State of the Evidence

**Description of the Evidence**

A key barrier to participation and learning in school is student health, especially in low- and middle-income countries. However, due to a lack of coordination between health and education departments, the health of schoolchildren—and the impact of their health on their potential to learn—is sometimes overlooked. Child health programs can improve learning outcomes, and schools are an especially important, convenient, and cost-effective venue to deliver these interventions. While evidence indicates the promise of leveraging schools to deliver health programs, more research is needed to understand what types of health programs are most effective at improving learning outcomes.

- Schools may be a particularly important place to address contagious health problems, as sick children can infect other children at school. For example, treating intestinal worms has been an especially cost-effective intervention in Kenya that led to longer-term increases in test scores and cognitive functioning (a ten-year follow-up of the deworming program found that it had increased the rate at which girls passed the secondary school entrance exam by 9.6 percentage points over the comparison group mean of 41 percent, which roughly halved the existing gender gap in exam performance). Test scores also increased for those not directly dewormed (comparable to between 0.5 and 0.8 years of schooling), likely because the overall wormload in the community fell as a result of the program.

- Non-contagious medical conditions may also present a barrier to learning. For example, directly treating micronutrient deficiencies such as anemia at school has been shown to increase learning outcomes in rural China (see here, here, and here, with increases on math test exams of about 0.1 standard deviations).

- Poor eyesight is another non-contagious medical condition that can make it difficult for children to learn at school. If students are physically unable to see well enough to read, providing them with eyeglasses may increase learning outcomes (see examples from China and the United States, in which free eye tests and eyeglasses increased test scores by 0.14 standard deviations and 2 percentage points, respectively, although the results in the United States faded by two years, suggesting children may have lost or broken their glasses).

In Burkina Faso, school-based feeding programs increased enrollment (3 to 5 percentage points) and increased test scores, an increase that could have been driven by improved health and cognition due to increased consumption of food.

In contrast to direct treatment at school, indirectly addressing poor health by providing information has been less successful at affecting either health or learning outcomes without a complementary intervention, perhaps because the importance of the information was not conveyed or because parents either did not understand or did not have the ability to act on it. For example, vision screening alone in the United States did not increase learning, nor did information-only anemia programs in China (see here and here).
Notes on Context

School-based health programs may not be as effective in areas with low enrollment or attendance rates, so it is important to consider alternative ways to reach children who do not attend school. The impact of any health program may vary based on the underlying prevalence of the issue it addresses. For example, the severity of a location’s wormload may affect the extent of a deworming program’s effects on learning. For health information campaigns directed at increasing the health and learning outcomes of schoolchildren, it is important to consider whether parents will be able to understand the information. The actionability of the information must also be considered: if parents learn that their children have anemia or poor eyesight but cannot afford to change their diets or buy glasses, for example, the information will likely not have an impact.

Equity Considerations

Since school-based health interventions are by design implemented at a school, they should reach all students who are at school on a given day. This means that two groups of children may be least likely to experience the benefits of a school-based health program: students who were not in attendance on the day of the program, or students who are not enrolled in school in the first place. To ensure high attendance on the day of a school-based health intervention, it may be useful to remind students several times before the day of the intervention, or to send information home to parents to emphasize the importance of their child attending school on that particular day.

Reaching out-of-school children will be difficult with school-based health interventions. Policymakers should be aware that existing disparities between enrolled children and out-of-school children may be exacerbated by school-based health interventions.

Within a school, it is important to ensure that school-based health interventions do not stigmatize children who are experiencing a certain health problem. However, in the above examples, deworming treatment, anemia treatment, vision tests, and school meals would be given to all children in a school (there is no danger to any of these tests or treatments, even if a child is not experiencing the specific problem addressed by the intervention), reducing the likelihood of a child being singled out for his or her health status.

Operationalization

Generalizability

Drawing on J-PAL’s Generalizability Framework, below are questions that will help you determine if a school-based health program might increase learning outcomes in your context. The below questions are not meant to be an exhaustive list of questions you will need to answer to determine if this type of program is appropriate for your context. They can, however, provide a starting point for applying the global evidence on this type of program to your specific context.

Local Conditions

- What health problems do students in your context face? This is important to determine, as a deworming program will only increase learning outcomes if intestinal worms are a common problem in your context, and so on.
- If you don’t already have data on the specific health problems faced by students in your area, can Education and Health ministries collaborate to share any existing data that health-related officials may already be collecting?
- Are students already receiving support for these health issues? Are there key gaps in the treatment of certain health issues faced by many children in your area?

Generalized Lessons on Behavior

- A key barrier to participation and learning in school is student health, especially in low- and middle-income countries. Child health programs can improve learning outcomes.
- In general, schools are a good venue to cost-effectively and conveniently deliver health services to more children.

Local Implementation

- Does the Health ministry, or a local health NGO, have the capacity to implement school-based health programs? This would involve sending staff to schools to administer tests or treatment directly at the school, and would involve some administrative tasks to keep track of which schools had been treated.

Many of the programs listed above are fairly easy to administer. For example, the deworming and anemia treatments were most commonly a small pill or tablet handed out to all children. In some cases, teachers can assist with distribution of these types of treatments.
- Is there a history of mistrust of health interventions that might make children (or their parents) less likely to be willing to participate in a health program at school? This may be more relevant for more invasive health programs (such as vaccines) than for simpler programs such as school meals or eye tests.

- For an eyeglasses program, there will need to be regular follow-ups to determine if students need new prescriptions. Is this feasible?

- For a school meals program, it is important to pick food that is both nutritious and culturally appropriate. Consider religious restrictions most likely to affect students in the area, cultural preferences, common allergies, etc. when deciding what types of food to include in a school meal program.

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### Successful Examples

- **Long-run and Intergenerational Impacts of Child Health Gains from Deworming in Kenya**

- **Improving the Health and Education of Elementary Schoolchildren in Rural China: Iron Supplementation Versus Nutritional Training for Parents**

- **Providing Vision Screening and Free Eyeglasses in Elementary Schools in the United States**

### Further Action

For approaches with mixed evidence or high variation of effectiveness in the literature, more evidence generation is recommended to close evidence gaps. Based on the evidence for this category, potential next steps might include:

- Connecting with implementers to learn more about evidence-based programs in this category;

- Connecting with researchers to identify relevant open questions that would benefit from further research;

- Other activities to think through the policy implications and/or research needs of this evidence in your context.

If you are interested in exploring these or other options, please contact the J-PAL Education team at, JPAL_Education@povertyactionlab.org, to set up an initial exploratory meeting. The team will be happy to brainstorm potential next steps.