

# Improving Policies for Home Management of Fevers in Children Under-five Years in Ghana

Dodowa Health Research Centre (DHRC)



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**INDEPTH Network**  
Better Health Information for Better Health Policy



The Dodowa Health Research Centre (DHRC) was created as part of the agreements between the Government of Ghana and the British Overseas Development Agency (now DFID) to have an operation research satellite station in the early 1990's. DHRC is within Dodowa, the district capital of the Danmbe West district. The estimated mid-year population of Dodowa for 2010 was 148,909 inhabitants. The district is fairly rural and the dominant ethnic group is Dangme (72%), followed by Ewes (13.7) with other minor ethnic groups constituting one percent of the population. In terms of research, since the beginning Dodowa Health Research Centre has focused on Malaria operations research. In 2005, the research centre set up a Health and Demographic Surveillance System (HDSS). This HDSS covers an area of 1,528.9 square kilometres. (More at: <http://www.dodowa-hrc.org/new/dhrc/dhrc-content/about-dhrc/our-history#sthash.vZ1Pg6f3.dpuf>.)



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INDEPTH is a global leader in health and population research, providing robust answers to some of the most important questions in development. The lack of a reliable information base to support the identification, prevention and treatment of health problems is a major hurdle to addressing the high burden of disease in low- and middle-income countries. INDEPTH — through its global network of 52 health and demographic surveillance system (HDSS) sites run by 45 research centres in 20 countries across Africa, Asia and the Pacific region — is the only organisation in the world capable of developing that information base. It tracks a total population of over 3.8 million people, providing high quality longitudinal data not only about the lives of people in low- and middle-income countries (LMICs), but also about the impact on those lives of development policies and programmes. Dodowa is a member of INDEPTH Network.

# Summary of the Impact

Research conducted at the Dodowa Health Research Centre (DHRC) has influenced the Government of Ghana's health policy on the home management of fevers among under-five children. The research conducted between 2007 and 2009 in Dangme West district showed that using antimalarial only for home management of fevers was just as effective in reducing under-five mortality as using antimalarial plus antibiotics. Furthermore, the results showed that the home-based management of fevers with antimalarial only was more cost-effective than antimalarial plus antibiotics. These findings provided evidence for continuation of the existing national strategy in home management of fevers among children using antimalarial only for fevers and to prescribe antibiotics only when there are respiratory signs of pneumonia.



## The Underpinning Research

According to the nationally representative Ghana Demographic and Health Surveys (DHS) conducted between the 1998 and 2003, the under-five mortality rate in Ghana marginally increased between the period from 108 to 111 deaths per 1000 live births. The main causes of under-five death in Ghana are thought to be malaria, diarrhoea, and pneumonia. The 2008 Ghana DHS estimated that about 20% of under-five children in the country had fever in the two weeks before the survey, 20% had diarrhoea, and about 6% had acute respiratory infections. During that period, the home management of fevers among under-five children was presumptive treatment with antimalarial drugs but excluded pneumonia.

The research carried out by DHRC between 2007 and 2009 aimed at evaluating the impact on under-five mortality of adding an antibiotic (amoxicillin) to an antimalarial (artesunate amodiaquine) for treating fevers among children within the Home Based Care (HBC) strategy. Another component of the study sought to assess the cost effectiveness of the two approaches (antimalarial or antimalarial plus antibiotic). The research was collaborative between DHRC, Ghana Health Services, and with support from WHO and other international partners (see Section 5). The research was a stepped-wedge cluster-randomized, open trial, with children 2-59 months of age with fever treated with either antimalarial only or antimalarial and antibiotic within the HBC. Historical controls were used.

The findings showed that under-five mortality was reduced by 30% in those using antimalarial, by 44% in those using antimalarial and antibiotic, compared with the standard care. However, there was no statistically significant difference in under-five mortality between the groups who received antimalarial alone and those who were given antimalarial plus an antibiotic. The study showed that both approaches were cost-effective, each averting one DALY at less than the standard US\$150 threshold recommended by the World Health Organization. However, antimalarial only was more cost-effective.

# Details of the Impact



The research findings were disseminated to several stakeholders using a range of mechanisms including: a) community meetings during the course of the study; b) at national level; c) the World Health Organization in 2009; and d) at the Global Health Forum in Geneva in 2008: "Development of a Strategy for Home and Community Management of Malaria and Pneumonia in Children Under Five in Southern Ghana".



The main impact of the research was to add further evidence of the efficacy of the existing strategy for home based care of fevers in Ghana that was already being implemented. The nature of the impact was in a supportive way, bringing more evidence of the efficacy of the current Home Based Care (HBC) strategy for fevers in Ghana which recommends treatment with antimalarial and amoxicillin only when there are respiratory signs of pneumonia. According to officials in the Ghana Health Services, the research promoted greater researcher-policymaker interaction and increased the researchers' political capital. Researchers with greater political capital are credible and valued by policy-makers, and they have more leverage in influencing policies. The researchers also gained by being part of policy networks including INDEPTH, the Special Program for Research and Training in Tropical Diseases (TDR/WHO) and the ICCM (integrated community case management of childhood illness) task force.



The research conducted by DHRC, by influencing the HBC strategy, has benefitted millions of children in Ghana. By providing antibiotics only when there are signs of pneumonia, the Ghana government is saving millions of dollars annually. The research also made an impact on the community by stimulating debate on how to better manage fevers among under-five children.

## Sources to Collaborate the Impact

- Ministry of Health, Ghana Health Service, Global Fund, WHO, USAID, CDC, Home Management of Malaria, ARI, and Diarrhoea in Ghana; Implementation Guidelines, 2010.
- Ministry of Health: Anti-malaria drug policy for Ghana, 2009.
- Ministry of Health: Guidelines for case management of malaria in Ghana, 2009.

### CONTACTS:

Prof John Gyapong PI of the study and director Research and Development Division at the time of the study.

## ROLE OF THE SECRETARIAT AND OTHER NETWORKS

While the INDEPTH Network did not directly fund this specific research project, Dodowa Health Research Centre is a member of the INDEPTH Network and therefore receives support through training of staff linked to the demographic surveillance system. The Network also provides training for scientists in data management and analysis.

Other collaborators: World Health Organization, University of Makerere, Ghana Health Services (Malaria and Child Health programs), University of Amsterdam, and University of Maastricht.

# Funding

The Centre was awarded US\$856,000 in a competitive call by the World Health Organisation.

# References

1. Chinbuah M, Kager P, M. A. Impact of Community Management of Fever (Using Antimalarials With or Without Antibiotics) on Childhood Mortality: A Cluster-Randomized Controlled Trial in Ghana. *Am J Trop Med Hyg.* 2012; 87(Supplement 5):11-30.
2. Nonvignon J, Chinbuah M, Gyapong M, al. e. Is home management of fevers a cost-effective way of reducing under-five mortality in Africa? The case of a rural Ghanaian District. *Tropical Medicine and International Health* 2012; 17(6).



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