

O1150 Associated factors and spatial distribution of *Plasmodium* spp. carriage in the trans-border context between French Guiana and Brazil

Emilie Mosnier*¹, Emmanuel Roux², Claire Cropet³, Yassamine Lazrek⁴, Celine Michaud⁵, Mathieu Nacher³, Mélanie Gaillet⁵, Luana Mathieu⁴, Felix Djossou⁶, Lise Musset⁴

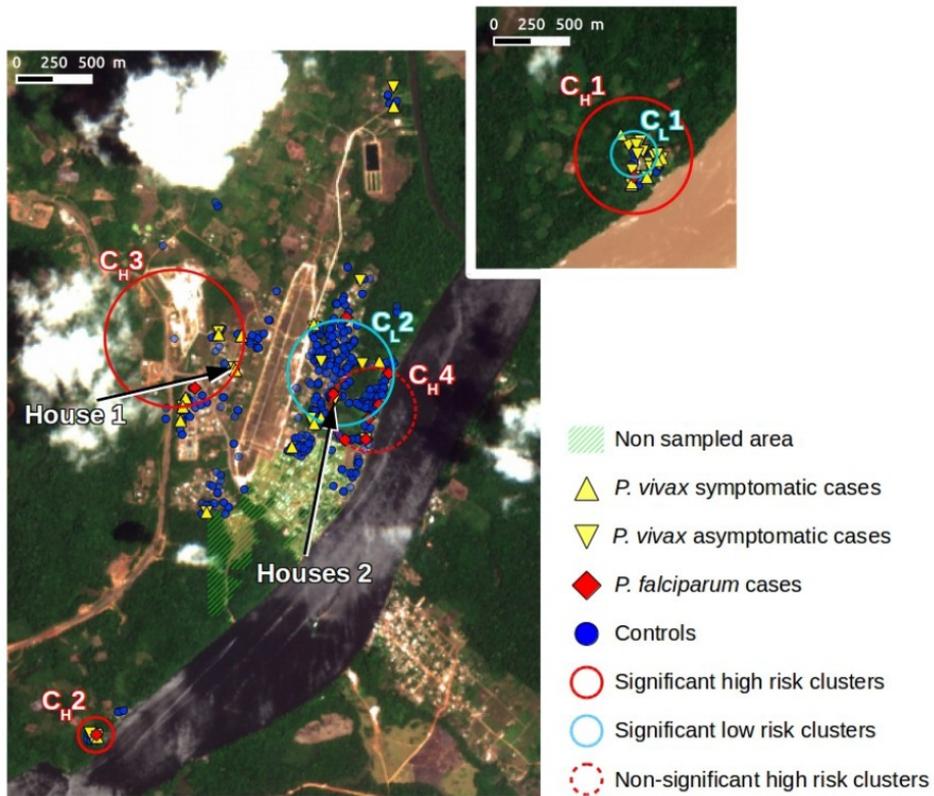
¹ Pôle des Centres Délocalisés de Prévention et de Soins, Cayenne Hospital, Cayenne, French Guiana, ² ESPACE-DEV (IRD, Univ. de Montpellier, Univ. de La Réunion, Univ. de la Guyane, Univ. des Antilles), Institut de Recherche pour le Développement, Montpellier, France, ³ Centre d'Investigation Clinique Antilles Guyane – Inserm 1424, Cayenne Hospital, Cayenne, French Guiana, ⁴ Laboratoire de parasitologie, Centre National de Référence du Paludisme, Pôle Zones Endémiques, WHO Collaborating Center for Surveillance of Antimalarial Drug Resistance, Institut Pasteur de la Guyane, Cayenne, French Guiana, ⁵ Pôle des Centres Délocalisés de Prévention et de Soins, Cayenne Hospital, Cayenne, French Guiana, ⁶ Unité de Maladies Infectieuses et Tropicales, Cayenne Hospital, Cayenne, French Guiana

Background: In order to implement a future elimination strategy in French Guiana, characterization of the infectious reservoir is recommended. We hypothesized that low endemic malaria transmission at the border between French Guiana and Brazil is due to asymptomatic carriage of *P. vivax* (*Pv*) and *P. falciparum* (*Pf*).

Materials/methods: A cross-sectional survey was conducted between October and December 2017, enrolling 1,566 people from a French Guianese village, St Georges de l'Oyapock, bordering Brazil. The prevalence of *Plasmodium* spp. was determined using Rapid Test Diagnostic (RDT) for malaria and a polymerase chain reaction (PCR) on whole blood samples. Houses locations of survey participants were georeferenced. Demographic, medical history, clinical and biological data were described with standard statistical tools. Factors associated with *Plasmodium* spp. carriage were analyzed using logistic regression. Spatial heterogeneity between symptomatic/asymptomatic or between *Pv*/*Pf* carriage were investigated through spatial cluster analysis.

Results: Of the 1,566 study participants, only 13/1,549 people tested by RDT were positive. Of 1,501 samples analyzed by PCR, 100 were positive for *Plasmodium* sp., 90% for *Pv* and 10% for *Pf*. The PCR prevalence was 6.6% [5,3-7,9], among which, 74% were asymptomatic. In multivariate analysis, age over 15 years, living in a remote neighborhood, a prior history of malaria, anemia and thrombocytopenia were associated with increased odds of *Plasmodium* spp. carriage. Bed net use was not associated with a lower odd of *Plasmodium* spp. infection. Significant high-risk clusters of carriage of *Pv* were detected: two big hotspots in the most remote neighborhoods outside of the village and two other small foci in very small parts of the center. A hotspot of both *Pv* and *Pf* symptomatic carriers was detected in the northwestern part of the village.

Conclusions: The current study confirms a wide-scale presence of asymptomatic *Pf* and *Pv* parasitemia in this area. Although malaria transmission was more often located in remote areas it was spatially heterogeneous and complex. *Plasmodium* spp. carriage was associated with anemia and thrombocytopenia, which might suggest an impact on carrier health. These results highlight the need to discuss, by neighborhood, different health strategies according to the spatial prevalence and human behavior.



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