Community Engagement for Global Health research

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Session’s objective

- To share community engagement and global health research experience
- Role of community engagement in global health research
- Why community engagement is critical in global health research
- How can we improve the current practice in global health research

Targeted Malaria Elimination-Southeast Asia 2015-2019

- Community engagement was designed to promote population coverage in targeted malaria elimination in Laos
- Design, implementation and impact of community engagement the malaria elimination study in Laos.
- A journey from mixed methods to qualitative dominant methods.
- Local social and cultural context
- Ethical global health research

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Targeted Malaria Elimination-Southeast Asia 2015-2019

- Emergence of Artemisinin resistance in Greater Mekong Sub-region (GMS) and its spread-can have catastrophic consequences [1].
- As a potential tool to eliminate malaria (Targeted Malaria Elimination) was trialed in the GMS [2].
- Among multiple approaches TME consists, a monthly rounds of mass drug administration and the blood test were the central elements.
- As a pilot intervention, mass drug administration (MDA) in TME aimed to interrupt the local malaria transmission and if successful, could become the potential tool to expedite the malaria elimination for future.

References:

1. Ashley EA, Dhorda M, Fairhurst RM, Amaratunga C, Lim P, Suon S, Sreng S, Anderson JM, Mao S, Sam B, et al: **Spread of artemisinin resistance in Plasmodium falciparum malaria.** *N Engl J Med* 2014, **371:**411-423.
2. NIH: **Targeted Chemo-elimination (TCE) of Malaria (TME).** *Clinical Trials.gov* 2017.

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Research gaps and community engagement

- Community engagement has heterogenous meaning and interpretation
- There is no consensus on the definition of community engagement
- Nature and the principles that makes community engagement effective are still scarce
- Past failure of “one size fits all” strategy has prompted scientists to explore the local cultural context.

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Methods: designing community engagement

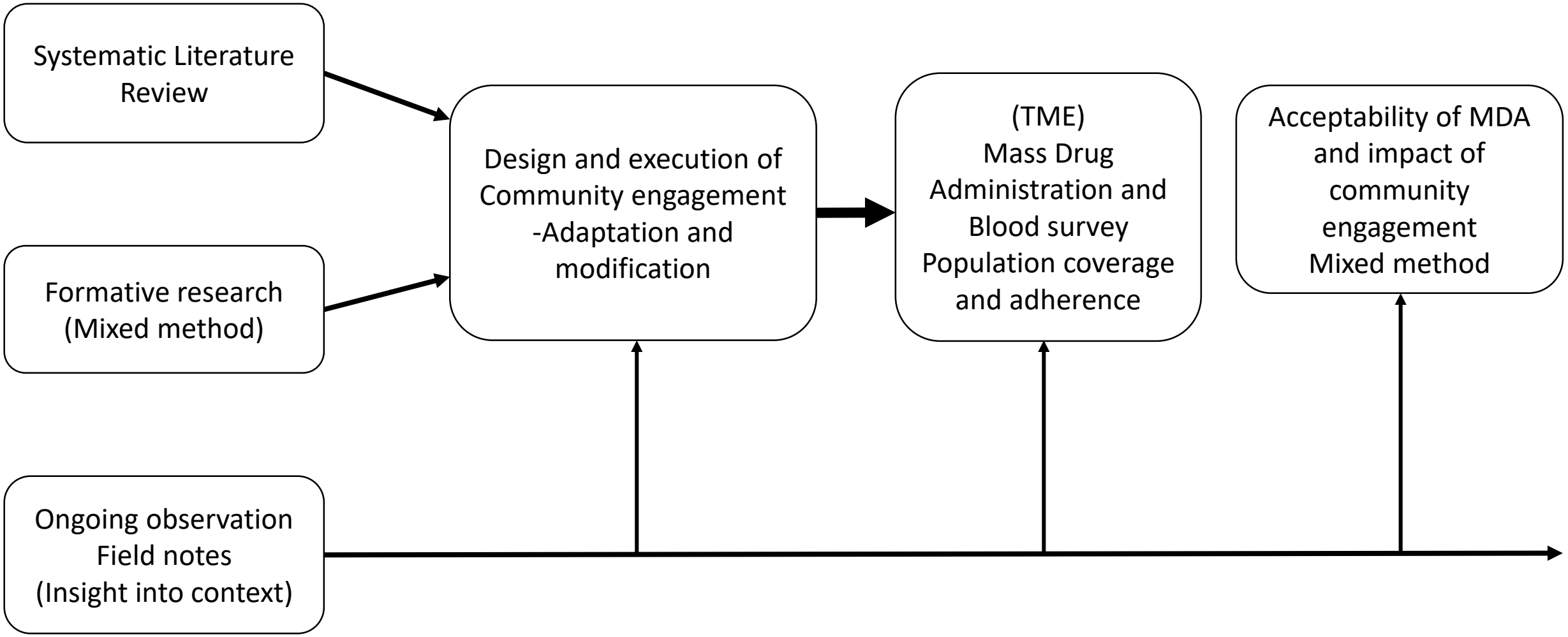

Figure: Schematic representation of results in summary

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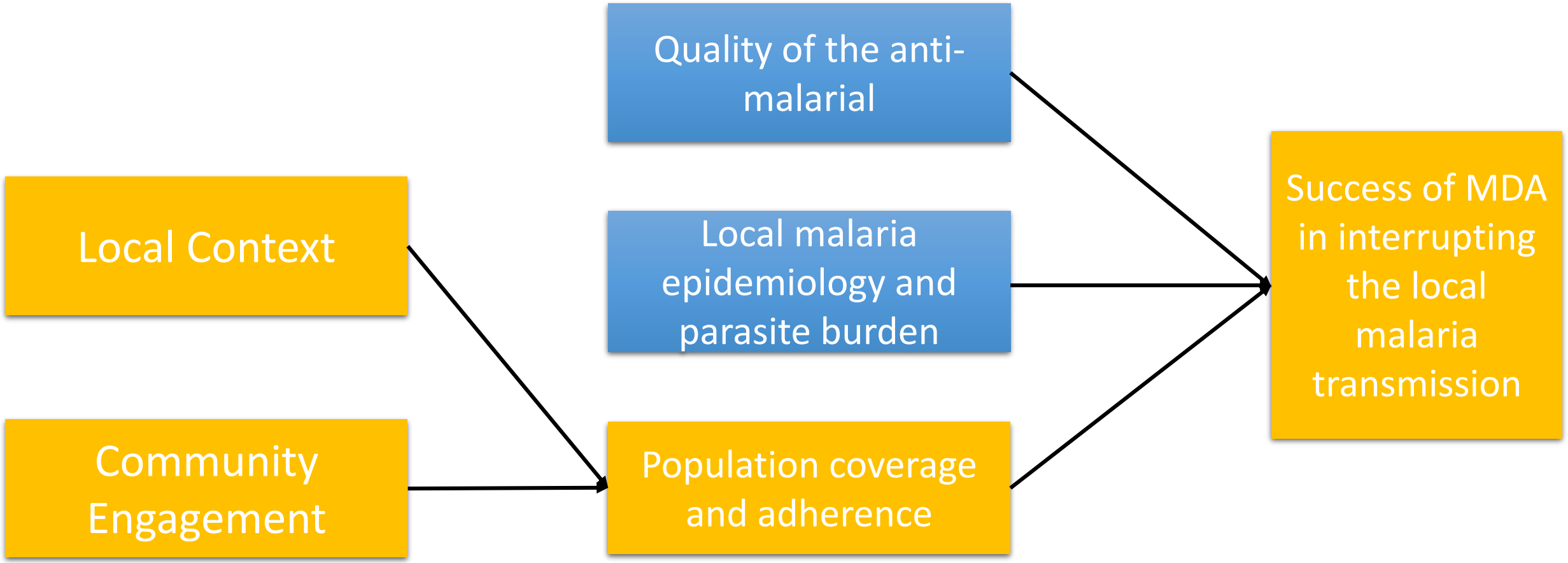
Effectiveness of MDA is predicated on several factors including high population coverage (>80%)



Reference:
1. Adhikari B, James N, Newby G, von Seidlein L, White NJ, Day NP, Dondorp AM, Pell C, Cheah PY: **Community engagement and population coverage in mass anti-malarial administrations: a systematic literature review.** *Malar J* 2016, **15:**523.

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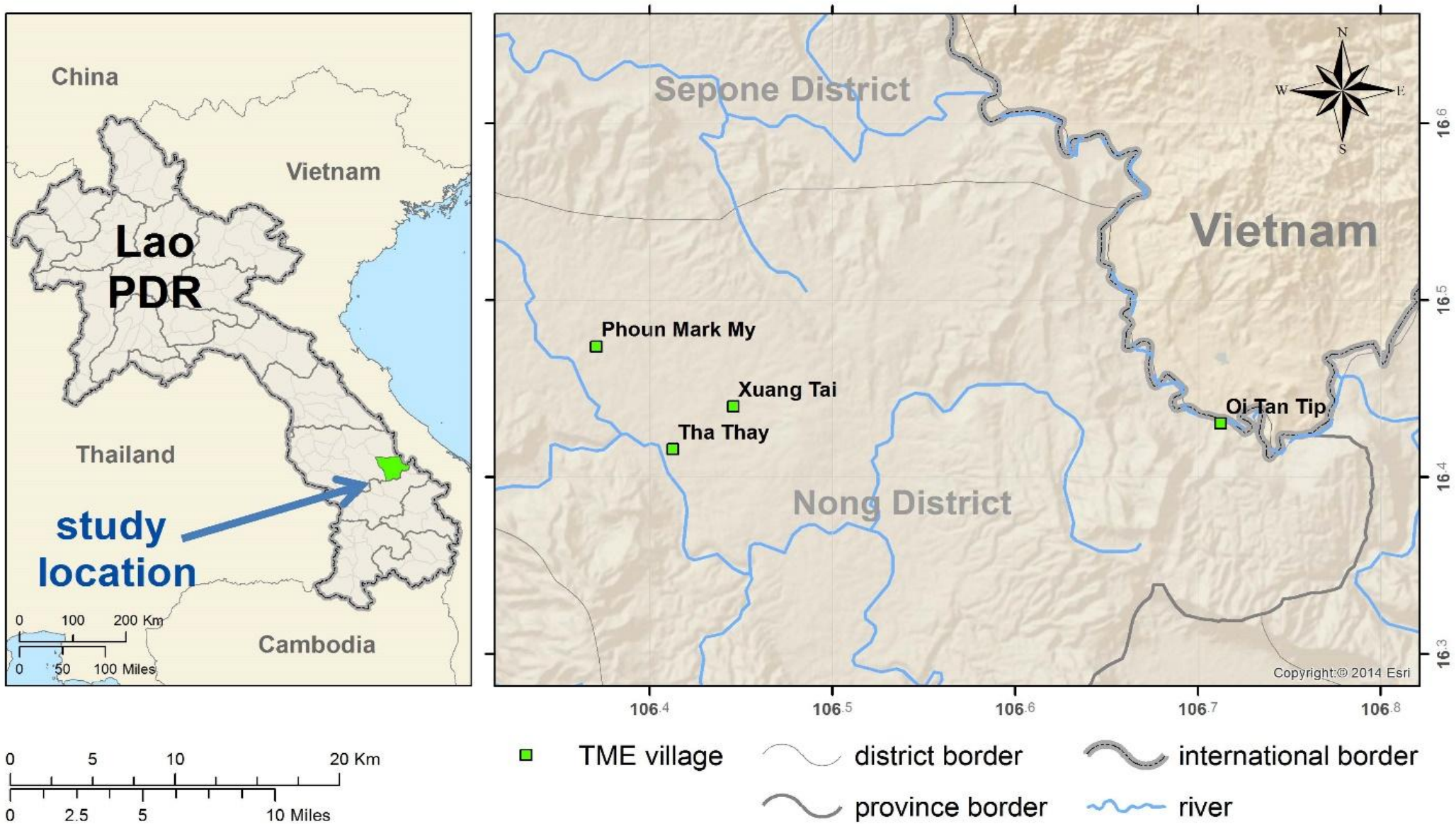
Study site



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Mass meeting in Thate, health education using posters

Taking anti-malarial at intervention village (TT)

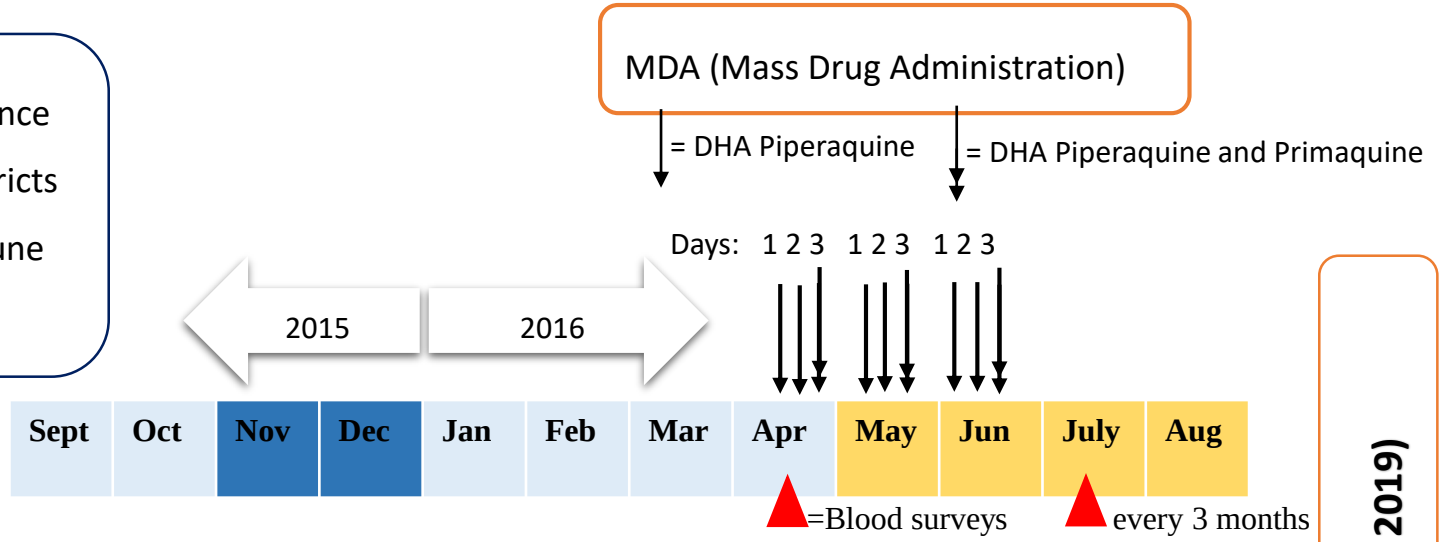
Village Phoun Mak Mee-an intervention village

Testing blood at intervention village (TT)

Mass meeting at Oi Tan Tip-control village

Malaria elimination study design in Laos

Malaria Prevalence surveys in 2 districts in March and June 2015



Focus group discussions

Semi-structured interviews

End of the study (July, 2019)

- MDA consisted of Dihydroartemesinin Piperaquine and a single low dose of primaquine for 3 days for 3 consecutive months.
- 7mg/kg DHA and 55mg/kg Piperaquine; and 0.25mg/kg Primaquine
- 3ml blood for adult and 0.5ml for children less than 5 years and above 6months.

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Systematic literature review

- Reporting on community engagement from past MDAs was minimal
- Inconsistency in population coverage calculation

Community engagement activities included:

- Providing health education and incentives
- Using community structures (infra structure and hierarchical structure)
- Mobilizing human resources
- Collaboration with government at some level
- Community engagement was often a process involving activities throughout the period of intervention

Adhikari et al. Malar J (2016) 15:523
DOI 10.1186/s12936-016-1593-y

Malaria Journal

REVIEW Open Access

Community engagement and population coverage in mass anti-malarial administrations: a systematic literature review

Bipin Adhikari[1*†], Nicola James[1†], Gretchen Newby[2], Lorenz von Seidlein[1,4], Nicholas J. White[1,4], Nicholas P. J. Day[1,4], Arjen M. Dondorp[1,4], Christopher Pell[5] and Phaik Yeong Cheah[1,3,4]

Abstract

Background: Mass anti-malarial administration has been proposed as a key component of the malaria elimination strategy in South East Asia. The success of this approach depends on the local malaria epidemiology, nature of the anti-malarial regimen and population coverage. Community engagement is used to promote population coverage but little research has systematically analysed its impact. This systematic review examines population coverage and community engagement in programmes of mass anti-malarial drug administration.

Methods: This review builds on a previous review that identified 3049 articles describing mass anti-malarial administrations published between 1913 and 2011. Further search and application of a set of criteria conducted in the current review resulted in 51 articles that were retained for analysis. These 51 papers described the population coverage and/or community engagement in mass anti-malarial administrations. Population coverage was quantitatively assessed and a thematic analysis was conducted on the community engagement activities.

Results: The studies were conducted in 26 countries: in diverse healthcare and social contexts where various anti-malarial regimens under varied study designs were administered. Twenty-eight articles reported only population coverage; 12 described only community engagement activities; and 11 community engagement and population coverage. Average population coverage was 83% but methods of calculating coverage were frequently unclear or inconsistent. Community engagement activities included providing health education and incentives, using community structures (e.g. existing hierarchies or health infrastructure), mobilizing human resources, and collaborating with government at some level (e.g. ministries of health). Community engagement was often a process involving various activities throughout the duration of the intervention.

Also a major gap: Elevation of concepts and theories→transferability

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How it fed to the community engagement for TME?

- Reporting on community engagement from past MDAs was minimal
- Inconsistency in population coverage calculation

Community engagement activities included:

- Providing health education and incentives
- Using community structures (infra structure and hierarchical structure)
- Mobilizing human resources
- Collaboration with government at some level
- Community engagement was often a process involving activities throughout the period of intervention

Community engagement in Laos applied the findings from the systematic literature review:

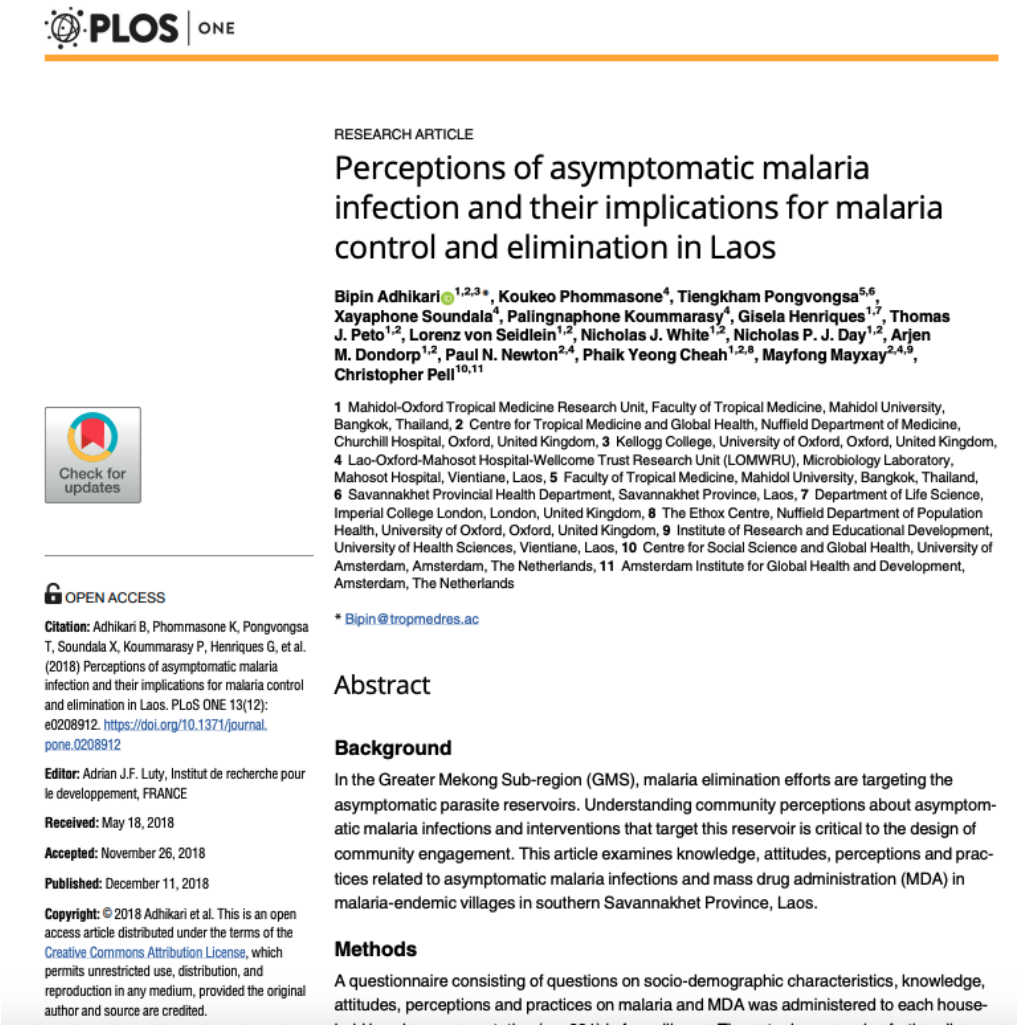
For example:

- Collaboration with the authorities at various levels (from central to local level-a stepwise process)
- Selection, training and devolvement of responsibilities to the local volunteers (10/each village)

Biomedical concepts are challenging for community members to conceive

What do community members think of asymptomatic malaria? And then intervention?

- Hardly many knew about the concept and relevance of asymptomatic malaria
- Communicating rationale for MDA was thus difficult



PLOS ONE

RESEARCH ARTICLE

Perceptions of asymptomatic malaria infection and their implications for malaria control and elimination in Laos

Bipin Adhikari[1,2,3]*, Koukeo Phommasone[4], Tiengkham Pongvongsa[5,6], Xayaphone Soundala[4], Palingnaphone Koummarasy[4], Gisela Henriques[1,7], Thomas J. Peto[1,2], Lorenz von Seidlein[1,2], Nicholas J. White[1,2], Nicholas P. J. Day[1,2], Arjen M. Dondorp[1,2], Paul N. Newton[2,4], Phaik Yeong Cheah[1,2,8], Mayfong Mayxay[2,4,9], Christopher Pell[10,11]

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Citation: Adhikari B, Phommasone K, Pongvongsa T, Soundala X, Koummarasy P, Henriques G, et al. (2018) Perceptions of asymptomatic malaria infection and their implications for malaria control and elimination in Laos. PLoS ONE 13(12): e0208912. https://doi.org/10.1371/journal.pone.0208912

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Abstract

Background

In the Greater Mekong Sub-region (GMS), malaria elimination efforts are targeting the asymptomatic parasite reservoirs. Understanding community perceptions about asymptomatic malaria infections and interventions that target this reservoir is critical to the design of community engagement. This article examines knowledge, attitudes, perceptions and practices related to asymptomatic malaria infections and mass drug administration (MDA) in malaria-endemic villages in southern Savannakhet Province, Laos.

Methods

A questionnaire consisting of questions on socio-demographic characteristics, knowledge, attitudes, perceptions and practices on malaria and MDA was administered to each house-

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Why is treatment seeking behavior of study population important?

- Poverty and poor access to health care, prompted TME to provide free health care.
- Lack of public transport prompted TME to facilitate the referral and free transport in TME trucks to the district hospital.
- Mobile health care with physicians and medicines to the remote sub-villages including house to house visits and deployment of TME physician in the villages

Adhikari *et al. BMC Health Services Research* (2019) 19:252
https://doi.org/10.1186/s12913-019-4070-9

BMC Health Services Research

RESEARCH ARTICLE Open Access

Treatment-seeking behaviour for febrile illnesses and its implications for malaria control and elimination in Savannakhet Province, Lao PDR (Laos): a mixed method study

Bipin Adhikari[1,2,3*], Koukeo Phommasone[4], Tiengkham Pongvongsa[5], Palingnaphone Koummarasy[4], Xayaphone Soundala[4], Gisela Henriques[1,6], Pasathorn Sirithiranont[1], Daniel M. Parker[7], Lorenz von Seidlein[1,2], Nicholas J. White[1,2], Nicholas P. J. Day[1,2], Arjen M. Dondorp[1,2], Paul N. Newton[2,4], Phaik Yeong Cheah[1,2,8], Christopher Pell[9,10] and Mayfong Mayxay[2,4,11]

Abstract

Background: How people respond to febrile illness is critical to malaria prevention, control, and ultimately elimination. This article explores factors affecting treatment-seeking behaviour for febrile illnesses in a remote area of Lao PDR.

Methods: Household heads or their representatives ($n = 281$) were interviewed using a structured questionnaire. A total of twelve focus group discussions (FGDs) each with eight to ten participants were conducted in four villages. In addition, observations were recorded as field notes ($n = 130$) and were used to collect information on the local context, including the treatment seeking behaviour and the health services.

Results: Almost three-quarters (201/281) of respondents reported fever in past two months. Most (92%, 185/201) sought treatment of which 80% (149/185) sought treatment at a health centre. Geographic proximity to a health centre (AOR = 6.5; CI = 1.74–24.25; for those < 3.5 km versus those > 3.6 km) and previous experience of attending a health centre (AOR = 4.7; CI = 1.2–19.1) were strong predictors of visiting a health centre for febrile symptoms. During FGDs, respondents described seeking treatment from traditional healers and at health centre for mild to moderate illnesses. Respondents also explained how if symptoms, including fever, were severe or persisted after receiving treatment elsewhere, they sought assistance at health centres. Access to local health centres/hospitals was often constrained by a lack of transportation and an ability to meet the direct and indirect costs of a visit.

Conclusion: In Nong District, a rural area bordering Vietnam, people seek care from health centres offering allopathic medicine and from spiritual healers. Decisions about where and when to attend health care depended on their economic status, mobility (distance to the health centre, road conditions, availability of transport), symptoms severity and illness recognition. Current and future malaria control/elimination programmes could benefit from greater collaboration with the locally accessible sources of treatments, such as health volunteers and traditional healers.

Keywords: Health seeking, Malaria, Febrile illness, On the counter, Resistance, Elimination

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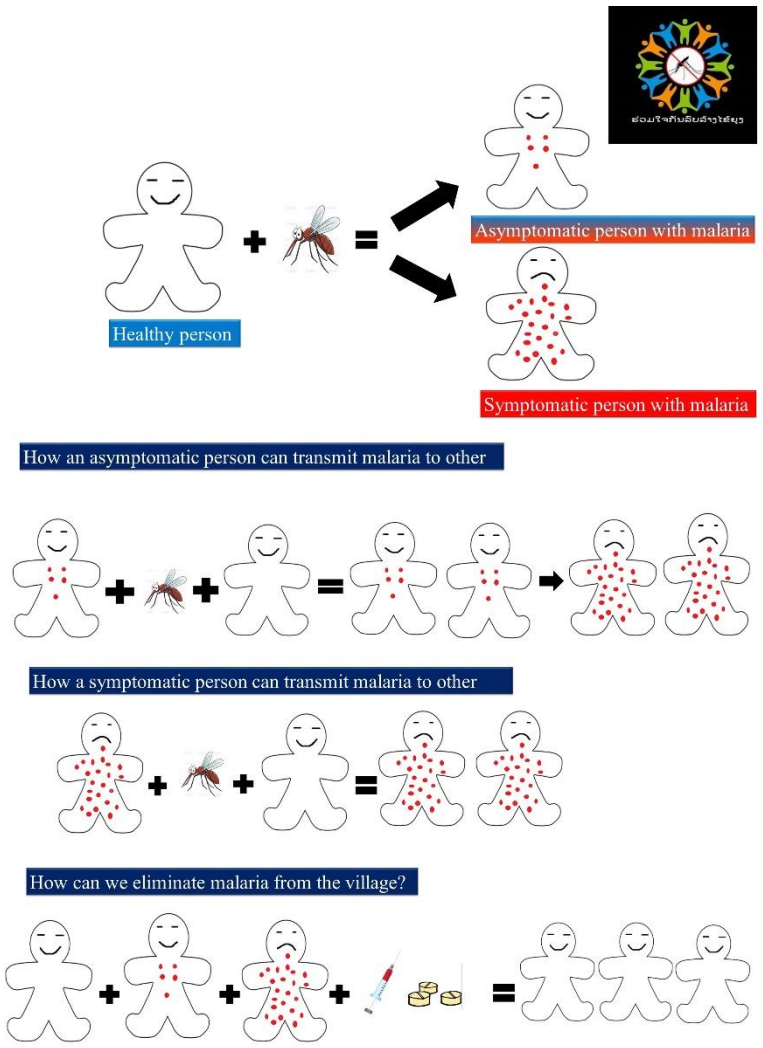
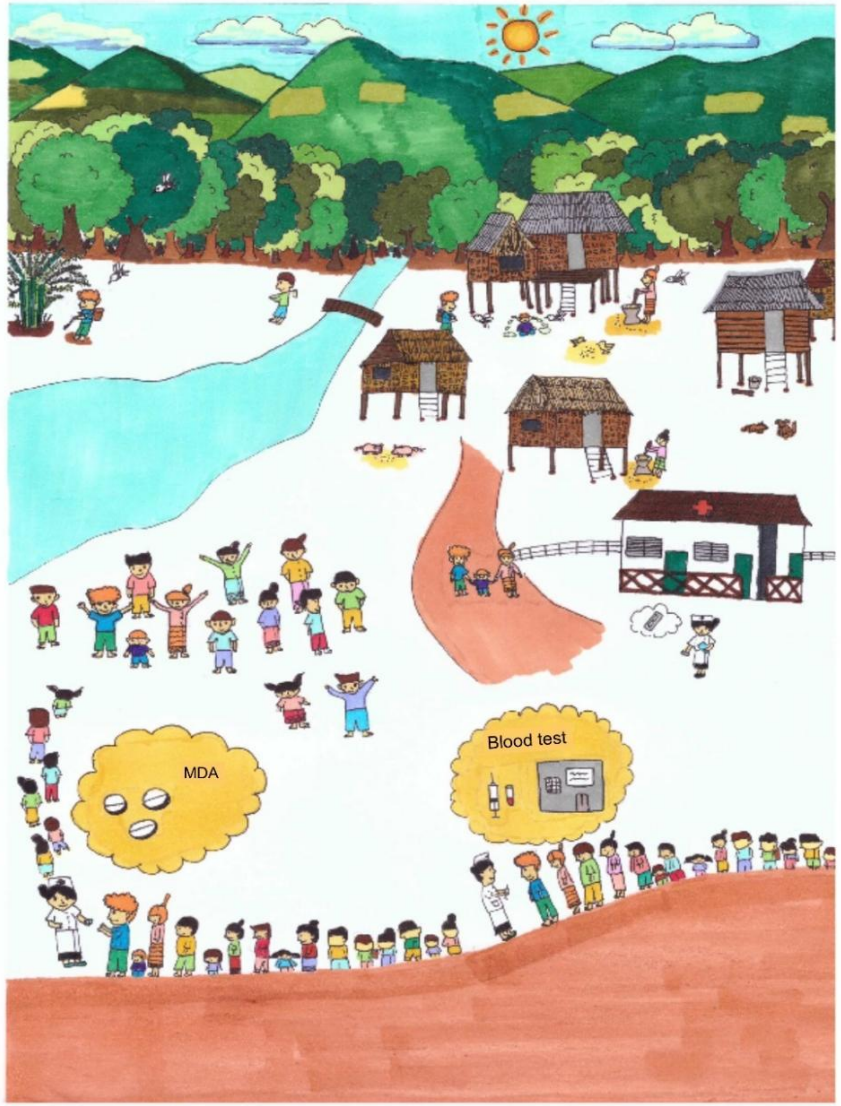
Designing community engagement

Responsiveness



Because the majority could not read and write, *local* language was incomprehensible, posters were designed to make it self-understandable-pictorial posters



Poster I: Pictorial explanation of concept of types of malaria and the rationale of MDA and blood test

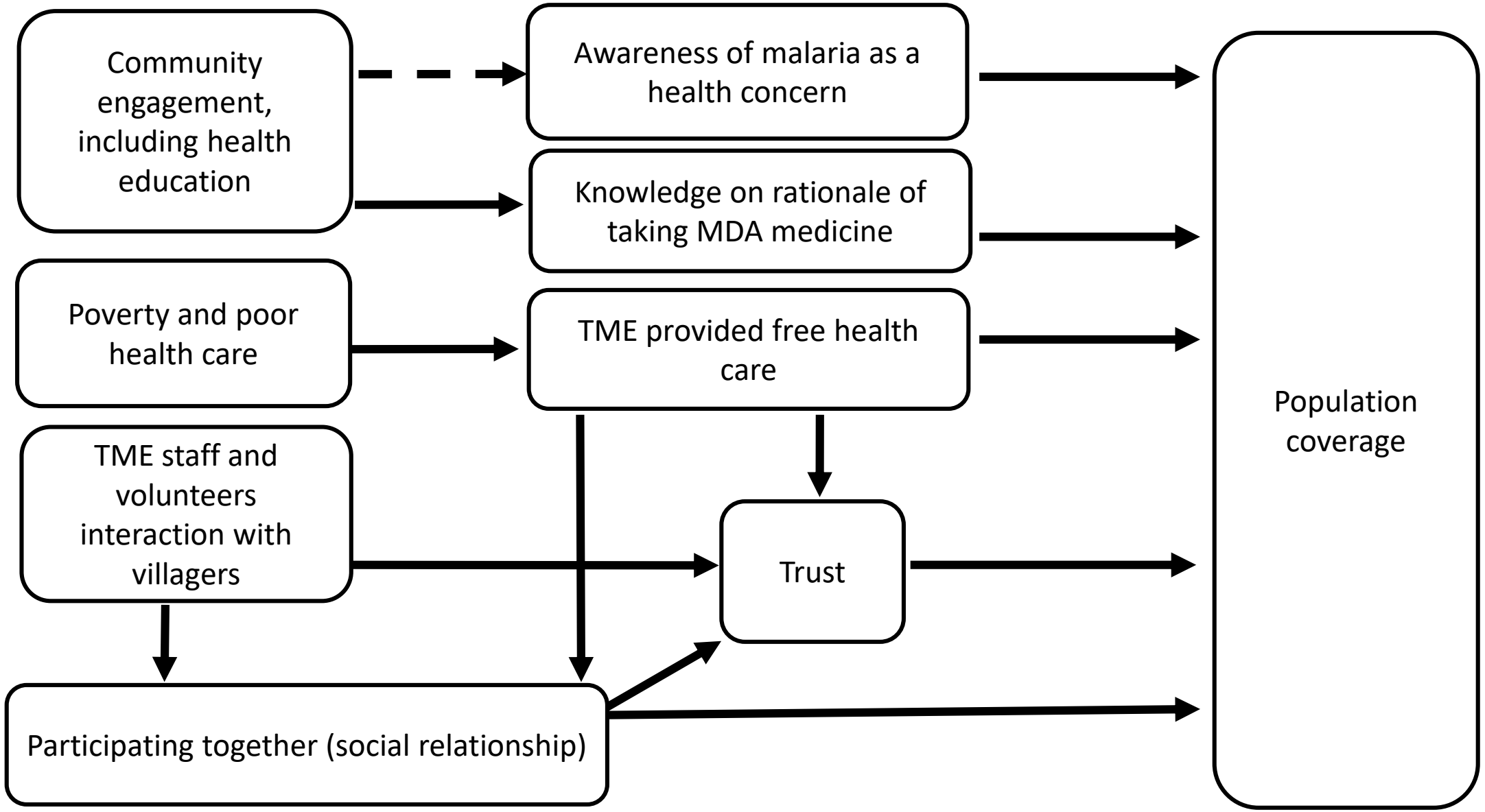
Poster II: Contextualized explanation of concept of types of malaria and the rationale of MDA and blood test

Reference
Adhikari B, Pell C, Phommasone K, Soundala X, Kommarasy P, Pongvongsa T, Henriques G, Day NPJ, Mayxay M and Cheah PY. **Elements of effective community engagement: lessons from a targeted malaria elimination study in Lao PDR (Laos)**. *Global Health Action* 2017, 10:1366136.

Coverage was above 80% and can we attribute that to community engagement?

Attribution versus contribution

Why do people participate in mass antimalarial administration?



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Elements of “effective*” community engagement

*Based on high coverage

- Stakeholder and authority engagement
- Local human resources
- Formative research
- Responsiveness
- Sharing control and leadership with the community

Effective:
High population coverage and adherence

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Is community engagement just a toolkit to achieve the high population coverage for interventions?

GLOBAL BIOETHICS
2020, VOL. 31, NO. 1, 1–12
https://doi.org/10.1080/11287462.2019.1703504

Routledge
Taylor & Francis Group

RESEARCH ARTICLE

OPEN ACCESS Check for updates

Community engagement and ethical global health research

Bipin Adhikari [a,b,c], Christopher Pell [d,e] and Phaik Yeong Cheah [a,b,f]

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- Respecting individuals, communities and stakeholders
- Building trust and social relationships
- Determining appropriate benefits; minimizing risks, burdens and exploitation
- Supporting the consent process
- Understanding vulnerabilities and researcher obligations
- Gaining permissions, approvals and building legitimacy
- Achieving recruitment and retention targets

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What specifically from the elements of community engagement here?

- Stakeholder and authority engagement
- Local human resources
- Formative research
- Responsiveness
- Sharing control and leadership with the community

Effect of generalised access to early diagnosis and treatment and targeted mass drug administration on *Plasmodium falciparum* malaria in Eastern Myanmar: an observational study of a regional elimination programme

Jordi Landier, Daniel M Parker*, Aung Myint Thu, Khin Maung Lwin, Gilles Delmas, François H Nosten, for the Malaria Elimination Task Force Group*

Lancet 2018; 391: 1916–26

Published Online
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See Comment page 1870

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Shoklo Malaria Research Unit, Mahidol-Oxford Tropical Medicine Research Unit, Faculty of Tropical Medicine, Mahidol University, Mae Sot, Thailand (J Landier PhD, D M Parker PhD, A M Thu MD, K M Lwin MD, G Delmas MSc, Prof F H Nosten MD); Institut de Recherches pour le Développement, Aix Marseille Univ, INSERM, SESSTIM, Sciences Economiques & Sociales de la Santé & Traitement de l'Information Médicale, Marseille, France (J Landier); Department of Population Health and Disease Prevention, University of California, Irvine, CA, USA (D M Parker); and Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, UK (G Delmas

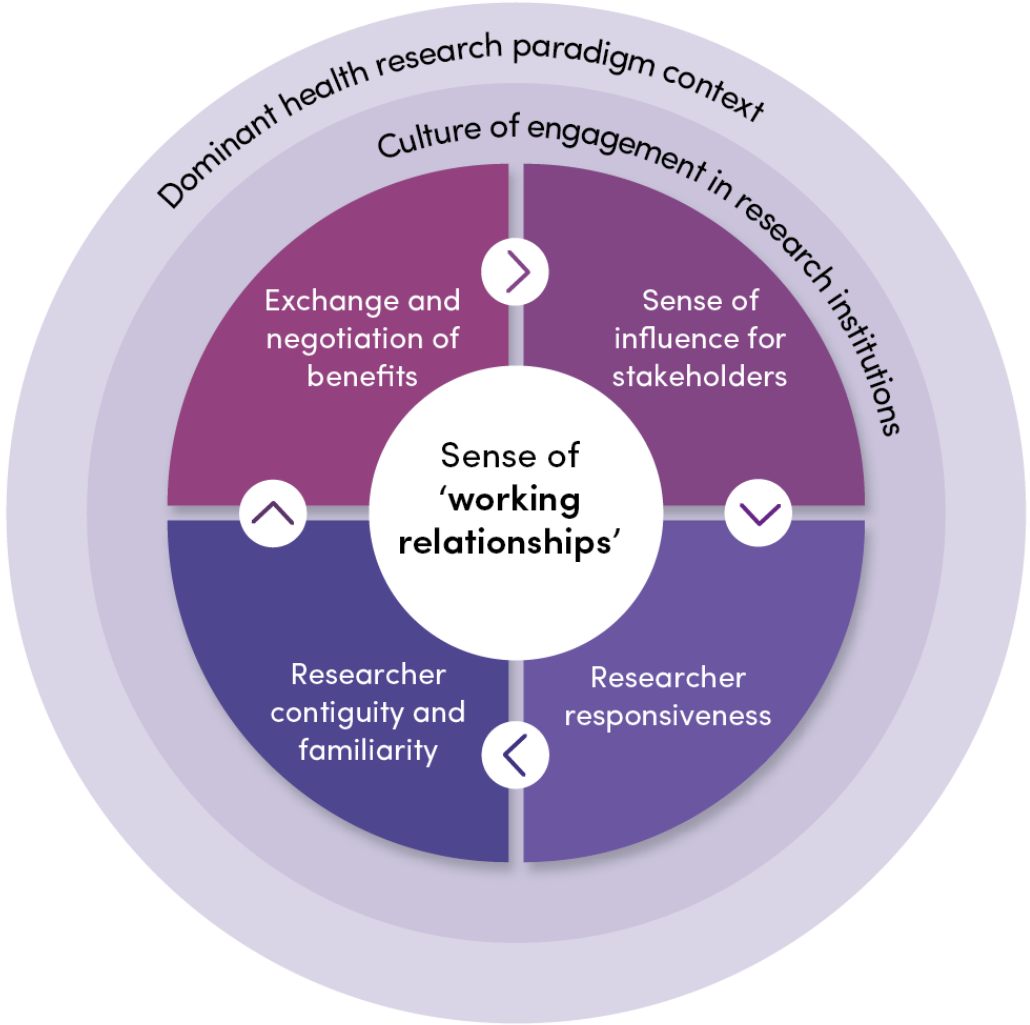
Summary

Background Potentially untreatable *Plasmodium falciparum* malaria threatens the Greater Mekong subregion. A previous series of pilot projects in Myanmar, Laos, Cambodia, and Vietnam suggested that mass drug administration was safe, and when added to provision of early diagnosis and treatment, could reduce the reservoir of *P falciparum* and interrupts transmission. We examined the effects of a scaled-up programme of this strategy in four townships of eastern Myanmar on the incidence of *P falciparum* malaria.

Methods The programme was implemented in the four townships of Myawaddy, Kawkareik, Hlaingbwe, and Hpapun in Kayin state, Myanmar. Increased access to early diagnosis and treatment of malaria was provided to all villages through community-based malaria posts equipped with rapid diagnostic tests, and treatment with artemether–lumefantrine plus single low-dose primaquine. Villages were identified as malarial hotspots (operationally defined as >40% malaria, of which 20% was *P falciparum*) with surveys using ultrasensitive quantitative PCR either randomly or targeted at villages where the incidence of clinical cases of *P falciparum* malaria remained high (ie, >100 cases per 1000 individuals per year) despite a functioning malaria post. During each survey, a 2 mL sample of venous blood was obtained from randomly selected adults. Hotspots received targeted mass drug administration with dihydroartemisinin–piperaquine plus single-dose primaquine once per month for 3 consecutive months in addition to the malaria posts. The main outcome was the change in village incidence of clinical *P falciparum* malaria, quantified using a multivariate, generalised, additive multilevel model. Malaria prevalence was measured in the hotspots 12 months after mass drug administration.

Findings Between May 1, 2014, and April 30, 2017, 1222 malarial posts were opened, providing early diagnosis and treatment to an estimated 365 000 individuals. Incidence of *P falciparum* malaria decreased by 60 to 98% in the four townships. 272 prevalence surveys were undertaken and 69 hotspot villages were identified. By April 2017, 50 hotspots were treated with mass drug administration. Hotspot villages had a three times higher incidence of *P falciparum* at malarial posts than neighbouring villages (adjusted incidence rate ratio [IRR] 2·7, 95% CI 1·8–4·4). Early diagnosis and treatment was associated with a significant decrease in *P falciparum* incidence in hotspots (IRR 0·82, 95% CI 0·76–0·88 per quarter) and in other villages (0·75, 0·73–0·78 per quarter). Mass drug administration was associated with a five-times decrease in *P falciparum* incidence within hotspot villages (IRR 0·19, 95% CI 0·13–0·26). By April, 2017, 965 villages (79%) of 1222 corresponding to 194 village tracts were free from *P falciparum* malaria for at least 6 months. The prevalence of

Community engagement: “what works for whom under what circumstances?”



Wellcome Open Research
Wellcome Open Research 2022, 7:13 Last updated: 13 NOV 2024

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REVIEW

‘Working relationships’ across difference - a realist review of community engagement with malaria research

[version 1; peer review: 3 approved]

Robin Vincent[1,2], Bipin Adhikari[1,3], Claire Duddy[4], Emma Richardson[5], Geoff Wong[4], James Lavery[6,7], Sassy Molyneux[1,8], The REAL team: Mary Chambers, Phaik Yeong Cheah, Al Davies, Kate Gooding, Dorcas Kamuya, Vicki Marsh, Noni Mumba, Deborah Nyirenda, and Paulina Tindana.

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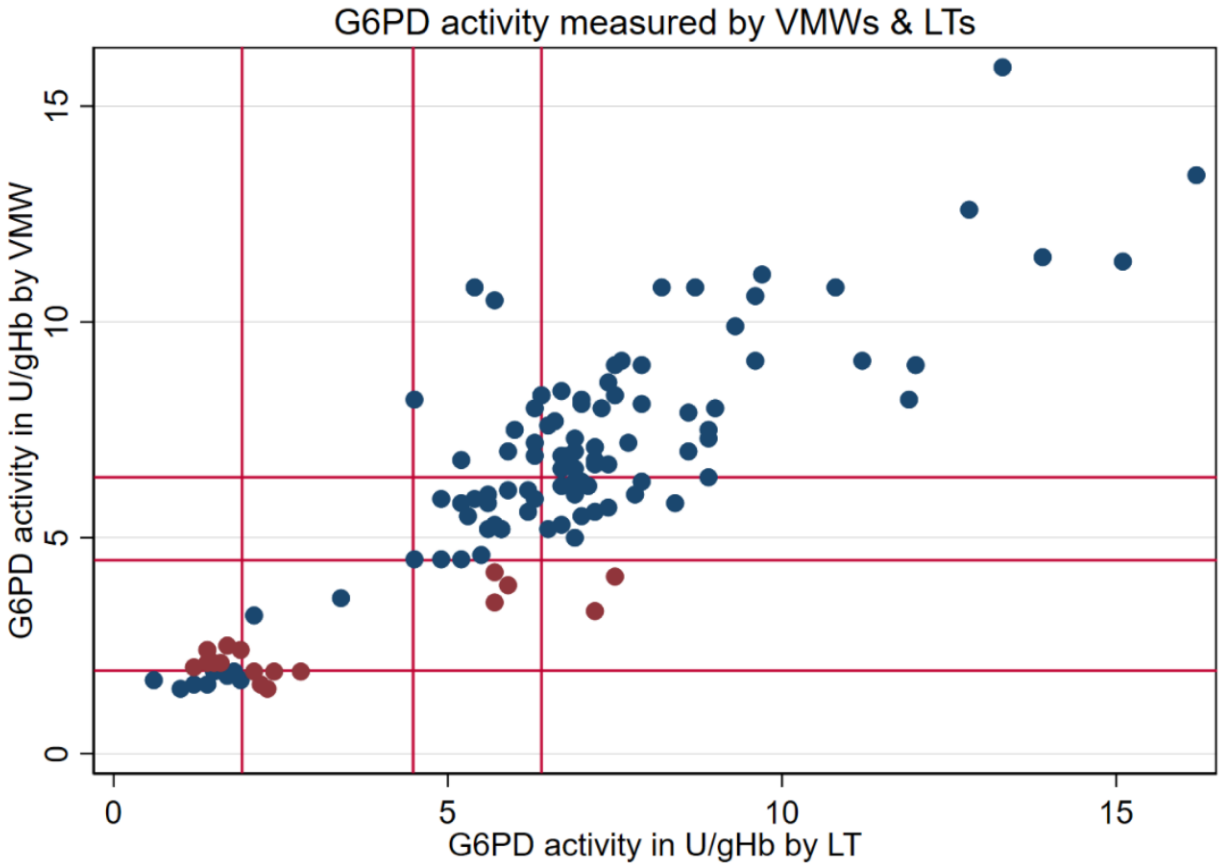
Can community-based health workers perform equally as lab trained personnel?



LT=Lab technician/lab trained personnel
VMW=Village Malaria Workers

Open Access Article

Glucose-6-Phosphate Dehydrogenase (G6PD) Measurement Using Biosensors by Community-Based Village Malaria Workers and Hospital Laboratory Staff in Cambodia: A Quantitative Study

by Bipin Adhikari [1,2,*], Rupam Tripura [1,2], Lek Dysoley [3], Thomas J. Peto [1,2], James J. Callery [1,2], Chhoeun Heng [1], Thy Vanda [1], Ou Simvieng [1], Sarah Cassidy-Seyoum [4], Kamala Thriemer [4], Arjen M. Dondorp [1,2], Benedikt Ley [4] and Lorenz von Seidlein [1,2]

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[3] C.N.M National Center for Parasitology, Entomology and Malaria Control, Phnom Penh, Cambodia
[4] Global and Tropical Health Division, Menzies School of Health Research and Charles Darwin University, Darwin, Australia
* Author to whom correspondence should be addressed.

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(This article belongs to the Special Issue ***Plasmodium vivax* and G6PD Deficiency: From Development of Novel Diagnostic Tools to Implementation into Routine Care**)

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What really worked in our operational research: Roll out Radical Cure for vivax malaria

- Stakeholder and authority engagement
- **Local human resources**
- Formative research
- Responsiveness
- Sharing control and leadership with the community

Health Policy

Village malaria workers for the community-based management of vivax malaria

Bipin Adhikari,[a,b,*] Rupam Tripura,[a,b] Thomas J. Peto,[a,b] James J. Callery,[a,b] Lorenz von Seidlein,[a,b] Lek Dysoley,[c,d] and Arjen M. Dondorp[a,b]

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[d]School of Public Health, National Institute of Public Health, Phnom Penh, Cambodia

Summary

In Cambodia, malaria cases are on a trajectory towards the goal of malaria elimination by 2025. Vivax malaria is difficult to eliminate because of hypnozoites that can cause relapse. Primaquine, an 8-aminoquinoline, clears hypnozoites but requires testing for glucose-6-phosphate dehydrogenase (G6PD) deficiency. Routine primaquine treatment of vivax malaria has recently been implemented in Cambodia in which Village Malaria Workers (VMWs) diagnose vivax malaria by rapid diagnostic test and refer patients to health centres for G6PD testing and further treatment. Patients are referred back to the VMWs for monitoring adverse symptoms and treatment adherence. This article explores how VMWs' roles might be optimized for the community-based management of vivax malaria. With sufficient training and supervision, the role of VMWs might be expanded to include G6PD testing, making referral to the health centre superfluous. Community-based management of vivax malaria could increase the coverage of radical cure and accelerate vivax malaria elimination.

Keywords: Malaria; Village malaria workers; Community health workers; Health system integration; Community and stakeholder engagement; Vivax malaria management

The Lancet Regional Health - Southeast Asia 2023;9: 100128

Published Online 13 December 2022

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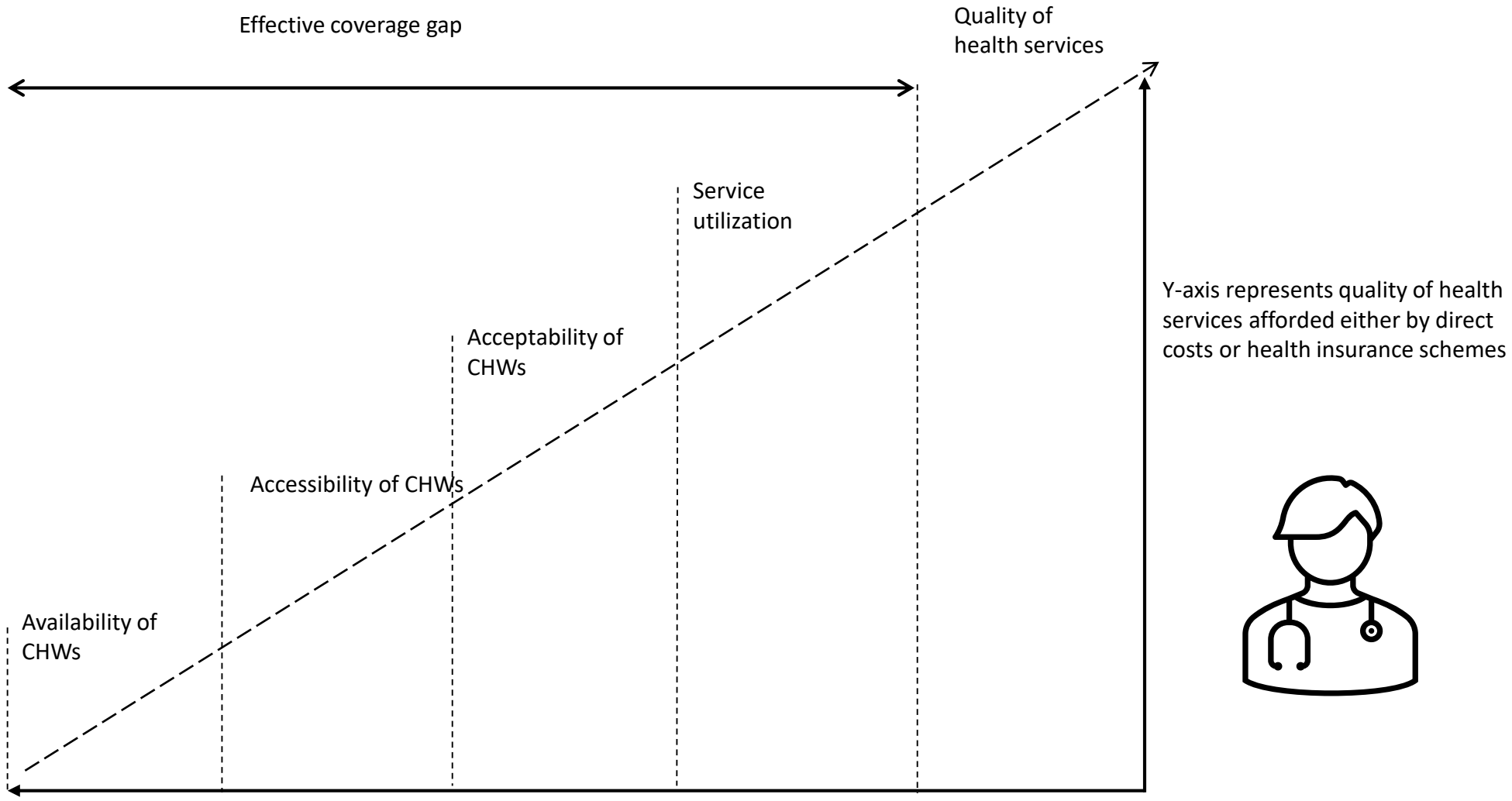
Effective coverage gap
Quality of health services
Service utilization
Acceptability of CHWs
Accessibility of CHWs
Availability of CHWs
Y-axis represents quality of health services afforded either by direct costs or health insurance schemes
X-axis represents the population, specifically the percentage of the population covered by health services

Stakeholder and authority engagement

Local human resources

Formative research

Responsiveness

Sharing control and leadership with the community

BMJ Global Health

Comparing the roles of community health workers for malaria control and elimination in Cambodia and Tanzania

Bipin Adhikari [1,2] Makhily Bayo,[3] Thomas J Peto [1,2] James J Callery,[1,2] Rupam Tripura,[1,2] Lek Dysoley,[4,5] Salum Mshamu,[2,6] Samwel Gesase,[7] Lorenz von Seidlein,[1,2] Arjen M Dondorp[1,2]

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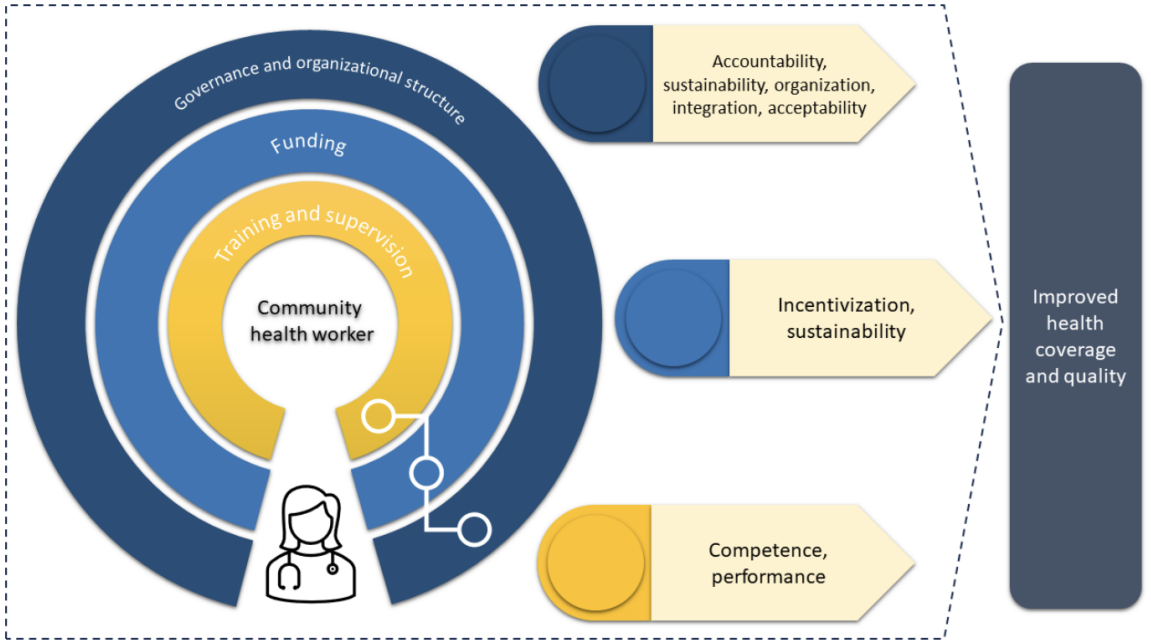

Figure 1 Essential health system components that affect community health workers' efficiency for improved healthcare services. Adapted from WHO's building blocks of health system.[46]

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Local human resources

Preventive Medicine Reports
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Review article

Reimagining primary health care: a historical and contemporary scoping review of community-based primary health care models and innovations

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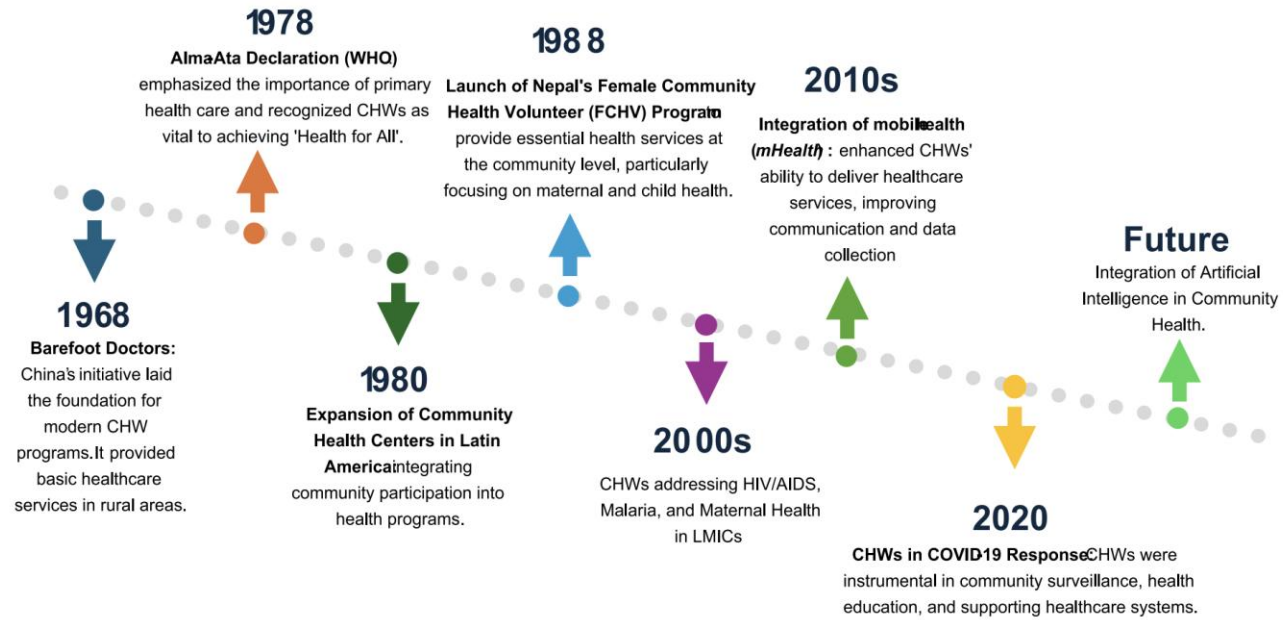

Fig. 2. Historical timeline showing the evolution of community health worker- led and community-based primary health care programs globally, from pre-20th century informal care models to contemporary integrated systems.

Community engagement for large novel housing intervention in rural Tanzania

Stakeholder and authority engagement

Local human resources

Formative research

Responsiveness

Sharing control and leadership with the community

Epistemic responsiveness

PLOS ONE

RESEARCH ARTICLE

Community responses to a novel house design: A qualitative study of "Star Homes" in Mtwara, southeastern Tanzania

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Abstract

Introduction

To evaluate the impact of a novel design "Star Home" on the incidence of malaria, respiratory tract infections and diarrheal diseases among children, randomly selected households in Mtwara, Tanzania were offered a free, new Star Home. Drawing on longitudinal qualitative research that accompanied the Star Homes study, this article describes the experiences of residents and the wider community of living with these buildings.

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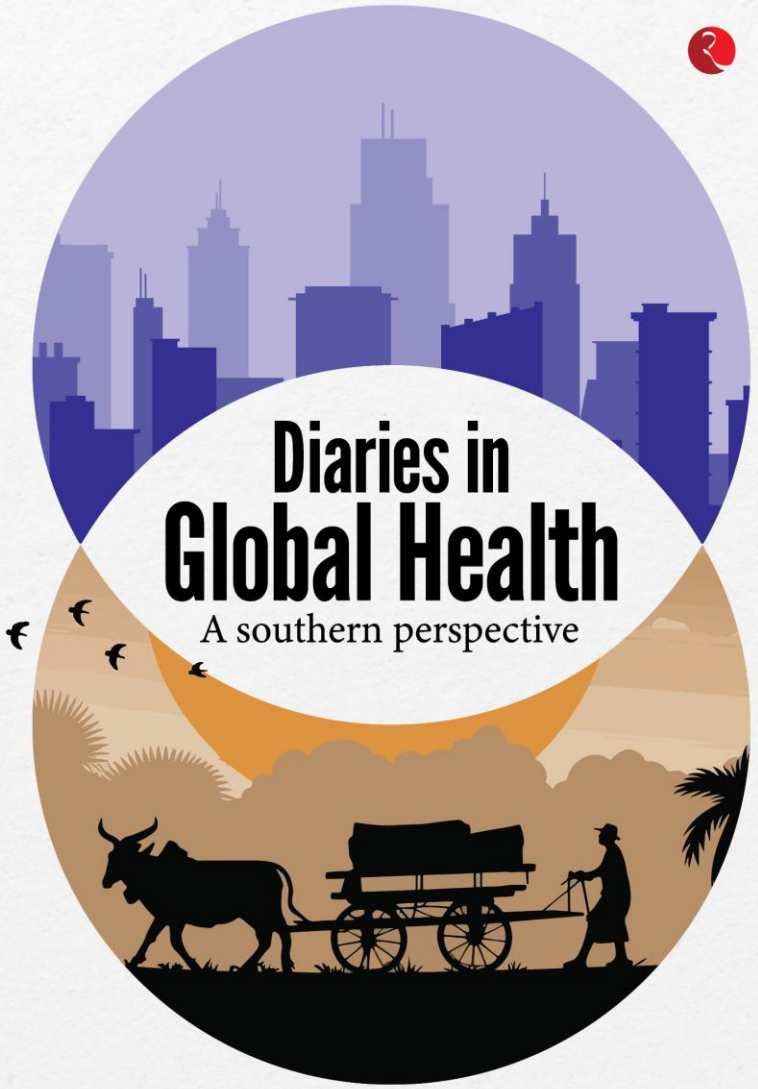
Rethinking community engagement in Global Health (interventions)?

- Beyond coverage and adherence
- Engagement as relational practice
- Ethics in everyday fieldwork
- Power, trust, and positionality
- Lived experience of global health—why should they matter?



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