

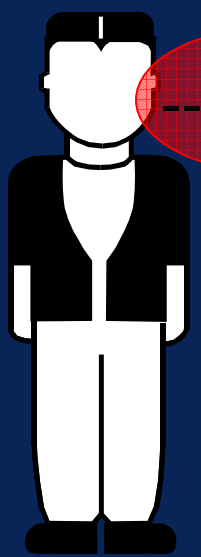


AIDS 2006

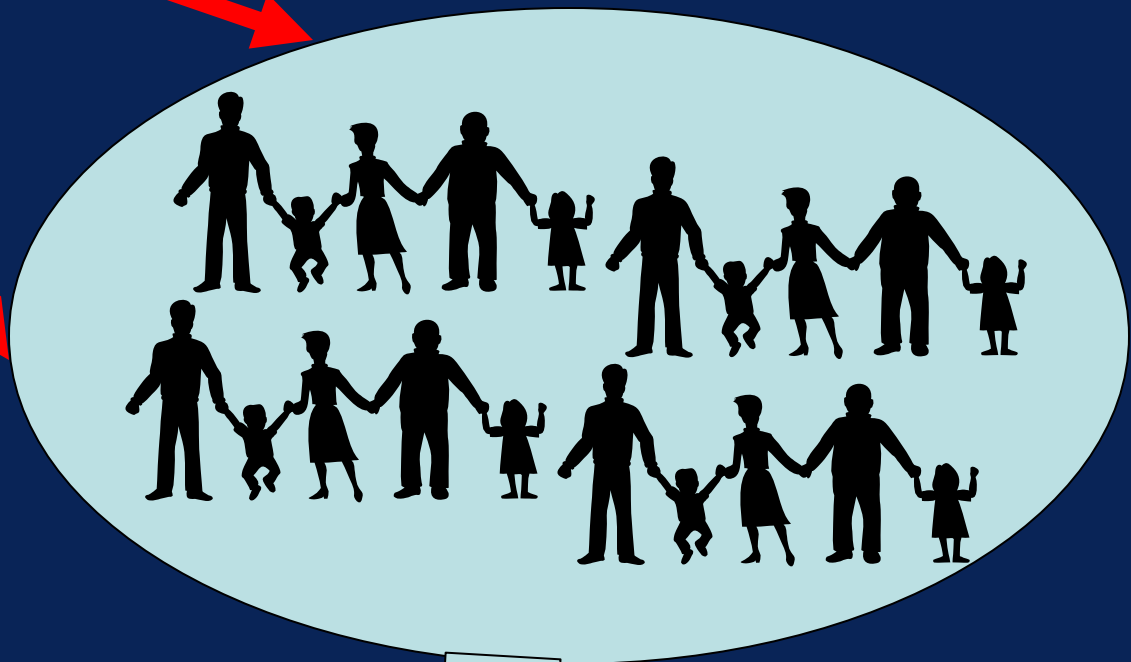
TB Case finding/TB Prevention in HIV infected populations

Helen Ayles
ZAMBART Project

Before HIV



1 Infectious case



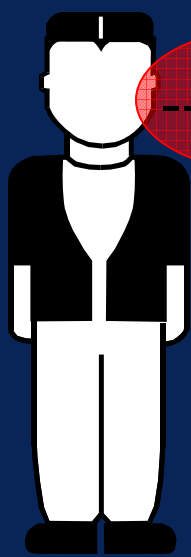
20 contacts

2 cases of TB

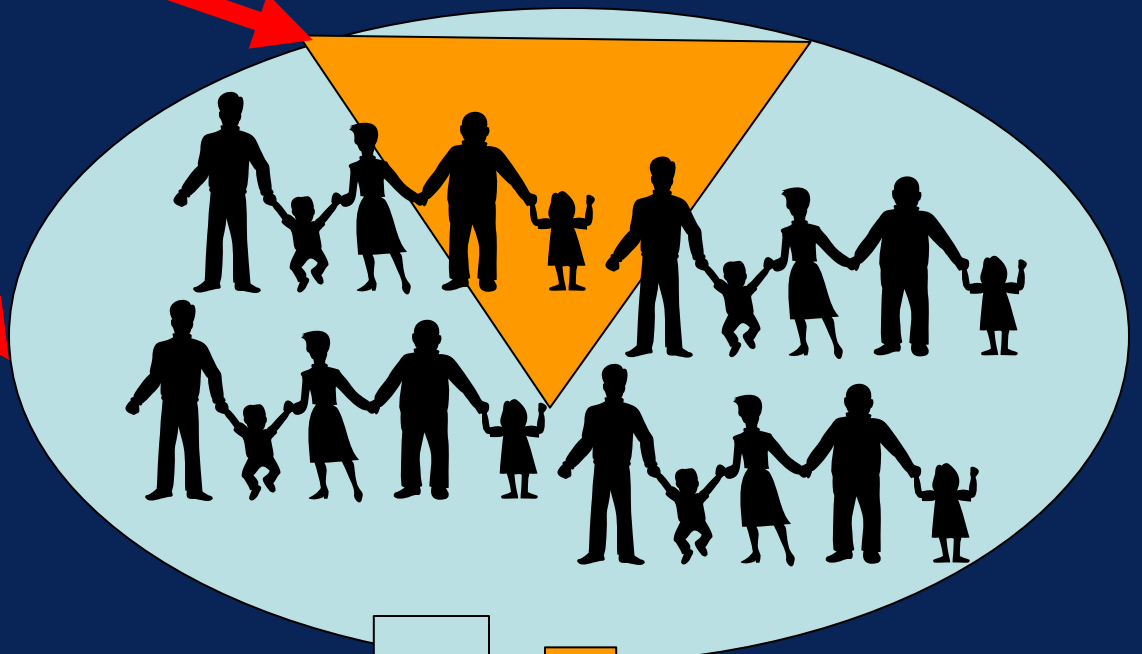
1 Non-Infectious

Stability

With HIV (10%)



1.2 Infectious cases



20 contacts

1.8 cases

18 HIV-ve

0.8 cases

2 HIV+ve

1.4 Non-Infectious

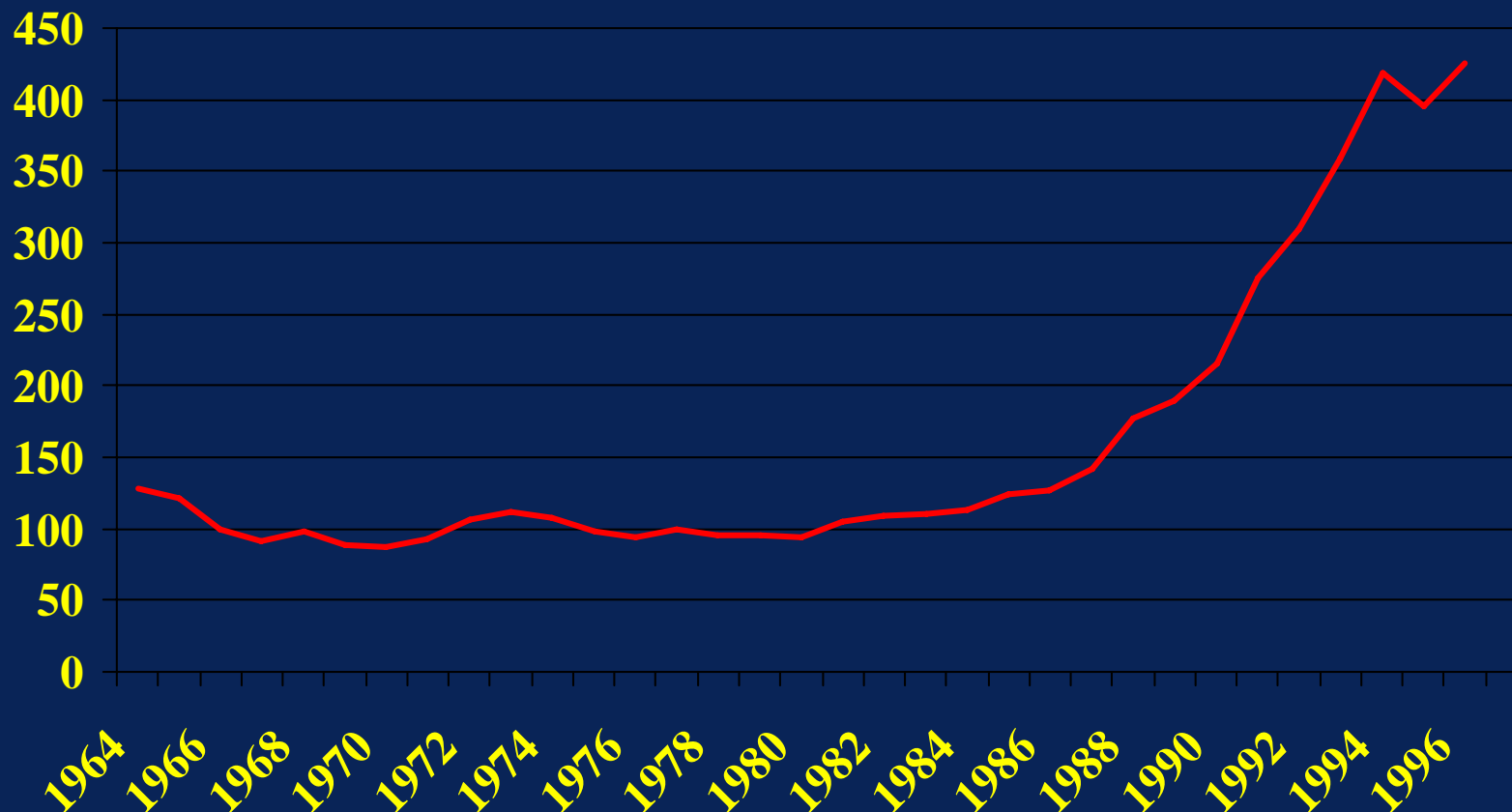
An Epidemic

New Cases of Tuberculosis in Zambia

Notification Rate /100,000 /year 1964-1996

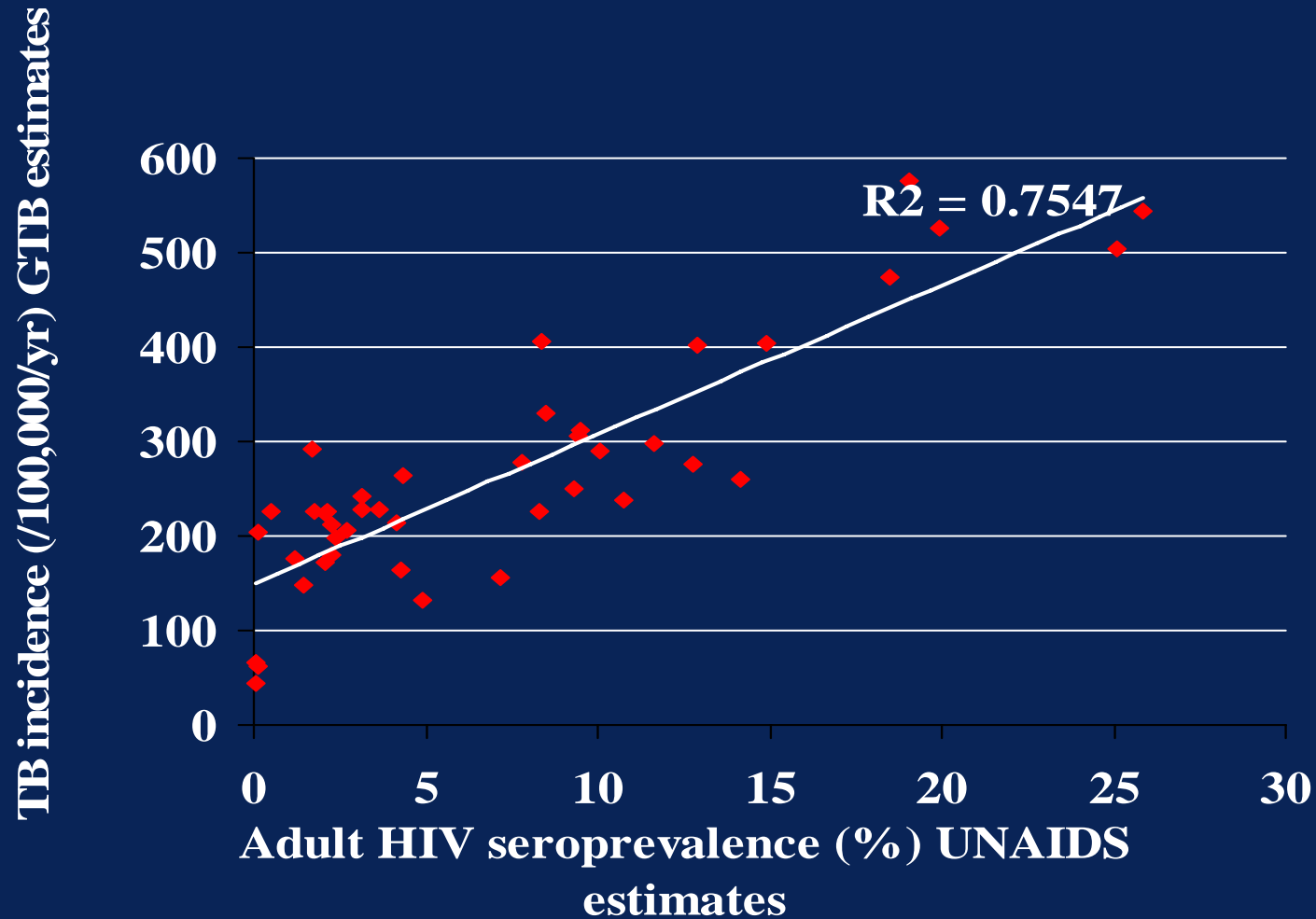


AIDS 2006

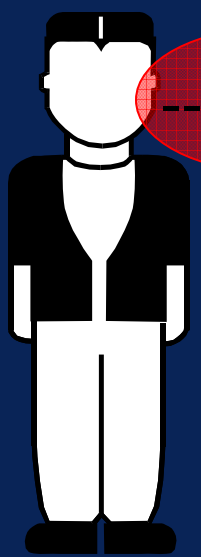


Source NASTLP/MoH

No country with a severe HIV epidemic is controlling TB

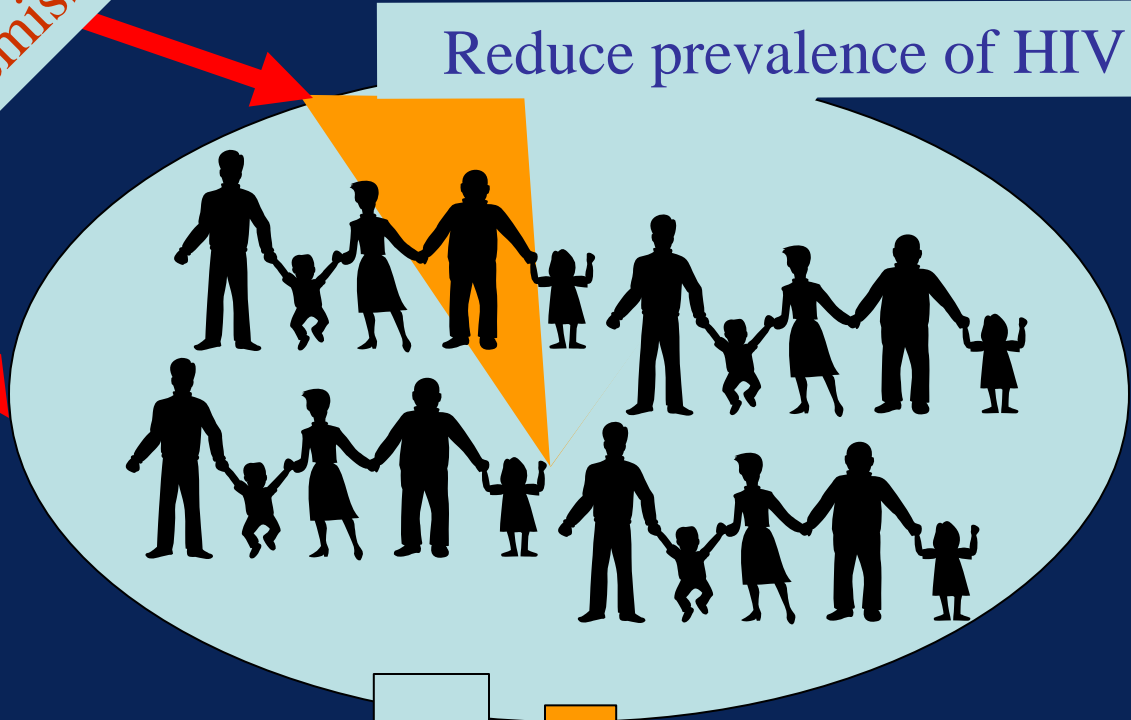


With HIV (10%)



Reduce transmission

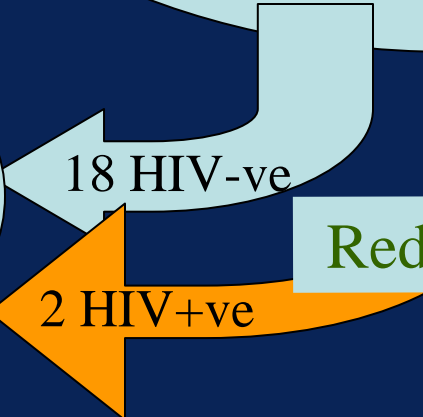
Reduce prevalence of HIV



1.1 Infectious cases



1.5 Non-Infectious



20 contacts

Reduce reactivation

An Epidemic

How does TB impact on HIV



- 750,000 PLHIV will develop TB this year
- TB is one of the leading causes of death in PLHIV
- ~200 PLHIV will die today of TB – despite the fact that TB is curable
- ART reduces the rate of developing TB but PLHIV on ART still have a massively increased risk of developing TB (4-8x that of HIV negative)

What can the HIV community do?



- Find more cases of active TB and treat them earlier
- Reduce reactivation of latent TB in those individuals who do not yet have active TB

Both will prevent TB!



TB Preventive therapy

- Cochrane review of 11 randomised trials including 8,130 HIV positive participants showed an overall reduction in TB of 33% (RR 0.67, 95% CI 0.51-0.87), and a reduction of 62% (RR 0.38, 95% CI 0.25-0.57) in people with a positive TST
- National and international policies exist to implement it

Poor uptake of policy in high burden countries

How?
When?
Where?

Screen all HIV infected
individuals for TB

Active TB: Treat

~~No active~~
Latent TB: Prophylaxis

Expected yield 0-6%¹⁻⁴

Eligibility 10-50%^{5,6}



How to Screen for TB

- Symptoms
- Chest x-ray
- Sputum examination: smear Vs culture

Can use the same screens to EXCLUDE TB

How to Screen for Latent TB

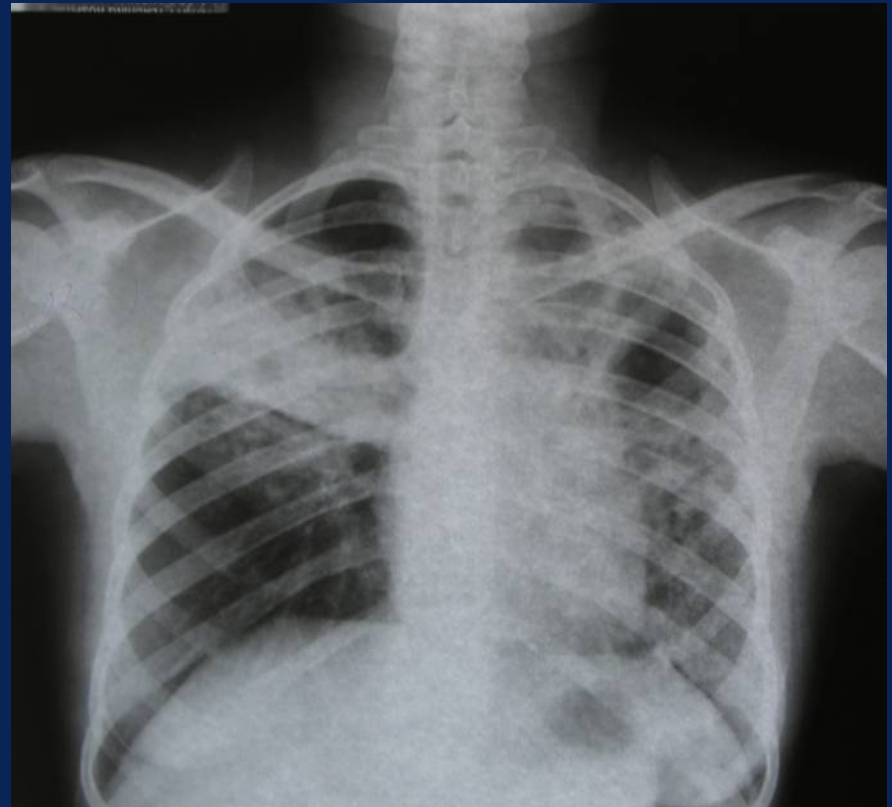
- Tuberculin skin test (TST)
- Interferon release assays

Symptomatic screen

- Most commonly done
- Screens vary – most validated include
 - Cough > 2/3 weeks
 - Fever (>2 weeks)
 - Night sweats (severe, > 2 weeks)
 - Unintentional weight loss (>10%)
- Sensitivity high, specificity low⁷

Chest X-rays

- Less availability in low income settings
- Difficult to interpret
- Lower sensitivity than symptoms, ? Improved specificity
- Not cost effective^{8,9}
 - Places where available tend to have less TB





Sputum examination

- **Sputum smear**
 - Cheap and readily available
 - Poor sensitivity
 - High specificity
- **Sputum culture**
 - Expensive, less available
 - Improved sensitivity
 - Liquid culture may lead to increased NTM detection

When & Where to Screen?



- On diagnosis – VCT, PMTCT, HIV care
- Every visit



AIDS 2006

Screen all HIV infected individuals for TB



VCT/PMTCT



AIDS 2006

Screen all HIV infected individuals for TB

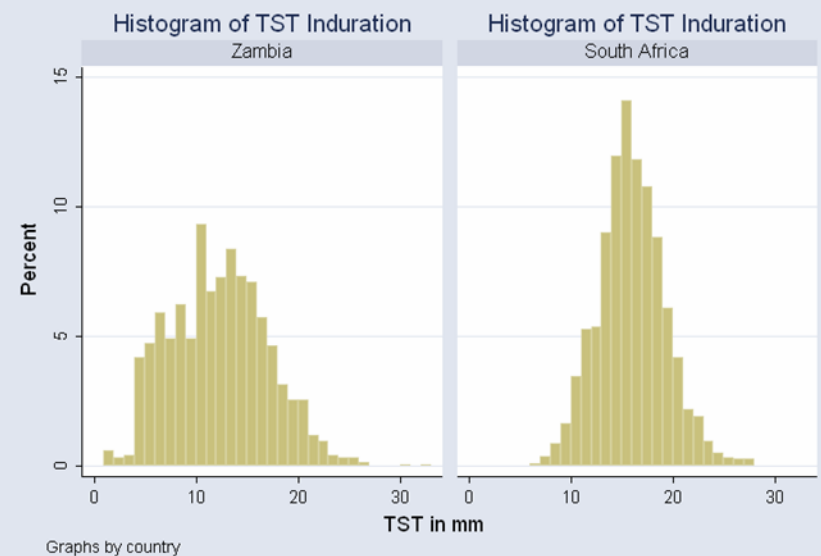


ART/HIV Clinical setting

TST



- Over 100 years old, skin test
- Cheap, limited facilities needed
- False positives
- Anergy in HIV positives



Interferon - γ assays

- In-vitro assays using the *M.tb* region of difference 1 (RD1) antigens
- Higher specificity than TST
- ? Better sensitivity although need to use a variety of Ag¹⁰
- Limited experience in HIV+ high TB prevalence areas¹¹
- Expensive and need lab facilities

What is the gold standard?

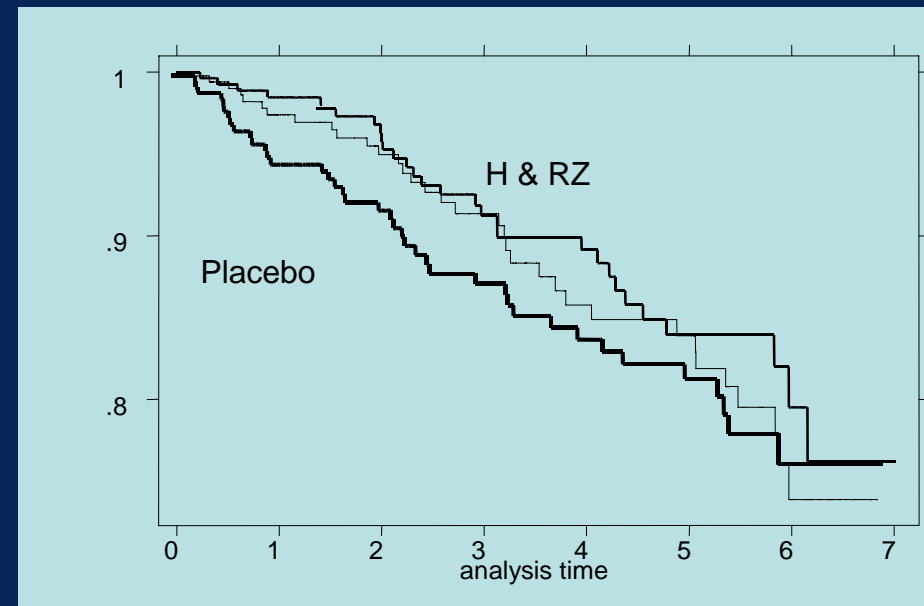
Do we need to diagnose latent TB in high prevalence countries?

- We need to exclude active TB
BUT
- Can we assume exposure +/- infection and use the expensive RD1 assays in low prevalence, high income countries?

TB Prevention



- INH 5mg/kg daily
- Duration 6-12 months
? Sufficient in high TB transmission areas
- Other regimens equally effective but higher toxicities and more potential drug interactions
- ? Value with ART



Summary

Screen all HIV infected populations for TB

Treat active TB

High income, low
TB prevalence

Low income, high
TB prevalence

Test latent TB

Exclude active TB

TB Preventive therapy

Asymptomatic
early HIV,
PMTCT/VCT

Acknowledgements



- ZAMBART Project Team
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