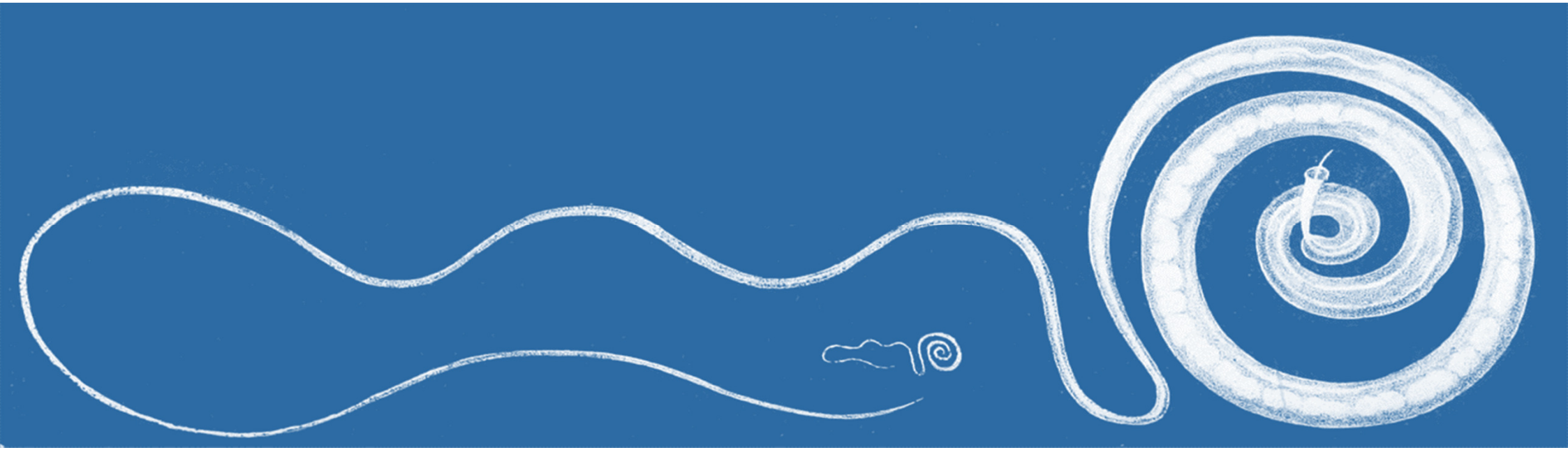

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APPMG

February 6, 2018

NATURAL HISTORY MUSEUM

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Solving neglected tropical disease challenges at the NHM

Reference collections | Parasites & Vectors

- Globally accessed, freely available, collecting for tomorrow
- Specimens, frozen tissues, DNA, genomic

Active research

- Soil-transmitted helminths
- Insect vectors
- Schistosomiasis

International Collaboration

- WHO Collaborating Centre for Schistosomiasis

World Health Organization

gsk GlaxoSmithKline

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BILL & MELINDA GATES foundation

LONDON CENTRE FOR NEGLECTED TROPICAL DISEASE RESEARCH

BBSRC bioscience for the future

wellcome trust

wellcome trust sanger institute

NERC SCIENCE OF THE ENVIRONMENT

THE ROYAL SOCIETY

NSF

SCORE RESEARCH for CONTROL and ELIMINATION

ZELS Zoonoses & Emerging Livestock Systems

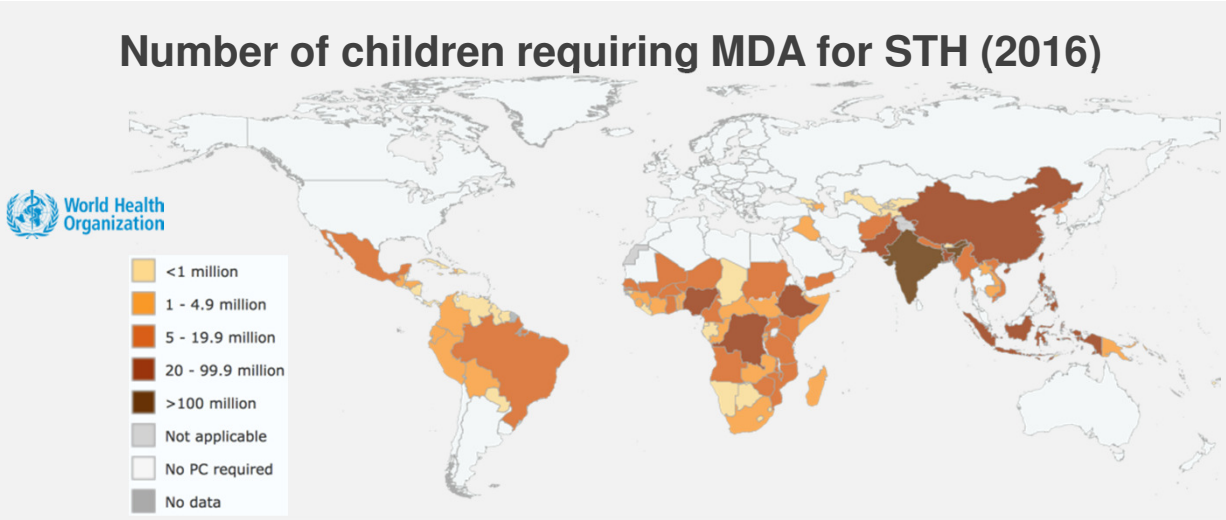
SCAN

STH - the problem

Soil-transmitted helminths (or intestinal worms) cause infections, that can be transmitted through **human faeces in soil**

Infections of moderate to heavy intensity cause various health problems, including **abdominal pain, blood and protein loss, and growth retardation**

Photo: ©Marcus Perkins for GSK



835m people at risk
513m people infected

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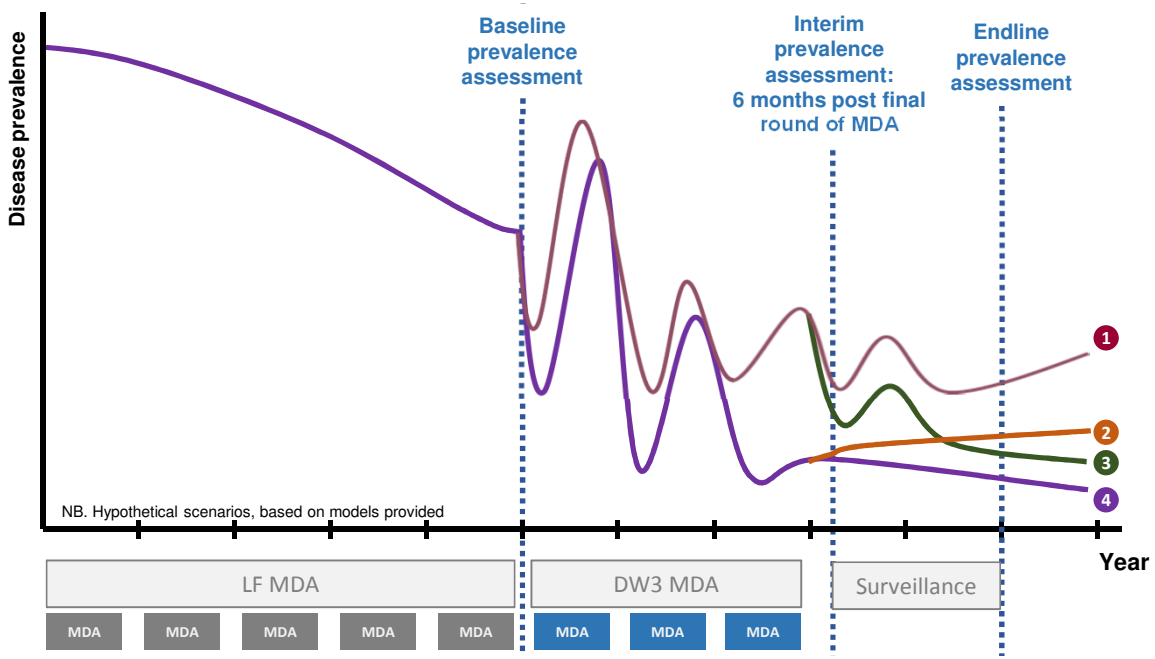
Current status

Routine deworming, with low-cost drugs, generously donated by the pharmaceutical industry

Whilst STHs persist treatment must continue indefinitely to prevent reinfection

This requires continual investment including foreign aid and pharma support

What if soil-transmitted helminths could be eliminated?



Scenario 1
Prevalence never falls below the ≤2% prevalence threshold

Scenario 2: BOUNCEBACK
Prevalence falls below ≤2% six months post-MDA, but then increases above 2% over two years of surveillance

Scenario 3: TRANSMISSION INTERRUPTION
Prevalence does not fall below ≤2% six months post-MDA, but falls below 2% over two years of surveillance

Scenario 4: TRANSMISSION INTERRUPTION
Prevalence falls below ≤2% six months post-MDA, and maintains or continues to decrease over two years of surveillance

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The challenge

can interruption of STH transmission be achieved with MDA ?

Project Objectives	Description
1 Define the goal	**Develop epidemiologic and operational definitions of STH transmission interruption**
2 Evaluate intervention impact	**Demonstrate the feasibility of interrupting STH transmission through MDA-based approaches in settings where LF programs have progressed to post-MDA surveillance**
3 Develop a strategy for implementation at scale	**Recommend a feasible and effective approach for scaling STH transmission interruption programs**

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What does DeWorm3 hope to achieve?

Objectives → **Evidence generation** → **Informing policies**

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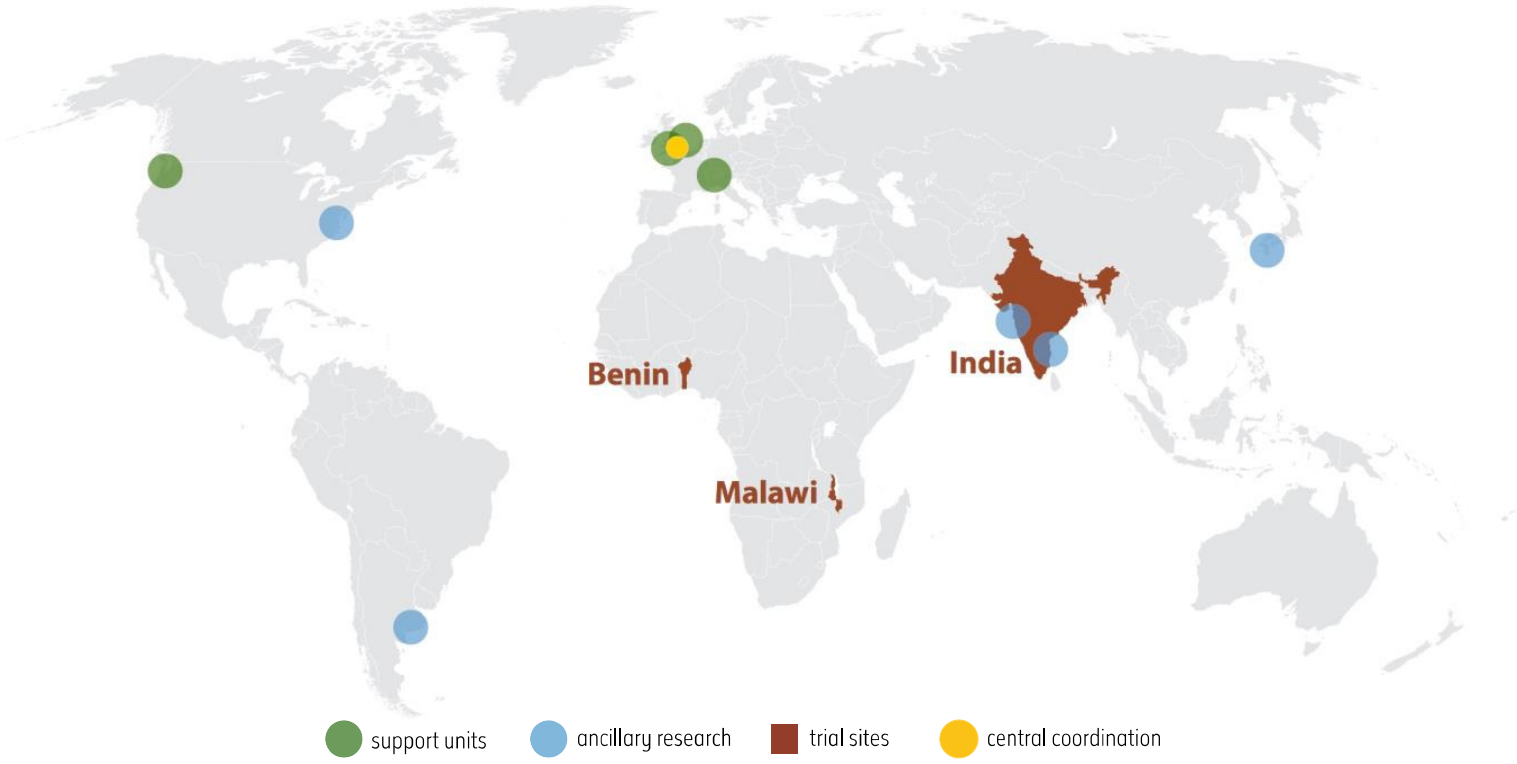

Interruption of STH transmission is feasible at all DeWorm3 trial sites

Policy recommendation:
Community-wide MDA should be included in the global guidelines to interrupt STH transmission

Interruption of STH transmission is feasible at some sites only

Policy recommendation:
MDA should be adjusted according to given characteristics

Interruption of STH transmission is not feasible

Policy recommendation:
Continue MDA targeting pre-SAC and SAC

How will DeWorm3 define policy?

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Interruption feasible at ALL sites	Interruption at SOME sites only	Interruption NOT feasible
Policy recommendation: Community-wide MDA included in global guidelines to interrupt STH transmission	**Policy recommendation**: MDA adjusted according to given characteristics	**Policy recommendation**: Continue MDA targeting pre-SAC and SAC
DeWorm3 will produce evidence for resulting MDA regime to be carried out in larger populations	**DeWorm3 will produce evidence for how MDA should be carried out under certain specifications**	**DeWorm3 will produce evidence to continue morbidity control**
Strategic partnerships with pharmaceutical industry and foreign governments to	**Strategic partnerships with pharmaceutical industry and foreign governments to**	**Strategic partnerships with pharmaceutical industry and foreign governments to**
PUSH FOR ELIMINATION	**PRIORITISE AREAS FOR ELIMINATION**	**DISCUSS FUTURE SUSTAINABILITY**

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DeWorm3 evidence is positioned to support changes to helminth policy

(i) Providing the evidence base for successful disease intervention

(ii) Collaboration involving expert partners led and coordinated by a neutral body linked to NTD research

(iii) Open data, methodologies and models provide best value and a path to policy provides returns on investment

LONDON CENTRE FOR NEGLECTED TROPICAL DISEASE RESEARCH

appg

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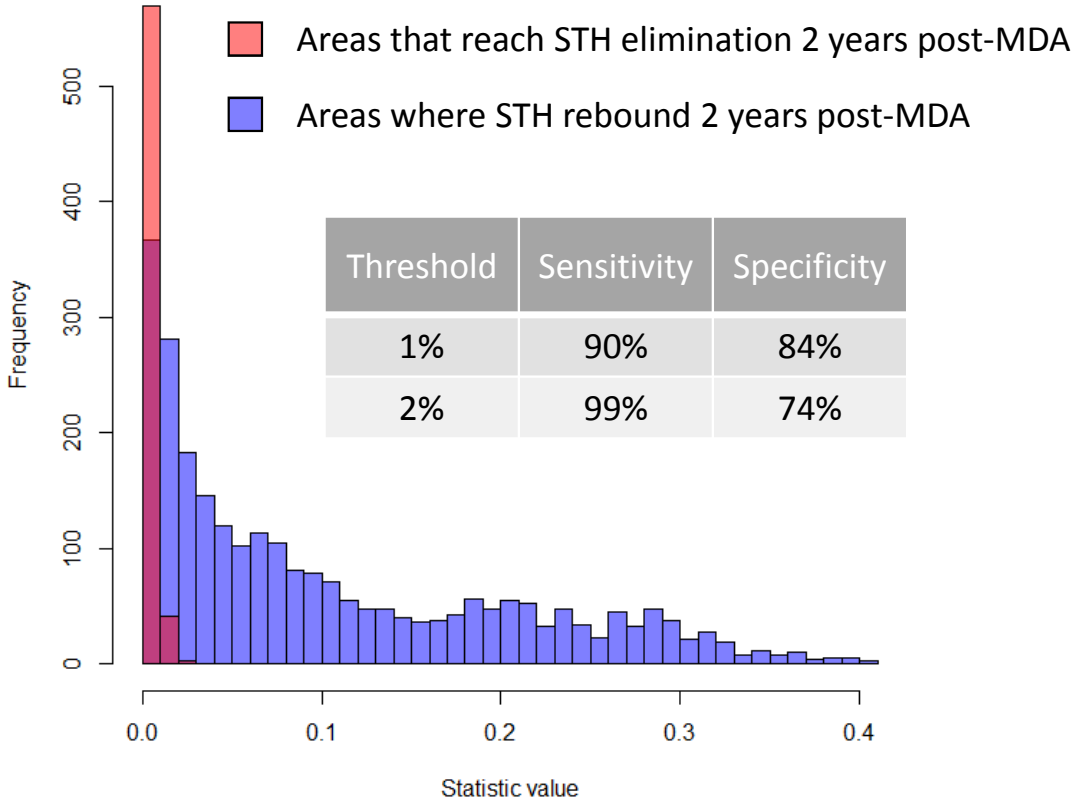
Defining STH elimination

STH transmission models suggest reaching a **2% prevalence of STH (for any species) 24 months after stopping MDA *reliably predicts*** transmission interruption.



Threshold	Sensitivity	Specificity
1%	90%	84%
2%	99%	74%

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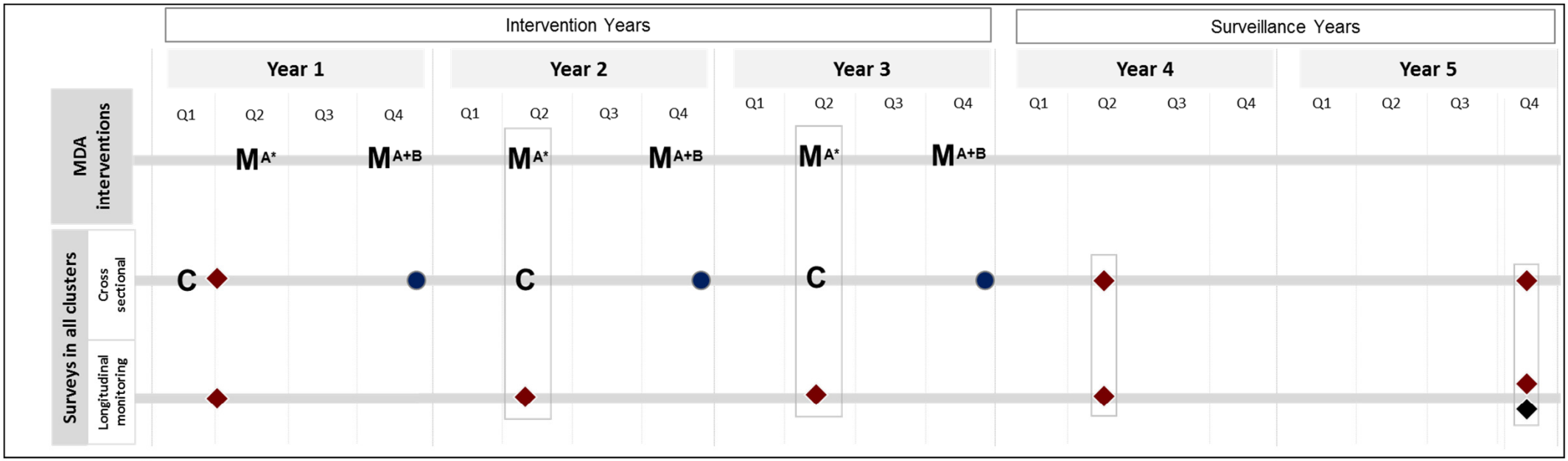
DeWorm3 study timeline



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