



# DeWorm3

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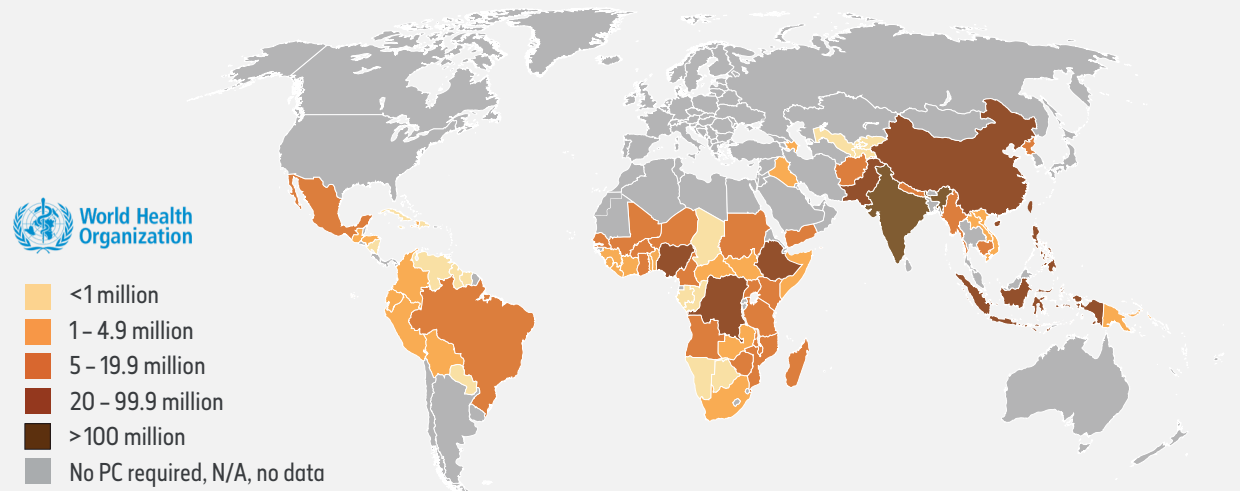
# Soil-transmitted helminths (STH) - the challenge

- An estimated 1.5 billion people are infected with soil-transmitted helminths (STH) globally
- Chronic and heavy infection can cause malnutrition and iron-deficiency anemia, resulting in:
  - Impaired physical and cognitive development in children
  - Reduced productivity and income generation in adults
- Current World Health Organization (WHO) strategy is to control STH-associated morbidities through mass drug administration (MDA)



Photo: ©Marcus Perkins for GSK

## Number of children requiring MDA for STH (2016)



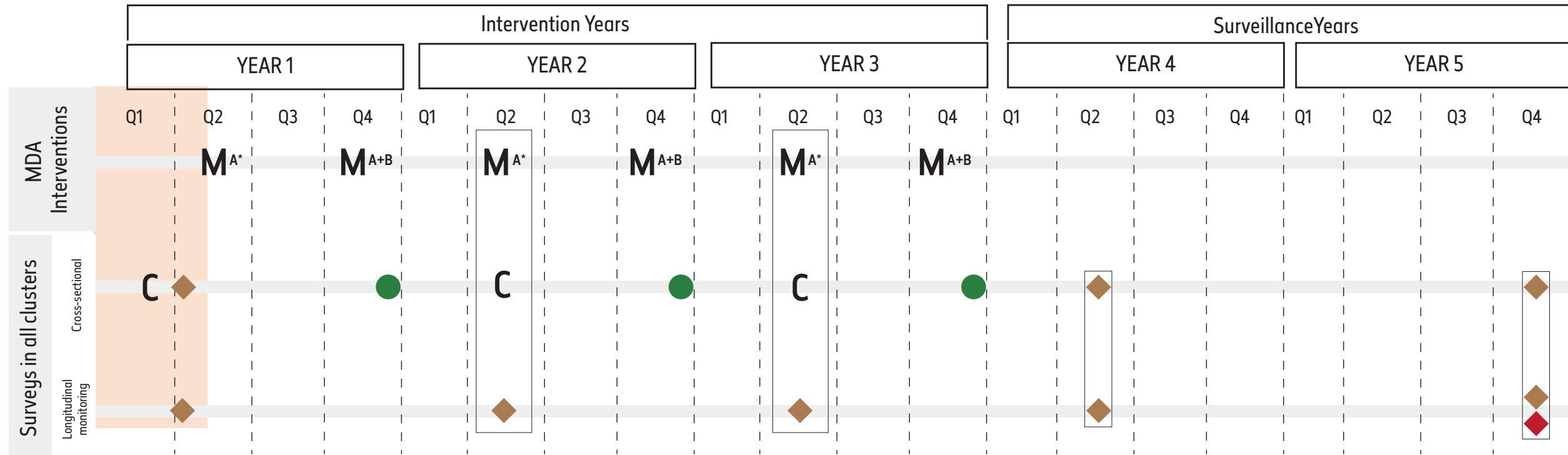
# DeWorm3

*can interruption of STH transmission be achieved with MDA ?*

## Project Objectives

## Description

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



- ◆ Stool collection
- ◆ Dry blood spot collection
- C Census
- $M^{A^*}$  MDA in intervention arms (Arm A) only, unless local standard of care indicates biannual treatment in children
- $M^{A+B}$  MDA in both intervention arms (Arm A) and control arms (Arm B)
- 48 hour post MDA coverage validation survey in random sample of households



community-wide MDA

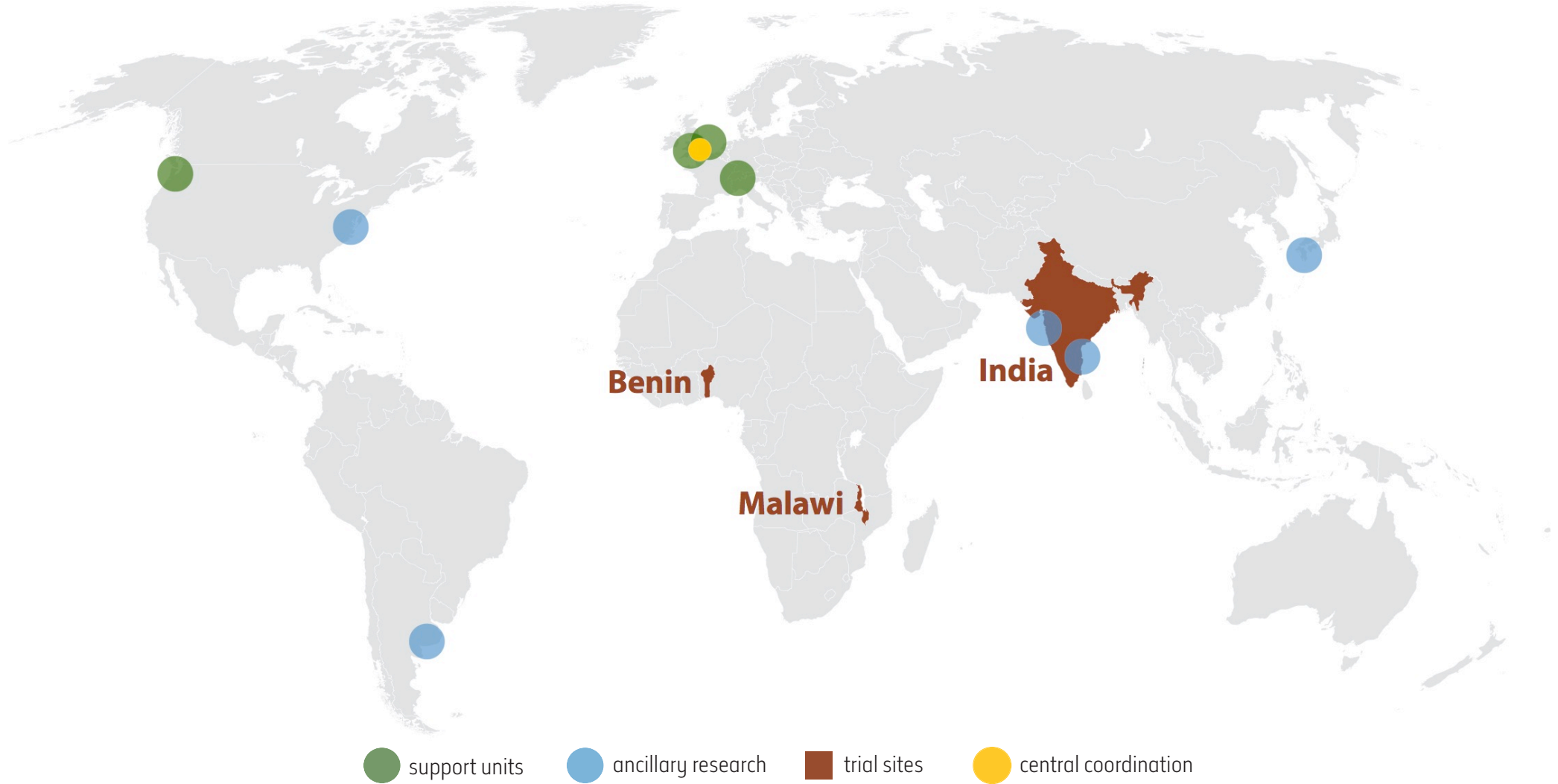


twice a year



high treatment compliance

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# DeWorm3 PLOS NTDS Collection launched January 2018


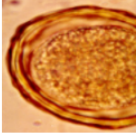
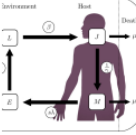

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Soil-transmitted helminths infect an estimated 1.45 billion people globally. The current WHO strategy for controlling STH is based on controlling morbidity via mass drug administration of medications to children. However, recent mathematical models and systematic reviews suggest that the current strategy of targeting children with MDA is unlikely to break transmission of STH, in large part due to the presence of adult reservoirs of disease. This collection highlights both the existing evidence and new methodological approaches needed for generating the evidence necessary for informing potential novel—and significant—intervention strategies and policy changes.

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### Research Articles

-  Assessing the feasibility of interrupting the transmission of soil-transmitted helminths through mass drug administration: The De...  
Kristjana Ásbjörnsdóttir, Sitara Ajjampur, Roy Anderson, Robin Bailey, Iain Gardiner, Katherine Halliday, Moudachiro...  
**PLOS Neglected Tropical Diseases:** 18 Jan 2018
-  Evaluating the sustainability, scalability, and replicability of an STH transmission interruption intervention: The DeWorm3 I...  
Arianna Means, Sitara Ajjampur, Robin Bailey, Katya Galaktionova, Marie-Claire Gwayi-Chore, Katherine Hallida...  
**PLOS Neglected Tropical Diseases:** 18 Jan 2018
-  Seasonally timed treatment programs for *Ascaris lumbricoides* to increase impact - An investigation using mathematical models  
Emma Davis, Leon Danon, Joaquin Prada, Sharmini Gunawardena, James Truscott, Johnny Vlamincq, Roy And...  
**PLOS Neglected Tropical Diseases:** 18 Jan 2018
-  A comparative analysis of preservation techniques for the optimal molecular detection of hookworm DNA in a human fe...  
Marina Papaioakovou, Nils Pilotte, Ben Baumer, Jessica Grant, Kristjana Ásbjörnsdóttir, Fabian Schaer, Yan Hu, Raf...  
**PLOS Neglected Tropical Diseases:** 18 Jan 2018

### DeWorm3 Project

Check out the DeWorm3 project page at the Natural History Museum site:

**DEWORM3**

<http://collections.plos.org/deworm3>