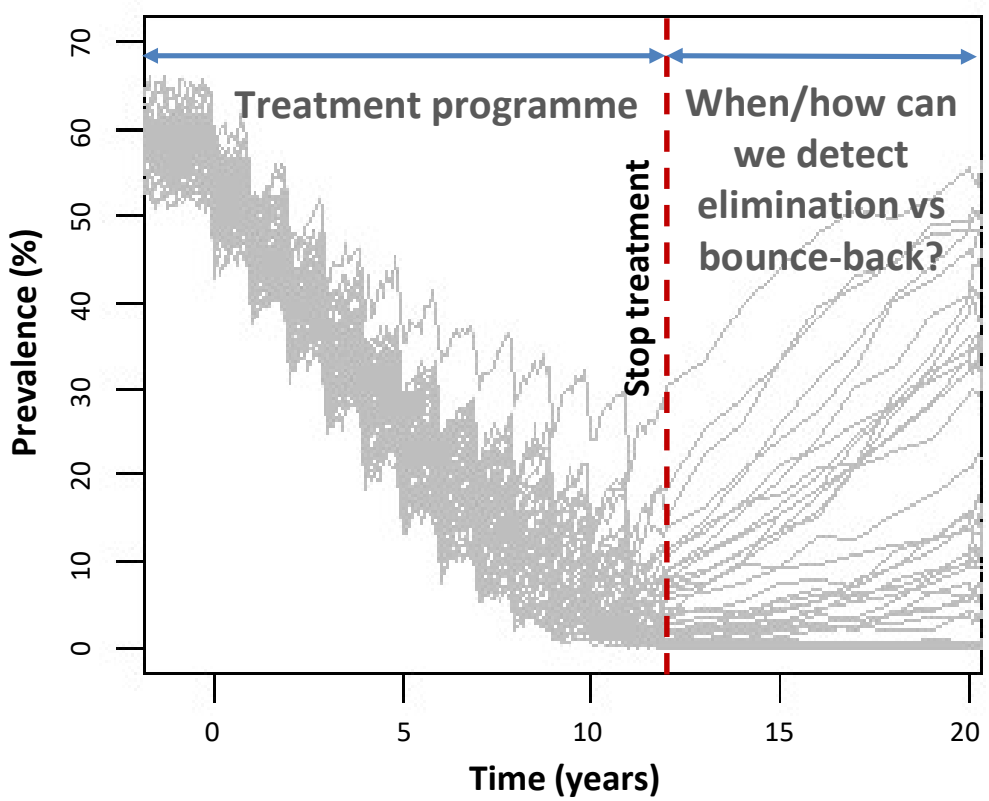
Breaking transmission for *Schistosoma mansoni*: Will elimination or resurgence occur after stopping treatment?

Jaspreet Toor, Roy M Anderson
Imperial College London

Beyond 2020: Research innovations for a new agenda. January 2019

Post-treatment surveillance factors



Elimination: incidence of infection is reduced to zero

Post-treatment surveillance time point

Community sample size

Treatment programme
Likelihood of elimination

Diagnostic
Prevalence measured by Kato-Katz

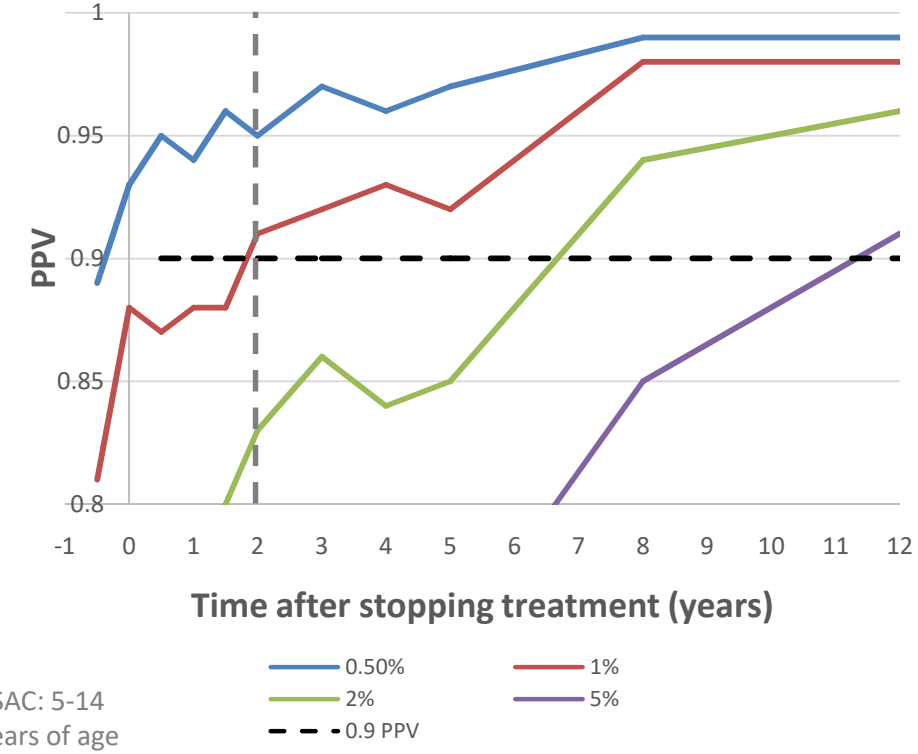
Positive/negative predictive value (PPV/NPV)
proportion of eliminations/bounce-backs detected by the threshold statistic* that result in long-term eliminations/recrudescence

*epidemiological measure based on prevalence

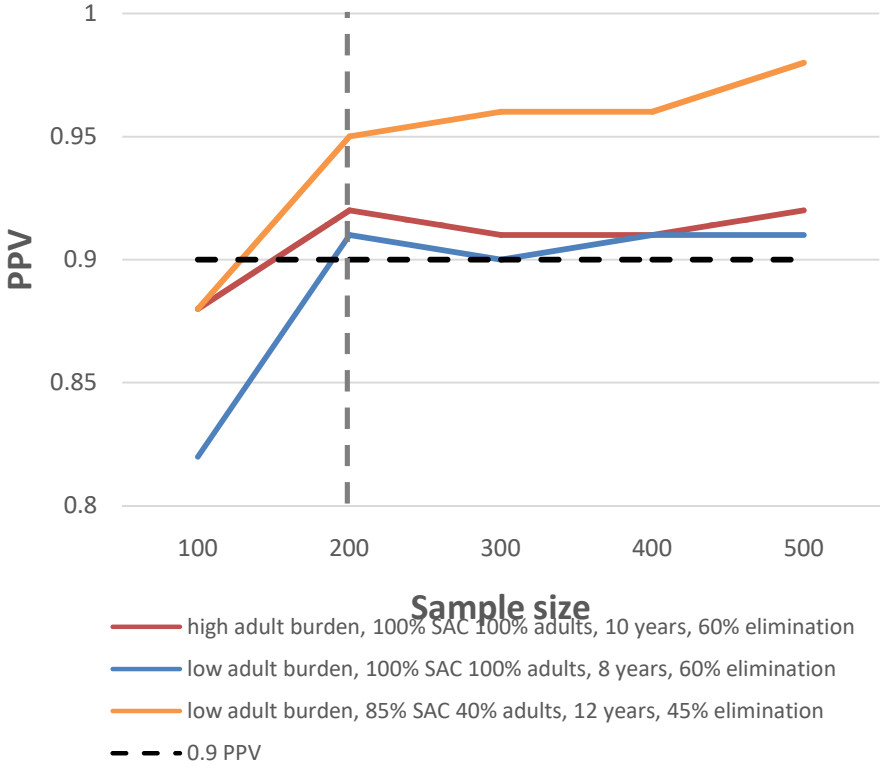
Determining threshold criteria

1% prevalence threshold after 2 years gives PPV > 0.9

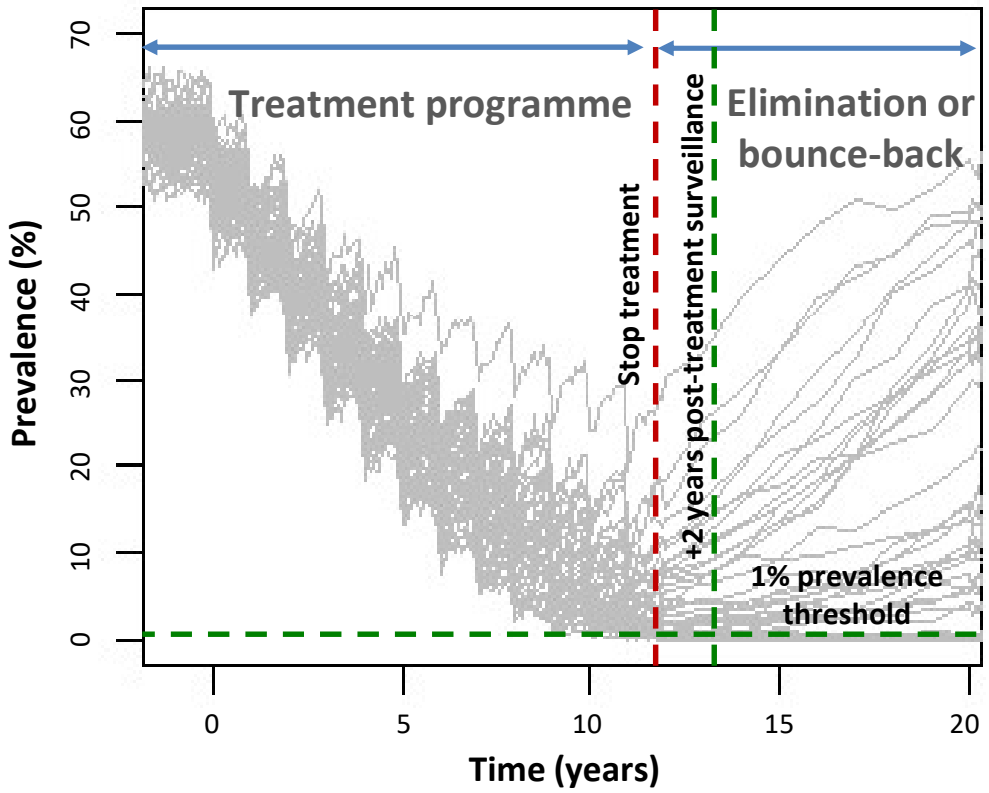
Sample size ≥ 200 gives PPV > 0.9



*SAC: 5-14 years of age



Post-treatment surveillance



Post-treatment surveillance threshold and time point

1% prevalence threshold after at least 2 years

Community sample size

200 individuals across entire community (population size 500)

Treatment programme

Likelihood of achieving elimination impacts threshold

Future work

Extend to: sampling from specific age-groups, more sensitive diagnostics, multiple communities, *S. haematobium*

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