

# Presumptive malaria treatment in schools

Successes and lessons learned from Mangochi District, Malawi, September 2008

## BACKGROUND

Malawi is one of the countries in Sub-Saharan Africa most affected by malaria. Every day, more than 110 people in the country die of malaria, nearly half of them under the age of 18.<sup>1</sup> Although school-age children are less likely to die from malaria than their preschool-age peers, evidence suggests that malaria causes up to half of all deaths among this age group and accounts for five to eight percent of school absenteeism in Africa.<sup>2</sup> The disease is a likely contributor to anemia and is suspected to have substantial negative impact on school attendance, achievement, and learning.<sup>3</sup> In Mangochi, where Save the Children has been implementing School Health and Nutrition, school-age children die of malaria at a rate of 0.42 deaths per 1000 children—three times the regional rate.<sup>4</sup>

To respond to these problems, Save the Children introduced Pupil Treatment Kits (PTKs) to provide immediate in-school treatment for malaria and minor illnesses and injuries among children. In the three years before we initiated PTKs, 43 children died, 25 from malaria.<sup>5</sup> Deaths were due to delay in seeking care, long distances to health facilities, the high cost of treatment in

some facilities, and the unavailability of essential medications in facilities offering free treatment. Save the Children designed PTKs to offer first assistance for sick or injured students before they receive more specialized medical care. In most cases, this first level of care is all the child needs, and **PTKs make a trip to the health center unnecessary, an important consideration when the trip requires a walk of a few hours.** PTKs include treatments for minor health problems such as bandages, gauze, gloves, and antiseptic to treat wounds; tetracycline to treat eye infections; paracetamol for general aches and pains; and oral rehydration salts for diarrhea. Until March 2008, when the Malawian government introduced a new drug regimen, PTKs also contained sulfadoxine-pyrimethamine to treat malaria.

## APPROACH

Save the Children introduced PTKs as part of a wider School Health and Nutrition (SHN) program, which aimed to address all key health and nutrition factors preventing children from full participation in school. The PTKs were accompanied by a strong behavior-centered malaria prevention program in schools and communities.

Save the Children trained at least three teachers per school to dispense medications, which were stored in locked cases to ensure safety. The training lasted five days, after which teachers received a PTK manual and PTK treatment posters (see picture at left) to help them identify appropriate treatment for most common health problems. Community health workers were trained to supervise the PTKs in schools. School Management Committees, comprised of community members and

**How to Diagnose and Treat Sick Pupils with the Pupil Treatment Kit (PTK)**

**HEADACHE**

**ASK: Does the pupil have a headache with fever?**

IF YES: TREAT for malaria with Fansidar & Paracetamol

IF NO, is there general malaise?

IF YES: TREAT for malaria with Fansidar & Paracetamol

IF NO: TREAT with Paracetamol

**REFER IF:**

- Treated but no improvement within 48 hours
- Treated within past 21 days
- Persistent headache
- Neck stiffness

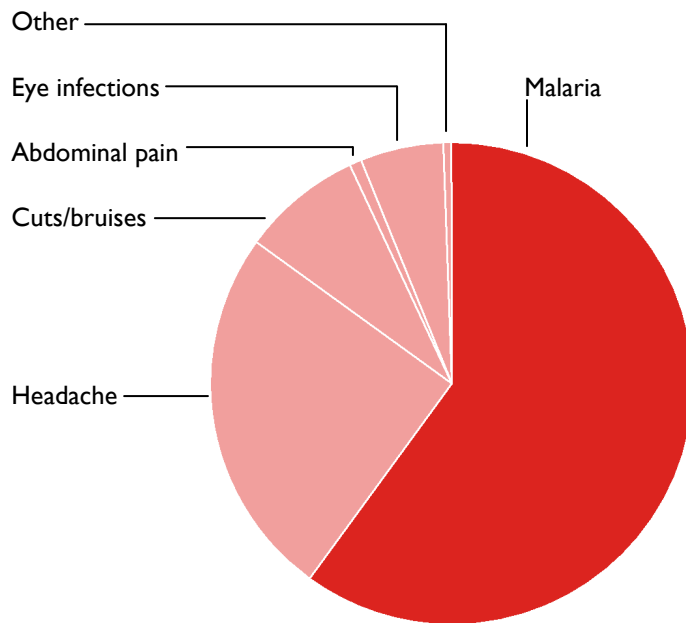
Pupil Treatment Kit poster to help teachers diagnose and treat common health problems (1 of 4 posters)

parents, were trained to monitor the management of PTKs and ensure an adequate supply of medication. Each school kept a cash register to record community contributions and expenditures on PTK supplies. Save the Children held quarterly review meetings to discuss problems and potential solutions and for general supervision of the SHN program. Random spot checks at all schools ensured appropriate use of PTKs. Schools kept records of all children treated, including a monthly report of problems and medication usage.

**COVERAGE**

Save the Children supported PTKs in 101 schools with a total student population of around 92,000. As the figure below shows, most children who used the PTKs sought treatment for malaria, with nearly 11,000 cases treated in 2007 alone.

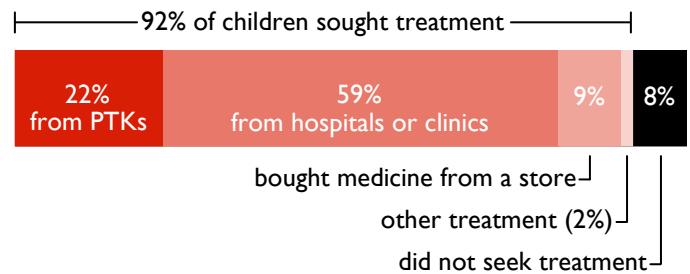
**PTK cases by treatment type in Mangochi, 2007**  
(10,962 malaria cases total)



**SUCCESSSES**

- Nearly all children with malaria symptoms sought treatment in 2007, with 22 percent seeking treatment from PTKs (see chart below).<sup>6</sup> Sixty-four percent of children said they missed school the last time they had malaria.

**Student-reported responses to malaria symptoms following implementation of PTK project, 2007**



- Focus group discussions<sup>7</sup> with students in Balaka District suggest that the number of days of schooling missed by students with malaria fell from seven to just two days when early treatment became available at schools. One pupil from Ntaya School reported, “Sometimes when we have received treatment we go back to class the same day.”
- An analysis of data from 39 schools supported by Save the Children found that malaria-specific mortality rates fell from 1.28 deaths per 1000 children before the introduction of PTKs to just 0.44 deaths per 1000 children after.<sup>8</sup> A teacher from Mpale School noted, “Before SHN, five to six pupils died in a school year due to malaria. But since SHN, the rate has been drastically reduced. This year we have had only one death; it was not due to malaria.”
- Communities were willing and able to contribute to the purchase and restock of PTKs, and by 2007, were paying 80 percent of the cost to replace the contents. When the government began providing free malaria treatment in 2007, one teacher noted, “We would rather pay for the medication and make sure we have them all the time than get them for free and run out of stock.”

- PTKs are a relatively inexpensive way to treat malaria. A London School of Hygiene analysis indicates that PTKs in Mangochi cost just \$0.39 (USD) per child with access to treatment, \$1.30 per child seeking treatment, and \$2.30 per child receiving malaria treatment. The largest cost component is training, which represents nearly half of total costs (see chart at right). By contrast, the cost of the malaria drug (sulfadoxine-pyrimethamine) represented less than four percent of total costs.<sup>9</sup> Decreasing the number of training days from five to two or three days would reduce treatment costs.

## HIGHLIGHT

Fifteen-year-old Luka was at his school desk, but could not concentrate. He wasn't feeling well. He had a fever, nausea, and pains in every part of his body. Luka recognized the symptoms of malaria because he'd had the disease before. He often contracted it during the rainy season.



Luka receives treatment from a PTK

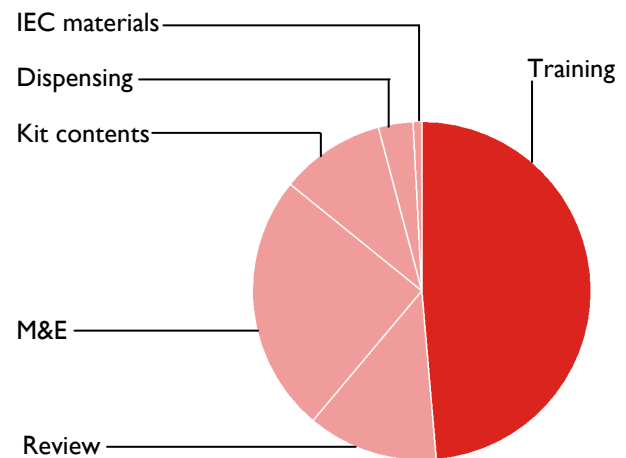
This time, Luka was relieved to know he wouldn't need to make the long walk to the clinic for treatment. Instead, he could receive malaria treatment at school. Luka got permission to leave class to visit the school's trained PTK teacher-dispenser. The dispenser, who was trained to diagnose and provide treatment for malaria, sat Luka down and asked him about his symptoms.

Although the dispenser could not diagnose malaria with certainty without a test, Luka's symptoms suggested he had malaria. Following WHO recommendations, the dispenser was able to provide treatment to Luka immediately.

After a couple days at home to recover, Luka was able to return to school and continue his studies. His mother Florence was pleased. She said, "The Pupil Treatment Kit is good because it makes our life better and it is easier to get treatment at school."

When the new prescription-only drug for malaria was introduced across Malawi in early 2008, all malaria treatment was removed from the PTKs. Children like Luka are no longer able to receive immediate treatment and may be absent from school for longer periods when infected with malaria.

## Relative cost of PTK components



- Communities see value in the PTKs and consider them an added benefit of school. A teacher at Mpale School reported, "Enrollment and attendance are now higher than before SHN began because of the Pupil Treatment Kit. Parents want their children to go to school now for education and immediate treatment."
- In 2007, Malawi's Ministry of Education introduced PTKs countrywide through a national SHN program modeled after Save the Children's SHN program in Mangochi.

## CHALLENGES AND LESSONS LEARNED

- Unfortunately, countrywide PTK coverage was short-lived. In January 2008, the introduction of a new, prescription-only malaria drug (Coartem) ended school-based malaria treatment in Malawi, including in Mangochi, where PTKs had been available since 2001. Many community members in Mangochi greeted the change with dismay and would like to see the return of school-based malaria treatment as soon as possible.
- Retaining trained teacher-dispensers was difficult. Many moved away, became ill, or died as a result of HIV/AIDS, which is prevalent in the district. The situation was complicated by a multi-year shortage of new teachers entering the workforce. Continuous training is needed to ensure sufficient numbers of qualified teacher-dispensers. While training costs are high, the

overall cost of the PTKs is still low relative to other malaria control programs in Malawi. Reducing the length of the training would help control costs.

- Monthly meetings with PTK dispensers were essential to the success of the project as they allowed discussion and resolution of any problems. The meetings were eventually taken over by schools and communities.
- Community involvement in PTK management was crucial and helped ensure adequate supply of medication and correct use.
- Initially, sick children were able to seek PTK care throughout the school day. When teachers complained that this disrupted class, PTK care was shifted to class breaks, except in emergencies. This allowed for prompt treatment and care of children with minimal interruption to class time.

## NEXT STEPS

In 2008, Save the Children phased programming out of Mangochi District and will no longer support PTKs or other SHN activities there. Fortunately, PTKs were included in the Ministry of Education's SHN program and introduced nationwide in 2007. Although malaria treatment was removed, schools and communities in Mangochi are likely to continue managing the PTKs with support from Health Surveillance Assistants and District Health and Education Offices.

Most communities are accustomed to maintaining the PTKs and will probably continue to do so. The Ministry of Health is promoting distribution of essential medications for free, however, central distribution of medication may mean long waits for schools that run out of medicine. Save the Children recommends that the government continue to train teacher-dispensers to respond to high turnover and ensure that all schools have at least one trained teacher. SHN coordinators who have worked with Save the Children in the past could be great resources for program sustainability.

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**Photos by**  
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## References

- <sup>1</sup> Kamlomo G (2006). [www.unicef.org/infobycountry/malawi](http://www.unicef.org/infobycountry/malawi)
- <sup>2</sup> Brooker S (in press). *Malaria Control in Schools. A toolkit on effective education sector responses to malaria.* [A Brief to the toolkit.] The World Bank.
- <sup>3</sup> Brooker et al (2008). Malaria in African school-children: options for control. *Transactions of the Royal Society of Tropical Medicine and Hygiene.* 102, 304–305.
- <sup>4</sup> Pasha et al (2003). The effect of providing Fansidar (sulfadoxine-pyrimethamine) in schools on mortality in school-age children in Malawi. *The Lancet*, 361(9357).
- <sup>5</sup> *Ibid.* (Figure compares data from the three years prior to PTK introduction and the two years following PTK introduction.)
- <sup>6</sup> Save the Children (2008). *Mangochi Phase out report. A quantitative evaluation for School Health and Nutrition[draft].*
- <sup>7</sup> Save the Children (2006). *Balaka SHN phase out survey report [Qualitative].*
- <sup>8</sup> *Ibid.*
- <sup>9</sup> Temperly M and Brooker S (2008). The cost of school-based malaria treatment in Malawi: the use of Pupil Treatment Kits. In Matilda Temperley and Simon Brooker, *London School of Hygiene and Tropical Medicine Report.*
- <sup>10</sup> Save the Children (2006). *Balaka SHN phase out survey report [Qualitative].*



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