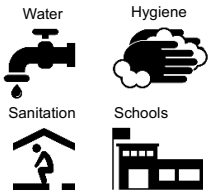
policy briefing

School-based WASH in Mali reduces pupil diarrhea and respiratory illness but not absenteeism



- **Project:** Dubai Cares Initiative in Mali (DCIM)
- **Location:** Rural Mali
- **Target Population:** Primary and secondary schools
- **Implementing Partners:** CARE International, Oxfam, Save the Children, UNICEF, WaterAid
- **Funders:** Dubai Cares

Key Messages

- School children are at high risk for water, sanitation and hygiene (WASH)-related infectious disease and absenteeism.
- The impact of a comprehensive school WASH intervention on pupils' diarrhea, respiratory infections, and absenteeism were evaluated in 200 primary schools in Mali.
- At endline, in intervention schools, the odds of **diarrhea was 29% lower** and odds of **respiratory infection symptoms was 25% lower** than in the comparison group. **Health benefits were greater in schools that met and sustained intervention targets.**
- **Absence was not impacted by the intervention.** WASH alone might not be sufficient to influence children education, in particular to decrease absenteeism that is influenced by many other factors.
- A **comprehensive and well implemented WASH intervention**, and a **focus on increasing adherence of beneficiaries to program objectives** maximize outcomes, sustainability, and health impacts.

The Need School-aged children are at high risk for disease related to poor WASH. Frequent infections can reduce school performance and increase absenteeism. WASH also influences absenteeism through non-infectious pathways, such as reducing time spent collecting water or improving girls' ability to manage menstruation at school.

The Impact Evaluation We evaluated a school-based WASH intervention delivered to primary and secondary schools in Mali. The intervention aimed to upgrade all schools to the WASH in schools standards composed of 15 targets. It included: (1) installing and/or rehabilitating water points and latrines, (2) distributing WASH supplies (e.g., soap, cleaning supplies), (3) conducting hygiene promotion activities, and (4) establishing school hygiene clubs and WASH governance. Longitudinal surveys were conducted following the completion of intervention activities at 100 beneficiary primary schools and 100 comparison schools not receiving the intervention.

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The Findings Over the evaluation period, beneficiary schools met on average 12.5 of the 15 WASH targets versus 5.5 for comparison schools, with varying levels of effectiveness by program component. Impact on pupil health and absenteeism were assessed.

Pupil diarrhea: Odds of self-reported diarrhea were 29% lower in intervention versus comparison schools.

Respiratory illness: Odds of self-reported respiratory illness symptoms were 25% lower in intervention versus comparison schools.

Absenteeism: Reductions in pupil illness did not translate into lower overall absenteeism. Absenteeism specifically due to diarrheal illness was lower among pupils attending intervention schools.

Additional analyses showed that **schools that sustained achievement of program targets experienced greater health benefits.**

Policy Recommendations Practitioners should consider **comprehensive school-based WASH interventions as an effective means to reduce child diarrhea and respiratory illness. However, absenteeism is less likely to reduce** because it is driven by numerous other non-WASH factors.

Main effectiveness issues were with handwashing practices and sanitation. Containers and soap were not always made available to pupils by teachers, and when they were, not all children were using them. Latrines were not cleaned daily in the majority of schools, and pupils did not always comply with the sex-separation rule. These aspects call for improved program monitoring, increased adherence by beneficiaries, and closer follow up by responsible authorities.

School WASH Targets

School adherence

Meeting the 15 WASH targets set by the program

- 81% of intervention schools met all 3 water targets
- 76% met all 4 WASH supplies targets
- 59% met all 3 handwashing targets
- 44% met all 5 sanitation targets
- 23% met ***all*** 15 WASH targets
- 62% met 12 targets or more, against 1% of comparison schools
- Follow-up observations showed increased compliance levels 24+ months after the intervention

Health Impacts on Pupils

Maximizing health with WASH adherence

Effects on diarrhea and respiratory infections

- Pupils were less likely to report diarrhea in schools that met all 5 sanitation targets or met all 15 WASH program targets.
- Pupils were less likely to report respiratory illness symptoms in schools that met all targets.

A boy washing his hands at an intervention school. Pupils are encouraged to practice proper handwashing behaviors through hygiene promotion, clubs, and trainings.

Partners

Dubai Cares, unicef, Save the Children, care, Oxfam, WaterAid

Further Readings

WHO. (2009). *WASH standards for schools in low-cost settings*.

WASH in schools studies in Kenya. Read more about:
Freeman et al. (2013). Comprehensive WASH and diarrhea.
Freeman et al. (2012). Comprehensive WASH and absenteeism.
Caruso et al. (2014). Latrine cleaning, hygiene, and absenteeism.

Publications

Trinies V, Garn JV, Chang HH & Freeman MC. (2016). The impact of a school-based water, sanitation, and hygiene program on absenteeism, diarrhea, and respiratory) infection: A matched-control trial in Mali. Am J Trop Med Hyg. 94(6), 1418-25.

Garn JV., Trinies V., Toubkiss J., & Freeman MC. (2017). The role of adherence on the impact of a school-based water, sanitation, and hygiene intervention in Mali. Am J Trop Med Hyg., 16-0558.