Malaria cases have been significantly declining for the last five years, decreasing from around 1400 cases in 2001 to around 450 cases in 2021/2022 and then around 300 cases in 2023/2024. The percentage of *Plasmodium vivax* cases ranged from 25% to 65%. With the efforts to eliminate malaria by 2030, Vietnam has deployed active case detection (ACD) with G6PD testing as well as mass drug administration (MDA) since 2022. This study aimed to assess whether the use of tafenoquine after semi-quantitative G6PD testing for radical cure (RC) of *P. vivax* malaria is operationally feasible based on the revised algorithm in Vietnam, a country approaching elimination and applying the ACD strategy. The implementation package included a point-of-care (POC) semi-quantitative G6PD test (SD Biosensor) to guide RC with a good safety profile using a 300 mg single dose of tafenoquine (TQ) in patients 16 years and older, 0.5 mg of primaquine (PQ) per kilogram of body weight per day for 7 days or 0.25 mg of PQ per kilogram of body weight per day for 14 days in patients six months or older.

The study was implemented from 22 August to 31 October 2025 with 14 ACD campaigns and 23 *P. vivax* patients were identified (with 14 patients identified through ACD campaign and 9 from passive case finding). Finally, 21 *P. vivax* patients (3 patients from Lai Chau province and 18 patients from Quang Tri province) were enrolled in the study. Two females with G6PD deficiency declined referral to district hospital for 8-week PQ and were not enrolled in the study. Overall compliance of health professionals to the revised treatment algorithm was high (100%), with comparable levels of compliance for both RC options (100% for 15 patients receiving PQ and 100% for 4 patients receiving TQ), as well as non-RC prescription for 2 breastfeeding female patients due to contraindication. Among 15 patients receiving PQ, 5 patients were eligible for TQ but did not receive TQ due to the delay of TQ importation. Overall, the prevalence of G6PD deficiency in the patient population was high (13.04%) among 3/23 identified *P. vivax* patients, all of whom were from Quang Tri province. Adherence to the 7-day PQ and 14-day PQ regimens was also high (100%). All 4 patients receiving TQ took the medication under direct observation, highlighting its advantage in ensuring patients complete the full course of treatment.

One hundred health care providers (HCPs) received initial training and completed the post-training test, with 88% achieving the required 80% passing grade on their first try; 12% of HCPs did not pass their first attempt and received additional training to pass the 2nd attempt. Fifty-eight HCPs were involved in G6PD testing at their health facilities (all of whom passed the G6PD competency test). Eighty-four HCPs received their initial training in Q1-Q2 2024 and completed refresher training immediately prior to study start. All these HCPs again passed the test with a score ≥80%. HCPs demonstrated strong compliance to the revised treatment algorithm and national guidelines, correctly interpreting and classifying G6PD activity status as well as following up patients.

Despite the limited sample size (21 enrolled patients, 4 of whom received TQ), overall compliance with the revised treatment algorithm was very high (100%), and there were no safety events reported. This study provides early but compelling operational evidence that Vietnam can safely and effectively integrate TQ and G6PD testing into routine workflows, with clear advantages for patient adherence and malaria elimination progress. The single-dose TQ + 3-day CQ regimen offers a major advantage in improving treatment completion rates over the 7-day and 14-day PQ + 3-day CQ regimens. Results from this study will inform national policy for the introduction of RC to support ACD for malaria elimination.