Additional file 3: Details of excluded studies

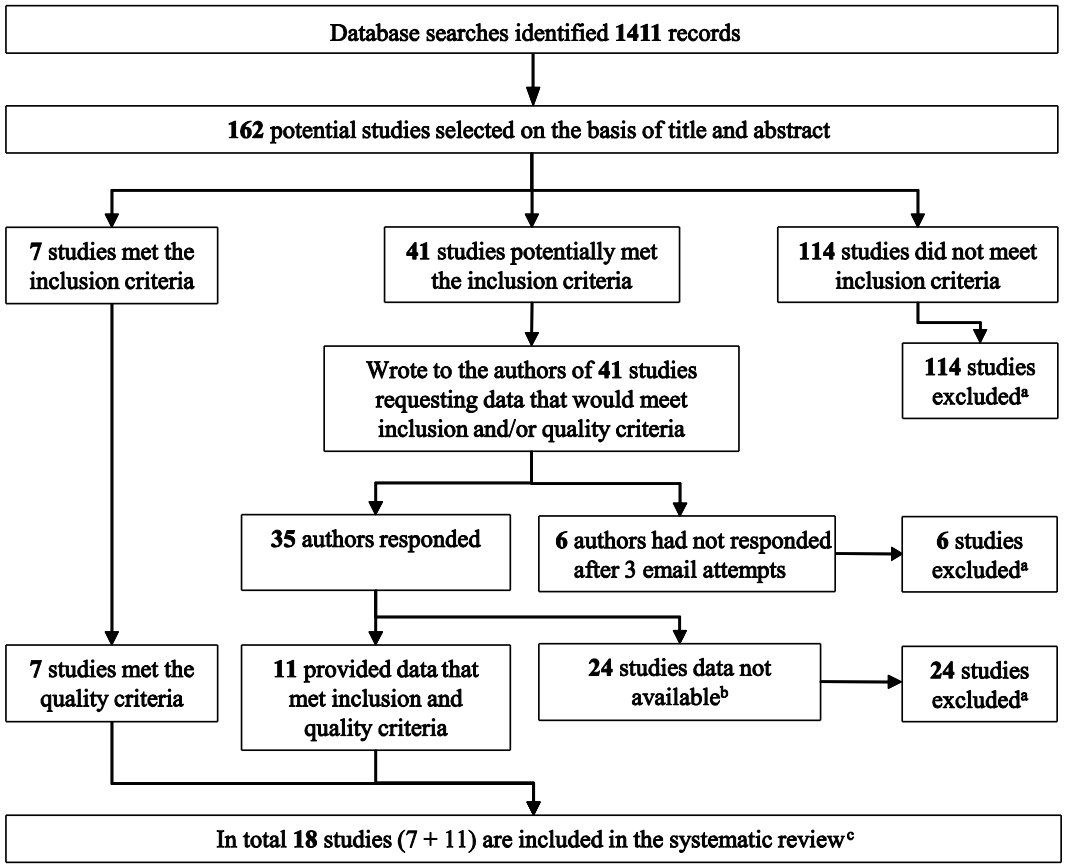

Figure 1 from manuscript

Inclusion and exclusion criteria for the systematic review are described on pages 7-9 of the manuscript. Briefly, population-based cohort, cross-sectional, case-control or treatment to reinfection studies that measured antibodies at enrolment were considered. Participants were required to have lived in *P. vivax*-endemic areas for a continuous period of 5 years.

After searching databases and examining the title and abstract, 162 potential studies were identified. Where there was insufficient information in the abstract to identify the characteristics of the study population, the paper was read in full to determine whether it met the inclusion criteria.

Seven out of 162 studies met the inclusion and quality criteria and were included in the systematic review [1-7].

Of the 162 studies examined, 114 records did not meet the inclusion criteria (**Figure 1**):

- 8 studies were excluded because all subjects were negative for *P. vivax* and there was therefore no outcome [8-15]
- 2 studies were excluded because the antibody data presented had been captured in a previous publication by the same authors [16, 17]
- 55 studies were excluded because antibody responses were either not reported or were determined for non-specific antigens such as whole parasites[18-72]
- 5 studies were excluded because antibody levels were measured in mosquitoes, not humans [73-77]
- 7 studies were excluded because more than 20% of the study population were migrants who had been living in the area for less than five years [78-84]
- 8 studies were excluded because they were conducted in non-endemic areas [85-92]
- 2 studies was excluded because antibody responses were tested using serum pooled from more than one individual [93, 94]
- 15 studies were excluded because recruitment of individuals was based on their clinical status (all *P. vivax* positive), and there was therefore no outcome as defined by this review [95-109]
- 3 studies were excluded because they were review articles and did not present new data [110-112]
- 1 study was excluded because it presented data from experimental *P. vivax* infections rather than from natural infections in an endemic area [113]

- 8 studies were excluded because of insufficient information regarding the origin of study samples or because controls were not representative of the population from which cases were drawn [114-121]

After reading the full text articles, 41 studies were considered to lack particular details or data to enable an assessment based on the inclusion and quality criteria [122-162]. The corresponding authors of these 41 studies were contacted to request additional study details or data to meet the inclusion and quality criteria of the review [122-162]:

- 6 studies were excluded because authors did not respond after three email attempts [131, 137, 139, 148, 153, 156]
- 24 studies were excluded after authors responded via email explaining that the requested data was not available [122-130, 133-135, 138, 141-143, 145, 146, 155, 158-162]
- 11 studies met the inclusion and quality criteria for the review after data was provided by the corresponding authors [132, 136, 140, 144, 147, 149-152, 154, 157]

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