



The note number 11 summarized current knowledge on malaria in Burkina Faso, the leading cause of infant and child mortality in Ouagadougou. Below we present malaria interventions that work in rural Burkina but that still need to be tested in the urban setting.

Appropriate, Affordable Interventions Exist...

Research such as that carried out by CNRFP has documented the impact and acceptability in rural settings of Burkina Faso of Insecticide Treated Materials (ITMs)^{1,2,3} and pre-packaged chloroquine⁴ to improve the home case management of simple malaria.

Promotion of the purchase and correct use of Insecticide Treated Materials (ITMs)

Large-scale trials carried out over the last decade in Burkina Faso^{9,10,11}, The Gambia⁵, Ghana⁶ and Kenya⁷ and smaller-scale controlled trials elsewhere have documented that overall child mortality can be reduced by

an average of 18%⁸ when children living in malaria endemic areas sleep under bednets or in rooms with curtains impregnated with pyrethroid insecticides. With the trial conducted in rural Burkina Faso there was a 14% reduction in child mortality with use of insecticide-impregnated curtains.

D'Alessandro, one of the researchers working on one of the large-scale trials, summarized the results in an editorial in the British Medical Journal⁹.

"These data provide strong evidence that ITMs can substantially reduce childhood mortality.... However, all these trials were carried out in a way impossible to reproduce on a large scale and they measured efficacy – the potential impact of ITMs when implemented in almost ideal conditions.... Here is the problem for the managers of malaria control programmes: the use of ITMs on a large scale can result in huge health benefits, and they are a cost effective intervention. In many cases, however, the introduction of ITMs requires behavioural changes, particularly where the use of bed nets is low, so it is not always clear how these benefits can be obtained. Moreover, some form of cost recovery might have to be built into the programme – simply in order to sustain it – but this might have an important adverse influence on coverage. In particular, a policy of cost recovery will reduce access for poorer groups in the population. An apparently simple intervention thus becomes difficult to implement when the issues of coverage, accessibility, equity, and sustainability are considered. We need new approaches to tackle those issues.

The editorial then draws attention to the results of a social marketing programme in rural Tanzania¹⁰ which rapidly increased net ownership in 2 years. Among the key features of this programme were sales through a network of private sector and community-based

¹ Habluetzel A. et al. 1997. Do insecticide-treated curtains reduce all-cause child mortality in Burkina Faso? *Trop. Med. Int. Health* 2(9) : 855-62

² Habluetzel A. et al. 1999. Insecticide-treated curtains reduce the prevalence and intensity of malaria infection in Burkina Faso. *Trop. Med. Int. Health* 4(8) : 557-64

³ TDR news. February 2001. Do insecticide-treated materials merely delay childhood mortality? <http://www.who.int/tdr/publications/tdrnews/news/news64/bednet.htm>

⁴ Sirima S.B. 2001. Pre-packaged antimalarials reduce progression to severe disease. TDR publications: <http://www.who.int/tdr/research/finalreps/no29.htm>

⁵ D'Allessandro U. et al. 1995. Mortality and morbidity from malaria in Gambian children after the introduction of an impregnated bednet programme. *Lancet* 345 : 479-83

⁶ Binka F.N. et al. 1996. Impact of permethrin impregnated bednets on child mortality in Kassena-Nankana district, Ghana: a randomized controlled trial. *Trop. Med. Int. Health* 1(2) : 147-54

⁷ Nevill C.G. et al. 1996. Insecticide-treated bednets reduce mortality and severe morbidity from malaria among children on the Kenyan coast. *Trop. Med. Int. Health* 1(2) : 139-46

⁸ Lengeler C. Insecticide-treated bednets and curtains for preventing malaria (Cochrane Review). In *The Cochrane Library*, 1, 2002. Oxford : Update Software

⁹ D'Alessandro U. 2001. Insecticide treated bed nets to prevent malaria. *BMJ* 322 : 249-250

¹⁰ Abdulla S. et al. 2001. Impact on malaria morbidity of a programme supplying insecticide treated nets in children under 2 years in Tanzania: community cross sectional study. *BMJ* 322 : 270-273

agents, partial subsidies on the nets and a voucher system to make the nets even more accessible to mothers of young children and pregnant women. These issues of coverage, accessibility, equity, and sustainability are of central importance to the Ouagadougou Initiative.

Improved home management (including care seeking outside of the home) for Malaria

A series of studies in recent years have documented various approaches to improving home treatment of malaria with chloroquine^{11, 12, 13, 14}. In several parts of Africa, chloroquine remains an extremely important medicine to homes, health workers and policy makers. This is due to the fact that its wide acceptance, affordability and near ubiquitous distribution make chloroquine the only antimalarial so far which is easily accessible to the great majority of the people who matter most – the mothers and other members of the household who provide first aid for any illness. Various studies have shown that 80% of uncomplicated malaria cases are treated in the home using over-the-counter antimalarial drugs.¹⁵ And in countries where most malaria remains sensitive to the drug (including much of West African), prompt and correct home treatment with chloroquine makes a dramatic difference. But chloroquine is frequently started too late and/or given in an inadequate dose.

Kidane and Morrow¹⁶ documented through a randomised controlled trial in rural Ethiopia how

¹¹ Yeboah-Antwi K. *et al.* 2001. Impact of prepackaging antimalarial drugs on cost to patients and compliance with treatment. *Bulletin of the World Health Organization* 79 : 394-399

¹² Ansah E.K. *et al.* 2001. Improving adherence to malaria treatment for children : the use of pre-packed chloroquine tablets vs. chloroquine syrup. *Trop. Med. Int. Health.* 6 : 496-504

¹³ Okokwo P.O. *et al.* 2001. Compliance to correct dose of chloroquine in uncomplicated malaria correlates with improvement in the condition of Nigerian children. *Trans. Roy. Soc. Trop. Med. Hyg.* 95 : 320-324

¹⁴ Marsh V.M. *et al.* 1999. Changing home treatment of childhood fevers by training shopkeepers in rural Kenya. *Trop. Med. Int. Health.* 4(5) : 383-389

¹⁵ TDRnews, 1997 Improving the home management of malaria. http://who.int/tdr/research/progress/mal_afr/home.htm

¹⁶ Kidane G, Morrow R. 2000. Teaching mothers to provide home treatment of malaria in Tigray, Ethiopia : a randomised trial. *The Lancet* 356 : 550 - 555

*an approach to teaching mothers to promptly treat fever with chloroquine reduced all-cause under-5 mortality by 40%. The project used local mother coordinators for each 10 to 20 households to teach mothers of young children and supply them with chloroquine. In rural Burkina Faso, Sirima *et al*¹² demonstrated through a case-control study how children treated with pre-packaged antimalarials sold by trained village volunteers were half as likely to progress to severe malaria compared to those who were not treated with these drugs. The pre-packaged chloroquine was provided in colour-coded packages each containing a full course for a given age group. A similar approach was successfully implemented throughout an entire province of Burkina Faso and managed by the Provincial Health Team.¹⁷ This strategy has now been adopted by the National Malaria Control Programme for promotion in 10 rural districts of the country*

... but Remain to be Proven Practical and Effective against Urban Malaria

The Ouagadougou Urban Health and Equity Initiative aims to document the efficacy, effectiveness, practicality and affordability of social marketing / community-based malaria interventions and thus mobilize the will to roll back malaria in cities like Ouagadougou. The next note will present the malaria interventions that the Initiative intends to test in Ouagadougou.

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¹⁷ Pagnoni F. *et al.* 1997. A community-based programme to provide prompt and adequate treatment of presumptive malaria in children. *Trans R. Soc. Trop. Med. Hyg* 91(5) : 512-7

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