

Policy Brief: Implications for Anemia Interventions in Ghana

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Research Prepared by the Ghana Health Service

Background: Ghana's efforts to improve the health of its citizens have targeted poverty alleviation, food insecurity, and undernutrition. These efforts are seeking to reduce the high rate of anemia in the most affected groups, children and pregnant mothers. The World Health Organization (WHO) recommends 5 strategies to address anemia, particularly for at-risk groups: 1) iron supplements, 2) fortifying staple foods, 3) preventing and treating malaria, 4) using insecticide treated nets (ITNs), 5) deworming. Ghana's response touches upon all of the WHO's recommendations.

Current Interventions: Because of interplay of undernutrition, malaria, and anemia, Ghana has implemented cross-sectoral programs attempting to reduce the impact of anemia. The national food fortification program, in partnership with Global Alliance for Improved Nutrition (GAIN) program, seeks to reach nearly three-fourths of the population over 5 years with fortified wheat flour and vegetable oil with vitamins A and B, iron, and folic acid. The solution is market-based, with \$1.8 million in startup funding from GAIN. Ghana's Roll Back Malaria strategy, using ITNs, is targeting anemia, given malaria's effect on anemia, as well as on stunting in children. Recently 2.1 million ITNs were distributed free during a mass immunization campaign.

Study of Iron Deficiency, Anemia, Malaria, and ITNs: A study measuring the impact of the food fortification project to alleviate vitamin A deficiency and anemia may take years. Because of limited resources available to fund all cross-sectoral programs to their fullest levels, the Ministry of Health conducted a cross-sectional survey of 1,173 persons. The 2008 survey used sampling techniques to reflect the national population. The results may help to inform future policy decisions by the Ministry of Health in allocating funding to programs that deliver the best results in anemia alleviation.

Key Facts, Anemia:

- Anemia is a serious health condition caused by low levels of hemoglobin in red blood cells, leading to iron deficiencies.
- Anemia is considered in the top 10 risk factors to the global burden of disease.
- The main causes of anemia are iron deficiency, malaria, and parasitic worm infections.
- Globally, anemia is associated with \$50 billion in lost GDP and 1 million deaths annually.
- A full 20% of maternal and perinatal mortality in developing countries is linked to anemia.
- Those most at risk to anemia are children and pregnant women, because their needs for iron are greater.
- Poor women and children have the least access to interventions to mitigate the disease.

Key Facts, Anemia in Ghana:

- In Ghana, more than 75% of young children, 65% of pregnant women, 41% of women of childbearing age are anemic.
- Iron deficiency, malaria, and worm infections account for 60% of anemia in pre-school children.

Study Results: The survey looked at the association between anemia and iron deficiency and anemia and malaria, as well as the association between the use of ITNs and anemia, in order to see if nets could be seen as a tool for malaria prevention and thus a means of controlling anemia. The overall prevalence of anemia in the sample was 48.8%. Prevalence for iron deficiency also was high, at 53.8%.

1. The likelihood of anemia in persons with iron deficiency was 1.14 times higher than those without iron deficiency, and iron deficiency can be attributed to 7% of all anemia cases in the country.
2. The likelihood of anemia in persons with malaria was 1.87 times higher than those without malaria, and malaria accounted for 22.3% of all instances of anemia among Ghanaians.
3. A third focus of the study, looking at the effectiveness of ITNs and anemia, found that the nets had a protective role in preventing anemia. The prevalence of anemia was 43% less among Ghanaians who used nets than those who did not.

Findings and Policy Implications: The findings suggest anemia is more commonly associated with malaria than iron deficiency, indicating programs promoting malaria reduction may yield better overall results to reduce the prevalence of anemia in the larger population. In addition, the strong links found between anemia and malaria and the lower prevalence of anemia among persons who use ITNs point to further support of policies that address anemia and malaria reduction concurrently. Such efforts, based on the data, appear more effective in overall impacts compared to activities designed to boost iron deficiency alone.

Possible Policy Actions	Costs and Obstacles
Continue the mass distribution of ITNs targeting children age 2 and under and pregnant women, subject to funding (likely international donors).	Programs that distributed nets (National Immunization Days) to eradicate polio ended; funding is lacking several years out to reach all newborn children most vulnerable to malaria.
Re-examine the costs of the current strategy for the wide-scale adoption iron-based food fortification. Efficient fortification models are needed to enhance iron intake of very young children, but an ambitious plan to target three-quarters of the population may require resource re-allocation.	The Ghana Health Service has identified this as a preferred policy to increase iron intake in children. Reallocating funding to malaria interventions may impact relations with GAIN, NGO-private sector alliances like Plumpy'nut®, UNICEF, USAID, and supporters of NGO-business food aid alliances.
Continue investing in basic public health infrastructure, activities that promote anemia-specific interventions in schools and daycare centers, micronutrients, sanitation, family planning, and infectious disease control.	Strengthening public health infrastructure will require continued support from foreign donors (bilateral, multilateral, NGOs), but may face obstacles because many programs favor vertically oriented health programs and interventions.

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