

Supplementary Information for

Routine clinical review to improve the safety of high dose radical cure treatment for *P. vivax* malaria: findings from Cambodia and Ethiopia

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Supplementary Table 1 Cambodia day 3 review visit scenario options

Location	ទីតាំង
VMWs house + HF if side effects	ផ្ទះអ្នកស្ម័គ្រចិត្ត + គ្រឹះស្ថានសុខាភិបាលផលវិបាក
Health centre	មណ្ឌលសុខភាព
Implementer	អ្នកអនុវត្តន៍
HC Staff	បុគ្គលិកមណ្ឌលសុខភាព
Village Malaria Worker	
Doctor	វេជ្ជបណ្ឌិត
Nurse	គិលានុបដ្ឋាយិកា
Procedures	នីតិវិធី
<u>Medical Exam</u>	ក្បួនវេជ្ជសាស្ត្រ
Pulse	ចង្វាក់ដង្ហើម
Temperature	កំដៅ/សីតុណ្ហភាព
Heart rate	ចង្វាក់បេះដូង
Blood pressure	សម្ពាធឈាម
Respiratory rate	ចង្វាក់ដង្ហើម
Abdominal exam	ស្ទាបពោះ
Questions about symptoms and side effects	សំណួរទាក់ទងនឹងរោគសញ្ញានិងផលវិបាក
Real-time Urine color Check (Hillmen or similar)	ពិនិត្យមើលពណ៌ទឹកនោមជាក់ស្តែង(ជាពិណាអ៊ីប្រូស្រងៀងៗគ្នា)
Hb Reading (HemoCue or G6PD test)	មើលឈាម (តេស្តឈាមដោយម៉ាស៊ីនហ៊ីម៉ូក្វេ ឬតេស្តG6PD)
Support Mechanisms	យន្តការគាំទ្រ
Community sensitization	ការយល់ដឹងពីសហគមន៍
VMW phone call follow-up day 0-2	អ្នកស្ម័គ្រចិត្តតេទូរសព្ទតាមដានថ្ងៃទី0-2
VMW reminder call for Day 3 visit	អ្នកស្ម័គ្រចិត្តតេទូរសព្ទលើកការណាត់ជួបថ្ងៃទី3
Incentive for VMWs	ការទឹកចិត្តសំរាប់អ្នកស្ម័គ្រចិត្ត
Incentive for patient for day 3	ការលើកទឹកចិត្តដល់អ្នកជំងឺសំរាប់ថ្ងៃណាត់ជួបទី3
Incentive for health centre staff	ការលើកទឹកចិត្តសំរាប់បុគ្គលិកមណ្ឌលសុខភាព

VMW transport of patient to HF (incentive)	ការលើកទឹកចិត្តដល់អ្នកស្ម័គ្រចិត្តករណ៍បញ្ជូនអ្នកជំងឺទៅគ្រឹះស្ថានសុខាភិបាលពេលអ្នកជំងឺមានអាការៈធ្ងន់ធ្ងរ
VMW follow-up (Day 1-2 for TQ or Day 1 and 7 for PQ7) [include incentive]	ការលើកទឹកចិត្តដល់អ្នកស្ម័គ្រចិត្តសំរាប់ការតាមដានថ្ងៃទី1-2និងទី7

Supplementary Table 2 Ethiopia day 3 review visit scenario options

Location	የመገኛ ቦታ
Health post	ጤና ኬላ
Health centre	ጤና ጣቢያ
Implementer	የፈፃሚ
Health Extension Worker	ጤና ኤክስቴንሽን ሠራተኛ
Clinician/nurse	የጤና ጣቢያ ሃኪም
Procedures	የህክምና
<u>Medical Exam</u>	<u>የጤና ምርመራ</u>
Pulse	የልብ ምት
Temperature	የሙቀት መጠን
Heart rate	የልብ ምት
Blood pressure	የደም ግፊት
Respiratory rate	የመተንፈሻ መጠን
Abdominal exam	የሆድ ውስጥ ምርመራ
Questions about symptoms and side effects	ምልክቶችን/ የጎንዮሽ ጉዳዮችን የተመለከቱ ጥያቄዎች
Real-time Urine color Check (Hillmen or similar)	የሽንት ቀለም ምርመራ (የሽንት ቀለም ለውጥን በሚያሳየው ቻርት ወይም በተመሳሳይ ዘዴ)
Hb Reading	የሄሞግሎቢን ንባብ
Support Mechanisms	የድጋፍ ዘዴዎች
Community sensitization (day3 + pharmacovigilance)	ለማህበረሰቡ ግንዛቤ መስጠት (የ 3ኛ ቀን + የመድሃኒት ክትትል)
HEW phone call follow-up day 0-2	ከቀን 0-2 የጤና ኤክስቴንሽን ሠራተኛ በስልክ የሚደረግ ክትትል
Incentive for HEWs	ለጤና ኤክስቴንሽን ሠራተኛ ማበረታቻ መስጠት
HEW transport of patient to HF if severe (incentive)	ህመሙ ከባድ ከሆነ ለታካሚው ትራንስፖርት ከጤና ኬላ ወደ ጤና ጣቢያ (ማበረታቻ)
Incentive for patient for day 3	ለታካሚው በ3ኛው ቀን ክትትል ማበረታቻ መስጠት
Incentive for health centre staff	ለጤና ጣቢያ ሠራተኛ ማበረታቻ መስጠት
HEW follow-up (Day 1-2 for TQ or Day 1 and 7 for PQ7) [include incentive]	በጤና ኤክስቴንሽን ሠራተኛ የሚደረግ ክትትል (ከቀን 1-2 ለታፌኖኩይን ወይም በቀን 1 እና 7 ለፕሪማኩይን ተጠቃሚዎች) [ማበረታቻን ጨምሮ]

Supplementary File 1 Example focus group discussion topic guide for Cambodia study arm

I. Introductory questions

1. How long have you been a VMW? តើអ្នកជា VMW អស់រយៈពេលប៉ុន្មាន?
2. How has your experience as a VMW been? តើបទពិសោធន៍របស់អ្នកជា VMW យ៉ាងម៉េចដែរ?
3. Can you describe the treatment for vivax malaria? តើអ្នកអាចពិពណ៌នាអំពីការព្យាបាលសម្រាប់ជំងឺគ្រុនចាញ់ vivax បានទេ?
4. Can you tell me more about what happens after a patient receives treatment? តើអ្នកអាចប្រាប់ខ្ញុំបន្ថែមអំពីអ្វីដែលកើតឡើងបន្ទាប់ពីអ្នកជំងឺបានទទួលការព្យាបាល?
5. The treatment now lasts 2 weeks. What do you think about the possibility of a shorter but stronger dose? ឥឡូវនេះការព្យាបាលមានរយៈពេល 2 សប្តាហ៍។ តើអ្នកគិតយ៉ាងណាចំពោះលទ្ធភាពនៃការប្រើថ្នាំរយៈពេលខ្លី ប៉ុន្តែខ្លាំងជាងមុន?
6. With the shorter and stronger dose, the doctors would have to monitor patients more closely, and one option would be to have the patient come to back to the health facility to make sure everything is okay three days after receiving the medicine. What would you think of this? ជាមួយនឹងកម្រិតថ្នាំដ៏ខ្លី និងខ្លាំងជាងនេះ គ្រូពេទ្យនឹងត្រូវតាមដានអ្នកជំងឺឱ្យបានតែជិតដល់ ហើយជម្រើសមួយគឺត្រូវឱ្យអ្នកជំងឺត្រលប់មកមណ្ឌលសុខភាពវិញ ដើម្បីប្រាកដថាអ្វីៗមិនអីទេ បើថ្ងៃបន្ទាប់ពីទទួលថ្នាំ។ តើអ្នកគិតយ៉ាងណាចំពោះរឿងនេះ?

II. Play the game of building the Day 3 visit

- Ask VMWs to walk through why they chose each component of the day 3 visit either during or afterwards or both

Supplementary File 2 Example focus group discussion topic guide for Ethiopia study arm

- Welcome remarks
 - Sign informed consent and confirm about recording
 - Begin
1. Please go around and introduce yourself, your role, and your experience with malaria diagnosis and treatment
 2. Please describe the process of VIVAX malaria diagnosis at your facility
 3. Is patient follow-up conducted at the facility after the patient receives treatment?
 - a. If so, please describe how it is done in great detail [**probe specifics like if patient is reminded, by who, do they usually come, on what days, which tests are done on follow-up, are there costs to the patients or facility, are there challenges with this follow-up process**].
 - b. If not, why may this be the case? What would make it possible for it to be done well at their facility?
 - c. What are their thoughts about vivax relapse compared to the risk of hemolysis from primaquine treatment.
 4. The current treatment for vivax is primaquine for 14 days.
 - a. What do you think of shortening it to 7-days and increasing the total dosage from 3.5mg/kg to 7mg/kg? [**probe details on their thoughts about this, any challenges this might have, why they think this, what may be needed to avoid these challenges**].
 - b. What do you think about a single dose treatment for vivax in the form of a new drug called Tafenoquine. It is not available yet here in Ethiopia, but what do they think about the possibility of having it?
 - c. For shorter or stronger vivax treatment, do they think G6PD testing would be necessary before prescribing. Show them example of machine and how it works. Ask if feasible to have at their facility, why or why not?
 - d. For either shorter stronger primaquine, or single dose tafenoquine, do they think that there should be changes to how patient follow-up is currently done. Or in the case where no follow-up is currently done, do they think that there should be follow-up. Why or why not?
 5. If indeed follow-up will need to be done for shorter and stronger vivax treatment, one suggestion is that it should be done on day 3 after receiving treatment. Now we are going to play a game to discuss how this might look in your setting. Please explain your reasonings for your choices.
 - a. Start with BLUE
 - b. YELLOW (probe potential role of family health case team)
 - c. GREEN (probe how this would be different from day 0, should they see the same clinician or can be different, why or why not, what extra costs would the patient have for this each choice).
 - d. PINK

Supplementary Table 3 In-text citation abbreviations key

Citation Code Key			
Country	Participant	Method	Number
Ethiopia- E	Routine Patient- RP	FGD- F	1-13
Cambodia- C	EFFORT Patient - EP	Interview - I	
	Health Center Worker - HCW		
	Community Health Worker - CHW		
	Referral Hospital - RH		
	Provincial Malaria Supervisor- PMS		
	EFFORT Staff - ES		

Supplementary Table 4 Socio-demographic information of day 3 review activity participants

Participant #	Discussion Type	Discussion Number	Country	Location	Gender	Occupation
1	Focus Group Discussion	D3E1	Cambodia	Prongil	Male	VMW (Farmer)
2	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
3	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
4	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
5	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
6	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
7	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
8	Focus Group Discussion	D3E1	Cambodia	Prongil	Female	VMW (Farmer)
9	Interview	D3E2	Cambodia	Svay Sor	Male	Routine patient - Farmer
10	Focus Group Discussion	D3E3	Cambodia	Phnom Kravanh	Male	Health Centre Lab Staff
11	Focus Group Discussion	D3E3	Cambodia	Phnom Kravanh	Male	Health Centre lab Staff/EFFORT Lab Staff
12	Focus Group Discussion	D3E3	Cambodia	Phnom Kravanh	Male	Health Centre Nurse - Malaria Controller
13	Focus Group Discussion	D3E4	Cambodia	Phnom Kravanh	Male	Referral Hospital Nurse
14	Focus Group Discussion	D3E4	Cambodia	Phnom Kravanh	Female	Referral Hospital Nurse
15	Focus Group Discussion	D3E4	Cambodia	Phnom Kravanh	Female	Referral Hospital Nurse
16	Focus Group Discussion	D3E5	Cambodia	Pramoay	Female	VMW (Groceries seller)
17	Focus Group Discussion	D3E5	Cambodia	Pramoay	Female	VMW (Farmer)
18	Focus Group Discussion	D3E5	Cambodia	Pramoay	Female	VMW (VHSG)
19	Focus Group Discussion	D3E5	Cambodia	Pramoay	Male	VMW (Farmer)

20	Focus Group Discussion	D3E5	Cambodia	Pramoay	Female	VMW (Housewife)
21	Focus Group Discussion	D3E5	Cambodia	Pramoay	Female	VMW (Groceries seller)
22	Focus Group Discussion	D3E5	Cambodia	Pramoay	Female	VMW (Farmer)
23	Focus Group Discussion	D3E6	Cambodia	Pramoay	Male	Health Centre Lab Staff
24	Focus Group Discussion	D3E6	Cambodia	Pramoay	Male	Health Centre Nurse
25	Focus Group Discussion	D3E7	Cambodia	Chheu Tom	Male	Farmer
26	Focus Group Discussion	D3E7	Cambodia	Chheu Tom	Male	Farmer
27	Focus Group Discussion	D3E7	Cambodia	Chheu Tom	Male	Farmer
28	Focus Group Discussion	D3E8	Cambodia	Chheu Tom	Male	Consultations Doctor + Private Clinic Owner
29	Focus Group Discussion	D3E8	Cambodia	Chheu Tom	Male	Health Centre Nurse - Malaria Controller
30	Focus Group Discussion	D3E8	Cambodia	Chheu Tom	Female	Lab Staff + Private Clinic Owner
31	Focus Group Discussion	D3E8	Cambodia	Chheu Tom	Female	Midwife + Private Clinic Owner
32	Interview	D3E9	Cambodia	Phnom Penh	Female	Provincial Malaria Supervisor
33	Focus Group Discussion	D3E10	Ethiopia	Arba Minch	Male	Microbiologist
34	Focus Group Discussion	D3E10	Ethiopia	Arba Minch	Male	Study nurse/data manager
35	Focus Group Discussion	D3E10	Ethiopia	Arba Minch	Male	Nurse
36	Focus Group Discussion	D3E10	Ethiopia	Arba Minch	Male	Nurse
37	Focus Group Discussion	D3E10	Ethiopia	Arba Minch	Male	Lab Technologist
38	Focus Group Discussion	D3E11	Ethiopia	Secha	Female	Health Officer
39	Focus Group Discussion	D3E11	Ethiopia	Secha	Female	Nurse
40	Focus Group Discussion	D3E11	Ethiopia	Secha	Female	Health Officer

41	Focus Group Discussion	D3E11	Ethiopia	Secha	Female	Health Officer
42	Focus Group Discussion	D3E11	Ethiopia	Secha	Male	Health Officer
43	Focus Group Discussion	D3E12	Ethiopia	Lante	Male	Health Officer
44	Focus Group Discussion	D3E12	Ethiopia	Lante	Male	Health Officer
45	Focus Group Discussion	D3E12	Ethiopia	Lante	Male	Health Officer
46	Focus Group Discussion	D3E12	Ethiopia	Lante	Male	Health Officer
47	Focus Group Discussion	D3E12	Ethiopia	Lante	Male	Nurse
48	Focus Group Discussion	D3E13	Ethiopia	Shele	Male	Health Officer
49	Focus Group Discussion	D3E13	Ethiopia	Shele	Male	Nurse
50	Focus Group Discussion	D3E13	Ethiopia	Shele	Male	Nurse
51	Focus Group Discussion	D3E13	Ethiopia	Shele	Male	Public Health Officer
52	Focus Group Discussion	D3E13	Ethiopia	Shele	Male	Health Officer
53	Focus Group Discussion	D3E14	Ethiopia	Shele	Female	Health Extension Worker
54	Focus Group Discussion	D3E14	Ethiopia	Lante	Female	Health Extension Worker
55	Focus Group Discussion	D3E14	Ethiopia	Lante	Female	Health Extension Worker
56	Focus Group Discussion	D3E14	Ethiopia	Lante	Female	Health Extension Worker
57	Focus Group Discussion	D3E14	Ethiopia	Shele	Female	Health Extension Worker
58	Focus Group Discussion	D3E14	Ethiopia	Secha	Female	Health Extension Worker
59	Focus Group Discussion	D3E14	Ethiopia	Secha	Female	Health Extension Worker
60	Focus Group Discussion	D3E15	Ethiopia		Male	EFFORT Patient- Security guard
61	Focus Group Discussion	D3E15	Ethiopia		Male	EFFORT Patient-

62	Focus Group Discussion	D3E15	Ethiopia		Male	EFFORT Patient -
63	Focus Group Discussion	D3E15	Ethiopia	Gurba	Male	EFFORT Patient - Government worker
64	Focus Group Discussion	D3E15	Ethiopia	Secha	Male	EFFORT Patient - Student