

Table S1. Model compartments

Compartment	Description	Separated by
U	Uninfected individuals. Those never infected.	-HIV(+/-)
L	Latently infected. Infected individuals that progress slowly to active disease.	-HIV(+/-) -MDR(+/-)
I	Pre-symptomatic Infectious. Infectious individuals that do not yet have symptoms.	-HIV(+/-) -MDR(+/-) -Smear(+/-) -Treatment History (Never treated, Treated previously)
A	Symptomatic active disease. Symptomatic individuals with active disease who have not yet started seeking healthcare.	-HIV(+/-) -MDR(+/-) -Smear(+/-) -Treatment History (Never treated, Treated previously)
D	Diagnosis seeking. Those that have visited healthcare providers for diagnosis but have not been successfully diagnosed.	-HIV(+/-) -MDR(+/-) -Smear(+/-) -Treatment History (Never treated, Treated previously) -HCP(informal/qualified/public)
Z	Successfully diagnosed. Those that have visited healthcare providers for diagnosis and have been successfully diagnosed and are awaiting treatment initiation.	-HIV(+/-) -MDR(+/-) -Smear(+/-) -Treatment History (Never treated, Treated previously) -HCP(informal/qualified/public)
T	On treatment. Those that are on treatment - either on first line (first time on treatment), retreatment (subsequent infections) or second line (after successful MDR diagnosis).	-HIV(+/-) -MDR(+/-) -Treatment History (Never treated, Treated previously) -Treatment Regimen(first line/retreat/second line) -Success (cured/not cured)
R	Recovered. Those that have been cured by treatment or spontaneously recover. Susceptible to endogenous reactivation or new infection.	-HIV(+/-) -MDR(+/-)

HCP: Healthcare Provider