

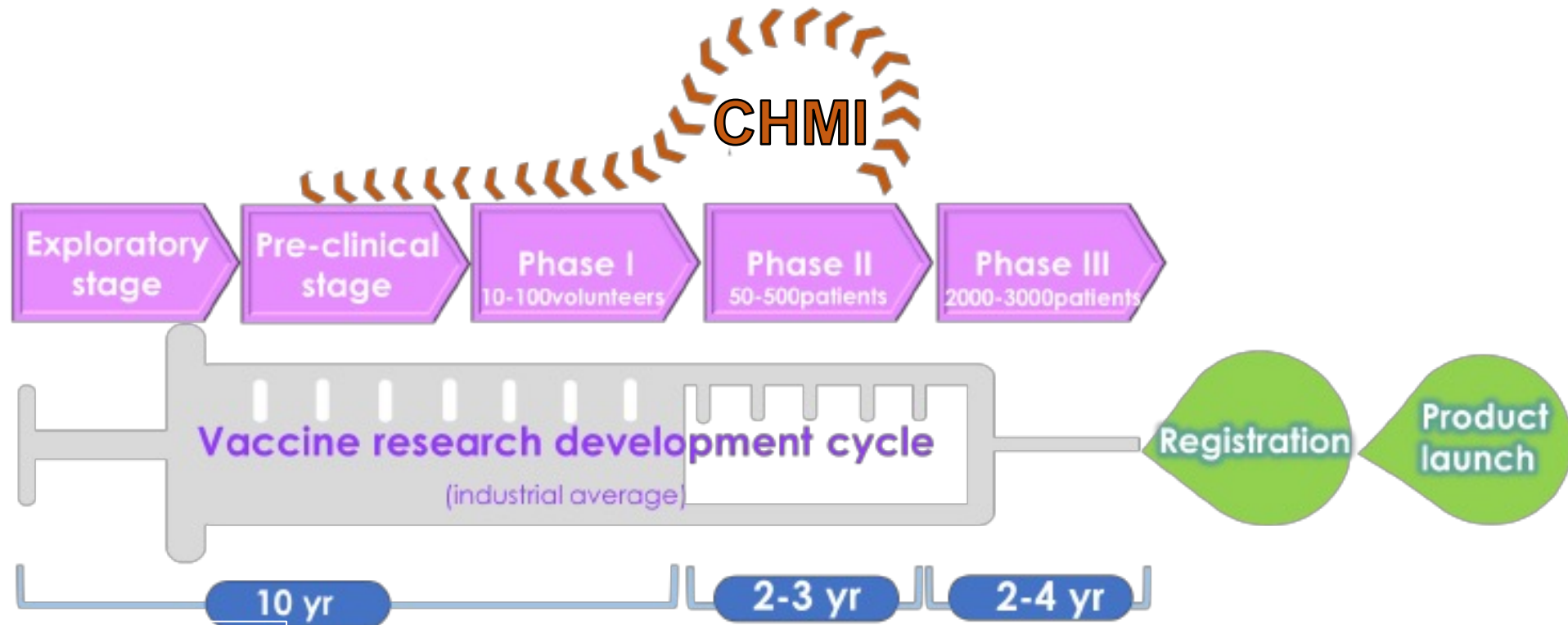
Establishment of human challenge model for *P. vivax*

18 March 2024

Wanlapa Roobsoong, Ph.D

Mahidol Vivax Research unit, Faculty of Tropical Medicine,
Mahidol University, Thailand

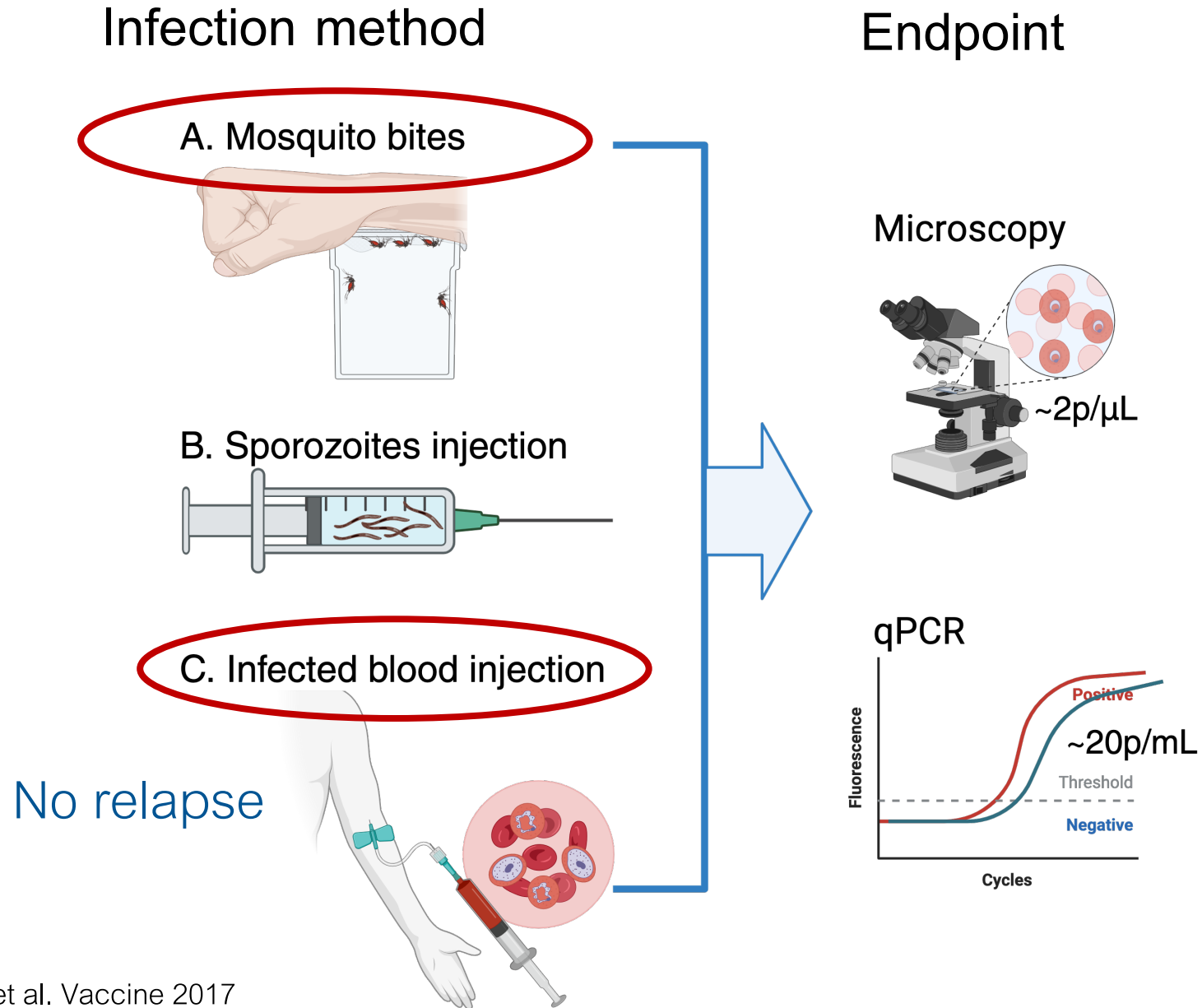
Controlled Human Malaria Infection Study



Modified from GSK

CHMI revolutionizes **vaccine efficacy assessment**, outpacing traditional methods, previously reliant on extensive testing across populous regions grappling with outbreaks. It **expedites effective vaccine development**.

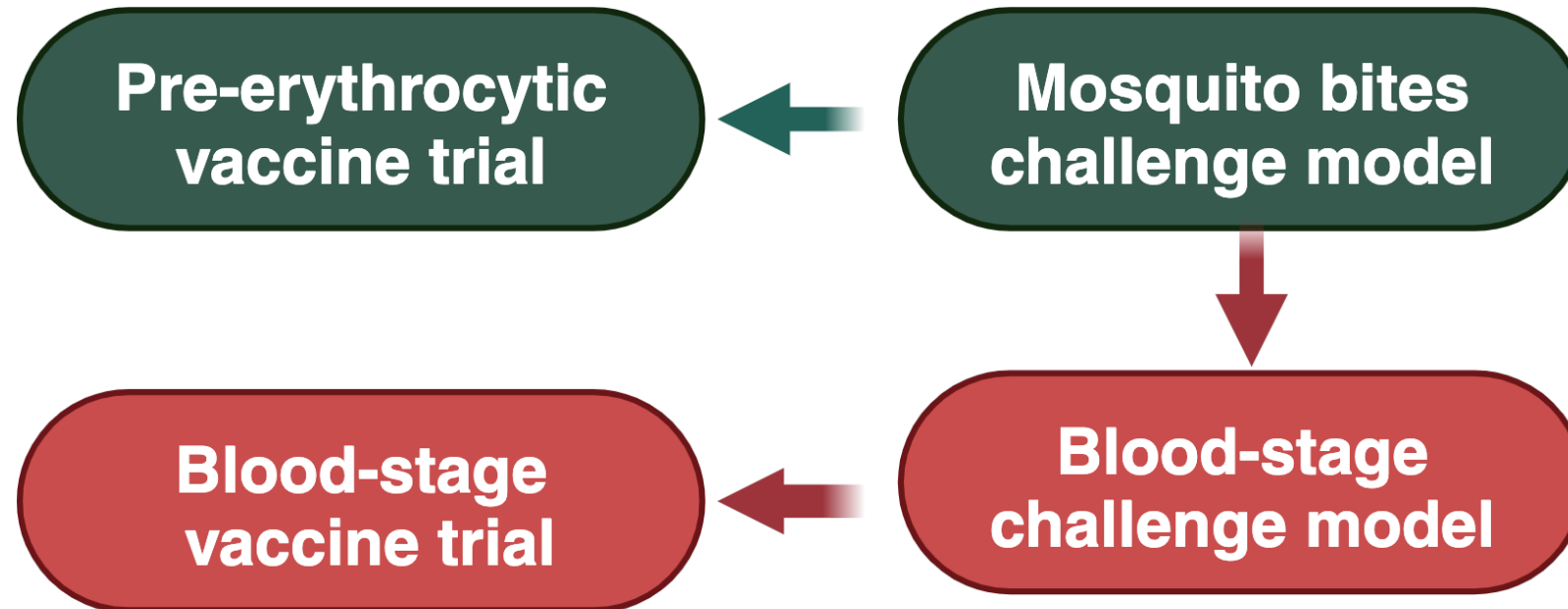
Models for Controlled Human Malaria Infection Study



**CHMI for *P. vivax* vaccine trial
(Safety & Efficacy)**

Pre-erythrocytic stage vaccine trial

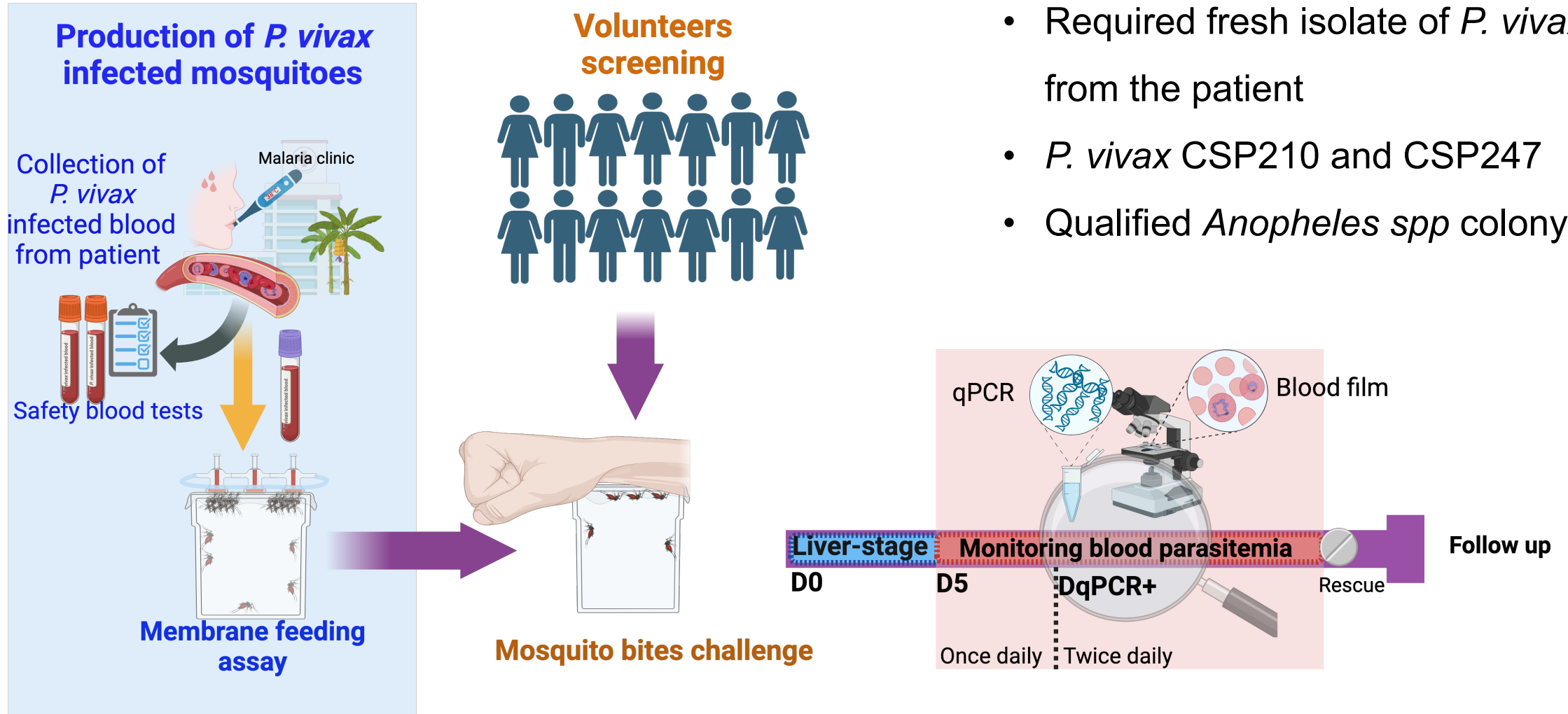
Blood-stage vaccine trial



Mosquito bites challenge model

Key resources for the production of *P. vivax*-infected mosquitoes

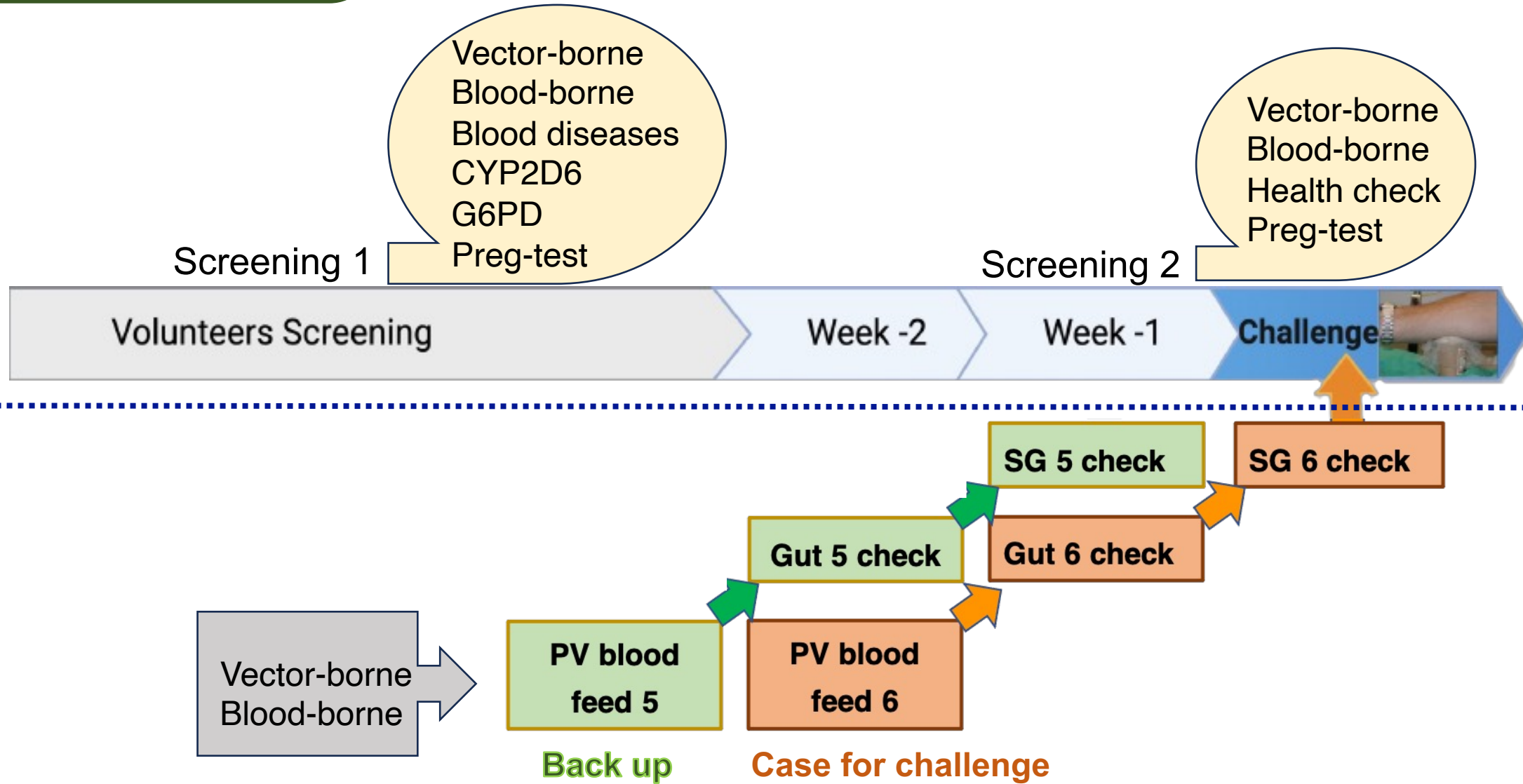
- Required fresh isolate of *P. vivax* from the patient
- *P. vivax* CSP210 and CSP247
- Qualified *Anopheles spp* colony



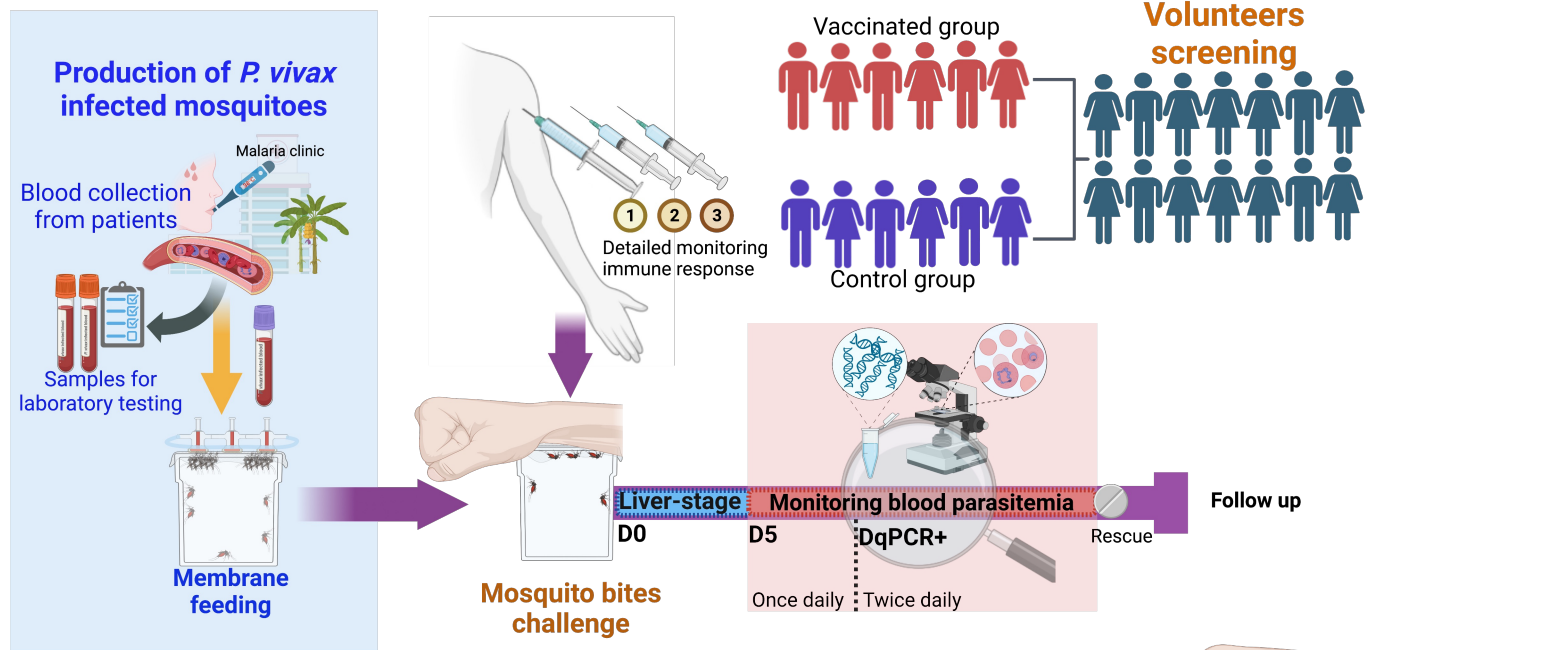
Mosquito bites challenge model

Trial site

Field site



Mosquito bites challenge model: Vaccine trial



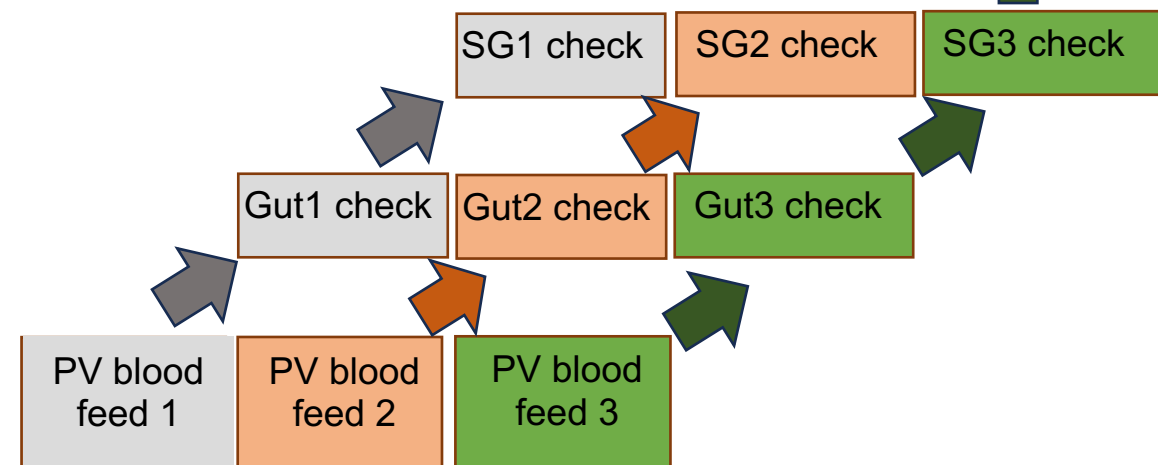
Boost 1



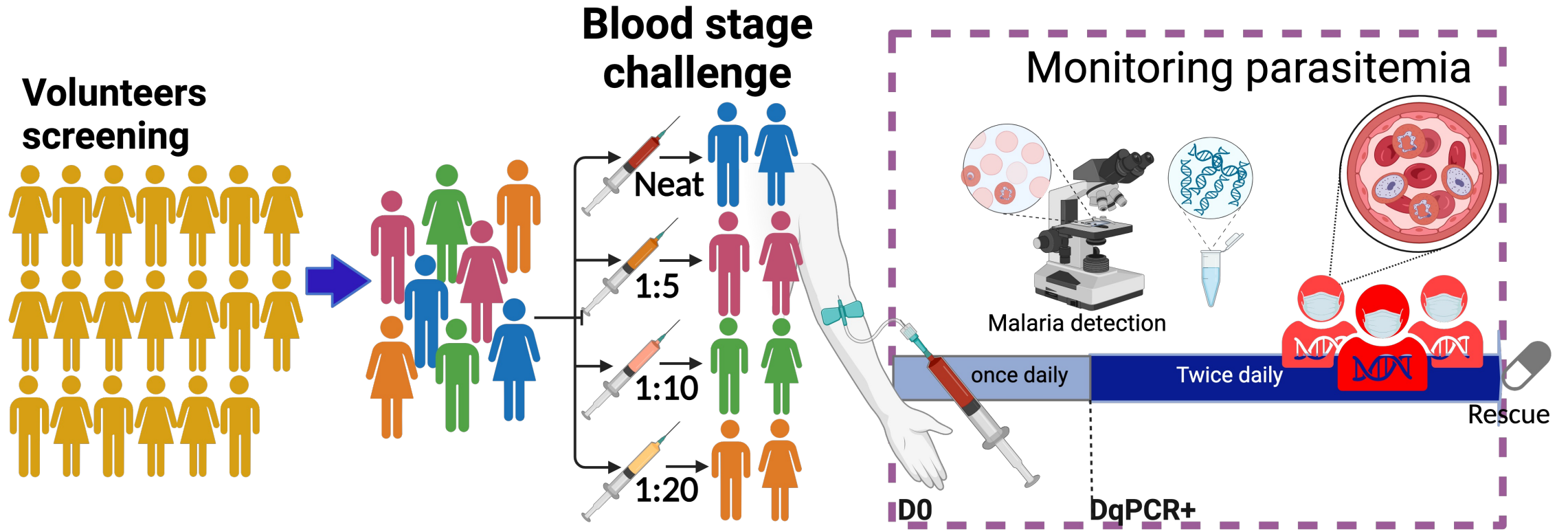
Boost 2



Boost 3



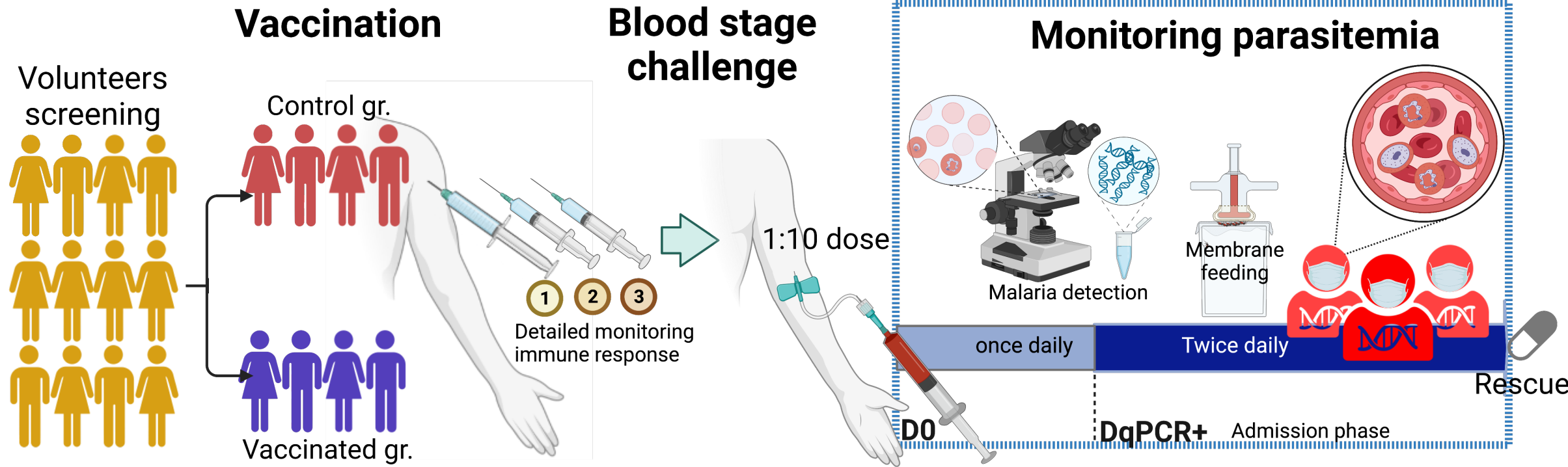
Blood-stage challenge model



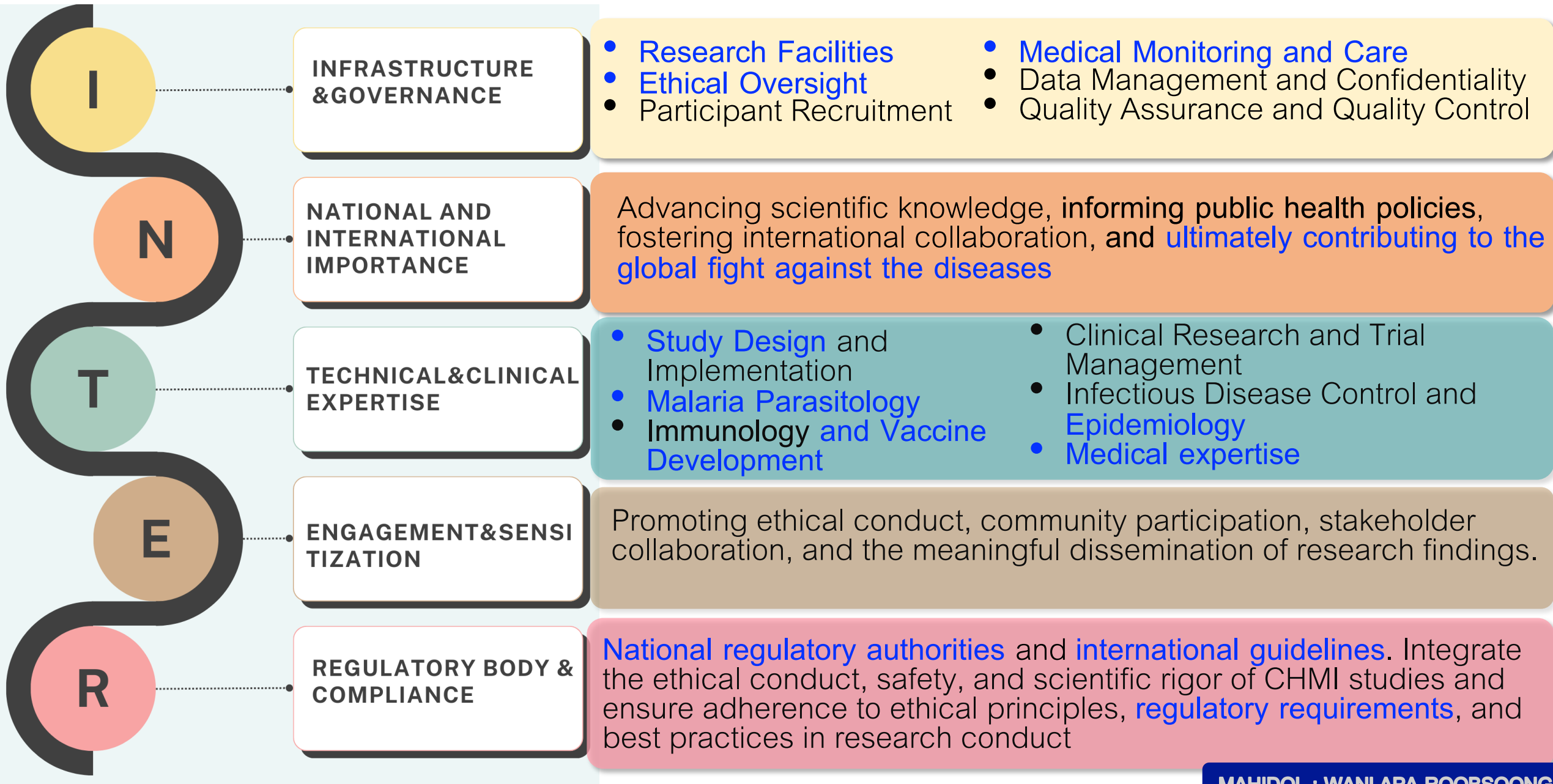
Key required resources for blood stage challenge model

- Required mosquito bites challenge to produce *P. vivax*-infected blood bank
- More diversity of blood stage inocula

Blood-stage challenge model : Vaccine trial



Things to consider for establishment of CHMI



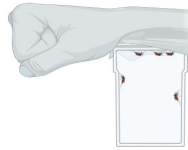
Achievements



Engagement with regulatory and authorities

Engagement with Thai-FDA, national & institutional EC, Mahidol university

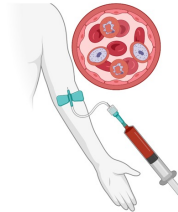
2018



First MIST in Thailand

2020-2024: Mosquito-bites challenge to produce *P. vivax*-infected blood bank (CSP210 and CSP247)

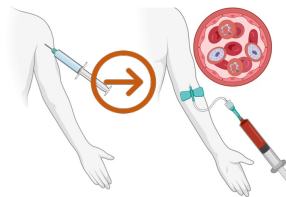
2020



MIST2

Blood-stage challenge for dose finding of the *P. vivax* infected blood inocula

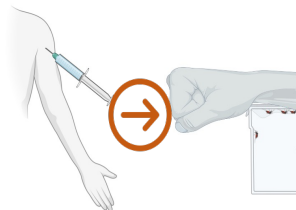
2022



Blood-stage vaccine trial

Aiming in Q4 2024, DBP blood stage vaccine trial will be initiated

2024



Pre-erythrocytic stage vaccine trial

Aiming in Q2 of 2025, Rvx21 pre-erythrocytic stage vaccine trial will be initiated

2025

