Organisation of ART in resource-limited settings: experience of South Africa.

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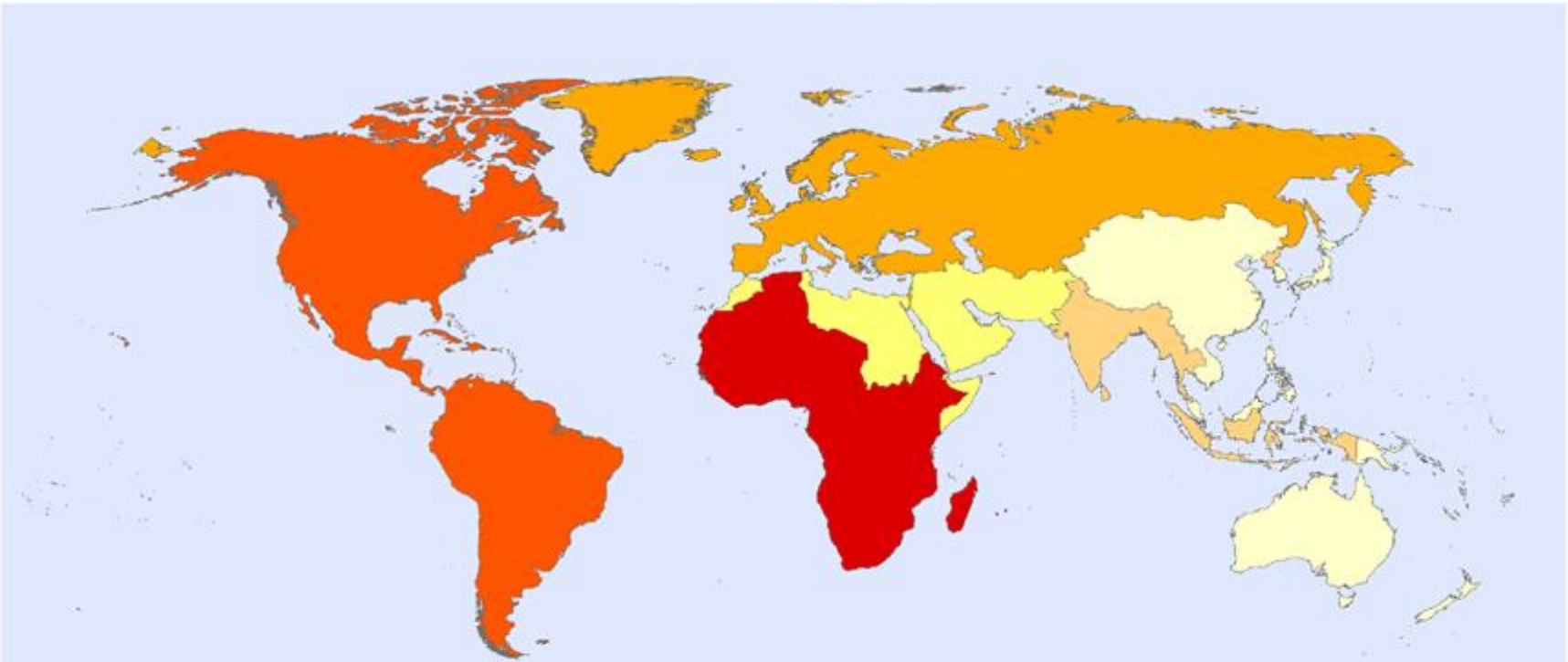
Topics to be covered

- Epidemiology of HIV in South Africa
- Current guidelines for treatment
- Rationale for treatment choices

Adult HIV prevalence (15–49 years), 2015
By WHO region



Prevalence (%) by WHO region

- Western Pacific: 0.1 [<0.1–0.2]
- Eastern Mediterranean: 0.1 [<0.1–0.2]
- South-East Asia: 0.3 [0.3–0.4]
- Europe: 0.4 [0.4–0.5]
- Americas: 0.5 [0.4–0.6]
- Africa: 4.4 [4.0–4.8]

Global prevalence: 0.8% [0.7–0.9]

0 875 1,750 3,500 Kilometers

Data Source: World Health Organization
Map Production: Information Evidence and Research (IER)
World Health Organization

World Health Organization

Demographic of South Africa

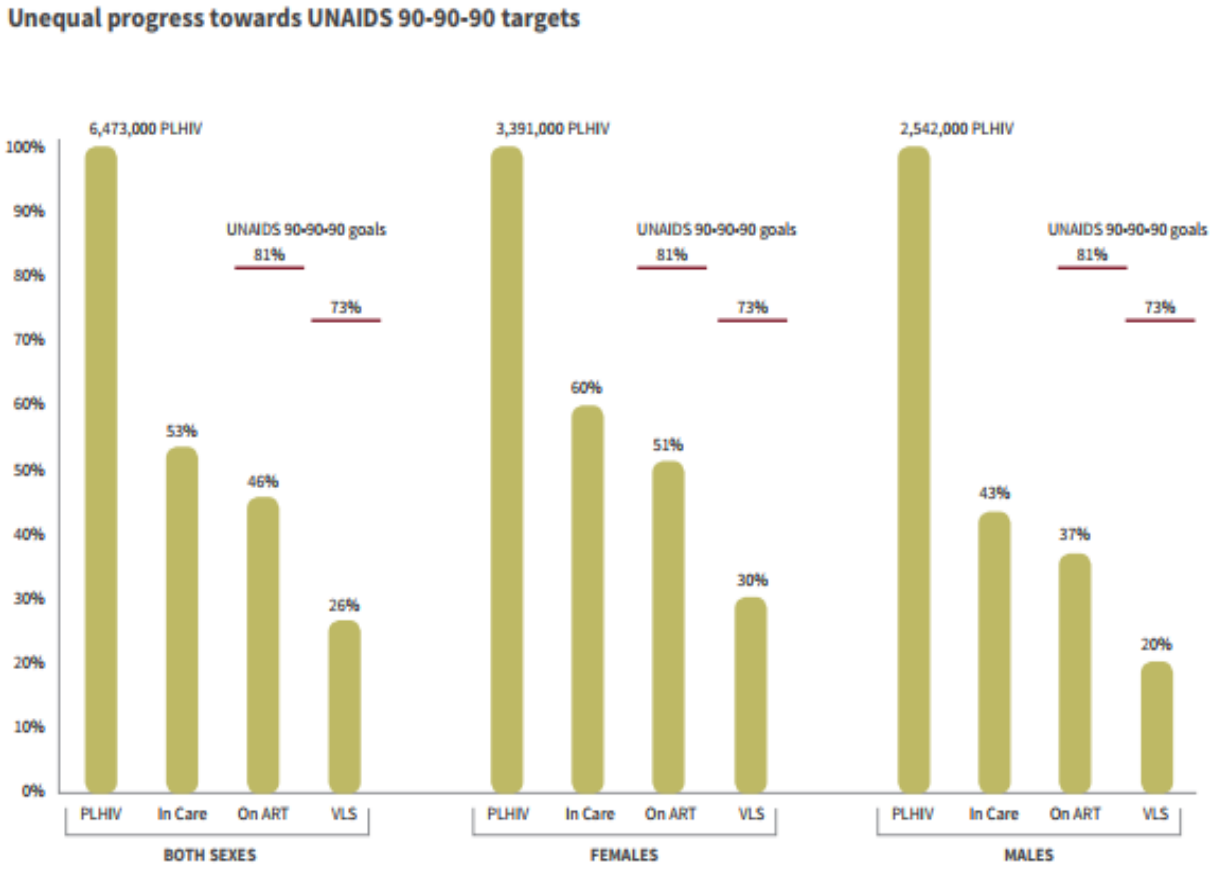
- Population: 53 million
- Population aged under 15(%) 30 %
- 85% of Health care provided by National Department of Health
- *9 provinces with different burdens*

Epidemiology of HIV in South Africa

- 6 431 000 people living with HIV
  - Predominantly heterosexual transmission
  - IVDU less than 1%
  - Children with HIV 240 000
  - Highest transmission risk in young women between 15 and 24 years
- 19.2 % adults HIV prevalence
- 380 000 new HIV infections annually
- 180 000 deaths annually from AIDS.
- 48% of adults on ART
- Adopted “treat all’’ treatment September 2016

UNAIDS Gap report 2016

90 90 90 cascade



Co-morbidities

- Most common co-infection: TB

South Africa

Estimates of TB burden,[a] 2015

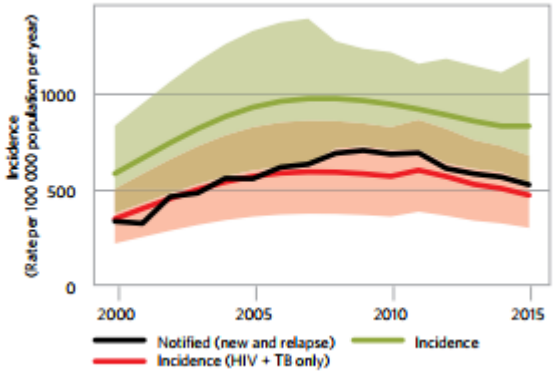
	Number (thousands)	Rate (per 100 000 population)
Mortality (excludes HIV+TB)	25 (21–29)	46 (39–53)
Mortality (HIV+TB only)	73 (27–140)	133 (50–256)
Incidence (includes HIV+TB)	454 (294–649)	834 (539–1190)
Incidence (HIV+TB only)	258 (165–370)	473 (303–680)
Incidence (MDR/RR-TB)[b]	20 (13–27)	37 (24–50)

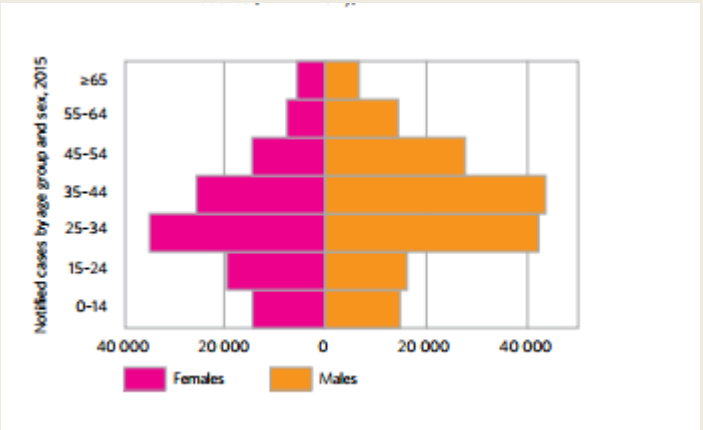
Estimated TB incidence by age and sex (thousands),[a] 2015

	0–14 years	>14 years	Total
Females	16 (6.9–25)	175 (91–260)	191 (98–285)
Males	17 (9.8–23)	246 (173–320)	263 (182–343)
Total	33 (21–44)	422 (327–516)	454 (294–649)

TB case notifications, 2015

Total cases notified	294 603
Total new and relapse	287 224
— % tested with rapid diagnostics at time of diagnosis	64%
— % with known HIV status	97%
— % pulmonary	90%
— % bacteriologically confirmed among pulmonary	60%





Current guidelines for treatment (1)

- Closely follow the WHO guidelines
- First line treatment for **all adults** and adolescences
  - Fixed Dose combination: tenofovir, FTC and EFV (600mg)
  - (unless clinical contra-indications e.g. renal failure, active psychiatric disease)

Current guidelines for treatment (2)

- Virological monitoring of patients on ART
  - No baseline viral load or genotype
  - First VL done after 6 months on treatment
  - Repeated at one year and annually
  - VL above 1000 copies/ml, repeat within 8 weeks (adherence counselling done)
  - If repeat VL above 1000 copies/ml, regimen changed to LPVr and two nucleosides
  - No genotype done at first line change

Current guidelines for treatment (2)

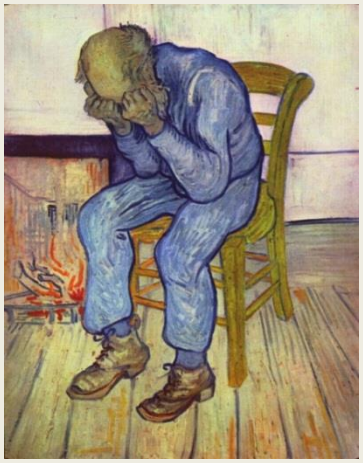
- Second line treatment
  - LPVr and two nucleosides
  - Viral load repeated at 6 months and then annually thereafter
  - If VL above 1000copies/ml after a year, adherence counselling done and if still above 1000copies/ml, drug resistance test done
  - Third line with DRV/r, two nucleosides, DTG and etravirine given as per DRT

Rationale for NNRTI (EFV) in first line

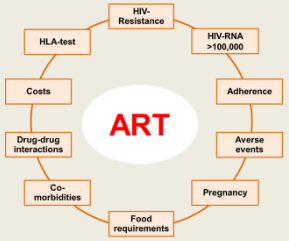
- Single day dosage
- Fixed dose combination
- Mostly favourable adverse event profile
- Can be co-prescribed with Rifampicin

Rationale for NNRTI (EFV) in first line

- Increasing recognition of CNS side effect
  - Africans stoic
  - asymptomatic
- Rash, hepatitis, gynaecomastia, lipids
- ENCORE (Lancet 2013)– 400mg vs 600mg – less discontinuations, but very little change in side effects
- Concerns about 400 mg dose in PMTCT and TB

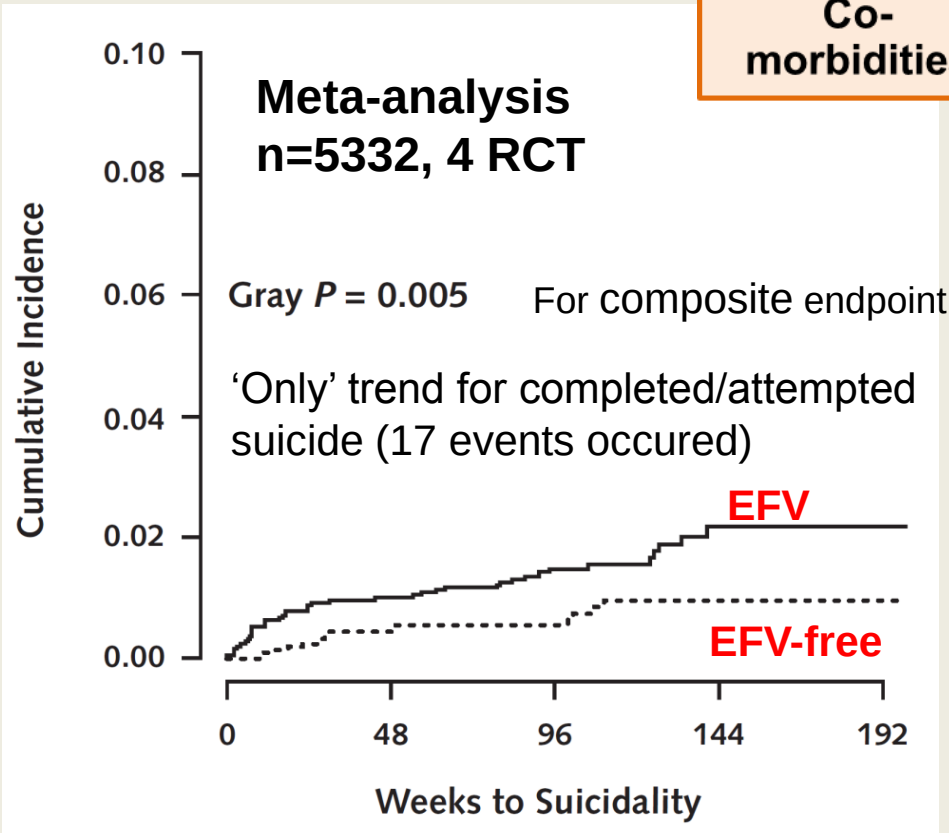


Depression



Co-morbidities

- **Efavirenz** (6%)
  2x higher risk for suicidality
- **Rilpivirine** (8%)
- **Elvitegravir/COBI** (5%)
- **Raltegravir** (6%)
- **Atazanavir/r** (2%)



Lack of association between use of efavirenz and death from suicide: evidence from the D:A:D study #O315 Wednesday 5 November
C. Smith; L. Ryom; A. d'Arminio Monforte; P. Reiss; A. Mocroft; W. El-Sadr; R. Weber; M. Law; C. Sabin; J. Lundgren.

Cohen et al., Lancet 2011; Molina et al, Lancet 2011; Elion et al., JAIDS 2013; Mollan et al, Ann Intern Med 2014

PI in first line

- Was commonly used when safety of EFV was not established in pregnancy in women with high CD4+ (NVP contraindicated)
- Women with suppressed VL changed to EFV based FDC after pregnancy
- Few adverse event occurred

What does the future hold?

- Even further optimization of treatment
- Intergrase inhibitor: Dolutegravir
  - 50 mg once-daily (in naïve patients)
  - Very good efficacy
  - Minimal toxicity
  - Pregnancy category B
  - Superior to EFV at 48 weeks in naïve patients– SINGLE study (compared ABC/3TC/DTG with TDF/FTC/EFV.) – but safer, not virologically better
  - Potential to be low cost and co-formulated

Walmsley SL et al. N Engl J Med. November 2013
FDA press statement. August 2013

What does the future hold?

Science evolved: smarter and better HIV treatment options are now available