018	187,020	135,174	67,988	40,483	26,355	15,330	10,326	5,917	2,064

HIV Care and Treatment Cascade (March 2016 - National)



Transmitted HIVDR (TDR) in recently infected individuals in South Africa (Hunt, 2016)

- National TDR from annual antenatal survey
  - In 2012, HIVDR to NNRTI 5.3% (95% CI 3.7 – 7.5%) in recently infected women.
  - In 2011, 3 of 5 provinces had TDR rates >5%
- MTN 009 microbicide trial (2010-2011)
  - 7.4% of enrollments had NNRTI resistance
- Africa Centre data (KZN):
  - 2010: 0%
  - 2011 4.7%
  - 2012 7.4%

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18

Manasa J et al, ARHR 2016; Parikh U et al, Pone 2013

HIVDR in patients initiating ART in primary health care clinics in SA – the GERMS TB/HIV study (Hunt, 2016)

- Higher rates of re-starters than expected; extremely high rates of resistance within this group
  - 25% of participants enrolled into study and initiating ART had prior exposure to ARVs
- Pre-treatment resistance rates: 22%
  - 19% of all participants recruited into study and being (re-) initiated on 1L ART are resistant to NNRTI
  - 38% of patients with prior exposure to ART have resistance to NNRTI, compared to 13.4% of those without prior exposure
- Need to conduct nationally representative survey, powered by province, to assess levels of pre-treatment resistance in SA

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Key issues from AIDS2016

- Prevention – are we failing?
  - Treat all needs to be complemented by tailored combination prevention
  - How to implement combination prevention?
  - Better targeting of male & female condoms
  - Innovation interventions needs to be contextualized (PrEP and self testing)
  - PrEP and self testing: how to do this; who should be targeted?
  - Better understanding of sexual and gender issues & transmission pathways

20

Andile J Mthombeni (Daily Vox)

"I felt violated as a young black woman, someone who still falls under the category of those most at risk of new infections. It was as if people were talking about us while we were in the room. Talking for us, yet we were being silenced – even when we spoke. They heard what they wanted to hear and they will go back to their offices and keep doing what they always do, because, let's be honest, how many of us are truly introspective and reflective of our wrongs? After all, they are the experts, right! The experts who have been working for 10, 20, 30 years in the field. Their voices thus are more credible and valuable than ours, right? We are just young people – what do we know?"

http://www.thedailyvox.co.za/andile-mthombeni-aids2016-eyes-voice-young-black-woman/

21

'Key populations'

- Key populations
  - Focus on girls and young women (as well as SWs, LGBTI, IDUs)
  - How to provide services to these populations?
  - How to address service gaps?
  - Political challenges; better size estimates, better investment cases?

22

90,90,90

- 90,90,90 opportunities and challenges
  - Treat all is critical to the 90,90,90 success
  - Gaps in the cascade from testing to linkage to adherence
  - Role of microbicides; understand why microbicides are not more effective (CAPRISA study & its implications)
  - Population prevention benefit not obvious: coverage and VL suppression needed (implications of the TasP study)

23

90,90,90 contd

- Limited attention to HIV drug resistance
- TB is essential to ending AIDS but incomplete integration
- Different ways of implementation may work for different sections of the population
- How to design and provide differentiated care: paeds; adolescents; pregnant women, key pops?
- How do we tailor services to the individual (PrEP, ART)?

24

Health & community systems

- Leverage HIV programmes to strengthen the health system
- Integration of programmes (HIV, TB, MCH, NCDs)
- How to provide services for 'key populations'?
- What can we learn from the B+ experience? Are women remaining in care during and post breastfeeding?
- How to ensure that the system is ready to test and treat all! Don't forget about the current patients – they will be our long term chronic patients!

25

Systems contd

- Focus for impact: put resources in the areas with the highest impact (this needs granular level data)
- How to prioritise resources given competing needs?
- Role of community and community partnerships, including CHWs
- Strategic information, epidemiology – gaps in information of the epidemic, including social & behavior change
- More resources are needed: now is the time to accelerate investment not reduce!

26

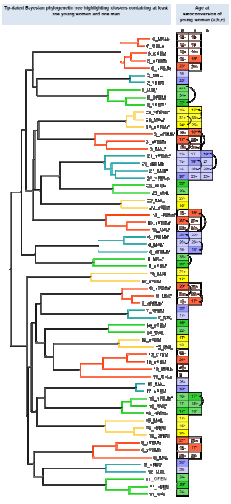
DOH launches during IAS

- TB clinical guidelines app (download from istore or google play)
- Infection, prevention and control website (www.ipconnect-sa.org)
- Medication Adherence app (download)
- EMTCT last mile plan (http://www.emtct-thelastmile.co.za/)
- TB Coalition to strengthen community mobilisation
- Stock Visual System (clinics)

27

Infection Pathway

Africa Centre identified phylogenetically linked HIV transmission networks in Hlabisa



High HIV incidence men
mean age 27 years (range 23-35 years)

Very young women acquire HIV from men, on average, 8 years older

Men and women > 24 years usually acquire HIV from similarly aged partners

High HIV risk women
Mean age 18 years
(range 16-23 years)

High HIV prevalence women
Mean age 26 years
(range 24-29 years)

When teen women reach mid-20s they continue the cycle

Source: *Dellar R, Tanser F, Abdool Karim Q, et al. Manuscript in preparation*

28

Game changers for 2017-2022

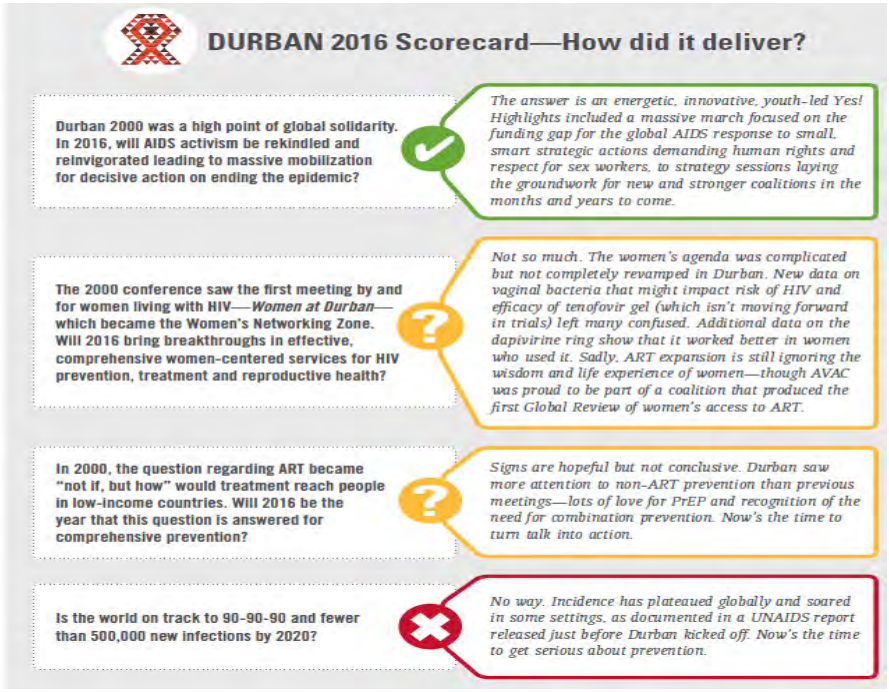
- Better understanding of needs of the population through partnerships (youth, women, LTBTI)
- Better understanding of transmission dynamics (phylogenetic studies)
- Refocus on prevention – what can we learn from Zimbabwe; inclusion of microbicides, PrEP as part of combination prevention
- Look for social vaccines to obtain structural, social and behaviour change

29

Game changers contd

- Testing (community, self testing)and getting HIV+ people into treatment as rapidly as possible
- Better and more tolerable medicines, including long acting injectables
- Expand access to viral load testing, adherence support
- Strengthen health systems; integration of HIV with TB, SRH, maternal health, mental health etc

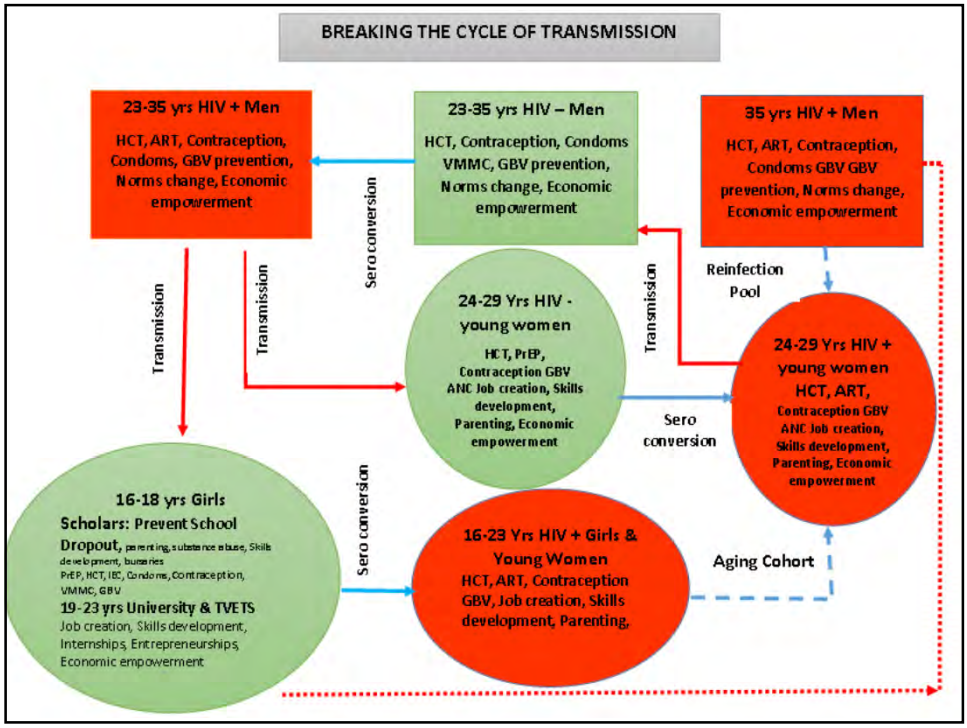
30



Objectives of the 'She conquers' campaign through empowerment of young people

1. Decrease new HIV infections in girls and young women
2. Decrease teen pregnancies
3. Keep girls in school till matric
4. Decrease sexual and gender based violence
5. Increase economic opportunities for young people

32



Conclusions

- Much has been achieved in the battle against the HIV epidemic: more investments needed not less or complacency
- Significant progress in EMTCT
- Large numbers of men circumcised and significant access to condoms
- Large number initiated on treatment but need to double number on treatment
- Leakages in the HIV cascade must be addressed urgently, including strengthening the health system
- Refocus on prevention

34

Thank you for your attention!

35

TB2016 Durban, South Africa July 16-17, 2016 Science + Solidarity

Selected highlights and recommendations

Kavindhran Velen

25 August 2016

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90-90-90 TB targets

Reach at least **90%** OF ALL PEOPLE WITH TB and place all of them on appropriate therapy—first-line, second-line and preventive therapy as required

As a part of this approach, reach at least **(90)%** OF THE KEY POPULATIONS the most vulnerable, underserved, at-risk populations

Achieve at least **90%** TREATMENT SUCCESS for all people diagnosed with TB through affordable treatment services, adherence to complete and correct treatment, and social support.

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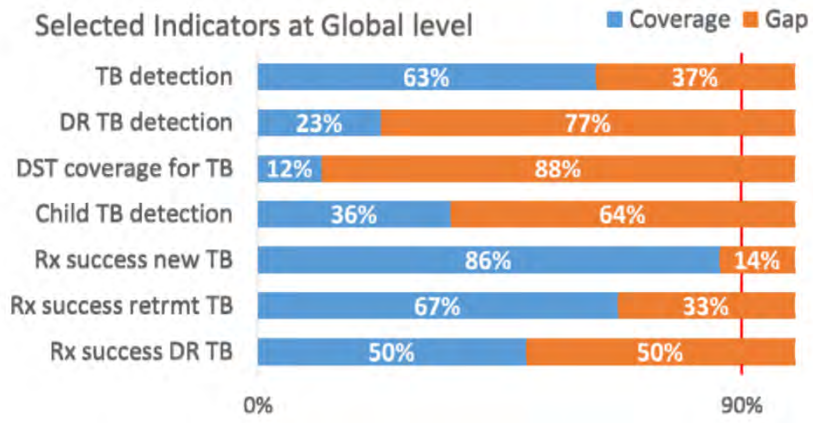
How far are we from the 90's



Fujiwara. P. TB 2016. Aligning and achieving targets for HIV/AIDS and TB Control. TB2016

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Advances in LTBI regimens: an update on ongoing clinical trials

- Several trials planned or underway on short-course rifamycin-based therapy to prevent drug-susceptible TB:
  - 4 months daily rifampin (4R)
  - 3 months daily INH + rifampin (3HR)
  - 3 months of weekly INH + rifapentine (3HP)
  - 1.5 months daily rifapentine (1.5P)
  - 1 month daily INH + rifapentine (1HP)
- Trials to prevent MDR-TB
  - 6 months of levofloxacin
  - 6 months of delamanid
  - 9 months of isoniazid
- Several trials on optimal treatment strategy
  - Annual 3HP vs. 3HP for one course in HIV+
  - Annual 1HP x 1 vs. 1HP x 3 in HIV+
  - 3HP based on transcriptome risk profile in HIV-

Sterling. T. Advances in LTBI regimens: an update on ongoing clinical trials. TB2016

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Research priorities for children – "Current gaps"

- Point of care test on easily accessible samples
- Non-invasive sampling method
- Effective, non-toxic treatment for TB infection
- Paediatric formulations

Furin. J. Filling research gaps for children with TB. TB2016

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TB Fast Track

A study to evaluate the effect of a point-of-care TB test-and-treat algorithm on early mortality in people with HIV accessing ART, a trial with randomisation at clinic level

Salome Charalambous, Mpho Tlali, Katherine Fielding, Aaron Karat, Chris Hoffman, Suzanne Johnson, Susan Dorman, Anna Vassall, Gavin Churchyard, Alison Grant

FPD

JOHNS HOPKINS MEDICINE

THE AURUM INSTITUTE

Mortality on ART

- Early on-ART mortality remains high in low-and middle-income countries
- TB is the leading cause
- TB remains hard to diagnose
- ART may be delayed while TB investigated
- Would wider use of empirical TB treatment for HIV+ people reduce mortality?

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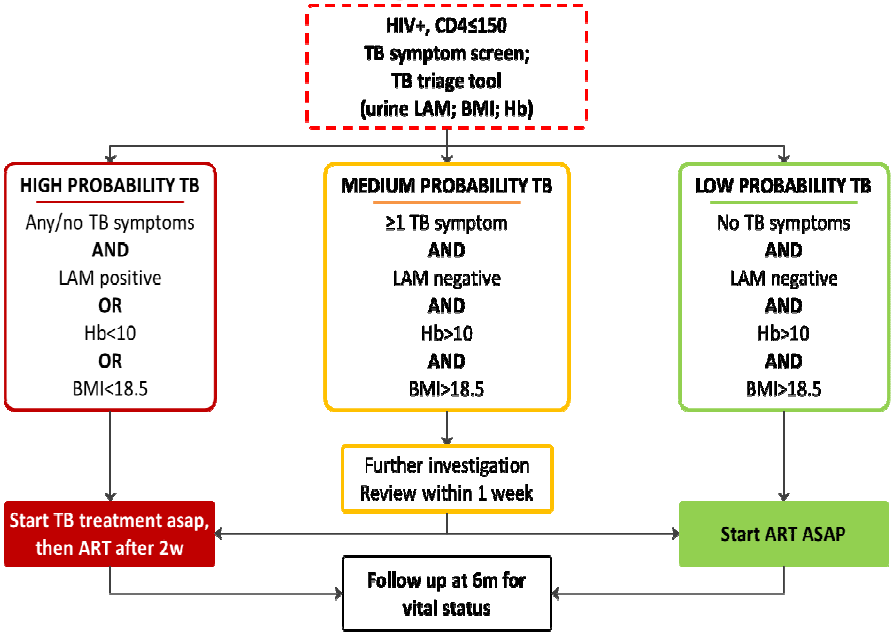
TB Fast Track algorithm



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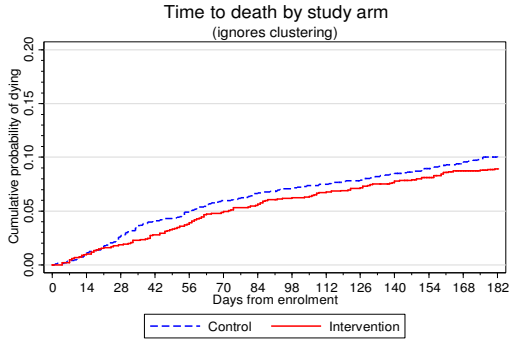
Primary outcome: mortality at 6 months

Study arm	Mortality risk	Events/pyrs	Rate / 100pyrs	Unadjusted RR (95% CI)	Adjusted RR* (95% CI)
Intervention	8.9%	134/704	19.0	0.92 (0.67-1.26)	0.87 (0.61-1.24)
Control	10.0%	151/699	21.6	1	1



*Adjusted for age, gender, BMI, CD4, taking IPT, symptoms, TB tests in last 6m, & previous TB; *p*=0.43

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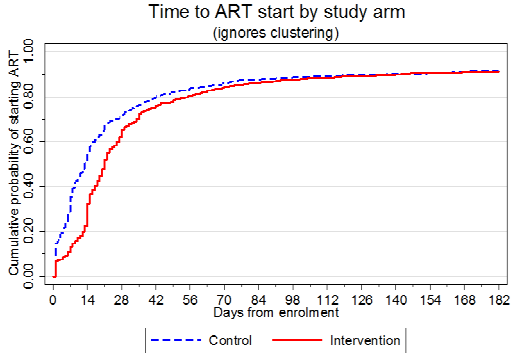
Secondary outcome: enrolment to ART start

Study arm	Starting ART in 30 d, n/N	%	Unadjusted RR (95% CI)	Adjusted* RR (95% CI)
Intervention	1001/1507	66.4%	0.89 (0.76-1.04)	0.91 (0.79-1.05)
Control	1104/1515	72.9%	1	1



*Adjusted for age, gender, BMI, CD4, taking IPT, symptoms, TB tests in last 6m, & previous TB; *p*=0.17

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1. High dose rifampicin tuberculosis treatment regimen to reduce 12-month mortality of TB/HIV co-infected patients: The RAFA trial

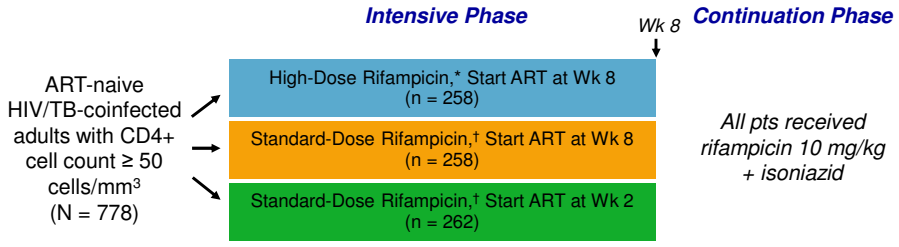
To assess in ARV-naïve TB/HIV patients with CD4 counts >50 cells/mm3 the efficacy in terms of morbidity and mortality at 2 and 12 months post randomisation of 3 treatment strategies:

- Early ARV initiation (week 2) with a standard TB treatment,
- Delayed ARV treatment (week 8) with a standard TB treatment,
- **Delayed ARV treatment (week 8) with high dose rifampicin during the intensive phase of TB treatment (15mg/Kg) and standard TB treatment in the continuation phase.**

THE AURUM INSTITUTE

RAFA: ART With Standard- vs High-Dose Rifampicin in HIV/TB-Coinfected patients

- Multicenter, open-label, randomized phase III trial
  - Pts in Benin, Guinea, and Senegal
  - Primary outcome: mortality at 12 mos post-randomization



*Rifampicin 15 mg/kg plus ethambutol, isoniazid, pyrazinamide.
†Rifampicin 10 mg/kg plus ethambutol, isoniazid, pyrazinamide.
ART regimen: EFV 600 mg + 2 NRTIs.

Merle CS, et al. AIDS 2016. Abstract WEAB0205LB.
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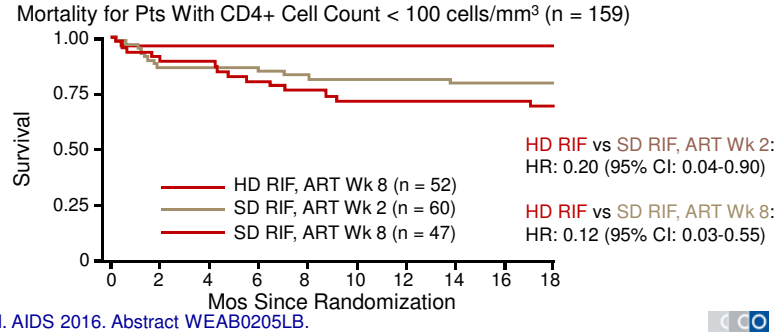
RAFA: Survival Outcomes With High- vs Standard-Dose Rifampicin

- Overall survival not improved, but high-dose rifampicin may benefit severely immunocompromised pts

Overall Survival, %	HD RIF, ART Wk 8 (n = 249)	SD RIF, ART Wk 8 (n = 247)	SD RIF, ART Wk 2 (n = 251)
12 mos	90	86	89
18 mos	90	85	88



Merle CS, et al. AIDS 2016. Abstract WEAB0205LB.
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Big research questions remain..

Transmission
Are all patients with active disease equally capable of transmitting TB?

Diagnosis
Why does TB progress from latent to active disease in some individuals, but not others?

Treatment
Why does treatment fail in certain individuals?
Host factors? Bug?
Or both?

Vaccines
Which concepts are most likely to lead to an effective vaccine?

Mundel. T. Fighting TB in the 21st century. TB2016

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Take home message…

"If a virus (HIV) and a bacteria (TB) can work so well together – why cant we?" (Michel Sidibé – AIDS 2010)

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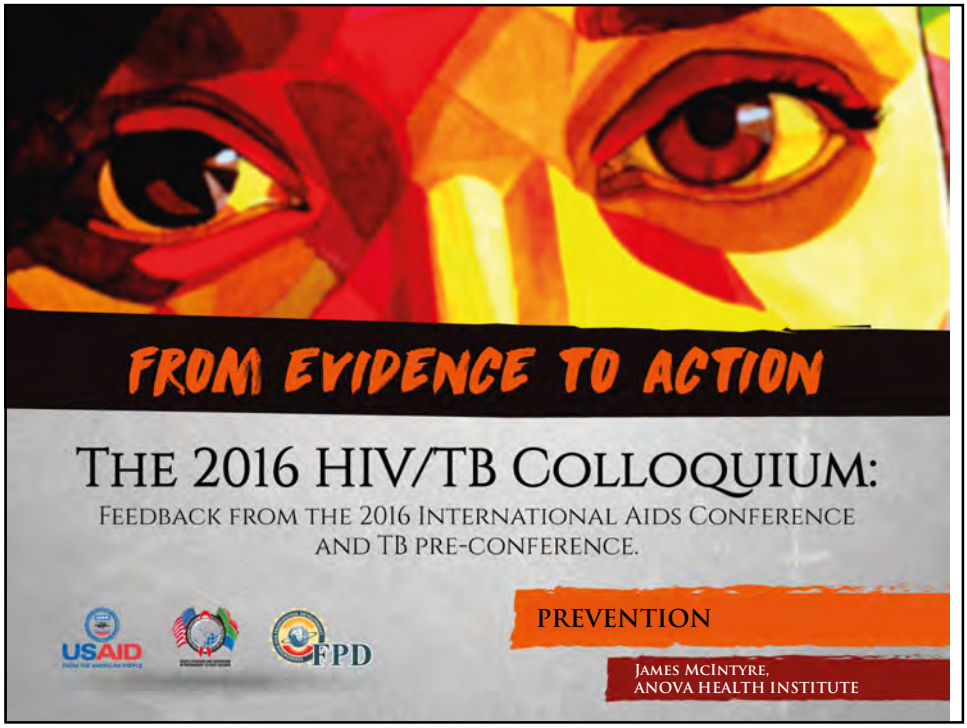


HIV PREVENTION at AIDS 2016

- Microbicides
- PrEP
- VMMC
- PMTCT
- Condoms (Male & Female)
- Adolescent Focus

MICROBICIDES

MICROBICIDES

Tenofovir gel

- Data from the CAPRISA 008 trial in KZN demonstrated that dispensing tenofovir gel through family planning services was acceptable, feasible, and led to similar adherence as seen when dispensing gel through trial clinics. These findings suggest that women may be more likely to uptake HIV prevention when it is integrated with family planning. (FRAE0102)
- There is a niche population willing to use topical PrEP. (THSY08)
- A randomised trial in KZN comparing the acceptability of the SILCS diaphragm used with tenofovir gel versus an applicator with tenofovir gel only showed that women found both easy to use and acceptable; however, 68% of women said they would be interested in using the SILCS diaphragm plus tenofovir gel if it could protect from both unintended pregnancy and HIV, compared to 18% who said they would use SILCS diaphragm only for pregnancy prevention and 14% who said they would use gel only for HIV prevention (WEPEC201).

MICROBICIDES

Dapivirine Ring

- Findings from an acceptability study of the dapivirine vaginal ring suggest that most concerns among women were related to male sexual partner's acceptance of the ring and concerns among men were related to injury during sex, but these concerns generally diminished over time with use of the ring. Women indicated that they preferred the monthly dosing of the ring to the more frequent dosing with a microbicide gel (WEPED304).
- Findings from an acceptability study of the dapivirine vaginal ring suggest that most concerns among women were related to male sexual partner's acceptance of the ring and concerns among men were related to injury during sex, but these concerns generally diminished over time with use of the ring. Women indicated that they preferred the monthly dosing of the ring to the more frequent dosing with a microbicide gel (WEPED304).
- Evidence from ASPIRE of statistically significant relationship between ring use and HIV protection: suggesting a dose-response relationship between ring use and HIV acquisition. Results suggest ring use is associated with at least 56% and potentially >75% protection when used consistently (TUAC0105LB)

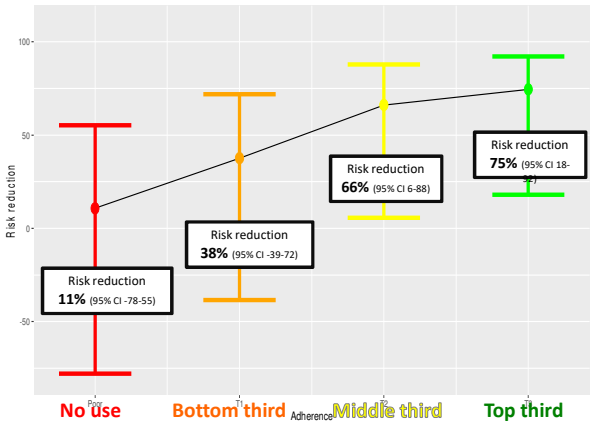
ASPIRE: Adherence vs. HIV protection:

Ring data two months prior to detection

Proportion of f/u	20%	27%	27%	27%
Incidence /100 p-y (# infections)	4.9 (10)	2.7 (7)	1.6 (4)	1.2 (3)

Placebo 100%

4.7 (47)



Brown
AIDS 2016
(TUAC0105LB)

PrEP

PrEP

- PrEP was generally found to be acceptable and feasible among South African cohorts of adolescents and MSM, although concerns emerged that those taking PrEP may be stigmatised for because others will think they are on ART (WEPEC256; WEPEC257; WEPEC259; WEPEC261)
- The feasibility of on demand oral PrEP in the African context was suggested by a study showing that 95% of female partners of migrant mine workers in Mozambique would be willing to periodically use oral PrEP when their partners were visiting home (WEPEC243).
- The Partners Demonstration Project in Kenya and Uganda showed that in serodiscordant couples, oral PrEP could be used by the HIV-negative partner as a “bridge” until the HIV positive partner was virally suppressed. This method led to a sustained HIV relative risk reduction of 94%, with only 5 incident infections observed among 1,013 couples (WEAC0105).

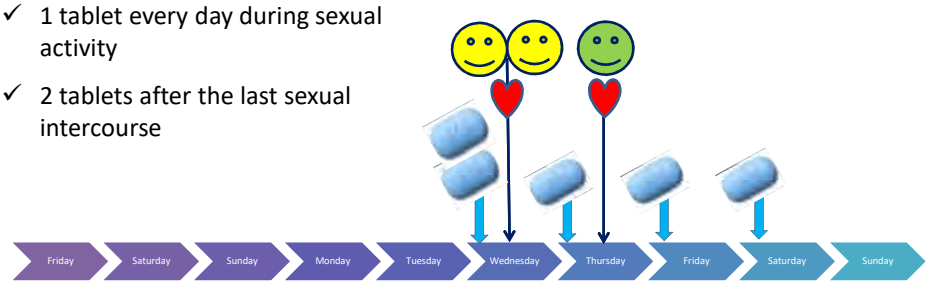
PrEP

- Growing experience with PrEP implementation in diverse settings
- Of 32 projects, the summarized HIV incidence of oral PrEP is 0.95/100 PY
- US: 700% increase in PrEP from 2012-2015.
- IPERGAY:
  - In OLE, the effectiveness was 97%, versus 86% in original trial
  - Condomless Anal Intercourse was higher and increased, STIs were more frequent
  - No change in number of partners or sexual acts
  - Adherence was higher than in RCT

ipergay ANRS

IPERGAY : Sex-Driven iPrEP

- ✓ 2 tablets 2-24 hours before sex
- ✓ 1 tablet every day during sexual activity
- ✓ 2 tablets after the last sexual intercourse



On demand PrEP tells you **How to Start and How to Stop PrEP**

Summary

- On Demand PrEP with oral TDF/FTC remained highly effective in high risk MSM as long as it was taken
- Safety of On Demand PrEP was good
- Low condom use in the open-label phase did not undermine efficacy
- No significant change in Nb partners or sex acts
- High rate of STIs needs to be addressed
- PrEP improved pleasure and removed fear during sexual activity
- Results of this study have led to PrEP approval in France with full reimbursement

PrEP

Summary: STIs & oral PrEP

- No evidence that STIs reduce efficacy of oral PrEP
- Modest reduction in HSV-2 with oral PrEP in heterosexual African HIV serodiscordant couples
  - Adds to substantial HIV protection
- STIs are prevalent in populations who benefit from PrEP
  - Useful for PrEP targeting
  - Incident STIs increase risk of HIV; indicates reaching 'right' population
- STI screening & treatment, ideally based on etiologic testing, are key part of PrEP delivery

Celum, AIDS 2016

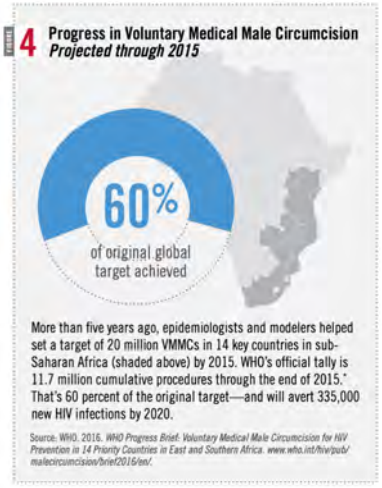
VMMC

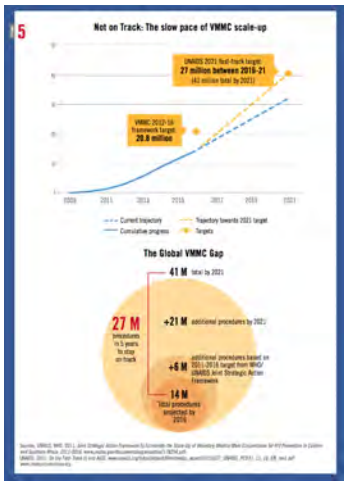
VMMC

- Several South African studies reported higher VMMC uptake among young men aged 18-24 than among men 25 and older (THPEC209; THPEC222)

- There were a few interventions that were reported to be successful in increasing VMMC uptake: Motivational counselling (THPEC0210); time compensation (THPEC210); female sexual partner involvement (THPEC212); Mass media campaigns (THPEC225).
-
- Evidence was also presented regarding how access to VMMC services could be improved in South Africa.
  - Offering surgical and nonsurgical procedure options: The PrePex device for nonsurgical VMMC was chosen by 15% of men accessing VMMC services, with a marginal rate of adverse events (THPEE438).
  - Increasing available human resources, training Clinical Associates to perform VMMC (THPEE452).
  - Improving geographic access: the odds of VMMC uptake decreased with each kilometre to the nearest health facility (THPEC222)

- Collateral benefits to VMMC were also reported, with VMMC service offering providing an opportunity to link HIV-positive men into care and to screen for TB and STIs (THPEC211).


4
Progress in Voluntary Medical Male Circumcision
Projected through 2015
60%
of original global target achieved
More than five years ago, epidemiologists and modelers helped set a target of 20 million VMMCs in 14 key countries in sub-Saharan Africa (shaded above) by 2015. WHO's official tally is 11.7 million cumulative procedures through the end of 2015.* That's 60 percent of the original target—and will avert 335,000 new HIV infections by 2020.
Source: WHO, 2016. WHO Progress Brief: Voluntary Medical Male Circumcision for HIV Prevention in 14 Priority Countries in East and Southern Africa. www.who.int/hiv/pub/malecircumcision/brief2016/en/.


5
Not on Track: The slow pace of VMMC scale-up
The Global VMMC Gap
41 M
27 M
+21 M
+6 M
14 M

PMTCT

PMTCT

PROMISE study:

- The IMPAACT PROMISE study investigated acceptance of early ART among post-partum women in 14 countries globally. A substantial number of women were not willing to initiate early ART after a single counselling session. Over one third needed more time to consider the offer to start early ART for their own health
- South African women in the study had the third lowest early ART uptake out of all countries, with less than 50% willing to accept early ART after a single counselling session (THAB0106LB).
- Although all HIV-positive pregnant women are now eligible for lifelong ART regardless of CD4 count, these findings suggest that HIV positive pregnant women who are initiated when they are asymptomatic may need additional counselling to understand the benefits of ART for themselves and their babies.

PMTCT

SA National PMTCT programme

Significant progress was made towards targets of the plan.
The number of children newly infected with HIV in South Africa declined by over 70% (2009 -2014). Over 90% of HIV positive women were receiving treatment for PMTCT (2015), a significant increase from the 63% in 2009. The coverage of early infant diagnosis of HIV increased from 45% in 2009 to 87% in 2014, MTCT rate declined to 2.6% in 2012/2013. Infant HIV positivity rates at around 6 weeks declined from 5.8% in 2009 to 1.5% in 2015.

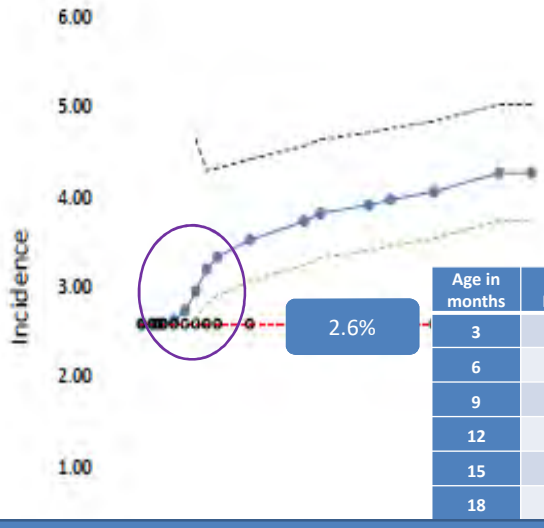
Mom Connect
Since its launch in August 2014 MomConnect has registered 583 929 pregnant women. More than 95% (34887) of all facilities dealing with pregnant women have recorded MomConnect registrations, indicative of its universal roll out.

PMTCT

SA National PMTCT programme: challenges

- A review of data in Eastern Cape revealed that only 66.9% of peripartum women were virally suppressed, and 22.8% had a high viral load (THPEC102). Among women who chose exclusive breast feeding, 24.3% had a high viral load, suggesting that a high proportion of HIV-exposed babies remain at risk of vertical transmission during the breast feeding period (THPEC102).
- A study of pregnant women in a high-prevalence population in KZN found that less than 60% of pregnant women who were HIV negative at their first antenatal (ANC) visit received a second HIV test and only 30% of HIV-positive pregnant women received viral load testing, according to maternity case records (THPEC252).
- Unplanned pregnancy also remains a challenge, with 67% of women in a study in Johannesburg reporting that their pregnancy was unplanned (THPEE479).

Cumulative HIV incidence till 18 months



Age in months	Cumulative % MTCT (95% CI)	%PN MTCT
3	2.7 (2.6-12.6)	0.1%
6	3.5 (3.1-4.4)	0.9%
9	3.7 (3.2-4.6)	1.1%
12	3.9 (3.4-4.7)	1.3%
15	4.1 (3.5-4.8)	1.5%
18	4.3 (3.7-5.0)	1.6%

81% cumulative MTCT by 6 months
56% PN MTCT occurred by 6 months; 68% by 9 months
PN MTCT accounted for 37% of 18-month MTCT

PMTCT

Highest risk of mother-to-child transmission of HIV or death in the first 6 months postpartum: Results from 18 month follow-up of an HIV-exposed national cohort, South Africa

- Cumulative MTCT at 18 months was 4.3% (95% CI 3.7-5%).
- The most rapid increase in MTCT occurred during the 1st 6 months postpartum, followed by a gradual increase thereafter.
- Postnatal MTCT accounted for 39% of 18 month MTCT, whilst intrauterine and early postnatal MTCT accounted for 61% of 18 month MTCT

- At population level <5% MTCT was achieved in a BF- national setting by 2014
- The first 6 months postpartum is a critical period for HEU infants

Goga AIDS 2016

CONDOMS

- "There is a need for ongoing public communication drives and prevention interventions to increase knowledge of HIV sexual transmission and to promote condom use. Targeted campaigns and programmes that address specific barriers to condom use that drive the epidemic are needed. HIV prevention communication should address both emotional and physical aspects that lead to non-condom use and increase knowledge of sexual transmission and risky behavior".(Young men in SA)
- Condoms were inconsistently used even when adults suspected their partner was HIV positive (Swaziland)

- National Female Condom Survey:
  - Similar percentages of women (82.2%) and men (83.5%) have ever heard of FCs. However, only about two-thirds knew they were available at the facility where they completed the survey, even though all facilities surveyed had distributed FCs at some time and 92% were currently distributing them. Overall 14.7% have ever used a FC, and of these, two-thirds (65.4%) had used them for dual protection (pregnancy and STI/HIV prevention)

- Dental Dams for WSW
  - The majority of participants reported feeling motivated to use dental dams out of a desire to protect themselves and use them for oral sex. Most indicated hearing about dental dams from LGBTI organisations but that widespread unavailability and not knowing where to get one from are issues prohibitive to use

ADOLESCENT FOCUS

The Youth Bulge

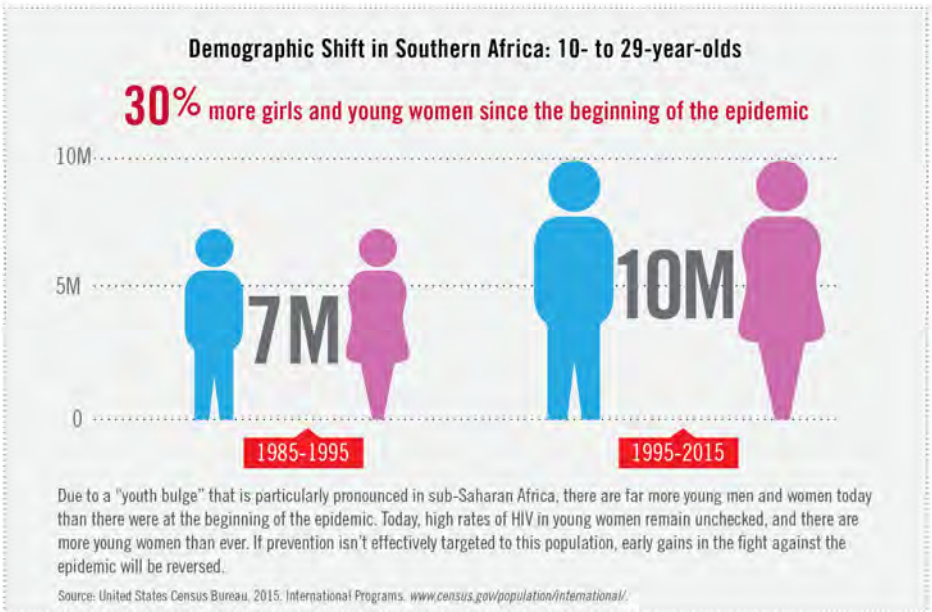
The “youth bulge” was also a recurring theme throughout the conference.

There are far more young people alive today than there were at the start of the epidemic—especially in sub-Saharan Africa.

This means that even if current *rates* of new cases of HIV don’t go up, the absolute numbers of young people diagnosed with HIV every year will increase.

That we haven’t seen an enormous jump so far says that some things may be working—but more is definitely needed.

AVAC 2016



AVAC Report 2016: Big Data, Real People
www.avac.org/report2016/graphics

Adolescents

Many studies were presented that investigated different approaches to HIV prevention in adolescents.

- The evaluation of the Zazi dual-prevention mass media campaign showed that 68% of young women who had the highest level of exposure to the campaign reported condom use at last sex, compared to 11.5% of those with no exposure to the campaign. Average contraceptive plus condom use was 74% in the highest exposure group versus 4.3% in the no exposure category. These findings highlight the impact a mass media campaign can have on sexual behaviour (THPEC128).
- An analysis was done to investigate the causal pathway for the "Star for Life" intervention, which reported a 30% lower pregnancy rates in its programme schools in KZN. Programme exposure correlated strongly with self-esteem and HIV literacy, which were both significantly associated with safe sexual behaviours (THPEC120).
- ART initiated HIV-positive adolescents reported high levels of unprotected sex (18% overall; 28% among females). Receiving more than one social protection intervention (cash/cash-in-kind or care provisions) was associated with decreased rates of unprotected sex, and the effect was stronger among adolescent girls. (THAD0204)

Prevotella,
Tenofovir eating
Gardnerella,
Lactobacilli
And other new thoughts

Prevotella bivia is strongly associated with genital inflammation and HIV acquisition

	P. bivia+ OR*	P value
HC	19.2 (95% CI: 4.0-92.4)	p<0.001
HIV+	12.7 (95% CI: 2.1-77.8)	p=0.006

**adjusted odds ratio*

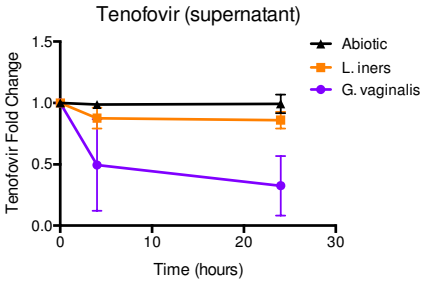
22 women were HIV positive & had inflammation – 9/22 (41%) had *P. bivia*

Women with *P. bivia* were **19 times** more likely to have genital inflammation and **13 times** more likely to acquire HIV

Conclusions

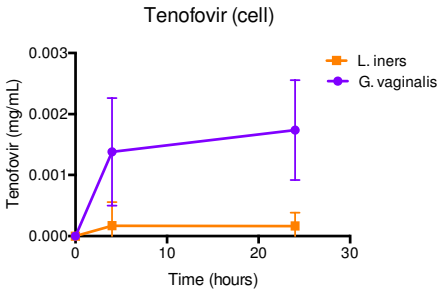
- **Vaginal *Prevotella bivia* is associated with increased HIV vulnerability**
- **Increased vulnerability may occur through genital inflammation**
- **Potential mechanism of action:** Potent Liposaccharide Biosynthesis Pathways response
- **Potentially a new target for interventions that could reduce the risk of HIV in women**

Tenofovir is rapidly depleted by *Gardnerella* but not *Lactobacillus*



4 hours:
G. vag vs. L. iners: *P*=0.002
G. vag vs Abiotic: *P*=0.005

24 hours:
G. vag vs. L. iners: *P*<0.001
G. vag vs Abiotic: *P*<0.001

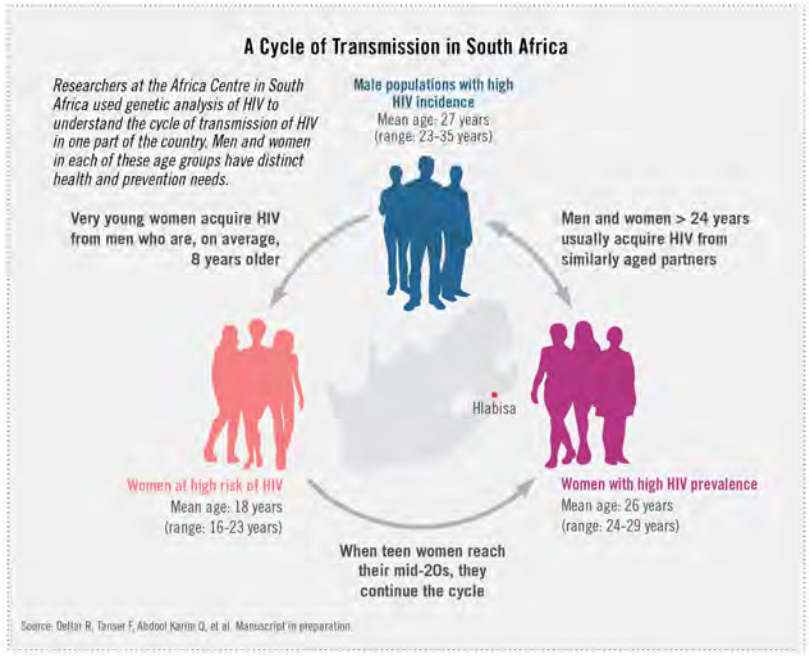


4 hours:
G. vag vs. L. iners: *P*<0.001

24 hours:
G. vag vs. L. iners: *P*<0.001

Conclusions

- **Identified a signature associated with high effectiveness of vaginal PrEP**
  - Tenofovir gel efficacy was **3-fold higher** (>61%) in women with vaginal *Lactobacillus* dominance
  - Tenofovir gel was **not effective** (18%) in women with non-*Lactobacillus* communities containing high amounts of *G. vaginalis*
- Tenofovir is rapidly depleted by *G. vaginalis* but not *L. iners*
- Importance of **adherence** and **vaginal health** for PrEP efficacy against HIV in women
  - Considerations for other trials, routes, and bacteria



Additional insights on why the high HIV rates in young women

Why such high risk of HIV acquisition following exposure?

LPS released by Prevotella bivia

Why such high variability in the efficacy of PrEP?

Tenofovir absorption by Gardnerella

Who is exposing young women to HIV?

Men with high viral loads in their thirties

Young women at high HIV risk

Technologies to empower women to protect themselves from HIV infection

Combination prevention to break the Cycle of HIV transmission

Men 25-40 years (N=79)
Knew HIV status: 21.5%
VL > 50,000 : 37.1%

Male circumcision for HIV negative men <25
&
Antiretroviral therapy for HIV positive men

Young women <25 years (N=43)

Women 25-40 years (N=56)

PrEP

Changing community norms on age-disparate sex & patriarchy

Test & Treat

S Abdool Karim AIDS 2016

AVAC 2016


USAID
FPD
THANK YOU
PRESENTER CONTACT DETAILS:
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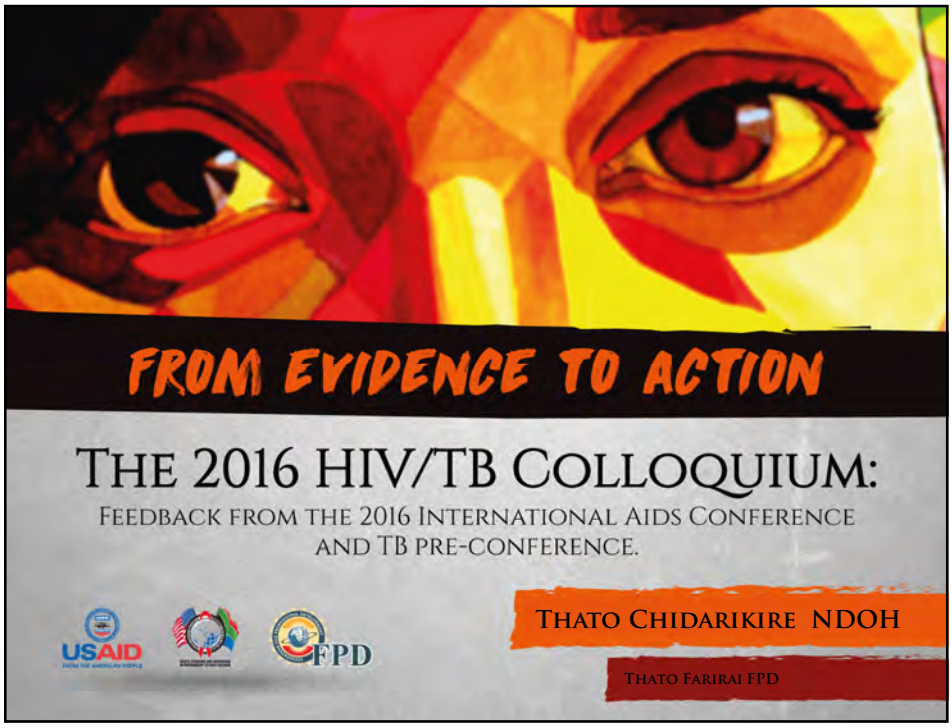
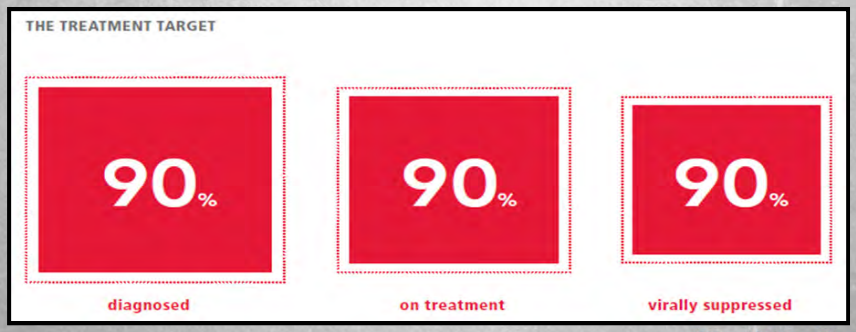
E-MAIL:
MCINTYRE@ANOVAHEALTH.CO.ZA



UNAIDS 90-90-90 Strategy by 2020

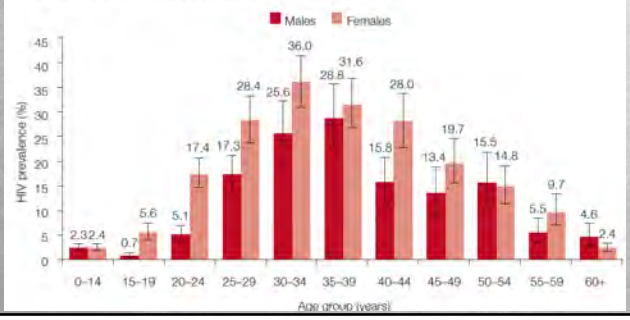
- 90% of all people living with HIV will know their HIV status
- 90% of people with diagnosed HIV infection will receive sustained ART
- 90% of all people receiving ART will have viral suppression



Focus on the right places & right people

Locality	HIV Prevalence %	HIV Incidence %	New Infections/ year
Urban			
Formal	10.1 [8.8 – 11.7]	1.06 [8.84-1.28]	227 000 [180 000 - 274 000]
Informal	19.9 [17.4 - 22.7]	2.46 [1.98-2.94]	80 000 [64 000 - 96 000]
Rural			
Formal	10.4 [7.4 - 14.4]	0.84 [0.65-1.03]	19 000 [15 000 - 23 000]
Informal	13.4 [12.2 - 14.7]	0.87 [0.69-1.05]	143 000 [113 000 - 173 000]
National	12.2 [11.4 – 13.1]	1.07 [0.87 – 1.27]	469 000 [381 000 – 557 000]

Figure II: HIV prevalence by sex and age, South Africa 2012

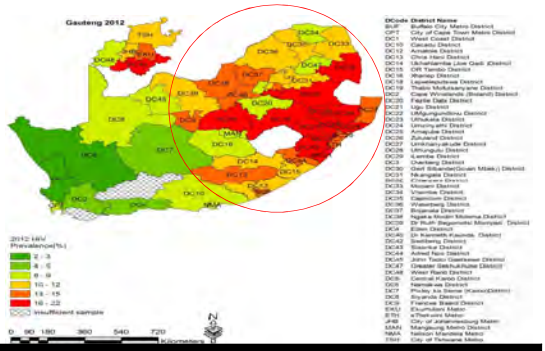


No one is left behind: Urban informal settlements have the highest prevalence and incidence rates (2.5%) compared to urban formal areas

High HIV prevalence and incidence rates among AGYW

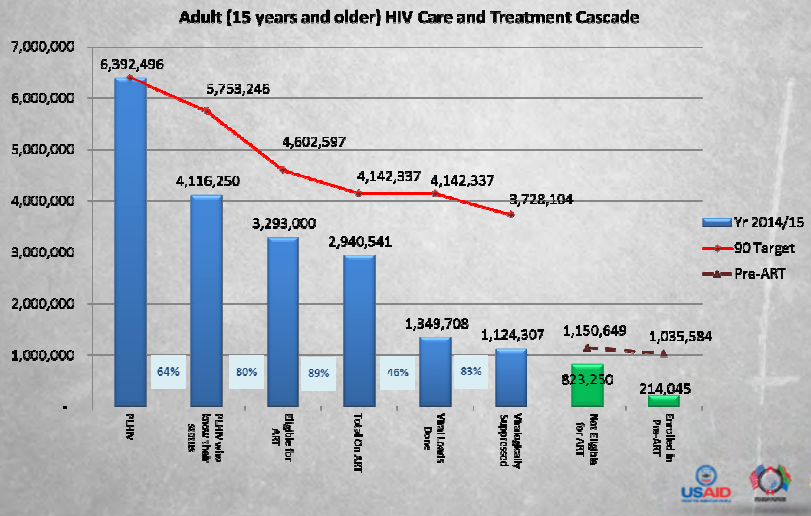
Location Specific: District and Cities Fast Track approach

Fast Track Cities: South Africa's 8 largest metros are home to 36% PLHIV

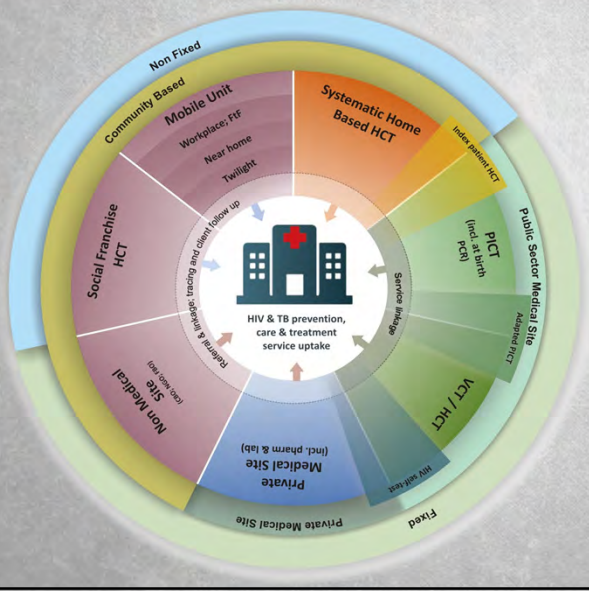


Metro	HIV Prevalence % (HSRC 2012)	Estimated number PLHIV (calc. HSRC data)
Cape Town	5.2 [3.4–7.8]	177 587
Mangaung	7.9 [5.3–11.6]	58 645
Nelson Mandela	8.3 [4.5–14.9]	90 414
Johannesburg	11.1 [8.3–14.6]	533 960
Tshwane	11.7 [8.1–16.6]	352 182
Buffalo City	13.6 [10.6–17.3]	103 943
Ekurhuleni	14.3 [10.3–19.5]	468 521
eThekwini	14.5 [11.2–18.6]	516 167
Total		2 301 419
National	12.2 [11.4–13.1]	6 400 000

90-90-90 Cascade



Use of combination testing modalities



- Fatti etal., TUPEE562 (KI)
  - Adolescent 10 – 19years
  - N = 4800
  - Tested 4756 (99%)
  - 36% male
  - Modalities used
    - 54% index
    - 40% door to door
    - 6% campaigns
  - 7.5% female positivity
  - 3.9% males positivity

Index Client Trailing

DEFINITION

- HCT offered to households of persons living with HIV (WHO, 2015)
- Patients who are on ART or TB treatment are approached from the clinic and informed about the benefits of testing members of their households.
- Index patient prepares household for the testing visits and schedules an appointment for the tester

PROCESS

- Community testers are based at facility level.
- All new clients testing HIV positive are identified as potential index cases.
- Clients are educated on home testing and index case trailing.
- Index consent is sought before home visit.
- Once consent is obtained the home visit for HCT is arranged.

Index cont. KI – IAS oral abstract (WEAE0104)

# index trailed clients	**14779**	
# households	66766	
Off-shoot per index	1 index → 4.5 HCT clients	
Total tested	59,457 (89%)	323 test/week
Test uptake rate	Male 81%	Female 91%
Positive	9,219	15.5%
Total linked	8,642	93.7%

- Children test 5%
  - 70 positive (2.5%)
  - 100% linked to care
- Jubilee M. etal – PSI - Lesotho
  - 992 index >2604 offshoot
  - 71%children
  - 88% linkage

Concluded

- High uptake and acceptability of testing
- High yield of newly diagnosed
- High linkage

Self testing

Private or supervised self-testing	Access to self-testing	Distribution and Initiation
Private self-testing: person self-tests in private (limited support) Supervised self-testing: support from HCW or volunteer who is physically present when individual self tests	Clinically restricted: specific populations & groups, as decided by policy and guidelines Semi-restricted: HCW provides test instructions & counselling prior to distribution Non-restricted: available at pharmacies, clinics, shops & vending machines	Distribute to community members through volunteers or CHW Involves some supervision from CHW or HCW before and/or after individual tests themselves in private

Self Testing – IAS Abstracts

Author	Abstract #	Question	Population	Results
Choko etal. (Malawi)	TUPED429	Acceptability	Pregnant women	Acceptable to use pregnant women to deliver HIVST
Juru etal. (Zimbabwe)	WEPEC206	Acceptability	Adults 14 -49	HIVST acceptable at low cost (87.9%)
Agot etal. (Kenya)	WEPEC228	HIVST and IPV	HIV negative FSW, ANC &PNC	280 distributed and only 4 attributed IPV to HIVST
Jamil etal. (Australia)	FRAC0102	Access	HIV negative Gay and bisexual men	HIVST among GBM increased frequency of testing by 2 folds
Sibanda etal. (Zimbabwe)	LBPE041	House to house distribution by CV Confirmatory test at 2/4 weeks after distribution	Adults	1month – 8095 tests distribute 85% unsupervised 0.4% invalid 0.4% unused 1153-14.3% positive

Slide 10

SJ1 she indicated that it was a very high ipv community so that 4 was really low
Suzanne Johnson, 24/08/2016

Considerations for HIVST

- What are the acceptable distribution methods?
  - Supervised or unsupervised
- Will it increase testing among males?
- Potential for increased IPV?
- Can it be used for high risk negative clients?

Couples and Men

- Mwakangalu etal. – TUPDE0105
  - Improving couple testing among pregnant women
  - Clinic invitation letters and community health talks
  - 84% increase in male partners tested
  - Provided assisted disclosure
- Darbes etal. – WEAD0102
  - Increased uptake in CHCT
  - Reduction in unprotected sex acts

Community

Door-to-door

Near home mobile

- Yang etal. (WEPEC216)
  - Working evenings and weekends reaches more males
- Thurman & Lukett (WEPEC229)
  - Increased caregiver visits resulted in higher testing among children

Campaigns

Workplace or HEI or community events

- Shenoi etal. (FRAC0103)

  Sites reached
  - Municipality events
  - Pension pay points
  - Taxi ranks

  Results
  - N=13278
  - 11435 accepted testing
  - 1244 tested positive (9.4%)
  - 39% first time testers

Policy

- New HTS policy with all modalities
- Self test: demonstration projects ongoing
  - Approved by SA Pharmacy Council
  - Supports expansion as screening, but not diagnostic
  - Blood vs oral
- Quality of HTS
  - Testing
    - IQC & PT
    - Algorithm
  - Counselling

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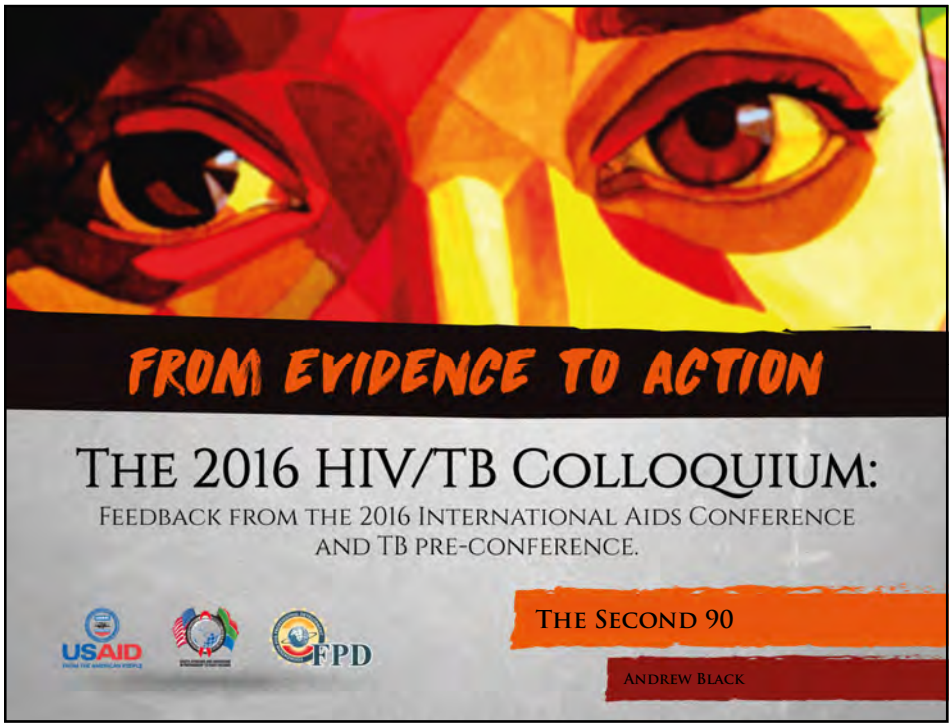


FROM EVIDENCE TO ACTION

THE 2016 HIV/TB COLLOQUIUM:

FEEDBACK FROM THE 2016 INTERNATIONAL AIDS CONFERENCE AND TB PRE-CONFERENCE.

THE SECOND 90

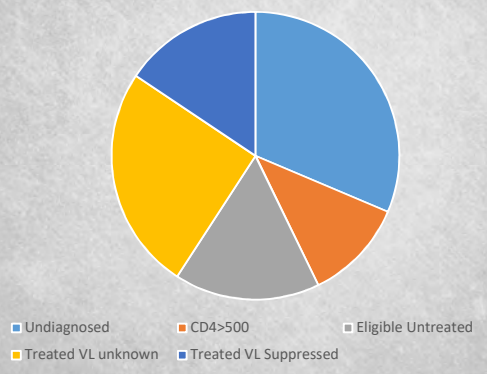
ANDREW BLACK

OUTLINE

1. The problem
2. What do the customers say
3. What worked
4. Areas needing special attention
5. Points of clarity

ADULT HIV CARE AND TREATMENT

National March 2015



ANRS 12249 TasP TRIAL

The impact of Universal Test and Treat on HIV incidence in a rural South African population

- **Objective:** To evaluate the effect of early ART, initated irrespective of CD4 count criteria, on HIV incidence in the general population in the same setting
- **Design:** Cluster-randomized trial *(Iwuji et al. Trials 2013; Orne-Gliemann et al. BMC Public Health 2015)*

6-monthly rounds of home-based HIV-testing

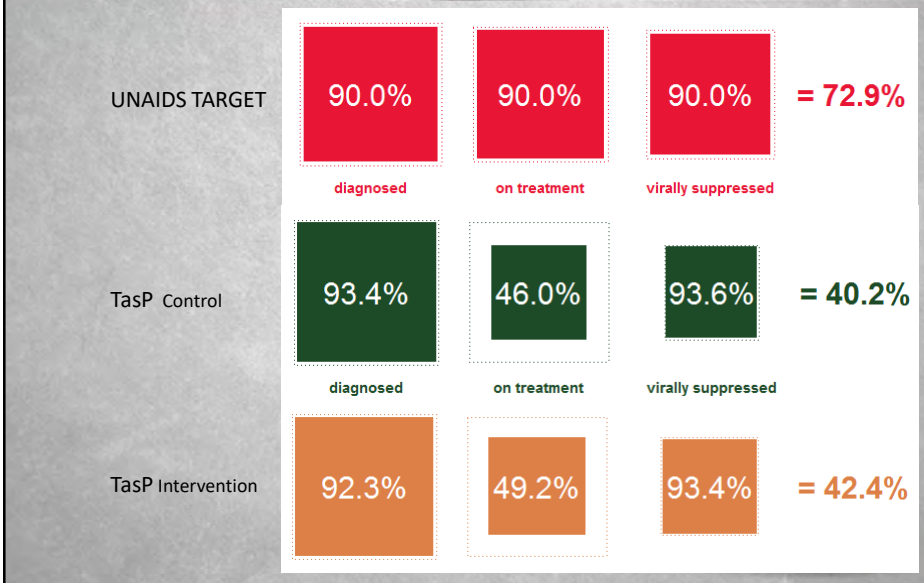
Intervention	Control
Treat all HIV+ individuals regardless of CD4 count and clinical stage	Treat all HIV+ individuals according to South African guidelines *(≤350 CD4, WHO stage 3 or 4 until Dec 2014, ≤500 since Jan 2015)*

François DABIS for the ANRS 12249 TasP study team

PRIMARY OUTCOME

	Number of HIV-positive DBS tests	Person-years	Incidence for 100 person-years	95% CI
Control	268	11,787	**2.27**	2.00-2.55
Intervention	227	10,646	**2.13**	1.85-2.41
TOTAL	495	22,434	2.21	2.01-2.40

TASP CASCADE



TASP

1 177 Newly diagnosed with HIV infection, 559 (47,5%) visited their treatment clinic within 6 months despite a phone call or home visit made to persons who had not linked to care at 3 months.

Once linked ART uptake was high in both arms.
Retention in care at trial clinics at 12 months was 84%
Viral load suppression was high in persons on ART.

93% (88029/ 9460) participants agreed with the statement that they would want to start ART as soon as possible if HIV positive.

WHAT DO THE PATIENTS SAY

Mismatch between how PLHIV experience and engage with HIV care and the linearity assumed by the treatment cascade.

Contextual influences: family and community relations, socio-economic circumstances, distance from nearest clinic.
Quality of Health Care services: poor provider client relationships, mistrust, perceived lack of efficacy of ART.
Individual agency: tired of taking chronic medications, alternative treatments, only sick people need medicine.
Other factors: age 16-24yrs, alcohol or substance abuse, GBV.
Decreased uptake of ART with increasing CD4 cell count (9% decrease with every 50-cell increase)

WEPEC188/THPEC099/TUPED273/TUPEB043/WEPEC182

WHAT WORKED

Link4Health Study:
A combination strategy for linkage to and retention in HIV care in Swaziland

Margaret L. McNairy, Matthew R. Lamb, Averie B. Gachuhi, Harriet Nuwagaba-Biribonwoha, Sean Burke, Sikhathele Mazibuko, Velephi Okello, Peter Ehrenkranz, Ruben Sahabo, and Wafaa M. El-Sadr

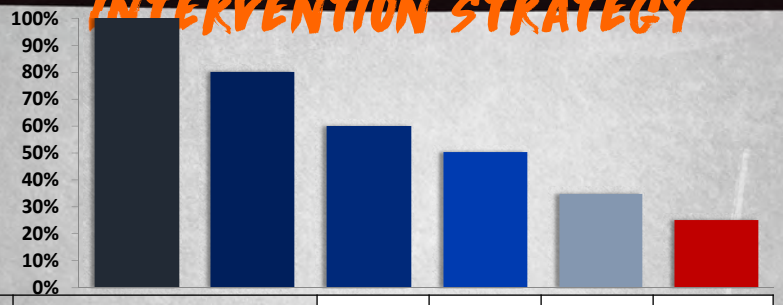
Superior Outcomes with Same-Day HIV Testing and ART Initiation

Serena Koenig, MD, MPH
GHESKIO, Haiti
Brigham and Women's Hospital, USA

SEARCH test and treat study in Uganda and Kenya exceeds the UNAIDS 90-90-90 cascade target by achieving over 80% population-level viral suppression after 2 years

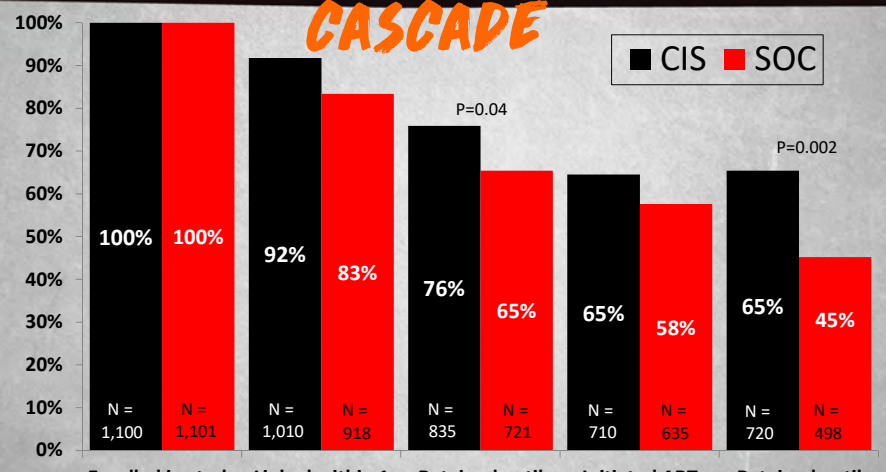
M. Petersen, L. Balzer, D. Kwarsiima, N. Sang, G. Chamie, J. Ayieko, J. Kabami, A. Owaraganise, T. Liegler, F. Mwangwa, K. Kadede, V. Jain, A. Plenty, G. Lavoy, D. Black, E. Bukusi, C. Cohen, T. Clark, E. Charlebois, M. Kamya, D. Havlir

LINK4HEALTH COMBINATION INTERVENTION STRATEGY



Cascade Step	HIV infected Diagnosed HIV	Linked to Care	Assessed for ART Eligibility	Initiated ART	Retained in Care
CIS Components	1. Point-of-care CD4 at HIV testing	X	X	X	
	2. Accelerated ART for CD4 ≤ 350			X	X
	3. SMS appointment reminders	X			X
	4. Basic care and prevention package	X			X
	5. Non-cash financial incentive	X			X

LINKUHEALTH HIV CARE CASCADE



GHESKIO INTERVENTION

Same-day HIV counseling and testing, CD4 count, physician evaluation, CXR, ART readiness questionnaire

Multiple clinician and counseling visits in the first month (same number for both groups)

Monthly visits after first month

Community health worker phone call/home visit for missed visits

$US 1.70 per visit for transportation subsidy

Standard group

- Days 7, 14, and 21: Physician/social worker visits
- Day 21: ART initiation
- Week 5: Physician/social worker visits

Same-day ART group

- Day 1: Counseling and ART initiation
- Days 3, 10, and 17: Physician/social worker visits
- Day 24: Physician visit

GHESKIO 12 MONTH OUTCOMES

	Standard Group (n=285)	Same-Day ART Group (n=279)	P-value
Initiated ART	262 (92%)	279 (100%)	p<0.001
Died	19 (7%)	8 (3%)	p=0.035
Alive and in care	201 (71%)	224 (80%)	p=0.007
In care with VL <50 copies/ml	120 (42%)	151 (54%)	p=0.004
In care with VL <1000 copies/ml	143 (50%)	171 (61%)	p=0.008

SEARCH : COMMUNITY BASED TESTING

Approach: Community based, out of facility
Multi-disease: HIV, DM, HT, malaria
"Collapse the Cascade"- immediate link to public health services

1. Census/Mobilization
2. Two week Health Fair (multi-disease)
3. Home testing for non-participants

UNIVERSAL STREAMLINED ART DELIVERY

1. Efficient Visits for Patients and Staff

- ART start at first clinic visit as indicated
- Triage by nurse or other extender at all follow-up visits
- Clinic visits and ART dispensation every 3 months rather than every 1-2 months

2. Patient-centered approach to care

- Welcoming environment
- Fostering trust, connection, and a sense of investment in the patient
- Flexible clinic hours
- Tiered Tracking
- Multi-disease chronic care model

3. Telephone hotline access for patients

- Easy triage of medical questions
- Appointment/scheduling logistics for retention

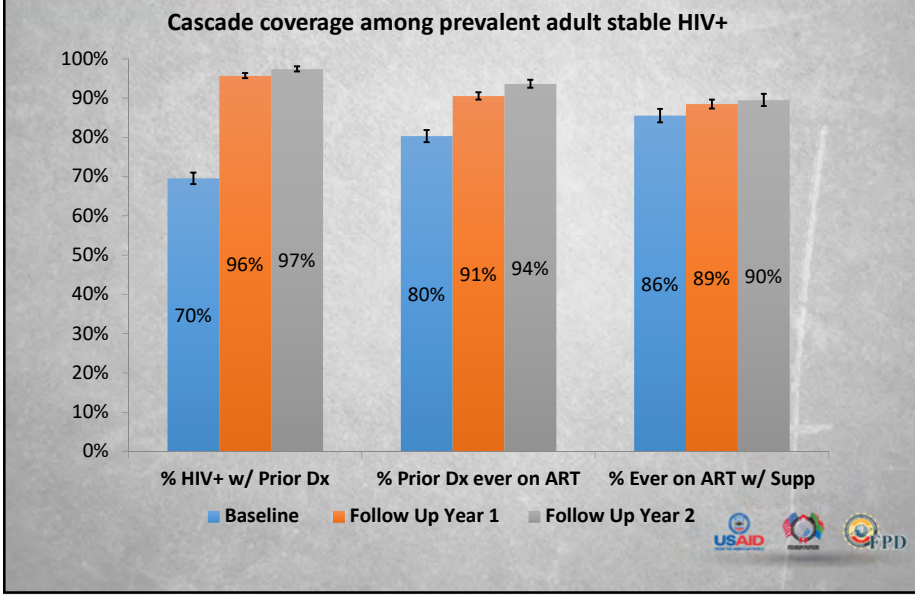
4. Appointment reminders by phone/SMS

- One week to few days in advance
- Retention tool

5. Viral Load Counseling

- Structured format for discussion of undetectable and detectable results

REACH 90 90 90 OUTCOMES



INTERVENTIONS IMPROVING LINKAGE

Involvement of religious and local leaders in mobilization and community dialogues. TUPED277

Community education on benefits of ART carried out in partnership with traditional healers and community care givers. THPEE580

Linkage registers, patient escorts, telephone calls and home visits for patients not linked. TUPDE0106/THPEE476

AREAS REQUIRING SPECIAL ATTENTION

Adolescents: Treatment bulge expected for the next decade in 15- 19 year olds who have worse outcomes than adults TUAB0102

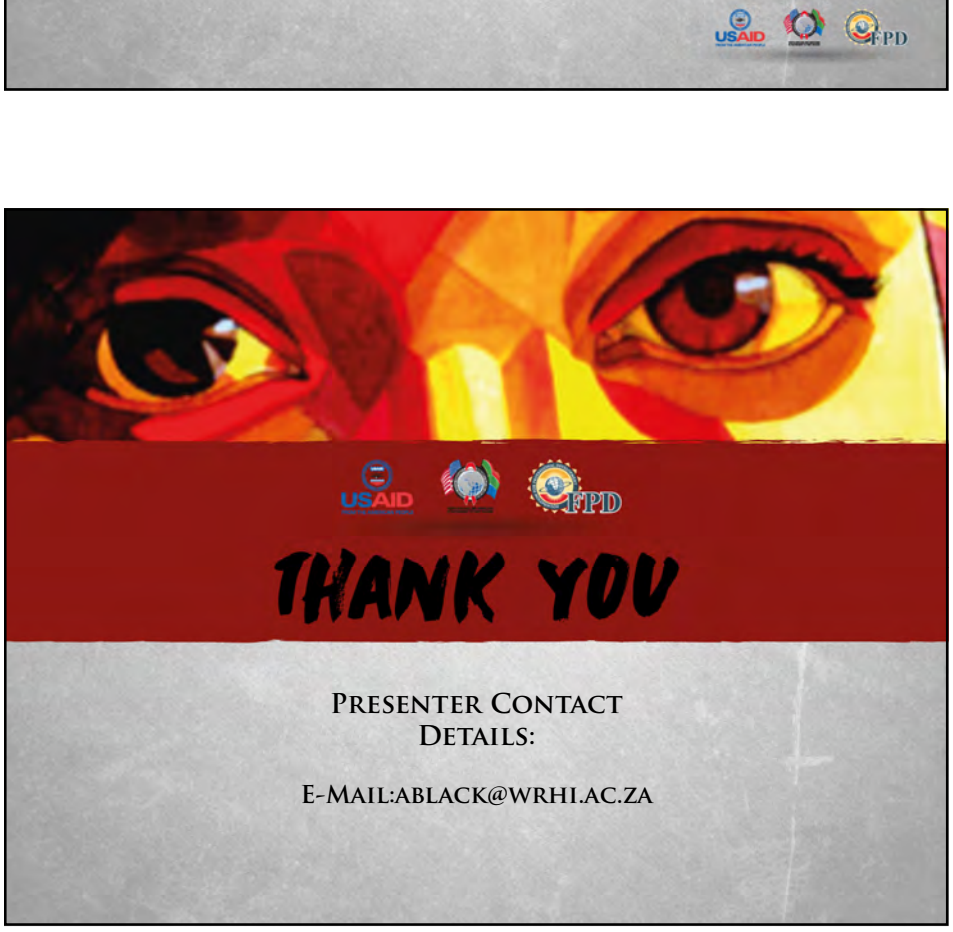
Men: Under represented in most studies with the exception of REACH

Migrants: Excluded from most studies

Sex Workers: high HIV prevalence low ART coverage

ACKNOWLEDGEMENTS

Alexandra Mumbauer



THANK YOU

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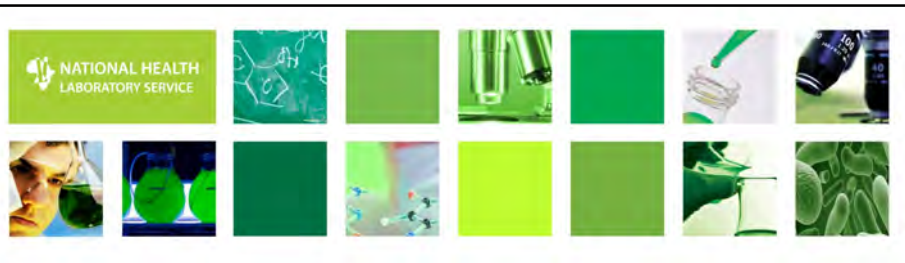
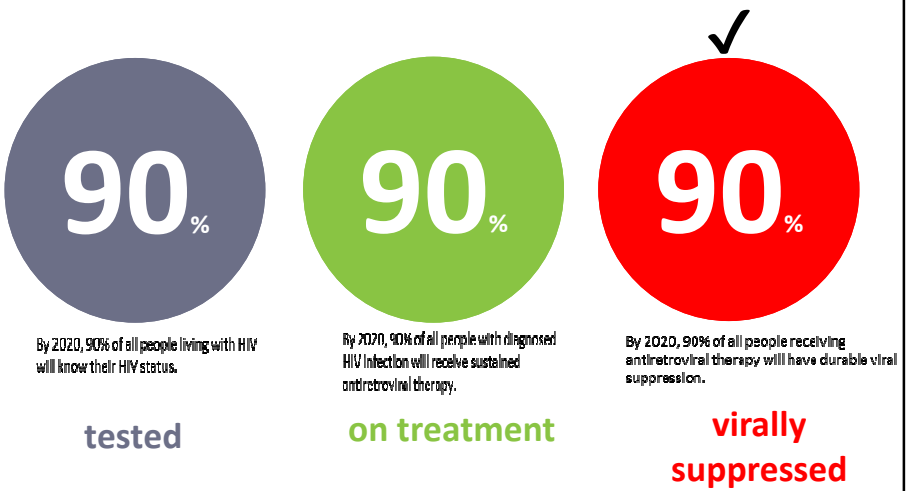


Professor Wendy Stevens

"The Last 90"

The treatment targets



The UNAIDS treatment initiative
and the re-targeting process – Implications for laboratory medicine
Geneva, Switzerland, 16 June 2014

The Third 90

- Adherence strategies (clinical & laboratory interventions)
- Viral load suppression rates (context matters)
- Viral load monitoring (not new, improving access & usage

What did we know before IAS 2016?
Clinical Links to viral suppression (VS)

- Most effective measure of **treatment success**: most NB metric in continuum of care **(SA understood this in 2004)**
- VS rates depend on definition of VF
  SA VL: <1000c/ml; VL <400c/ml; CDC: VL <200 c/ml
- Strong biological marker for adherence: direct link to VS
- Community VL or % VF = programmatic: link to performance of interventions
- Less affected by other infections at reasonable CD4 counts (TB, malaria)
- 2 annual appointments correlates well with CD4>500 and VS
- High risk populations for achieving and maintaining VS:
  - children, adolescents, pregnant women, incarcerated, IDU
- Socio-economic factors linked directly to VS:
  - <50 copies/ml: language barrier, education, financial status
- Poor SE status linked to a high probability on virological non suppression
- Used to better select sentinel sites for targeted intervention

Nursing Strategy in Achieving 90-90-90

90 % Tested + 90% Treated + 90% Virally Suppressed

Call to Action – Nursing Rights to Support of 90-90-90

- Workforce Strengthening and Practice Safety Improves Access
- Policy / Leadership and Equitable Decision Making
- Greater Political and Financial Investments in Nursing

ANAC Association of Nurses in AIDS Care

Main Themes for adherence

- Differentiated models of care
  - Community HCW emphasis on role
  - Call to action for nurses
- Community based adherence clubs: CAGS/CC
- Adolescents: challenges/some solutions
- Mental health

Non-facility-based methods of delivering ART and supporting adherence show promising results

- **Two studies in Cape Town showed relatively high Adherence Club (AC) retention, at 83.7% at 24 months (LBPE038) (FRAE0206LB).**
  - First study, 96.0% of AC members were virally suppressed at 24 months, with a VL completed for 84% of patients (LBPE038).
  - Second study, raised VL while an AC member was significantly predictive of subsequent loss to follow up (Hazard Ratio 4.4) (FRAE0206LB).
- **A JHB study randomised stable ART patients into clinic- and community-based ACs and found that retention in ACs was higher among clinic based AC members than community-based AC members (26% vs. 19%, p=0.012) (TUAB0203).**
  - Viral rebound was very low and comparable in clinic- and community-based ACs (3% vs. 2%, p=0.594)
- **In KZN, 21% of patients choose to join a group ART delivery method, instead of the SOC clinic visit for ART pick up:**
  - 96.3% opted for a facility-based, counsellor-led group of up to 30 members, 2.2% choose a community-based, counsellor-led group of up to 30 members, and 17.5% chose a patient-led,
  - Community ART group of 3-8 members, with more patients located in rural areas opting for community delivery (THPEE579).

Data supporting community adherence

FRAE0202

- **1306, 2010-2015**
- Improved survival and retention in HIV treatment and care: the value of community ART groups for HIV patients on ART in rural northern Mozambique (Pemba):
  - CAG participation: reduced mortality rate (55%) & LTFU (84.3%)
- Females & older more likely to participate

Challenges with community adherence clubs

- **THPEE539**
  - Challenges of transitioning from health facility based adherence clubs to communities
  - 36 clinics: HCW acceptance of community club caution about transition challenges: security, transportation/packaging of medication,
  - linkages to DoH databases
- **FRAE0206LB**
  - Gugulethu (2012-2015), 3359 entered club
  - 26% LTFU after 3 years (linked with high VL)
  - <25 years
  - Control?
- **THPEE579**
  - KZN, Uthungulu district
  - Differentiated models of care
  - 67% opted to remain in facility (standard of care) rather than Community club , CAGs

Vulnerable Groups: Adolescents

The association between adherence and seven social protection factors was measured in a sample of HIV-positive adolescents in Eastern Cape

- Self reported non-adherence high: 36%
  - 3 cash and care social protection factors were associated with reduced non-adherence: food security (OR .6; p<0.001); high parental/caregiver supervision (OR .62, p<0.001); attending an HIV support group (OR .54, p<0.004) **(TUAB0201).**

Perinatally HIV-infected adolescents receiving ART either at a specialized Saturday teen clinic or standard paediatric weekday clinic in KZN:

- showed that retention was significantly higher among adolescents attending teen clinic versus standard paediatric clinic (97% vs. 85%, p=0.005).
- Viral suppression was also higher in adolescents attending the teen clinic versus the standard paediatric clinic (91% vs. 81%, p=0.048**) (TUPEB124).**

TUPEE490

- Khayelitsha: 3 years; 12-25 year olds
- Youth model with interventions
- High retention rates, except in ART ineligible groups

ATN 113: Daily Oral TDF/FTC as PrEP for Adolescent MSM in US

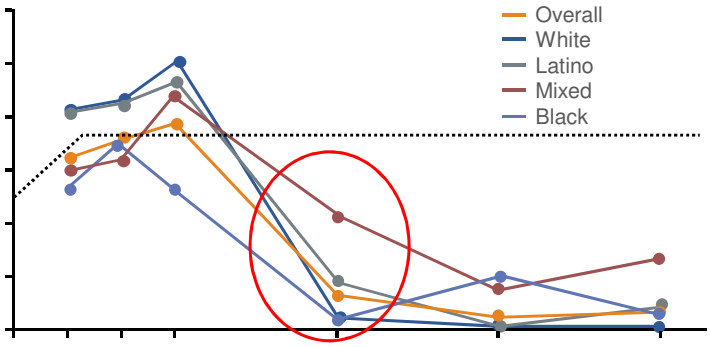
- Observational, open-label, single-arm feasibility study
  - HIV-negative US MSM aged 15-17 yrs who demonstrated high-risk behavior for acquiring HIV were prescribed daily oral TDF/FTC
  - 2864 individuals prescreened, N = 79 enrolled
  - Follow-up visits at Wks 4, 8, 12, 24, 36, 48
- Wk 48 outcomes
  - 3 seroconversions
    - All 3 had low TFV-DP drug levels at time of seroconversion
  - HIV incidence: 6.41/100 PY (95% CI: 4.9-25.8)

Hosek S, et al. AIDS 2016. Abstract TUAX0104LB.

Slide credit: clinicaloptions.com

ATN 113: Adherence

Drop off in TFV-DP levels between Wk 12 and Wk 24 corresponded to reduced frequency of scheduled study visits (from every 4 wks to every 12 wks)



Hosek S, et al. AIDS 2016. Abstract TUAX0104LB.
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Vulnerable populations

Underestimation of mental health contributions to non adherence

THPEC179

- Association between depression and anxiety and adherence to antiretroviral therapy among newly diagnosed HIV-infected men who have sex with men in China

TUPEB119 (Witkoppen)

- 9-19 years, median age of 11
  - Mental health and VL suppression in adolescents: high rates of PTSD, depression and anxiety
  - Reduced VS rates, especially PTSD; trend?

- **TUPED268**
  - The crucial role of the family context: family functioning and depression in HIV patients on public-sector ART in South Africa (very qualitative)

Biological markers of adherence
Not a new concept

THPEB071

- Utility and acceptability of dried blood spot (DBS) and hair biomarkers as objective measures of antiretroviral therapy (ART) adherence among HIV+ adults in South Africa
- DBS and hair
- Good correlation, small sample size

How far are we off the mark?

Table 1. Select treatment and monitoring indicators for VL scale-up using matched laboratory data

Country	Year of VL scale-up	Period pre- and post-VL scale-up	Cumulative number of ART patients		Number of ART patients with ≥ 1 VL test		Proportion of ART patients with ≥ 1 VL test		Proportion of VL tests with VL suppression	
South Africa	2014	2014 vs. 2015	2,609,275	2,951,159	1,878,927	2,119,890	72%	75%	75%	78%*

Numbers of VL tests were disaggregated at the individual level for adult and pediatric patients in South Africa

Massive geographic variation between districts sub-districts and facilities: 47-87%

Focused interventions needed

Last 20%: massive effort!!!!

Stevens, Deyde, Pillay, Macleod, Carmona; 2015

Virological suppression

- A national HIV care cascade for the period April 2014 – March 2015 was constructed using data from HSRC, StatsSA, NHLS and DHIS.
- The analysis showed that 20% of men and 30% of women were virally supressed, far from the 90-90-90 goal of 72.9% of PLHIV virally suppressed **(TUPDC0102).**

Poor Virological suppression

The Africa Centre TasP trial in KZN

- (2012-2016) suppression rates of 40.2% and 42.4% in the control and universal test and treat arms **(FRAC0105LB).**

A household survey in uMgungundlovu District in KZN

- slightly higher suppression rates of 44.1% for males and 58.2% for females **(TUPDC0101)**

An older analysis of antenatal surveillance data from 2010-2012 :

- VS rates among pregnant women varied widely across districts (9% - 39%), districts with the highest HIV prevalence also had the best viral suppression rates.

FRAC0105LB

- The impact of universal test and treat on HIV incidence in a rural South African population: ANRS 12249 TasP trial, 2012-2016

TUAC0205

- District prevalence of unsuppressed HIV in South African women: monitoring programme performance and progress towards 90-90-90

TUPDC0101

- Achieving UNAIDS 90-90-90 targets in a high HIV burden district in KwaZulu-Natal, South Africa

TUPDC0102

- Analysis of age- and sex-specific HIV care cascades in South Africa suggests unequal progress towards UNAIDS 90-90-90 treatment targets

Improving access to VL monitoring old news?

- **Dried blood spot (DBS)** collection for viral load (VL) testing was evaluated during a study in Kenya and Uganda.
  - The correlation between DBS and plasma tests was 0.85 ($p<0.0001$).
  - At the WHO viral suppression threshold of < 1000 copies/mL in plasma and < 624 copies/mL with DBS:
    - sensitivity and specificity of DBS was 87% and 86%, respectively,
    - positive and negative predictive values of 46% and 98%, respectively,

  for detecting treatment failures in a population with 13% virological failures.

  - As DBS tests provide comparable results to plasma and are less resource intensive than plasma testing,
  - **DBS VL testing should be considered for testing in low resource or community settings (WEAE0304).**

Studies Assessing Tools for Monitoring ART Efficacy and Failure

Study	Findings
Validation of *GeneXpert HIV-1 Quant* for monitoring HIV-1 RNA in pts on ART[1] ▪Point-of-care, PCR-based testing system ▪Assessed samples from Indian pts with varying HIV-1 RNA levels (N = 219) and controls	▪ **Similar detection with *GeneXpert* vs standard *Real Time* assay: R^2 = 0.784** ▪ Sensitivity/specificity for detecting HIV-1 RNA > 200 c/mL: 97%/100%
Assessment of SAMBA-1 for routine monitoring of HIV-1 RNA in pts on ART[2] ▪Nearly point-of-care, PCR-based testing system ▪Assessed pts on first-line ART at hospital/health centers in Malawi from Aug 2013 to Dec 2015	▪ **13675/19036 (72%) received ≥ 1 test** ▪ > 80% of tests reviewed the same day at health centers
LAg-Avidity for detecting viral breakthrough for pts on ART[3] ▪Antigen avidity enzyme immunoassay ▪Assessed samples from US pts pre/post ART (n = 72) and suppressed pts who had breakthrough (n = 179)	▪ **Sensitivity/specificity for detecting viral breakthrough: 65%/86%**

1. Kulkarni S, et al. AIDS 2016. Abstract THPDB0205. 2. Nicholas S, et al. AIDS 2016. Abstract THPEB046. 3. Wendel SK, et al. AIDS 2016. Abstract THPEB039.

Slide credit: clinicaloptions.com

Critical choices

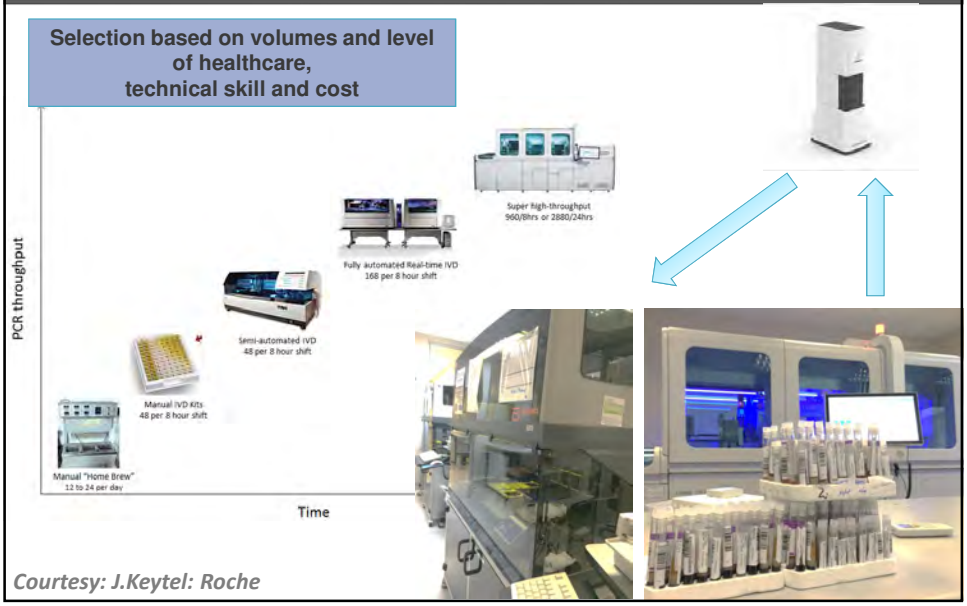
Available options (lab extension, lab replacement, lab multifunctional, clinic based service)

Laboratory based testing	Opportunity
Extend existing plasma services	• Ultra high throughput (Roche 8800 or equivalent) • Decentralised (Cepheid) • PPT
Replace/extend existing service through alternative matrices	• DBS on existing platforms using existing logistics
Multi-functional	• HIV/TB (Cepheid, Roche, Abbott etc)

Clinic based testing using POC
Space, operators, connectivity!
Time to reportable result (35mins – 90mins)
Threshold change: on-site adherence vs clinic workflow disruption Single or multiple assays

Options
Diagnosis vs monitoring (whole blood/DBS): TNA selection vs RNA
Plasma vs whole blood with threshold change

Addressing trends in technology and scale



Courtesy: J.Keytel: Roche

Improving usage of VL

- **Best practice in clinic**
- **Sekhukune District** implemented simple interventions to increase VL completion rate from 29% to 70% over the course of one year.
- Gaps addressed were novel practices including:
  - generating daily lists of patients due for blood draws
  - annotating patient files to indicate that blood draw was due at the next visit, and
  - a reminder system for phlebotomists by completing laboratory forms and placing them on patient files at the beginning of each month. **(WEPEE495)**

Key Activities:

- **Activity 1:** Enhance the clinic laboratory interface to streamline processes, improve turnaround times and ensure quality services are rendered for HIV viral load.
- **Activity 2:** Strengthening and enhancing the in-lab pre analytical component of the NHLS value chain through workflow engineering and automation of HIV viral load.
- **Activity 3:** Improved results delivery mechanisms and monitoring and evaluation tools to ensure optimal treatment management for HIV viral load.

HIV DRUG RESISTANCE

EWI 7: VIRAL LOAD SUPPRESSION ...LIMITED MONITORING

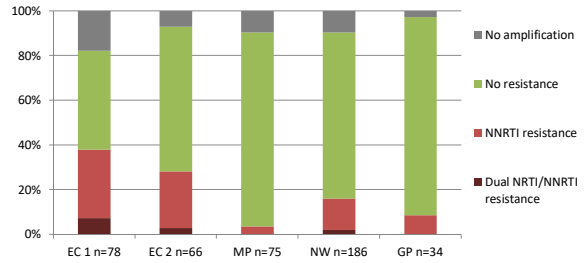
VL monitored in only **18.8%** of EWI rounds in 13 countries in 2004-2014 due to limited use of routine VL testing.

Period: 2013-2014

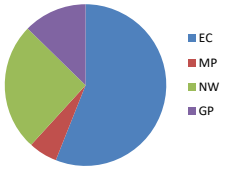
	% patients on ART virologically suppressed @12 months	% ART clinics achieving target of >90% VS	% patients with VL test done and results recorded (VL testing coverage)
Thailand: 865 Clinics	**93.6%**	**74.7%**	From **53%** in 2009 to **79.8%** in 2013 (p<0.001)
South Africa 115 clinics	**80.7%**	**10.4%**	**44.5%**

Resistance levels detected

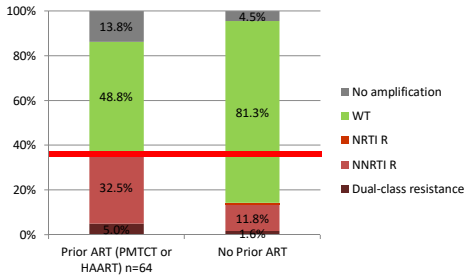
By clinic



Provincial contribution to resistance detecetd



By self-reported ART exposure



NNRTI resistance: 38% in ART starters with prior exposure to ARVs

13.4 in ARV-naive starters

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Laboratory approach to Linkage to care and improved adherence

Data collection/analysis focuses on surveillance and not patient care

Intervention	Solution	feasibility	Needs
Data Centralization	CDW NHLS: BIG DATA	In place for all assays performed	Maintenance costs high Skilled staff
Data Dashboard	Needs assessment Progress monitoring Real-time accountability	Developed Probabilistic matching Ready for launch	Maintenance costs high Skilled staff Unique identifier Security levels defined
mHealth Hub	Public-private partnerships Service all apps consolidation	In progress for 4 pilots for MDR Forum established multiple partners and feasibility Result push out into any platform	Funding for Hub development and maintenance
Enormous training needs	Partner collaboration	RTC model	Participation by PEPFAR partners e.g. simple messaging: VL>1000: what do you do?

Results

Patients initiating ART in 2004 and 2005

- **N = 66,865**

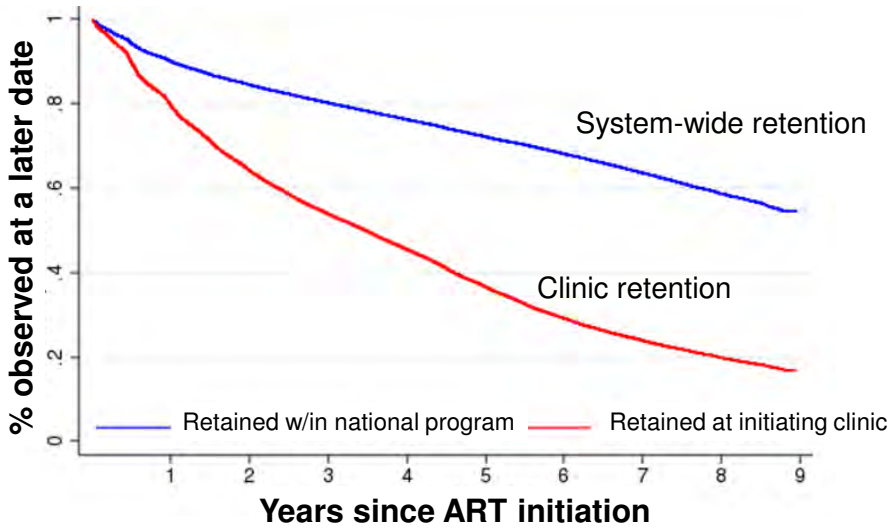
9-year retention

- **…at initiating clinic:**
  - 16.7% (95% CI: 15.8 - 17.7)
- **…system-wide:**
  - 54.5% (95%CI: 53.5 – 55.4)

BU

Population Characteristics at first CD4 count		
Sex	Female	64%
Age	<30	35%
	30-39.9	39%
	≥40	27%
CD4	<100	36%
	100-199	30%
	200-349	17%
	≥350	17%

Retention: system-wide vs. clinic perspective



	1 year	5 year	9 year
System-wide	0.90 (0.89-0.90)	0.72 (0.72-0.72)	0.54 (0.53-0.55)
Clinic retention	0.79 (0.79-0.80)	0.37 (0.36-0.37)	0.17 (0.16-0.18)

NHLS CDW Capability: Abstracts

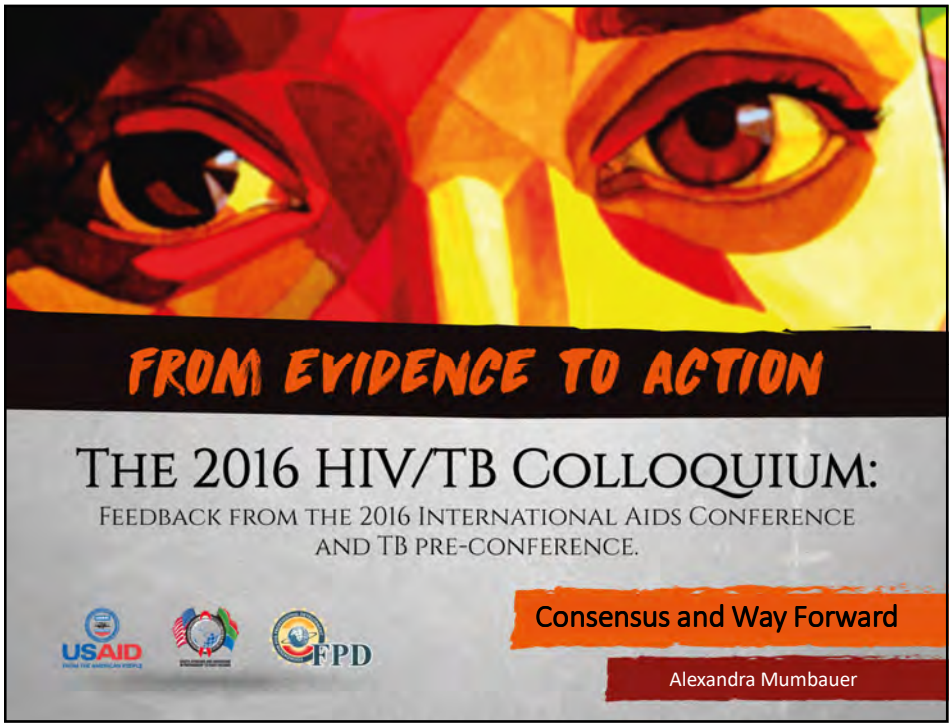
1. **Is retention on ART underestimated due to patient transfers? Estimating system-wide retention using a national labs database in South Africa**
Matt Fox, Jacob Bor, William MacLeod, Mhairi Maskew, Alana Brennan, Wendy Stevens, Sergio Carmona

2.- **Analysis of age- and sex-specific HIV care cascades in South Africa suggests unequal progress towards UNAIDS 90-90-90 treatment targets**
W.B. MacLeod, N. Fraser, J. Bor, Z. Shubber, S. Carmona, Y. Pillay, M. Gorgens

3.- **The youth treatment bulge in South Africa: increasing numbers, inferior outcomes among adolescents on ART**
M. Maskew, J. Bor, W. MacLeod, S. Carmona, G. Sherman, M.P. Fox

4.- **District Prevalence of Unsuppressed HIV in South African Women: Monitoring Programme Performance and Progress Towards 90-90-90**
Jacob Bor*, Alana Brennan, Matthew P. Fox, Mhairi Maskew, Wendy Stevens, Sergio Carmona, Bill MacLeod

5.- **Rising CD4 counts at clinical presentation: evidence from a novel national database in South Africa***
Cornelius Nattey, Brendan Maughan-Brown, William MacLeod, Mhairi



TB Pre-conference report back

- Need to go back to basics
- Case finding, especially for key populations (including children)
- Reducing initial loss to follow up before treatment initiation
- Address data issues
- Integration with HIV services still isn't there

Prevention

- Oral PrEP – next step is to reach young women
  - But don't forget male partners
- Young people want to be involved in developing programmes
- PMTCT – increased support to women during post-natal period
- VMMC – rapid scale up, not as much of a hot topic anymore, but targets have not been hit

1st 90

- We now have a diverse set of testing modalities to choose from
  - Different modalities reach different populations
  - Consider cost implications/return on investment when scaling up modalities
  - New HTS guidelines supports implementation of all community-based modalities
- Progress is being made with HTS in schools
- Implications of removing lay counsellors from facilities in Gauteng

2nd 90

- Contrast of TasP and SEARCH trial results
  - Importance of offering integrated, patient-centred services
- Linearity of HIV cascade does not reflect reality for PLHIV engaging with health system
- Engaging men in health care: “Men’s tents”; role of traditional leaders
- New HIV drugs
  - Can be prescribed for individuals patients, but waiting for fixed dose combination before national rollout
  - Ensure new HIV drugs work with TB drugs!

3rd 90

- Differentiated models of care
  - Adherence clubs show promise, but have challenges that need to be addressed (e.g. LTFU)
- Specialized care for adolescents
- Impact of mental health on adherence
- Focus on districts, subdistricts, and facilities with poor viral load suppression rates
- Waiting on true point of care VL technology
- Investment in drug resistance testing
- Make use of NHLS data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THANK YOU