



Incidence of catastrophic health expenditures for households: An example of medical attention for the treatment of severe childhood malaria in Kinshasa reference hospitals, Democratic Republic of Congo



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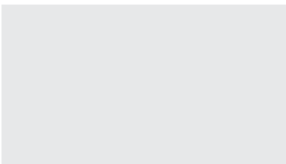
KEYWORDS

Catastrophic expenditures;
Households;
Severe malaria;
Child

Summary This study aimed to estimate the incidence of catastrophic health expenditures faced by households in Kinshasa with children affected by severe malaria. A total of 1350 children below the age of 15 year who were hospitalized due to severe malaria were included in the study. We analyzed the incidence of households facing catastrophic expenditures according to two thresholds: 40% of the household's capacity to pay and 10% of the household's total consumption. Based on the '40% of the capacity to pay' threshold, the incidence of catastrophic health expenditures reached 81.1%, and this estimate reached 46.4% for the '10% above total consumption' threshold. Regarding the $\geq 40\%$ capacity to pay threshold, the incidences of catastrophic expenditures was higher among households with children who were admitted to state hospitals (adjusted odds ratio [aOR] 3.7) and private hospitals (aOR 59.1), for poor households (aOR 13), for households with medium socioeconomic statuses (aOR 3.2), for female-headed households (aOR 2.9),

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for households with children affected by the neurological form (aOR 4.8) and respiratory distress (aOR 3.6), and for households who opted for a pre-hospital resort (aOR 2.7). Similar results were obtained when the 10% above the total consumption threshold was applied. Greater government financing of medical attention would lead to a reduction in the catastrophic health expenditures faced by the poorest households. © 2014 King Saud Bin Abdulaziz University for Health Sciences. Published by Elsevier Ltd. All rights reserved.

Introduction

Malaria is a substantial public health problem around the world. Malaria is one of the deadliest human infections. In 2010, nearly 655,000 deaths were registered worldwide. Victims are generally children under 5 (86%). Africa is the most affected continent [1]. The medical expenditures associated with this disease tend to be catastrophic for households (i.e., the expenditures are considered to be excessive for households) [2]. Each year, approximately 44 million households worldwide, the equivalent of more than 150 million people, face catastrophic health expenditures because one member of the household is affected by the disease [3]. Some 20 million households, or more than 100 million people, fall into poverty due to healthcare expenditures [3,4]. In the Democratic Republic of Congo (DRC), malaria is one of the main causes of morbidity and mortality among children [5]. The medical care for severe forms of childhood malaria often entails recourse to heavy means of treatment which creates enormous healthcare expenditures for already poor households. Access to healthcare is enabled only upon the direct payment of medical expenses because the social security system is almost non-existent [6,7]. The established policy of cost recovery in this country exposes most households to catastrophic health expenditures. In the DRC, few studies have been conducted to predict the risk of households incurring catastrophic expenditures when children suffer from severe malaria. The present work will clarify the consequences of the direct payments required of households with children who are admitted for severe malaria in the context of nearly non-existent social security and health insurance systems. The present study aims to estimate the incidence of catastrophic health expenditures incurred by households in which one child suffered from severe malaria and subsequently attended a Kinshasa reference hospital. This estimation might contribute to the orientation of health financing strategies and the improvement of financial accessibility for the poorest households that are affected by severe malaria.

Methods

Study framework

The study was performed in nine reference hospitals in Kinshasa. These hospitals were classified into three sectors: State, Private, and Confessional. Three hospitals in each sector were randomly selected for a total of 9 sample hospitals. Eight to 10 million people live in Kinshasa, and over 50% of the population is below the age 15 years. The informal sector is the main supplier of jobs. The non-agricultural informal sector provides 66% of jobs, followed by public administration (12%), the formal private sector (9%), agriculture (5%) and public enterprises (5%) [8].

Population and study type

The study population included children under the age of 15 who suffered from severe malaria. The diagnoses were confirmed by identification of the hematozoan parasite via thick smears or blood smears and diagnostic immunological tests with antigenic strips (i.e., immunochromatographic assay tests) that were performed on whole blood and the associated severities of clinical and biological signs (according to the WHO 2000) [9]. This prospective study enlisted children under 15 as they were admitted for severe malaria. These children were followed from admission until discharge/death.

Inclusion and exclusion criteria

Households with one child under 15 who was admitted to one of the selected hospitals for severe malaria were included in the study. If the child's fever could be explained by any other disease, that household was excluded from the study.

Sample size and study time frame

Given that 50% of households with children suffering from severe malaria incur catastrophic expenditures, with 95% confidence intervals (i.e.,

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