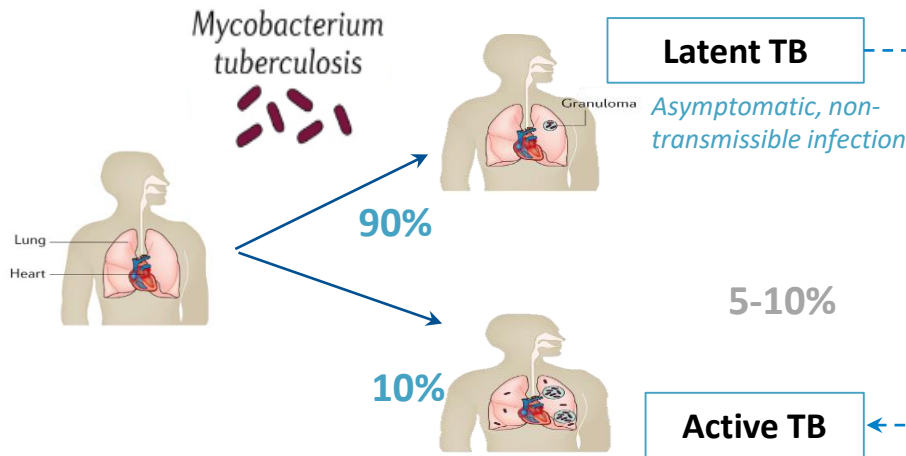


APRECIT : Improving the Management of Latent Tuberculosis Infection

Infection *M. tuberculosis*(TB)

Transmission by aerosol (cough, sneeze)



Needs treatment for latent TB infection to prevent active TB disease but it has no reference test

Questions :

1: What is the performance of TST, IGRA tests in detecting the LTB knowing that there is no reference test ?

2: How does living condition affect the development of latent infection to develop into active TB in Madagascar?

Acknowledgment : E2M2 team, Mirella, Dr Rila, Marius, Anthonio

What is the performance of TST, IGRA tests in detecting the latent infection knowing that there is no reference test ?

Model class latent

R function : `poLCA(formula = cbind(TST, QTF, TSPOT) ~ 1, data = df, nclass = 2, nrep = 10, na.rm = FALSE, graphs = TRUE)`

Outcome : Presence/absence of latent infection

Distribution : Binomial

Predictors : TST, QTF, TSPOT

Hypothesis : TST, QTF and TSPOT detect sufficiently the latent infection.

Data

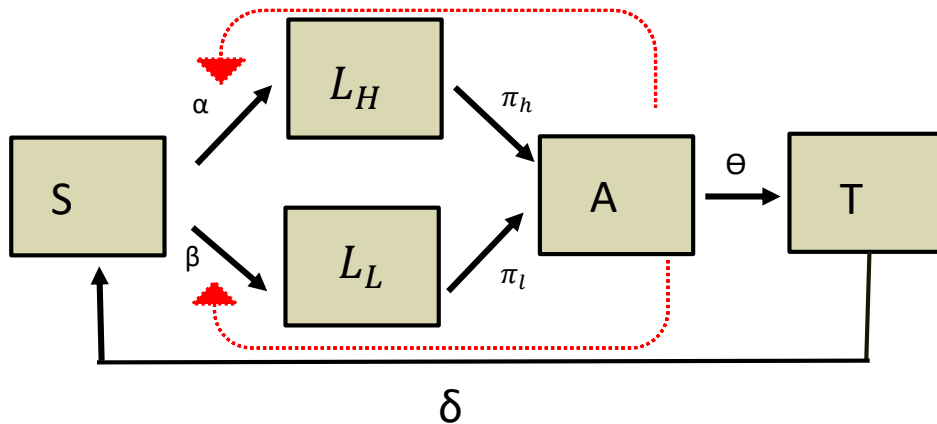
The project recruited index cases with TB disease

Set up household surveys of index active tuberculosis cases and follow-up over 18 months

Each household contact was tested with QTF, TST, TSPOT and has data on exposure variables in questionnaire

How does living condition affect the development of latent infection to develop into active TB in Madagascar?

Model diagram



States :

- **S** : susceptible
- **L_L** : latent low nutrition
- **L_H** : latent high nutrition
- **T** : Treated
- **A** : active TB

Processes :

- **α** : Transmission latency rate from susceptible to latente with high nutrition
- **β** : Transmission latency rate from susceptible to high nutrition
- **π_h** : Activation rate from latent high nutrition to active TB
- **π_l** : Activation rate from latent low nutrition to active TB
- **Θ** : treated rate from active to treated
- **δ** : rate from treated to susceptible

Next steps

- 1- Stratification of the analysis in age group
- 2- Study more living conditions : clean water, time in household...
- 3- Opened population