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### Worms at Work: Long-run Impacts of Child Health Gains<sup>\*</sup>

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**Abstract:** The question of whether – and how much – child health gains improve adult living standards is of major intellectual interest and public policy importance. We exploit a prospective study of deworming in Kenya that began in 1998, and utilize a new dataset with an effective tracking rate of 83% over a decade, at which point most subjects were 19 to 26 years old. Treatment individuals received two to three more years of deworming than the comparison group. Among those with wage employment, earnings are 21 to 29% higher in the treatment group, hours worked increase by 12%, and work days lost to illness fall by a third. A large share of the earnings gains are explained by sectoral shifts, for instance, through a doubling of manufacturing employment and a drop in casual labor. Small business performance also improves significantly among the self-employed. Total years enrolled in school, test scores and self-reported health improve significantly, suggesting that both education and health gains are plausible channels. Deworming has very high social returns, with conservative benefit-cost ratio estimates ranging from 24.7 to 41.6.

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# Worms at Work: Long-run Impacts of Child Health Gains

We use data from a survey of young Kenyan adults who participated in a deworming program as children to calibrate a version of the Grossman (1972) model, in which investments in health increase future endowments of healthy time. Mean hours worked increase by 12% in the treatment group, or 1.8 more hours each week on a base of 15.2. There is also evidence that deworming generated positive externalities in work hours. Furthermore, both the direct

and externality effects are even larger in our preferred subsample analysis on out-of-school youth. Gains are concentrated outside of traditional agriculture, among small business owners and those working for wages. Among wage earners no longer in school, the treatment group earned over 20% more, with manufacturing employment tripling. These results suggest health improvements may increase labor supply and facilitate structural transformation. A calibration of the model combining data on the impacts of deworming and the price responsiveness of deworming take-up suggests that fully subsidizing deworming yields greater welfare than partial subsidies or laissez-faire. From the point of view of a public policymaker, deworming also appears to pay for itself by generating more in future government revenue than it costs.

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