



APPENDIX 6

Impact of Malaria on Schoolchildren and the Education Sector

Incidence: Estimates from Africa suggest that 20–50 percent of school-age children experience clinical malaria attacks in a given year (Clarke et al.). Higher rates have been reported from endemic areas of Asia (Luxemburger et al. 1994).

Mortality: Of all mortality in schoolchildren, 15–20 percent is attributable to malaria. In an area of intense transmission in Asia, 27 percent of all malaria mortality was in the school-age group (Bundy et al. 2000).

Enrollment: In Sub-Saharan Africa, 600,000 children under five years of age experience cerebral malaria, and each year 9,000–19,000 children (more than 2 percent of the survivors) experience neurological complications, including developmental and behavioral impairments, lasting for more than six months (Mung’ala-Odera, Snow, and Newton 2004; Murphy and Breman 2001). A study in Kenya found that these children were less likely to have been enrolled in school (Holding and Snow 2001).

Absenteeism: Studies in the Democratic Republic of Congo, Kenya, Senegal, and on the Thailand-Myanmar border indicate that malaria is a cause in 5–8 percent of all absenteeism, equivalent to 50 percent of all preventable absenteeism (Brooker et al. 2000; Bundy et al. 2000; Holding and Snow 2001; Luxemburger et al. 1994; Trape et al. 1987, 1993).

Cognition, learning, and educational achievement: School performance of 6–14-year-olds has been related to the number of previous clinical

malaria attacks (Fernando et al. 2003a; Fernando et al. 2003b). These effects appear to be mediated through the anemia that is associated with both asymptomatic and clinical malaria, and the neurological consequences of cerebral malaria. Anemia occurs in 50 percent of schoolchildren in Africa and 12 percent to 38 percent of schoolchildren in Asia (Partnership for Child Development 2001). Schoolchildren with anemia score more poorly (~ 1–3 standard deviation worse) on tests of education and of general reasoning ability (Pollitt et al. 1989). In Kenya, schoolchildren who had been hospitalized with cerebral malaria were 4.5 times more likely to suffer from mild to severe learning difficulties three to four years later, even though half of the children had no neurological problems at the time of hospitalization (Holding et al. 1999).

Impact on the education system: Malaria is reported to have a significant impact on education supply, through absenteeism of teachers. Anecdotal evidence suggests that in areas of unstable transmission, absenteeism of teachers can close schools during the transmission season.

Conclusions

- There is strong evidence that malaria has an impact on the health and cognition of schoolchildren that adversely affects their education.
- Malaria interventions both early in life and at school age offer benefits for educational outcomes.
- There is a relative absence of efforts to address malaria in the school-age population.
- Ministries of education have a strong commitment to improving the health of schoolchildren and recognize the importance of malaria.