Evidence to Action:
The National Scale-Up of School-Based Deworming in Kenya

The Problem
Parasitic worm infections affect more than 400 million school-age children across the globe. In some countries, infections are so widespread that they are perceived as a normal part of childhood. Yet chronic worm infections damage children’s health and development, resulting in malnutrition, anemia, and stunted growth. More immediately, they cause fatigue and listlessness, which can leave infected children too sick and weak to attend school. Long-term, worm infections go hand-in-hand with lack of education: children persistently infected with worms are approximately 13 percent less likely to be literate.

The Promise
Unlike many development challenges, the problem of widespread worm infections has a simple and cost-effective solution. One inexpensive deworming tablet, taken once or twice per year, can effectively treat infections. Because the medicine is safe and individual diagnosis is costly, the World Health Organization recommends treating all children in areas of high prevalence. The administration is simple and inexpensive: teachers and health workers can be trained to distribute the drugs to children.

The Challenge
Although low-cost deworming drugs are available, fewer than 15 percent of children in need are receiving treatment. Fortunately in 2004, a high-profile research study showed that school-based deworming programs are highly cost effective in improving school attendance. The study, conducted in Western Kenya by researchers at Harvard and UC Berkeley, found that deworming decreases school absenteeism by 25 percent, at a cost of less than 50 cents per child per year. They also found that mass deworming programs break the cycle of transmission, thereby improving the health of untreated children living near treated schools. While earlier studies had identified the beneficial role that deworming can play in health and education, this research added an important demonstration of cost-effectiveness. Indeed, compared with other schooling programs—like scholarships, school meals, and subsidized uniforms—deworming provides greater access to education, at significantly lower cost. These research results shifted the debate on the value of deworming, by framing it as a “best-buy” for improving education in worm-endemic countries.

The Action
In response to the research, in 2007 a group of Young Global Leaders of the World Economic Forum launched a new organization, Deworm the World, to work directly with governments and other partners to expand school-based deworming worldwide.

This Action Brief highlights one of the early successes of this effort: the scale-up of school-based deworming in Kenya. In 2009, the Kenya national deworming program reached more than 3.6 million children at 8,200 schools across the country, making it one of the first evidence-based, national deworming programs in sub-Saharan Africa. This exciting achievement highlights how a partnership of researchers, policy-makers and community actors can create sustainable advances in human capital development.
Bringing a Pilot Program to National Scale

The Kenyan experience with school-based deworming demonstrates how a rigorously tested pilot program can be brought to the national scale, using research as the driver for policy change. This example highlights a few of the key steps in sustainably bringing a development program to scale:

» Build National Political Momentum
» Leverage Existing Infrastructure
» Target Program Resources
» Access Strategic Start-up Support

Build National Political Momentum

Bringing evidence-based social programs to scale requires widespread support and relationship-building, both at high levels of government and within local communities.

The support of top political leadership is essential to catalyze scale-up. In January 2009, Prime Minister Raila Odinga announced at the World Economic Forum that the Kenyan government had committed nearly US $1 million to implement a national deworming program. This public statement helped solidify political support within Kenya and provided strong momentum for launching the national program. The Prime Minister’s announcement was facilitated by an invitation from Deworm the World to speak at the Forum, demonstrating how outside actors can engage public leadership and drive political momentum.

Implementing a social program relies on cross-sectoral partnerships within the government. Because the 2004 research study framed deworming as a cost-effective education initiative, the

From Evidence...

In 2004, UC Berkeley and Harvard researchers published the results of a randomized controlled trial in rural western Kenya, measuring the health and educational impacts of school-based deworming. Working in 75 schools with 30,000 students, the study offered striking evidence that deworming programs can cost-effectively expand access to education. The researchers found that:

» Absenteeism from school is reduced by 25 percent at schools with deworming programs.
» Treatment costs less than 50 cents per child per year.
» The benefits spill over: untreated children in neighboring villages have fewer worm infections (by 26 percentage points) if living within 3 km of schools with deworming programs.
» Deworming improves school participation more cost-effectively than other education programs, such as providing school meals, subsidized uniforms, or scholarships.

...to Action

In 2006, the Harvard and Berkeley researchers intensified dissemination of their study, through the Abdul Latif Jameel Poverty Action Lab at MIT (J-PAL) and its partner organization Innovations for Poverty Action (IPA). In 2007, in collaboration with the Young Global Leaders of the World Economic Forum, they launched Deworm the World, a nonprofit organization that works directly with governments and other partners to expand school-based deworming worldwide. As of 2010, the organization is working in 27 countries to reach 20 million children with school-based deworming programs. The achievements of the recent national deworming program in Kenya are illustrative of the partnership’s success:

» In 2009, more than 3.6 million children in 8,200 schools across Kenya received deworming treatments at their local schools.
» The Government of Kenya has added a line item for deworming campaigns to its national School Health budget. Kenya is now a pioneer in making school-based deworming a national educational policy priority.
» Kenya’s national deworming program has leveraged the existing infrastructure of schools to reach the maximum number of children at a low annual cost of only 36 cents per child.
» A cascading training program has prepared more than 1,000 government personnel and 16,000 teachers to administer deworming tablets at local schools.
creation of a national program required champions within the Ministry of Education. Yet implementation also relied on close collaboration with officials in the Ministry of Public Health and Sanitation. To catalyze this collaboration, high-level meetings between the two ministries were facilitated. The resulting cross-sector coordination was critical not only for the initial launch of the program, but also for the ongoing integration of the program within Kenya’s education sector strategy.

**Building buy-in at the local level is critical for effective implementation within communities.** Kenyan officials and Deworm the World consistently build awareness of the benefits of deworming through routine media campaigns, including posters and radio programming in local languages. Building a local understanding of the benefits and importance of deworming—particularly among the parents of treated children—is crucial for the success of a sustainable program, because deworming drugs are not a one-time treatment; they must be taken once or twice each year to combat re-infections.

**Leverage Existing Infrastructure**

*Use of existing infrastructure for new development programs provides significant savings in costs, time, and human capital. It also increases the probability of long-term sustainability.*

Schools, like other public institutions, are a natural access point for communities. Delivering deworming drugs across Kenya—and ensuring that more than 3.6 million children actually take their medicines—requires significant distribution infrastructure. Instead of trying to build a costly new system, the Kenyan program is leveraging the existing training and distribution infrastructure of schools to administer the drugs. Most Kenyan children are enrolled in primary school, so schools represent the easiest, most efficient venue for reaching the most children. Un-enrolled children are also invited to visit schools to receive medication.

**School-based programs take advantage of spill-over health benefits.** Because parasitic worms are easily transmitted between children, simultaneously treating all children at a school can reduce the overall transmission of parasites within the community. Even those who fail to receive deworming tablets (either because they are too young for school, or because they are not enrolled) will indirectly benefit, because their neighbors are less likely to carry parasitic worms—and therefore less likely to spread infection.

**Target Program Resources**

*Even the best development programs are only cost-effective when they are targeted to areas with highest need.*

Mass deworming programs are most efficient when targeted to areas with high risk of worm infections. Before the national program was brought to scale, Deworm the World partnered with epidemiologists to generate and manage worm prevalence data. Co-mapping of school locations and worm prevalence data has allowed Kenya to maximize the impact of each dollar spent, by targeting areas with both high worm prevalence and a high concentration of schools. This mapping not only helps with targeting the program, but it also provides a clear justification to government officials and the public for why some areas are receiving the program before others.

**Access Strategic Start-up Support**

Strategic partnerships between governments and organizations like Deworm the World can help to catalyze start-up and remove barriers to effective program implementation.

Governments can leverage existing resources through partnerships with outside organizations. In the first years of the Kenya national program, the Government is working closely with Deworm the World, which provides technical assistance and capacity-building in logistics and implementation. This includes provision of technical staff who work alongside the Ministry of Education and the Ministry of Public Health and Sanitation to develop detailed work plans, budgets, and implementation schedules. Deworm the World is also strengthening the government’s relationships with other development partners, including Innovations for Poverty Action, a non-profit organization that has run pilot deworming programs in Kenya (and therefore has valuable programmatic knowledge and human capital) and Feed the Children, a non-profit that has donated deworming drugs to the Kenyan government for 2009 and 2010.

Catalytic funding from outside partners maintains momentum during start-up. The long government budget cycle in Kenya could have caused significant delays while the program awaited approval for funding of drugs and other supplies. Deworm the World is providing catalytic funding for some first-year expenses, while the Kenyan ministries add line items to the next year’s budget to cover these expenses.
In 2009, a school-based national deworming program implemented by the Government of Kenya reached more than 3.6 million children at 8,200 schools across Kenya. This Action Brief highlights the lessons learned from the implementation of one of the first evidence-based national deworming programs in sub-Saharan Africa.

What Are Some of the Key Steps for Sustainable Scale-Up?

» Building National Political Leadership
» Leveraging Existing Infrastructure
» Targeting Program Resources
» Accessing Strategic Start-up Support

Read the Research


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**Center of Evaluation for Global Action**

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CEGA is a multi-disciplinary research center at the University of California, Berkeley advancing global health and development through impact evaluation and economic analysis.

The Center is premised on the principle that knowledge gained from randomized trials—and other forms of impact evaluation—is a valuable public good that can improve policy and outcomes around the world.