



Closing the Gap between Policy and Practice of Childhood Malaria Management in Uganda: a Need to Reach beyond the Formal Health System

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Background

Malaria is one of the leading public health problems worldwide, with incidence estimated at 219 million and deaths reported at approximately 660,000 in 2010 [1]. Almost 90% of these deaths occur in sub-Saharan Africa (SSA), of which 91% are in children under five. Young children are most susceptible to malaria due to waning of their passive immunity and an acquired immunity that has not fully developed [2]. Among those who are inadequately treated and survive, there is a high risk of persistent anemia and of acquiring severe debilitating complications such as impaired brain function and/or paralysis hampering physiology and cognitive development.

Reducing child mortality from treatable diseases is a global priority [3]. At a 2000 summit in Abuja, Nigeria, African leaders pledged to halve malaria mortality by 2010 [4]. One of the proposed declarations was to have at least 60% of those suffering from malaria be able to access affordable and effective treatment within 24 hours of onset of symptoms. Accordingly, two of the United Nation's Development Goals focus on reducing this unacceptably high level of child mortality rate [5]. To-date, prompt diagnosis and treatment with effective drugs remain the cornerstone of malaria case management. However, in spite of several large-scale efforts to improve access of antimalarial drugs at the population level, the Abuja target continues to be elusive in some SSA countries. Country level data for 2010 indicates that 80% of malaria cases in the World Health Organization (WHO) African region occur in just 17 countries, with Uganda being among the six highest burden countries along with Nigeria, Democratic Republic of the Congo, United Republic of Tanzania, Mozambique, and Cote d'Ivoire [6]. Though a downward trend in malaria for children under five has been observed in select regions of SSA, there is no such evidence for Uganda [6-8]. In fact, recent health system data and studies across Uganda support either an increase in malaria incidence or an incidence rate that remains steady among children under five [9].

Discussion – the Uganda Perspective

Malaria accounts for 25 to 40% of annual outpatient visits and half of inpatient childhood deaths in Uganda, resulting in approximately 39,000 annual deaths in children under five [10,11]. The problem is particularly acute in rural and remote parts of Uganda where a majority of the population lives in high transmission areas, and where the social and economic burden of acute malaria and asymptomatic parasitemia on families and governments is staggering [12]. Families commonly incur out of pocket expenses when seeking malarial treatment for their children coupled with loss of income from missed worked days [13]. In an effort to improve malaria case management, the Uganda government has undertaken several initiatives to strengthen the delivery of effective antimalarials to communities [8,11,14-16]. Some key policy strategies have included the removal of user fees at government health facilities, the adoption of artemisinin-based combination therapy (ACT) as the first-line malaria treatment, the distribution of Coartem® (artemether-lumafantrine) to government and private-not-for-profit health facilities for free of charge dissemination to the community, the ban of

artemisinin monotherapies and chloroquine, and the implementation of national targets for 2010 and 2015 to ensure 85% of children under five with suspected or confirmed malaria receive treatment with ACT within 24-hours of their symptoms [16-18]. Additionally, several interventions centered on the formal health-system have been deployed to bring diagnostics and treatment with ACTs closer to the communities. Two such recent interventions include the rolling out of the integrated community case management of childhood illness (iCCM) program using community health workers and the dissemination of subsidized ACTs to licensed private outlets through the AMFm program [17]. A few interventions which have focused on caregivers and their families, have primarily aimed at increasing awareness through mass campaigns and sensitization meetings.

While these initiatives have generated some improvement in case management for young children in Uganda, a current systematic review reveals they have not created sufficient behavior change to achieve the national 2010 and 2015 targets of 85% [19]. The review found care seeking for malaria in children under five to be pluralistic, with home management using traditional herbs and/or medicines purchased from private drug vendors, leftover from previous treatments, and/or borrowed to be a common first response. Among those who seek external care over the course of a child's illness, most favor private over public outlets. Additionally, while the review confirms the use of ACT among young children to have increased over the past decade, ACT usage continues to fall short of the national 2010 and 2015 target of 85%. In 2012 only 36% of children were reported to have received an ACT within 24 hours of onset of fever, and approximately 44% received an ACT over the course of their illness. Equally important, caregivers' knowledge about ACT did not always translate into receipt of an ACT. Some proposed reasons for the observed gap between policy and practice include (1) on-going stock-outs of ACTs at public facilities, (2) an over-reliance of caregivers on self-management practices and on untrained and unregulated private vendors - particularly in rural and remote areas where access to public health services, regulated private outlets, and trained health providers is scarce, (3) in spite of this knowledge, interventions have by and large centered on improving the formal health-system (public and private licensed), and (4) the simplistic view that a direct relationship exists between caregivers' awareness

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and action, and improving awareness through mass campaigns and sensitization programs will automatically change behavior [16,20-25]. While caregiver awareness about malaria and its treatment is vital to making an informed decision, this one-dimensional concept of behavior change neglects a number of other factors that can influence treatment-seeking behavior [26].

The Path Forward

Ecological approaches to health behaviors propose that no single factor individually influences people's behaviors, but rather a multiplicity of factors at the individual, family, community, and societal levels interact collectively to influence behavior [26]. There is therefore a need to advocate for public policies and programs that support a multi-level system strengthening approach, targeting all factors likely to influence uptake of new services and programs by caregivers [24,27]. For rural and remote regions where the formal health system is the weakest, the review highlights the need for a much-needed discussion regarding the role of the unregulated health system to address current gaps in drug delivery. Existing policies have yet to recognize the role of unregulated and untrained private vendors in regions where access to trained health providers and licensed outlets remains a challenge. Future studies are needed to understand unregulated vendors' practices and knowledge, to determine factors which influence their fever management decisions in young children, as well as to explore health delivery models that can be inclusive of such providers. Additionally, public health interventions are needed to increase individual household's capacity to seek out appropriate malaria treatment for their young children. Given that children are obviously reliant on their caregivers to seek out appropriate care on their behalf, an understanding of educational and environmental assets and challenges at the community-level are necessary to inform tailored programs to positively influence treatment-seeking behaviors within households.

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