

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Identifying Forms of Interventions Towards Cross Border Malaria in the Asia-Pacific Region: A Scoping Review Protocol
<b>AUTHORS</b>	Cintyamina, Utsamani; Murhandarwati, Elsa; Elyazar, Iqbal; Probandari, Ari; Ahmad, Riris

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Leavy, Justine Curtin University, School of Public Health
<b>REVIEW RETURNED</b>	03-Sep-2021

<b>GENERAL COMMENTS</b>	<p>General comments: Thank-you for the opportunity to review the paper, which has the potential to make a niche contribution to the Asia-Pacific literature base. Overall, it is a very simple description of each step of the PRISMA-ScR checklist. At times it is not consistent. I believe the paper would benefit from more detail in places. It would also be appropriate to have the manuscript proofread and edited by a native English writer as there are some areas of awkward expression and verb tense agreement that are not consistent. My main area of concern is you state you will conduct key informant interviews as part of Stage 6, and then indicate Ethics is not required. This should not be the case.</p> <p><b>Abstract</b> Introduction you write 'an ambitious strategy' is it actually a goal or a target for 2030? This needs to be clear and set by whom to give contest eg WHO?</p> <p><b>Methods and Analyses.</b> Do you need to cite Arksey and O'Malley here in an abstract? What is the Journal policy on citations in an Abstract? You could write this more succinctly e.g. Four electronic databases will be searched (PubMed.). At the moment, the use of the plural literatures does not make sense. I would suggest you remove the citation as you also use Levac et al's refined approach as part of the methods.</p> <p><b>Ethics and Dissemination:</b> I suggest you re-order the information to align with the heading and then it is more logical. Here you say no data collection will be primary however, Stage 6 outlines interviews.</p> <p><b>Strengths and Limitations</b> I do not believe a scoping review is 'novel'; they are routinely appearing in the literature. I would remove that from the first dot point. In addition, you are not searching any grey literature, which makes a scoping review different from a narrative review so I am unsure of any 'novel' contribution. I am unsure why the time filter is a limitation. Maybe it will become clearer in the full paper.</p> <p><b>Introduction</b></p>
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	<p>Page 5, line 58 can I suggest you change the opening sentence to Malaria may be a fatal disease – as it does not always end in death? Can you describe what you mean when you say ‘leftover countries’ and give an example.</p> <p>Line 66 - I am not sure what global plan you are referring to – you need to state specifically the plan both here and in the Abstract to give the context for the global reader. Is it the GMAP or something else?</p> <p>Can you describe in the Introduction what is included in cross border interventions so the reader gets the sense of the specific malaria control activities/strategies this will review will encompass?</p> <p>Line 79 please write out WHO in full the first time it is used, then subsequently abbreviate.</p> <p>Line 88 -89 awkward sentence, can you check that a word is not missing</p> <p>Suggest remove the sentence line 97 page 5 “The result of this would reveal...” it is past tense, and a protocol is about proposed future work.</p> <p><b>Methods and Analysis</b></p> <p>Ideally, provide more detail so the reader gets an exact sense of what you will be doing, versus a general statement. See comments below</p> <p>Stage one: Objectives in the PRISMA ScR checklist states “provide an explicit statement of the questions and objectives being addressed” this is not evident in your paper. A description of how you will go about it is as a research group is not enough. You need to state “The objective of this review is to map the available evidence of cross border interventions to prevent malaria among Asia-Pacific regions for example...”xxxxxxx</p> <p>Stage 2: one of the points of difference for a scoping review is the inclusion of grey literature, this not addressed? You are excluding material that is deemed ‘not rigorous’ page 7, line 147-148 however the remit of a scoping review is to include grey and unpublished literature – what is the rationale for this as I believe there may be reports from global agencies eg WHO or UNICEF that you may not capture, but are important?</p> <p>Remove ‘st’ from June 30st. Why is this time frame a limitation? And why you chose this time-line might be worth including here?</p> <p>Line 137, page note tense change to ‘are used’ in all databases should be future tense.</p> <p>Stage 4: please review the second sentence line 164 page 7, “As been agreed by all researchers, the heading of data extraction data will include at least the following:...” it lacks clarity. Can you link to the PRISMA-ScR checklist here for the charting and presenting of your results? It may make the description more clear.</p> <p>Stage 5: can you briefly outline the WHO framework here and provide a rationale as to why this was framework chosen?</p> <p>Stage 6: see comments above if you conduct interviews, how will they be selected and invited? and how many do you anticipate to validate or explore further your review findings. This will need Ethics Approval if you plan to publish the results with the review.</p> <p><b>Dissemination and Ethics</b></p> <p>As many of the agencies who would use this type of information in the Asia-Pacific may have limited access to peer reviewed journals and conferences, will there be any other channels of dissemination? E.g. a lay summary?</p> <p>Page 8 Stage 6 you mention consultation with stakeholders, experts, and key informants will be undertaken. However, on page, nine you state only secondary data analysis will be undertaken and Ethics is not required. If you are conducting</p>
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	<p>interviews, you will require Ethics Approval to publish the findings. Can the authors please review?</p> <p>General comments</p> <p>I am not sure what Figure 1 adds to the paper, consider deleting.</p> <p>Page four – is this hard-to-reach populations i.e. the plural?</p> <p>Might be worthwhile having a native English writer review the manuscript prior to publication.</p> <p>All the best with the publication.</p>
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<b>REVIEWER</b>	Zirimenya , Ludoviko MRC/UVRI and LSHTM Uganda Research Unit, Immunomodulation and Vaccines Programme
<b>REVIEW RETURNED</b>	28-Sep-2021

<b>GENERAL COMMENTS</b>	<p>Please note my comments below:</p> <ul style="list-style-type: none"> <li>• In the abstract under the methods and analysis section, it should be mentioned that this review will comply with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews' guidelines.</li> <li>• Under the protocol design more detailed description is lacking e.g. stage 1: what question (s) will the scoping review seek to answer? This is mentioned in the purpose and objectives sections but not under this sub-section. Are they seeking to generate more research questions? If yes, these should have been agreed upon and mentioned as well in this section.</li> <li>• It is good that the team has agreed on how the search will be done. Can the authors as well include a proposed search strategy that will be used for at least one of the databases?</li> <li>• Stage three: How will the steps in this stage be summarised? No mention is made that this information will be presented in a Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow diagram. This should be done.</li> <li>• Stage four: it is noted that two independent reviews will extract the data, in situations where there are differing opinions, how will this be addressed? Will investigators be contacted to obtain and confirm data if required? These details are lacking.</li> <li>• Stage 5: it is noted that quantitative data will be summarised, how will this be done? Will descriptive statistics be used? Will a meta-analysis be done? Will the quality of evidence of included studies be assessed? These details are lacking. How will qualitative data be summarised, the authors refer us to the WHO framework for malaria elimination but how exactly will it be done? How will it be done specifically? Will it be reported by interventions?</li> <li>• Ethics: it is noted that none will be required but as step 6 consultations with stakeholders, experts, and key informants will be done, ethical approval exemption should be sought from a local IRB.</li> <li>• Strengths and limitations: These are not clear. E.g. the first point is neither strength nor weakness, unless when it is intended to bring to the forefront the gaps that exist in this area. Please rephrase it better. One other strength is the compliance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews. Another limitation, if meta-analysis is not planned, this will be one.</li> </ul>
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<b>REVIEWER</b>	Tholandi, Maya JHPIEGO
<b>REVIEW RETURNED</b>	30-Sep-2021

<b>GENERAL COMMENTS</b>	<p>*The reference and conclusions noted in the background need to be updated and revised. Malaria contributes to substantive morbidity and mortality globally, but it is not a fatal disease as described in the first sentence. I would revise the opening paragraph to reflect this. Also, as the scoping review focuses on Asia Pacific - consider highlighting the burden of malaria in that region. And finally, there is variation across Asian countries in their surveillance approaches. In countries such as Thailand - the use of the 1-3-7 approach gives them a high degree of confidence in the number of cases which is not consistent with your statement that, "the malaria burden is highly under-diagnosed." It might be helpful if you narrow your scoping review to specific countries or that you attribute statements to relevant countries.</p> <p>*On line 113, the authors note that, "Quality appraisal of studies will not be conducted as this review..." It would seem that some QA check would be important to ensure that interventions included met a basic threshold of quality.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer 1:

1. Overall, it is a very simple description of each step of the PRISMA-ScR checklist. At times it is not consistent. I believe the paper would benefit from more detail in places. It would also be appropriate to have the manuscript proofread and edited by a native English writer as there are some areas of awkward expression and verb tense agreement that are not consistent. My main area of concern is you state you will conduct key informant interviews as part of Stage 6, and then indicate Ethics is not required. This should not be the case.

Thank you for your observation. We agree with your opinion and put the ethical approval from local IRB in the abstract and 'ethics and dissemination'.

We add this point on page 9, lines 198-200.

#### Ethics and Dissemination

This scoping review has received ethical approval from the Ethical Committee from Faculty Medicine, Public Health, and Nursing, Universitas Gadjah Mada (KE/0873/08/2021), as part of World Class Research – Malaria Cross Border study.

#### 2. Abstract

Introduction you write 'an ambitious strategy' is it actually a goal or a target for 2030? This needs to be clear and set by whom to give context eg WHO?

We apologize if this statement was not clear. The 'ambitious strategy' refers to the WHO target for malaria elimination in 2030. We thought that even though the malaria control program has been massively succeeded, considering at least 20 countries and 35 countries targeted to eliminate malaria in 2025 and 2030 sequentially, we were afraid that the 2030 elimination target would be hard to achieve.

On page 2, line 28, we revised the sentence as following:

An ambitious epidemiology strategy has been set by World Health Organization, targeting malaria elimination for at least 35 countries in 2030.

3. Methods and Analyses. Do you need to cite Arksey and O'Malley here in an abstract? What is the Journal policy on citations in an Abstract? You could write this more succinctly e.g. Four electronic databases will be searched (PubMed..). At the moment, the use of the plural literatures does not make sense. I would suggest you remove the citation as you also use Levac et al's refined approach as part of the methods.

Thank you for your suggestions. We have revised the Arksey and O'Malley citation in the abstract and written the use of 4 databases. Please see page 2, lines 33-36.

This scoping review will search literature from four electronic databases (PubMed, ScienceDirect, EBSCOhost, and ProQuest) using the time limit in the last 10 years. Two independent reviewers will screen all titles and abstracts during the second stage. Study characteristics will be recorded; qualitative data will be extracted and evaluated, while quantitative data will be extracted and summarized.

4. Ethics and Dissemination: I suggest you re-order the information to align with the heading and then it is more logical. Here you say no data collection will be primary however, Stage 6 outlines interviews.

Thank you for the comment. We have revised the order of ethics and dissemination section and added information of ethical approval from the local IRB. Please see page 9, lines 198-201.

#### Ethics and Dissemination

This scoping review has received ethical approval from the Ethical Committee from Faculty Medicine, Public Health, and Nursing, Universitas Gadjah Mada (KE/0873/08/2021), as part of World Class Research – Malaria Cross Border. Furthermore, results will be disseminated through peer-reviewed publication and conferences, such as APMEN or APLMA meetings.

#### 5. Strengths and Limitations

I do not believe a scoping review is 'novel'; they are routinely appearing in the literature. I would remove that from the first dot point. In addition, you are not searching any grey literature, which makes a scoping review different from a narrative review so I am unsure of any 'novel' contribution. I am unsure why the time filter is a limitation. Maybe it will become clearer in the full paper.

Thank you for your observations. We agree with your "novelty" comment, and to make it clearer, we have changed it to "first comprehensive scoping review" related to malaria intervention or activity in cross border setting. Thus, we believe our review is broader and more up-to-date than the previous report (1).

Please see page 3 lines 50-51.

This study is a first comprehensive scoping review to understand malaria interventions related to malaria elimination efforts in cross border settings in the Asia-Pacific region.

#### 6. Introduction

Page 5, line 58 can I suggest you change the opening sentence to Malaria may be a fatal disease – as it does not always end in death? Can you describe what you mean when you say 'leftover countries' and give an example.

Thank you for your suggestion. We have revised 'malaria is a fatal disease' to 'malaria is a public health burden'. (Please see Page 3, lines 59-60)

Malaria is a public health burden caused by the Plasmodium parasite, transmitted from person to person by the Anopheles mosquito as a vector.

Also, please apologize for the lack of clarity on 'leftover countries'. We refer the 'leftover countries' to other endemic malaria countries outside the African region that have not achieved the elimination target yet. To avoid misperception, we deleted the 'leftover countries' and changed it to: (Please see lines 65-68)

Some countries in Asia Pacific have low-intensity transmission, and have specific challenges that should be overcome, including lack of surveillance (2–4), dominance of *P. vivax* (5), starting to find resistance to artemisinin drugs and insecticides, diversity of malaria vectors, and having hard-to-reach populations (5–7), and cross border malaria problems (8).

7. Line 66 - I am not sure what global plan you are referring to – you need to state specifically the plan both here and in the Abstract to give the context for the global reader. Is it the GMAP or something else?

We apologize for the lack of clarity. The 'global plan' referred to global strategic planning by WHO. We will ensure this word consistency throughout the article. However, after authors discussion, we agreed to delete the sentence.

8. Can you describe in the Introduction what is included in cross border interventions so the reader gets the sense of the specific malaria control activities/strategies this will review will encompass?

Thank you for the comment. We have added some cross border activities suggested by the WHO framework. Please see page 4, lines 74-77

There are three main pillars from the WHO strategic plan, such as (i) Maximize access to malaria interventions in border areas (within national boundaries), (ii) Maximize malaria surveillance and response as well as M&E in border areas, and (iii) Maximize cross-border coordination mechanisms that provide an enabling environment (6).

9. Line 79 please write out WHO in full the first time it is used, then subsequently abbreviate.

Thank you for your observation. We have revised as advised. Kindly check page 3, lines 71-74.

As emphasized by the World Health Organization (WHO) in their strategic plan, there is an urgency to collaborate in accelerating elimination efforts by paying attention to prevention and treatment management and the importance of surveillance (10).

10. Line 88 -89 awkward sentence, can you check that a word is not missing

Thank you for your observation. We have revised as advised. Kindly check page 4, lines 86-87.

Meanwhile, the Global Fund is more focused on providing and leveraging funding to support malaria elimination efforts (14,15).

11. Suggest remove the sentence line 97 page 5 “The result of this would reveal...” it is past tense, and a protocol is about proposed future work.

Thank you for your keen observation. We revised the sentence as follow:  
(Please see page 5, lines 96-97).

Therefore, we aim to identify and summarize existing evidence on any interventions related to malaria elimination efforts in cross border settings.

12. Methods and Analysis

Ideally, provide more detail so the reader gets an exact sense of what you will be doing, versus a general statement. See comments below

Stage one: Objectives in the PRISMA ScR checklist states “provide an explicit statement of the questions and objectives being addressed” this is not evident in your paper. A description of how you will go about it as a research group is not enough. You need to state “The objective of this review is to map the available evidence of cross border interventions to prevent malaria among Asia-Pacific regions for example....”xxxxxxx

Thank you for your suggestion. We have paraphrased the sentence as follow:  
Please see page 5, lines 96-97.

Therefore, we aim to identify and summarize existing evidence on any interventions related to malaria elimination efforts in cross border settings among the Asia-Pacific regions.

13. Stage 2: one of the points of difference for a scoping review is the inclusion of grey literature, this not addressed? You are excluding material that is deemed ‘not rigorous’ page 7, line 147-148 however the remit of a scoping review is to include grey and unpublished literature – what is the rationale for this as I believe there may be reports from global agencies eg WHO or UNICEF that you may not capture, but are important?

Thank you for your keen observation. We agree that grey literature is essential in scoping review. Therefore, we have added grey literature as inclusion criteria and deleted the ‘not rigorous articles’ from the exclusion criteria. The grey literature will be searched from organization or institution websites supporting malaria elimination, such as WHO, APMEN, APLMA reports.

For grey literatures, we will search from organization or institution websites supporting malaria elimination, such as WHO, APMEN, APLMA reports. (Page 6 line 125-127)

The following eligibility criteria will be used to guide the search and reviewing published articles and grey literature: (i) study location in Asia-Pacific, (ii) countries with malaria nationwide elimination program (iii) data collection in the last ten years (from January 1st 2010), (iv) articles written in English. (Page 6 line 137-140)

14. Remove 'st' from June 30st. Why is this time frame a limitation? And why you chose this time-line might be worth including here?

Thank you for your keen observation. Previously, we used 30 June 2021 as time frame adjusting the completion of the initial draft. But then we have internal discussion and consider your observation about the time frame limitation. We think that the time limit can be extended to Oct 31st 2021, prior to resubmission of protocol manuscript.

Please see page 6, lines 137- 140:

The following eligibility criteria will be used to guide the search and reviewing published articles and grey literature: (i) study location in Asia-Pacific region, (ii) countries with malaria nationwide elimination program (iii) data collection in the last ten years (from January 1st 2010 to October 31st 2021), and (iv) articles written in English.

15. Line 137, page note tense change to 'are used' in all databases should be future tense. Thank you for your observation. We have revised the sentence to future tense on page 6, lines 131-132.

The filtering methods of ranged date, English, and non-review articles will be used in all databases.

16. Stage 4: please review the second sentence line 164 page 7, "As been agreed by all researchers, the heading of data extraction data will include at least the following:..." it lacks clarity. Can you link to the PRISMA-ScR checklist here for the charting and presenting of your results? It may make the description more clear.

Thank you for your comment, and please apologize for the lack of clarity. For data extraction, we will use the WHO framework as guidelines to define variables and assumptions. And in showing the result, we will present the characteristic for which data were charted and provide citations as recommended by the PRISMA-ScR checklist, as well as using this checklist in overall stages. Please see page 5, lines 107-108

We will follow the Preferred Reporting Items for Systematic reviews and Meta-Analyses: extension for Scoping Review (PRISMA-ScR) checklist in all stages (20).

17. Stage 5: can you briefly outline the WHO framework here and provide a rationale as to why this was framework chosen?

Thank you for your comment. We have added the rationale of the WHO framework. Please see page 8, lines 176-177.

The WHO/global framework is the most familiar and is a global consensus, which will make it easy for global audiences to understand and use it in their context.

18. Stage 6: see comments above if you conduct interviews, how will they be selected and invited? and how many do you anticipate to validate or explore further your review findings. This will need Ethics Approval if you plan to publish the results with the review.

Thank you for your comment. We will select the participants by coordinating it first with National Malaria Program (NMP). The initial estimation is we will invite representatives of WHO, APMEN, ALPMA, but the list may grow accordingly. Please see page 9, lines 190-192.



The initial potential stakeholders are obtained after a discussion with the National Malaria Program (NMP). Additional potential participants are possible to recruit with snowball sampling technique.

19. Dissemination and Ethics

As many of the agencies who would use this type of information in the Asia-Pacific may have limited access to peer reviewed journals and conferences, will there be any other channels of dissemination? E.g. a lay summary?

Thank you for your keen observation. We are considering your suggestion and might share the result with APMEN or APLMA.

Please see page 9, lines 200-201.

Results will be disseminated through a peer-reviewed publication and/or conferences, for example in APMEN or APLMA' meeting.

20. Page 8 Stage 6 you mention consultation with stakeholders, experts, and key informants will be undertaken. However, on page, nine you state only secondary data analysis will be undertaken and Ethics is not required. If you are conducting interviews, you will require Ethics Approval to publish the findings. Can the authors please review?

Thank you for the comment. We included the additional information regarding this step on page 9, lines 198-200.

This scoping review has received ethical approval from the Ethical Committee from Faculty Medicine, Public Health, and Nursing, Universitas Gadjah Mada (KE/0873/08/2021), as part of World Class Research – Malaria Cross Border study.

21. General comments

I am not sure what Figure 1 adds to the paper, consider deleting.  
We agree to delete Figure 1.

22. Page four – is this hard-to-reach populations i.e. the plural?

Thank you for your question. The hard-to-reach population means any population sub-group challenging to access due to physical and geographical location limitations. In this paper, the hard-to-reach population refers to the mobile population, refugee, migrant workers, forest or mining workers, and indigenous population.

In manuscript draft, we will just write it as 'hard-to-reach populations' (page 3, line 67)

Some countries in Asia Pacific has low-intensity transmission, and has specific challenges that should be overcome, including lack of surveillance (2–4), dominance of *P. vivax* (5), starting to find resistance to artemisinin drugs and insecticides, diversity of malaria vectors, and having hard-to-reach populations (5–7), and cross border malaria problems (8).

23. Might be worthwhile having a native English writer review the manuscript prior to publication  
Thank you for this suggestion. The manuscript is now has been reviewed by a professional proofreader provided by our institution.

Reviewer: 2

1. In the abstract under the methods and analysis section, it should be mentioned that this review will comply with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews' guidelines.

Thank you for your suggestion. We have revised as advised on page 5, lines 107-108.

We will follow the Preferred Reporting Items for Systematic reviews and Meta-Analyses: extension for Scoping Review (PRISMA-ScR) checklist in all stages (20).

2. Under the protocol design more detailed description is lacking e.g. stage 1: what question (s) will the scoping review seek to answer? This is mentioned in the purpose and objectives sections but not under this sub-section. Are they seeking to generate more research questions? If yes, these should have been agreed upon and mentioned as well in this section.

Thank you for your keen observation. The questions that this scoping review seek are presented in the objectives section. We move it to the stage 1 section.

Please see page 5, lines 113-114

The objective of this review is to identify the most successful interventions or innovations in accelerating malaria elimination goals in a cross-border setting among Asia-Pacific regions.

3. It is good that the team has agreed on how the search will be done. Can the authors as well include a proposed search strategy that will be used for at least one of the databases?

Thank you for your question. We added an example of the proposed search strategy in the stage two section.

Please see page 6, lines 132-135:

For example, in using Pubmed database, the search strategy will be developed to MeSH terms. Keyword that will be search are malaria\* title/abstract, cross\$border OR border\* title/abstract. Then we will use "English" as language filter and "1 Jan 2010" as initial time filter.

4. Stage three: How will the steps in this stage be ummarized? No mention is made that this information will be presented in a Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow diagram. This should be done.

Thank you for your keen observation. We have mentioned the PRISMA-ScR flowchart to summarized the data in stage five: collating, summarizing, and reporting results.

Please see page 8, line 174:

We will use PRISMA-ScR for summarizing the data.

5. Stage four: it is noted that two independent reviews will extract the data, in situations where there are differing opinions, how will this be addressed? Will investigators be contacted to obtain and confirm data if required? These details are lacking.

Thank you for your question. The data will be extracted by UC and AG, and in a situation when there is a differing opinion, IE will be the third reviewer.

On page 8, lines 169-170, we wrote this point as following:

When there is a differing opinion, one author will be the third reviewer.

6. Stage 5: it is noted that quantitative data will be summarised, how will this be done? Will descriptive statistics be used? Will a meta-analysis be done? Will the quality of evidence of included studies be assessed? These details are lacking. How will qualitative data be summarised, the authors refer us to the WHO framework for malaria elimination but how exactly will it be done? How will it be done specifically? Will it be reported by interventions?

Thank you for your question, and please apologize for the lack of clarity. We will use descriptive statistics in quantitative analysis, for example, prevalence discrepancies regarding intervention. Regarding qualitative analysis, we will use the pillars in the WHO framework as a thematic reference, and any intervention found will be grouped and summarized according to these pillars. Moreover, we also explained how the interventions was conducted based on each pillar.

Explanation on the above detailed is presented in page 8, lines 177-180

We will use the pillars in the WHO framework as reference, and any intervention found will be grouped and summarized according to these pillars. Meanwhile, the quantitative data will be briefly summarized with descriptive statistics.

7. Ethics: it is noted that none will be required but as step 6 consultations with stakeholders, experts, and key informants will be done, ethical approval exemption should be sought from a local IRB.

Thank you for your keen observation. We agree with your opinion and put the ethical approval from the local IRB.

We add this point on page 9, lines 198-200.

This scoping review has received ethical approval from the Ethical Committee from Faculty Medicine, Public Health, and Nursing, Universitas Gadjah Mada (KE/0873/08/2021), as part of World Class Research – Malaria Cross Border study.

8. Strengths and limitations: These are not clear. E.g. the first point is neither strength nor weakness unless it is intended to bring to the forefront the gaps that exist in this area. Please rephrase it better. One other strength is the compliance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews. Another limitation, if meta-analysis is not planned, this will be one.

Thank you for your suggestions. We have revised the sentences and added strengths and limitations. Please see page 3, lines 49-55.

Strengths and limitations:

- The study is a first comprehensive scoping review to understand malaria interventions related to malaria elimination efforts in cross border settings in the Asia-Pacific.
- Stakeholders will be engaged throughout the review process.
- This scoping review is limited to the land border, according to its primary definition
- Only the latest interventions or activities related to malaria elimination will be identified (literature searching not to include publications before 2010).

Reviewer 3:

1. \*The reference and conclusions noted in the background need to be updated and revised. Malaria contributes to substantive morbidity and mortality globally, but it is not a fatal disease as described in the first sentence. I would revise the opening paragraph to reflect this. Also, as the scoping review focuses on Asia Pacific – consider highlighting the burden of malaria in that region. And finally, there is variation across Asian countries in their surveillance approaches. In countries such as Thailand – the use of the 1-3-7 approach gives them a high degree of confidence in the number of cases which is not consistent with your statement that, “the malaria burden is highly under-diagnosed.” It might be helpful if you narrow your scoping review to specific countries or that you attribute statements to relevant countries.

Thank you for your keen observation. We agree with your suggestion and revised the sentence of ‘fatal diseases’ to ‘malaria as public health burden’. Regarding the variance of surveillance approach, we also agree that only some countries have a low-intensity transmission, so we changed our statements to:

Please see page 3, line 65.

Some countries in Asia Pacific have low-intensity transmission ...

2. Malaria burden is highly under diagnosed – change this sentence – in some countries when surveillance is lacking it is potential that malaria burden is under diagnosed

Thank you for your suggestion. Continuing your first suggestion, we delete the sentence and changed it as follow (Kindly see page 3, lines 65-68):

Some countries in Asia Pacific have low-intensity transmission ...

3. \*On line 113, the authors note that, "Quality appraisal of studies will not be conducted as this review..." It would seem that some QA check would be important to ensure that interventions included met a basic threshold of quality.

Thank you for your keen observation. We considered your suggestions and will use the quality appraisal from Joanna Briggs.

We add this point in page 5, lines 108-109.

Quality appraisal of studies will be conducted by guidance from Joanna Briggs website.

Reviewer: 1

Competing interests of Reviewer: No competing interests

Reviewer: 2

Competing interests of Reviewer: None

Reviewer: 3

Competing interests of Reviewer: none

## VERSION 2 – REVIEW

<b>REVIEWER</b>	Leavy, Justine Curtin University, School of Public Health
<b>REVIEW RETURNED</b>	23-Nov-2021

<b>GENERAL COMMENTS</b>	<p>General comments: Thank-you for the opportunity to review the paper, the authors have diligently addressed my previous comments. I still believe it is appropriate to have the manuscript proofread and edited by a native English speaker/writer prior to publication. There are still areas that lack clarity and or the details I would expect in a protocol. Please see below.</p> <p><b>Abstract</b> Ethics and Dissemination: Remove the last sentence "The data used will be from publicly available secondary sources". This should be part of the methods.</p> <p><b>Strengths and Limitations</b> Rewrite first dot point to be 'The study is believed to be the first scoping review to understand malaria interventions related to malaria elimination efforts in cross border settings in the Asia-Pacific region". Consider removing the word comprehensive the PRISMA ScR check list indicates it is comprehensive.</p> <p><b>Introduction</b> Paragraph 2 lines 65 – 68 can this content be integrated into the opening paragraph or the next paragraph as this seems a bit disjointed to be a one sentence paragraph located here? Line 76 what is M&amp;E - the reader needs the full description - management and elimination? needs to be written out in full. Line 96 the aim includes 'any' intervention I believe this is too broad and needs to be refined maybe public health interventions if the focus is on the public health burden (para 1). Any intervention could range from medical, environmental through to political - is that what you aim to capture? Maybe remove the word 'any' as the strategies described do not seem to encompass advocacy and/or policy.</p> <p><b>Methods and Analysis</b> Line 112 – should this be 'was' developed? See comments above re: refinement of the question to be more specific to public health is this clinical, individual, environmental and policy interventions for example? This still needs some criteria or refinement. Consider using a figure to outline what an intervention constitutes in this review.</p> <p><b>Stage two:</b> Some more details for inclusion criteria would be helpful still eg all primary studies, quantitative, qualitative and mixed methods included also details which may be included in grey literature eg project and program reports.</p> <p>Did the authors consider using a grey literature database such as Trove (Australian from memory) or Google Scholar keywords using citeorg*? TROVE is Australian but there must be other similar databases for the region you are interested in? Can you write out the acronyms APMEN, APLMA in the first instance? Please review throughout the manuscript. Tense still needs correcting line 133 eg 'Keywords that will be search are .....' re-write to be active and future tense eg., Keyword search terms will include xxxxxx</p> <p><b>Stage four</b> Line 151-153 "For studies that have multiple publications of the same outcomes reported, we will use the one with the newest</p>
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	<p>publication". What is the rationale for this decision? What if the papers are reporting on different outcomes you will not capture the full information on the full range of interventions? Please reconsider including all publications for one study?</p> <p>Line 167 'We will involve stakeholders to review the data extraction form'. Who are the stakeholders? What is their expertise, what is the rationale for this step? Will you then send it back to them after it has been revised following their review?</p> <p>Stage five</p> <p>If you are using the three WHO Pillars for classification of the studies then it will be a good idea to use these pillars in the extraction form/table. Is that possible??</p> <p>This section is quite confusing, I think the authors still need to write this section more clearly. If you can also use the three pillars to align with the data extraction table described above in the Intervention section eg MBS, LLINs? If they can be used as broad categories and then the specific strategy eg LLINs is allocated to a specific pillar, then you should use them as part of the data extraction to reduce any double handling.</p> <p>I am unsure what how the framework will be to used to code qualitative aspects in reports? "... all reports will be coded by the WHO framework (6)" what does the qualitative component refer to here?</p> <p>You need to describe how the data will be analysed and reported for the literature and the interviews. Is there qualitative data collection in terms of interviews (section 6) ? - yes that needs to be outlined more clearly how you will use and/or report (triangulate) those results (see below).</p> <p>Stage six</p> <p>As per above this section is still quite confusing. I need to understand if this is formative as it seems it might be or if it will add to the potential findings/ recommendations of the review. It needs to more clearly describe why, and how you will use this data to supplement the scoping review. See a sample below</p> <p>A consultation exercise will be conducted with relevant stakeholders from the community including x, x, and x. This stage aims to validate the findings of the scoping review and may also result in additional insights being included in the review and guide recommendations for future research. A purposive/snowballing approach will be taken to select participants for the consultation exercise. The purposive sampling method involves identifying a sample of participants that have characteristics appropriate for the study. This methodology enables researchers to consult with stakeholders who may be difficult to reach and who are likely to provide rich information (Bury et al 2020).</p> <p>Dissemination and Ethics</p> <p>My same comment applies as before - As many of the agencies who would use this type of information in the Asia-Pacific may have limited access to peer reviewed journals and conferences, will there be any other channels of dissemination? E.g. a lay summary?</p> <p>General comments</p> <p>More specific linking with the PRISMA ScR checklist is worthwhile in text.</p> <p>There is still some issues with the use of plural and tense eg literatures in place of literature.</p> <p>E.g. page x line 117-118 this sentence is awkward in expression 'Our team will decide to use the PCC approach as a second screening after all literature search is combined'.</p>
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	<p>Recommended to use a native English writer for review prior to publication.</p> <p>References</p> <p>Bury, K., Leavy, J. E., O'Connor, A., &amp; Jancey, J. (2020). Prevalence, prevention and treatment of saddle sores among female competitive cyclists: a scoping review protocol. <i>Methods and protocols</i>, 3(1), 4.</p>
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## VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Dr. Justine Leavy, Curtin University

Comments to the Author:

Please see attached comments for further action and consideration.

Reviewer: 1

Competing interests of Reviewer: No competing interests

Abstract

Ethics and Dissemination: Remove the last sentence “The data used will be from publicly available secondary sources”. This should be part of the methods.

Thank you for your feedback.

We have removed the last sentence in the ‘Ethics and Dissemination’ as advised and changed the statement accordingly.

Previously:

“Ethics and Dissemination

This scoping review has received ethical approval from the Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada. The results will be disseminated through peer-reviewed publications and conference presentations. The data used will be from publicly available secondary sources.”

(Page 2 line 40-42)

Revision:

“Ethics and Dissemination

This scoping review has received ethical approval from the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada. The results will be disseminated through peer-reviewed publications and conference presentations.”

(Page 2, line 39-42)

### Strengths and Limitations

Rewrite first dot point to be ‘The study is believed to be the first scoping review to understand malaria interventions related to malaria elimination efforts in cross border settings in the Asia-Pacific region’. Consider removing the word comprehensive the PRISMA ScR check list indicates it is comprehensive.

Thank you for your suggestions.

We deleted the word comprehensive and revised the statement accordingly.

Previously, the first dot point of strengths and limitations was written as:

‘The study is a first comprehensive scoping review to understand malaria interventions related to malaria elimination efforts in cross border settings in the Asia-Pacific region.’

(Page 3, line 50-51).

Revision:

‘This scoping review will be the first related to malaria cross border interventions or activities in the Asia-Pacific region’.

(Page 3, line 50-51)

### Introduction

Paragraph 2 lines 65 – 68 can this content be integrated into the opening paragraph or the next paragraph as this seems a bit disjointed to be a one sentence paragraph located here?

Thank you for your suggestions. We moved and integrated those lines into the first paragraph.

“Malaria is a public health burden caused by the Plasmodium parasite, which is transmitted from person to person by the Anopheles mosquito as a vector. This disease creates a significant health and socio-economic burden, with 3.7 billion people at risk of being infected with malaria (1). Globally, there were an estimated 229 million malaria cases and over 400 thousand deaths across 87 malaria-endemic countries in 2019, with the African region contributing for 94% of the global case burden (1). Some countries in the Asia- Pacific region have low-intensity transmission, and there are specific challenges that should be overcome, including lack of surveillance (2–4), dominance of *P. vivax* (5). Additionally, epidemiologists are starting to find resistance to artemisinin drugs and insecticides, and



diversity of malaria vectors, while identifying hard-to-reach populations (5–7), and cross border malaria problems (8)”

(Page 3, line 59-67)

Line 76 what is M&E - the reader needs the full description - management and elimination? needs to be written out in full.

Thank you for your observation.

M&E is monitoring and evaluation, and we revised it as advise.

“Maximize malaria surveillance and response, as well as monitoring and evaluation (M&E) in border areas.”

(Page 3, line 75-76)

Line 96 the aim includes ‘any’ intervention I believe this is too broad and needs to be refined maybe public health interventions if the focus is on the public health burden (para 1). Any intervention could range from medical, environmental through to political - is that what you aim to capture? Maybe remove the word ‘any’ as the strategies described do not seem to encompass advocacy and/or policy.

Many thanks for your comment. Regarding intervention, the focus will relate to public health activities or innovations related to malaria control effort, based on WHO framework for malaria elimination and pillars on malaria cross border collaboration. The interventions that will be included are as follows:

- Case finding, case detection, surveillance, treatment, community intervention, vector control,
- Multisector collaboration
- Advocacy and/or policy

To make it clear, we deleted the word ‘any’ from original sentence. Types and details of the interventions will be mentioned in methods section.

Previously

‘Therefore, we aim to identify and summarize existing evidence on any interventions related to malaria elimination efforts in cross border settings among the Asia-Pacific regions.’

(Page 5, line 96-97)

Revision

“Therefore, we aim to identify and summarize existing evidence on interventions related to malaria elimination efforts in cross border settings among the Asia-Pacific regions.”

(Page 5, line 96-97)

Methods and Analysis

Line 112 – should this be ‘was’ developed?

Thank you for your observation. Line 112 should be ‘was’, and we revised it in the main draft.

“Our research question was developed and refined through an iterative process and consultations held by the research team.”

(Page 5, line 113)

See comments above re: refinement of the question to be more specific to public health is this clinical, individual, environmental and policy interventions for example? This still needs some criteria or refinement. Consider using a figure to outline what an intervention constitutes in this review.

Thank you for your remarks. Continuing our responds on previous comments, the outline of interventions or activities that happens in cross border setting are presented in the Figure 1. Kindly see attachment below this document.

Stage two:

Some more details for inclusion criteria would be helpful still e.g all primary studies, quantitative, qualitative and mixed methods included also details which may be included in grey literature eg project and program reports.

Thank you for your suggestions. We added details on selected articles in inclusion criteria, for instance, (i) all primary studies, quantitative, qualitative and mixed method published articles, (ii) grey literatures such as reports of project and programs, government documents or documents from ministry websites from countries in Asia-Pacific region and documents from organizations related to malaria elimination efforts, such as UN agencies and APMEN-APLMA.

“The following eligibility criteria will be used to guide the search and reviewing published articles and grey literatures: (i) all primary studies, quantitative, qualitative and mixed method published articles, (ii) grey literatures such as reports of project and programs, government documents or documents from ministry websites from countries in the Asia-Pacific region and documents from organization related malaria elimination efforts, such as UN agencies and APMEN-APLMA, (iii) study location in the Asia-Pacific region, (iv) countries with malaria nationwide elimination program (v) data collection in the last ten years (from January 1st 2010 to October 31st 2021), and (vi) articles written in English.”

(Page 6, line 137-143)

Did the authors consider using a grey literature database such as Trove (Australian from memory) or Google Scholar keywords using citeorg\*? TROVE is Australian but there must be other similar databases for the region you are interested in?

Thank you for your questions. Our team will not use Trove or Google Scholar, but we will use reports of project and programs, government documents or documents from ministry websites from countries in Asia-Pacific region and documents from organization related malaria elimination efforts, such as APMEN-APLMA and UN agencies (WHO, UNDP, UNICEF).

“(ii) grey literatures such as reports of projects and programs, government documents or documents from ministry websites from countries in the Asia-Pacific region and documents from organization related malaria elimination efforts, such as UN agencies and APMEN-APLMA”

(Page 6, line 138-141)

Can you write out the acronyms APMEN, APLMA in the first instance? Please review throughout the manuscript.

Thank you for your comment. We wrote out the acronyms APMEN and APLMA on page 4, in the Introduction section.

“In the Asia-Pacific region, attention to malaria elimination efforts is promoted by a strategically united networking of the Asia-Pacific Malaria Elimination Network (APMEN), the Asia Pacific Leaders Malaria Alliance (APLMA), and the Global Fund to Fight AIDS, Tuberculosis and Malaria (The Global Fund) (12-14).

(Page 4, line 79-82)

Tense still needs correcting line 133 eg ‘Keywords that will be search are .....’ re-write to be active and future tense eg., Keyword search terms will include xxxxxx

Thank you for your observation. We have revised as advised.

“Keywords search terms will include malaria\* title/abstract, cross\$border OR border\* title/abstract. Then we will use “English” as the language filter “1 Jan 2010” and “31 Oct 2021” as the initial and final time filter.”

(Page 6, line 133-135)

#### Stage four

Line 151-153 “For studies that have multiple publications of the same outcomes reported, we will use the one with the newest publication”. What is the rationale for this decision? What if the papers are reporting on different outcomes you will not capture the full information on the full range of interventions? Please reconsider including all publications for one study?

Thank you for your comment. Earlier, we thought that if publications had same outcomes, it would be captured in the new publications. However, we agree with your remarks. We will include all publications for one study, as suggested.

“For studies with multiple publications, we will use all publications that have different outcomes.”

(Page 7, line 155-156)

Line 167 ‘We will involve stakeholders to review the data extraction form’. Who are the stakeholders? What is their expertise, what is the rationale for this step? Will you then send it back to them after it has been revised following their review?

Thank you for your questions. Stakeholders that will be involved in reviewing data extraction are those who are involve in malaria-cross border elimination efforts, such as expertise in surveillance, public health, program planning, etc. Those stakeholders include MoH, WHO, UNICEF, APMEN, and APLMA. After their feedback, the research team will deliberate and use it in the data extraction.

“We will involve stakeholders who are involved in malaria-cross border elimination efforts, such as expertise in surveillance, public health and program planning, to review the data extraction form. Those stakeholders include MoH, WHO, UNICEF, APMEN, and APLMA. After receiving their feedback, each team member will be independently charting the data from all included literature studies.

(Page 8, line 178-181)

#### Stage five

If you are using the three WHO Pillars for classification of the studies then it will be a good idea to use these pillars in the extraction form/table. Is that possible??

Thank you for your comment. It is possible to use the WHO pillars in the extraction form.

“These data extraction headings are adapted from the WHO pillars of cross border collaboration and the WHO framework of malaria elimination (10,21).”

(Page 8, line 173-174)

This section is quite confusing, I think the authors still need to write this section more clearly. If you can also use the three pillars to align with the data extraction table described above in the Intervention section eg MBS, LLINs? If they can be used as broad categories and then the specific strategy eg LLINs is allocated to a specific pillar, then you should use them as part of the data extraction to reduce any double handling.

Thank you for your remarks. We agree with it; we will use the modified WHO pillars of cross border collaboration (World Health Organization, 2018) as main variable in the data extraction, with following activities or interventions, adapting from WHO framework for malaria elimination (WHO/GMP, 2017), as subsection of each pillar. The classification will be:

- (i) Maximize access to malaria interventions in border areas (within national boundaries)
  - Quality assurance of malaria diagnosis, treatment, and prevention
    - o the use of Artemisinin Combination Therapy (ACT)s
  - Vector control
    - o Mass blood survey (MBS)
    - o Long-lasting insecticidal nets (LLINs)
    - o Indoor Residual Spray (IRS)
  - Equity in migrant, mobile population, and other vulnerable populations

- Community and civil society engagement
- Collaboration activities
- (ii) Maximize malaria surveillance and response as well as Monitoring and Evaluation (M&E) in border areas
  - Case- based surveillance system
  - Data sharing
  - Joint M&E
- (iii) Maximize cross border coordination mechanisms that provide an enabling environment
  - Strong regulation, policies, strategies, and collaboration
  - Joint capacity building and research implementation

“As agreed by all researchers, the heading of data extraction data will include at least the following: (1) author’s name; (2) publication date; (3) country and study location; (4) type of population; (5) study design; (6) aim of the study; (7) type of interventions such as (i) Quality assurance of malaria diagnosis, treatment, and prevention, (ii) vectors control (Mass blood survey (MBS), Long-lasting insecticidal nets (LLINs), Indoor Residual Spray (IRS)), (iii) equity in migrant, mobile population, and other vulnerable populations, (iv) community and civil society engagement, (v) collaboration activities the use of ACTs, intersectoral collaboration, (vi) case-based surveillance system, (vii) data sharing, (viii) joint M&E, (ix) regulation, policies, strategies, and collaboration, and (x) joint capacity building and research implementation (Figure 1); and (8) outcomes (e.g., malaria elimination status, prevalence/ incidence). These data extraction headings are adapted from the WHO pillars of cross border collaboration and the WHO framework for malaria elimination (WHO/GMP, 2017; World Health Organization, 2018).

(Page 7-8, line 164-174)

I am unsure what how the framework will be used to code qualitative aspects in reports? “.... all reports will be coded by the WHO framework (6)” what does the qualitative component refer to here?

Thank you for your questions and please apologize for lack of clarity. The qualitative component here refers to qualitative result from publications or grey literatures. The WHO framework of cross border collaboration includes: (1) prevent and/or reduce transmission and disease burden, with special emphasis on minimizing risk of importation of malaria cases; (2) prevent, and/or rapidly respond to, and control malaria epidemics; and (3) prevent re-establishment of malaria transmission

Those points will be the main qualitative codes, while the subcodes will be:

- malaria import and indigenous cases
- prevention/ reduce of malaria burden: MBS, LLINs, IRS, ACTs.
- malaria transmission
- rapid response

- population movement
- strategic planning malaria transmission

“Related results of qualitative literatures, all reports will be coded by the WHO framework, such as (1) prevent and/or reduce transmission and disease burden, with special emphasis on minimizing risk of importation of malaria cases; (2) prevent, and/or rapidly respond to, and control malaria epidemics; and (3) prevent re-establishment of malaria transmission (10).”

(Page 8, line 188-191)

You need to describe how the data will be analysed and reported for the literature and the interviews. Is there qualitative data collection in terms of interviews (section 6) ? - yes that needs to be outlined more clearly how you will use and/or report (triangulate) those results (see below).

Thank you for your question. We will not use primary data collection, such as stakeholder interviews. The consultation with stakeholders in stage six will be useful as triangulation of literature review findings, or as inputs in the synthesized results.

“Consultation with stakeholders, experts, and key informants will not be our primary data, but serve as triangulation of data sources in reviewing findings or as inputs in the synthesized results. This approach will be conducted to clarify potential missing studies or ongoing relevant interventions.”

(Page 9, line 200-202)

#### Stage six

As per above this section is still quite confusing. I need to understand if this is formative as it seems it might be or if it will add to the potential findings/ recommendations of the review. It needs to more clearly describe why, and how you will use this data to supplement the scoping review. See a sample below

A consultation exercise will be conducted with relevant stakeholders from the community including x, x, and x. This stage aims to validate the findings of the scoping review and may also result in additional insights being included in the review and guide recommendations for future research. A purposive/snowballing approach will be taken to select participants for the consultation exercise. The purposive sampling method involves identifying a sample of participants that have characteristics appropriate for the study. This methodology enables researchers to consult with stakeholders who may be difficult to reach and who are likely to provide rich information (Bury et al 2020).

Please apologize for the lack of clarity, and thank you for your suggestion. We revised it as follow:

“Consultation with stakeholders, experts, and key informants will not be our primary data, but serve as triangulation in reviewing findings or as inputs in the synthesized results. This approach will be conducted to clarify potential missing studies or ongoing relevant interventions. The consultations will include the Ministry of Health, UN Agencies such as UNICEF and WHO, APMEN, APLMA and Non-Governmental Organizations working in the malaria elimination efforts. The stage aims at triangulation of findings, especially adding insights into policy documents or guidelines.”

(Page 9, line 200-206)

#### Dissemination and Ethics

My same comment applies as before - As many of the agencies who would use this type of information in the Asia-Pacific may have limited access to peer reviewed journals and conferences, will there be any other channels of dissemination? E.g. a lay summary?

Thank you for your comment. We will produce policy briefs as dissemination tools for relevant stakeholders.

“Results will be disseminated through a peer-reviewed publication and/or conferences, for example, in APMEN or APLMA meetings. Moreover, we will also produce policy briefs for relevant stakeholders.”

(Page 10, line 218-220)

#### General comments

More specific linking with the PRISMA ScR checklist is worthwhile in text.

Thank you for your comment. We have linked the PRISMA ScR checklist in the protocol draft.

We will follow the Preferred Reporting Items for Systematic reviews and Meta-Analyses: extension for Scoping Review (PRISMA-ScR) checklist in all stages (20).

(Page 5, line 107-109)

There is still some issues with the use of plural and tense, eg literatures in place of literature. E.g. page x line 117-118 this sentence is awkward in expression ‘Our team will decide to use the PCC approach as a second screening after all literature search is combined’.

Thank you for your remarks. We have revised the sentence to:

Moreover, within this stage, the team will use the Population, Concept, and Context (PCC) of the study (Table 1). The PCC approach is used as a second screening after all literatures search is combined.

(Page 5, line 117-118)

Recommended to use a native English writer for review prior to publication.

Thank you for your recommendation. As advised for review prior to publication, we asked a native English writer to proofread the final version.

#### Additional References

WHO/GMP. (2017). A Framework for Malaria Elimination. In Geneva World Health Organization.

World Health Organization. (2018). An urgent front: Cross-border collaboration to secure a malaria-free South-East Asia Region.

Notes:

LLIN: Long-Lasting Insecticide Net, IRS: Indoor Residual Spraying, MBS; Mass Blood Survey, ME: Monitoring and Evaluation