Diagnostics for STH: MDA decisions and TPP

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Worm Burden

Proportion Positive

Fitted relationship from research study
Worst sensitivity – probably the most realistic for field
Best sensitivity – high single worm sensitivity
Increasing sensitivity of diagnostic results in better control where possible – more chemotherapy in mid-prevalence communities
Diagnostics Influence MDA Decisions

• The impact of improved (more sensitive) diagnostics for STH depends on their use for decision-making
  – Guidelines (e.g. 30% threshold) are based on APPARENT prevalence
  – Create a barrier to improved diagnostics – what is 30% by KK in terms of a different diagnostic?

• APPARENT prevalence is different from TRUE prevalence
  – Discrepancy changes with true prevalence
  – True prevalence is never known
Target Product Profiles

• Diagnostic influences
  – Individual-level sensitivity and specificity
  – Pooling of samples

• Epidemiological influences
  – Sources of heterogeneity – sampling frames
  – Systematic non-compliance
  – Spatial & population effects

• Economics
  – Cost (value) of prevalence estimates vs. Human and financial costs of incorrect decisions
    • Epidemiology
      – Transport, labour, sample size
    • Diagnostic
      – Type of sample; Laboratory requirements

• For a given diagnostic, how would it best be used and what is the impact on MDA decisions to stop and re-start
APPARENT prevalence is different from TRUE prevalence, and the discrepancy changes with true prevalence. True prevalence is never known.