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# Aetiology of acute non-malarial undifferentiated fever in children in rural Guinea-Bissau: prospective cross-sectional investigation

*Rui Gutierrez[1], Mariana Landa[2], Masse Sambou[3], Hubert Bassane[4], Ndongo Dia[4], Alfa Djalo[5], Chiara Domenichini[2], Gamou Fall[4], Martin Feye[4], Maria-Dolores Fernandez-Garcia[4], Ousmane Feye[4], Laurence Flevaud[2], Jerlie Loko[6], Oleg Mediannikov[7], Mbayame Niang[4], Valerie Mize[2], Kader Ndiaye[4], Didier Raoult[7], Merce Rocaspana[2], Jean-François Saint-Saveur[2], Susana Villen[2], Amadou Alpha Sall[4], Florence Fenollar[7]

[1]Médecins Sans Frontières (MSF), Sao Paulo, Brazil; [2]MSF, Barcelona, Spain; [3]Institut de Recherche pour le Développement, Dakar, Senegal; [4]Institut Pasteur Dakar, Dakar, Senegal; [5]MSF, Bissau, Guinea-Bissau; [6]MSF, Dakar, Senegal; [7]Institut de Recherche pour le Développement, Marseille, France

*rui.gutierrez@barcelona.msf.org

## Introduction

With increasing use of parasitological tests for detection, and decreasing incidence of malaria in sub-Saharan Africa, improving the management of fever in children will require greater understanding of the causes of non-malarial infections. We aimed to investigate the aetiology of non-malarial causes of undifferentiated acute fever in paediatric outpatients in Guinea-Bissau.

## Methods

We recruited children aged between 0 and 5 years who presented with acute fever (≥38°C) or a history of fever, together with two negative rapid diagnostic tests for malaria, and no signs of organ-specific disease. Children were recruited at the outpatient clinics of three medical facilities during 54 consecutive weeks, including both dry and rainy seasons. Childrens' medical histories were recorded and blood, nasopharyngeal, stool, and urine samples were collected and tested for the presence of 40 different potential aetiological causes of fever.

## Ethics

This study was approved by the MSF Ethics Review Board and the ethics committee of Guinea-Bissau.

## Results

We carried out 48,336 laboratory analyses on samples from 741 children presenting with acute fever of unknown origin (cases), and a further 2,277 analyses on samples from 69 control children. We were able to determine a potential aetiological cause of acute fever in samples from 544 (73.6%) cases. The most commonly identified pathogens were respiratory viruses, present in nasopharyngeal samples from 435 (58.9%) cases. 113 children (15% of cases) were diagnosed with either *Coxiella burnetii*, *Rickettsia felis*, or both. Despite all cases having two negative rapid diagnostic tests for malaria, *Plasmodium falciparum* was identified in samples from 24 (3.3%) patients and 1 (1.45%) control.

**Conclusion**
We detail the aetiological causes of non-malarial acute fever in a cohort of young children from a West African setting. Evidence of viral infections was more commonly identified than bacterial or parasitic aetiologies.

**Conflicts of Interest**
None declared.

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