Health

Deworming program in Kenya

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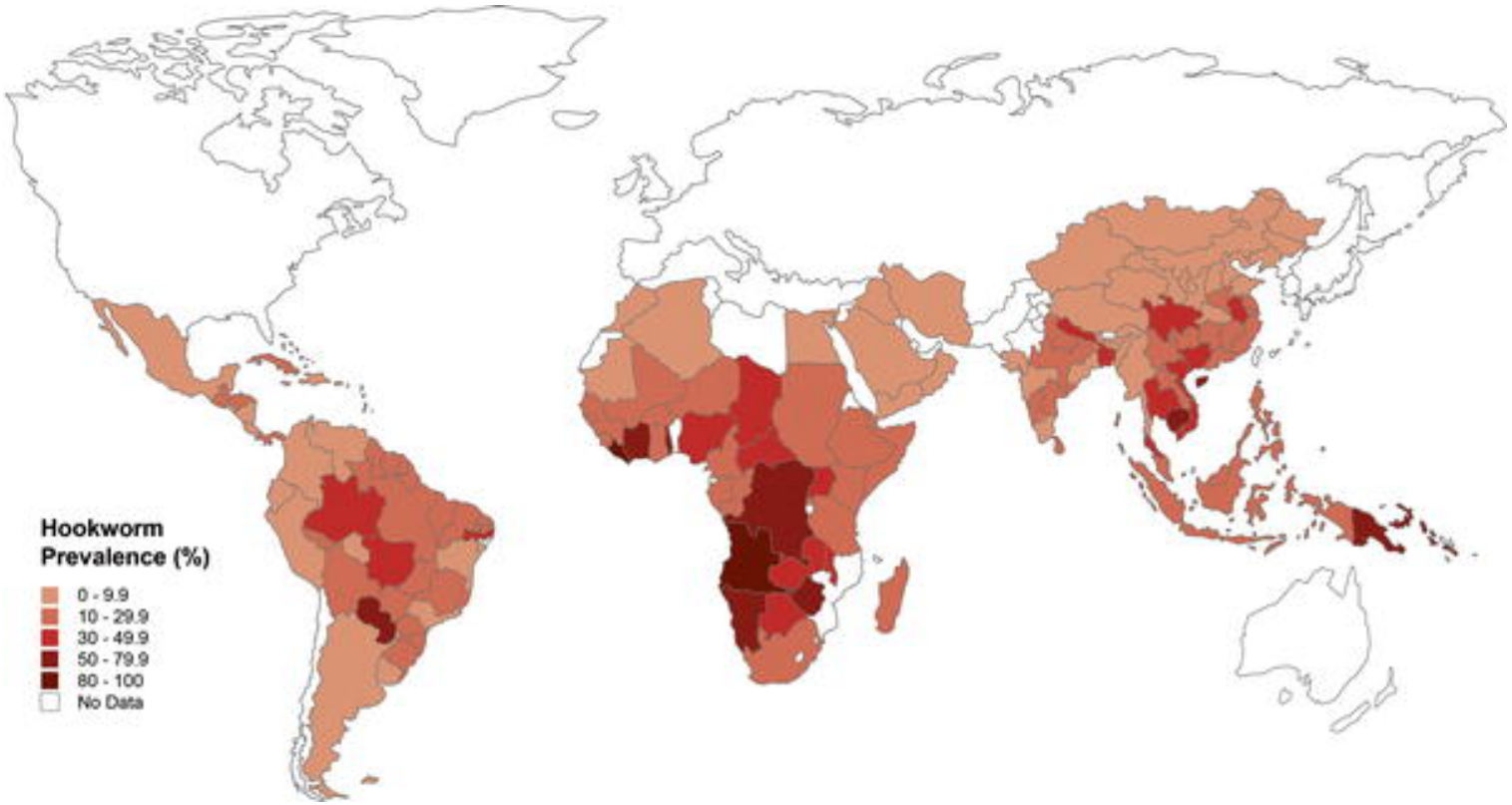
Motivation

- Hookworm and roundworm each infect about 1.3 billion people around the world.

Cause --- iron deficiency, abnormal pain, enlargement of liver.

Motivation (Con)

Spread among school age children in emerging countries, especially African countries.



Motivation (Con)

- Low-cost single pill

can kill the worms, reducing the hookworm infection 99%. This is effective way for just severe worm infections. BUT...

Motivation (Con)

BUT

- Reinfection is rapid. Worm burden often returning 80% its original level within one year.
- Concerning about the possibilities that drugs could cause birth defects.

Motivation (Con)

- Account for 90% of school children are infected in east part of Kenyan village.

Conditional infection level

The reason of infection is to use latrines and more generally have poor hygiene practice.

= Parasite is spread through contact with infected water.

Motivation (Con)

- Evidence

Large literature documentations show

Positive correlation between health and economic outcome.

Objective of project

Identify the overall program effects.

- Improve the health
- school participation

Among the untreated children and both treatment school and neighboring schools.

Method of Kenyan project

1. School based mass treatment with deworming drugs was randomly phased into schools, rather than to individuals.

--- allowing estimation of overall program affects.

2. Identify cross-school externalities.

--- impact of deworming for children in schools located near treatment schools.

Method in Kenyan project (Con)

Deworming project in Kenya.

Primary School Deworming Project (PSDP)

75 PSDP schools were randomly divided into three groups of 25 schools each.

Method in Kenyan project (Con)

- The project required singed consent of parents for all children to receive medical treatment, that document should be submitted to headmaster.
- Some parents didn't want their children to participate in the program when there are problems on school tuition fees. They didn't want to meet headmaster.

Intervention

1. Medical treatment
2. Worm prevention education

--- emphasis on washing hand, wearing shoes, not swimming in the infected water.

Method in Kenyan project (Con)

$$Y_{ijt} = a + \beta_1 \cdot T_{1it} + \beta_2 \cdot T_{2it} + X'_{ijt}\delta + \sum_d (\gamma_d \cdot N^T_{dit}) + \sum_d (\phi_d \cdot N_{dit}) + u_i + e_{ijt}.$$

Y_{ijt} is the individual health or education outcome,

i refers to the school

j to the student,

$t \in \{1, 2\}$ to the year of the program

X_{ijt} are school and pupil characteristics

N_{dit} is the

total number of pupils in primary schools at distance d from school i in year t,

Results

- Improve school participation by allowing children to attend the school and improve the ability to concentrate.
- In treatment schools had about 7.5 % higher participation.
- Increase test scores by increasing total amount of time spend in schools.

Results (Con)

- Potentially have reduced test scores in treatment schools through congestion and peer effects.

Results (Con)

- Children in treatment schools experienced a range of heath benefits, and provides evidence that these benefits spillover both non-treated children in the treatment schools and to children in neighboring schools.

Results (Con)

Cost effectiveness

1. Health cost effective approach.
2. Educational cost effective approach.
3. Human capital investment approach.
4. The externality approach.

Thank you for listening!