Genomic insights into malaria transmission dynamics

OR How to get more information from cross-sectional samples

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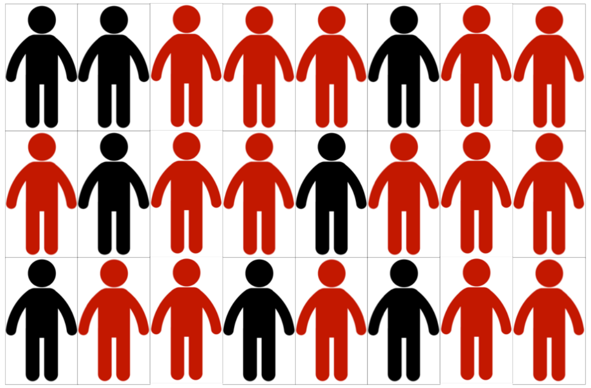
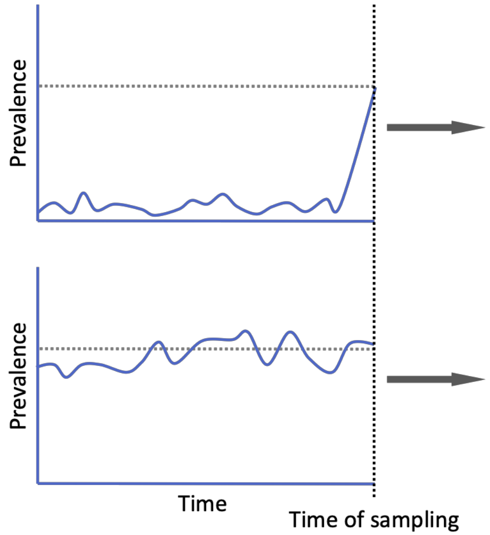
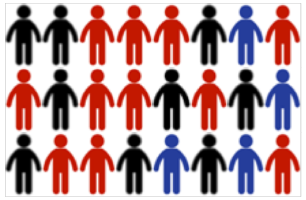
Cross-sectional prevalence estimates | **Consistent with multiple historical scenarios** | **Discriminate using genetic parameters** | **Response**

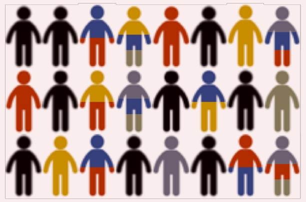






Unstable transmission:
Few haplotypes
Few polyclonal infections

Acute outbreak response

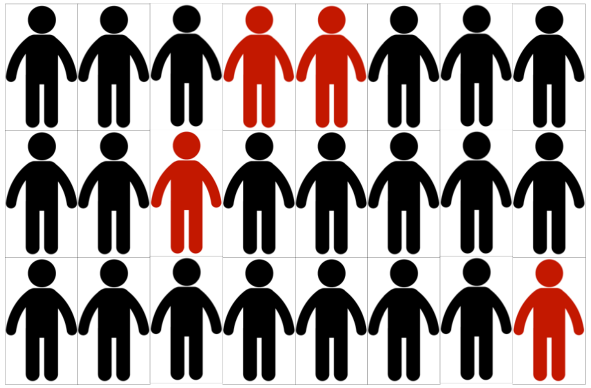


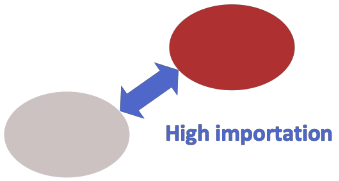
Stable transmission:
Many haplotypes
Many polyclonal infections

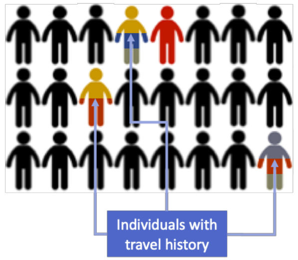
Maroantsetra data

Sustained local response

Vs

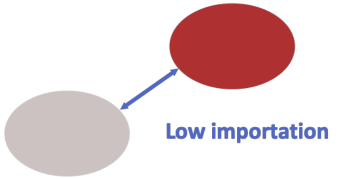






High importation:
Many haplotypes
Many polyclonal infections

Target the reservoirs, monitor travel



Low importation:
Few haplotypes
Few polyclonal infections

More sensitive surveillance