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Navigating the evidence landscape: Conducting Systematic Reviews Guiding WHO Recommendations in Malaria Elimination and Prevention – Process, challenges and lessons learnt

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BACKGROUND

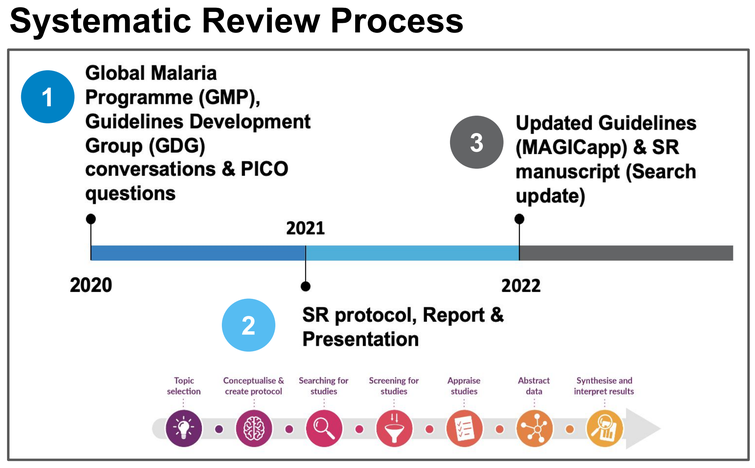
The World Health Organization (WHO) advocates initiating malaria elimination efforts, even amid high disease burdens. Programs in the final elimination phase or guarding against transmission re-establishment benefit from evidence-based recommendations. Evidence-based guidelines are essential for effective public health initiatives, ensuring interventions are beneficial, acceptable, feasible, cost-effective, and equitable. **Systematic reviews provide crucial up-to-date evidence for comprehensive guideline development.** In 2020, WHO assembled an external guideline development group and initiated the commissioning of 10 systematic reviews assessing potential interventions in elimination or post-elimination settings. The WHO elimination guideline development group (GDG) thoroughly examined the outcomes of these systematic reviews. Subsequently, the GDG formulated 12 recommendations for malaria elimination, which were published as a part of the WHO Guidelines for Malaria. Of these, four were led by MESA, focusing on both mass and targeted interventions.

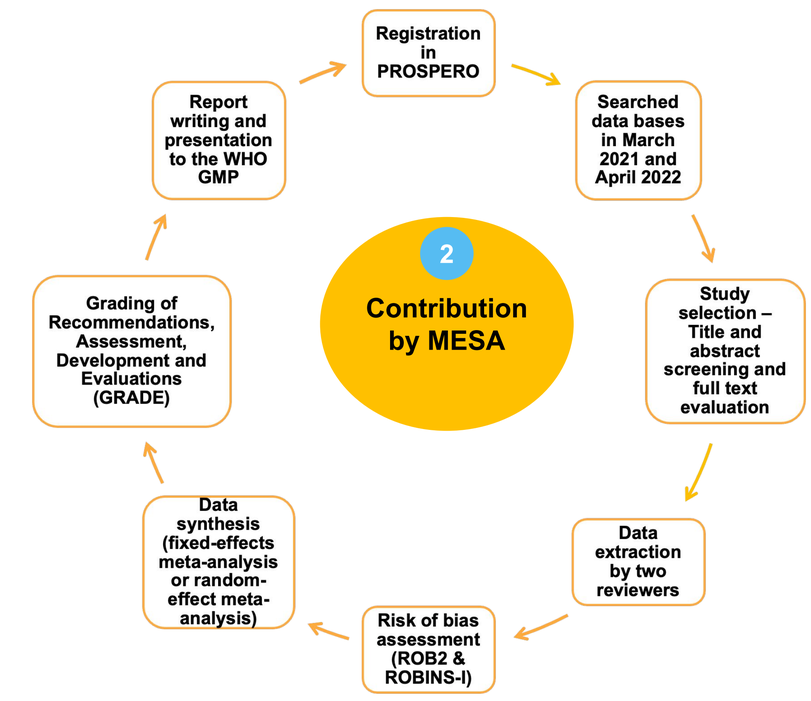
REVIEW AIMS

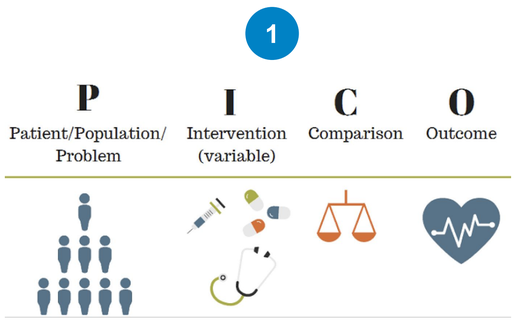
1. To assess the impact of interventions on malaria transmission outcomes in malaria elimination and post-elimination contexts.
2. To analyze contextual factors relevant to public health considerations.
3. To consolidate information from systematic reviews to support decision-making processes.

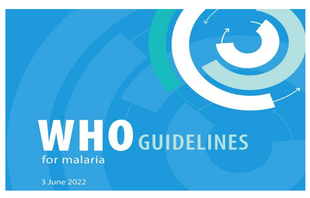
METHODS

Systematic Review Process









RESULTS

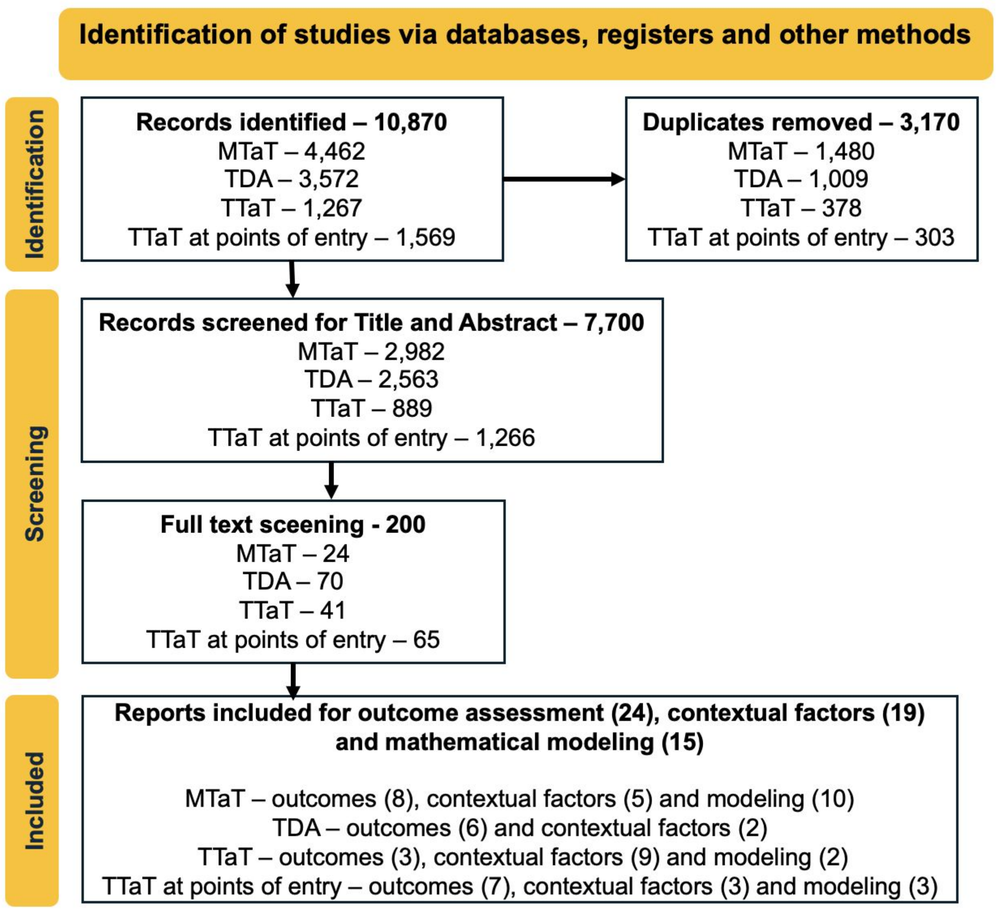


Figure 1: PRISMA flow diagram for Systematic Review. Adapted from Page, Matthew J., et al. "Updating guidance for reporting systematic reviews: development of the PRISMA 2020 statement." Journal of clinical epidemiology 134 (2021): 103-112.

WHO Recommendations – direction and strength

Mass testing and treatment (MTaT) to reduce transmission of malaria (2022)

- ***Conditional*** *recommendation* ***against****, moderate certainty evidence*:

MTaT to reduce the transmission of malaria is not recommended.

Targeted drug administration (TDA) to reduce transmission of malaria (2022)

- ***Conditional*** *recommendation* ***for****, very low certainty evidence*:

In areas with very low to low transmission or post-elimination settings preventing re-establishment of transmission, antimalarial medicine can be given as chemoprevention to people with increased risk of infection relative to the general population to reduce transmission.

Targeted test and treatment (TTaT) to reduce transmission of malaria (2022)

- ***Conditional*** *recommendation* ***against****, very low certainty evidence*:

Testing and treatment of people with an increased risk of infection relative to the general population to reduce the transmission of malaria is not recommended.

Routine malaria testing and treatment at points of entry (2022)

- ***Conditional*** *recommendation* ***against****, very low certainty evidence:*

Routine malaria testing and treatment of people arriving at points of entry (land, sea or air) to reduce importation is not recommended.

Malaria testing and treatment of organized or identifiable groups arriving/returning from malaria-endemic areas (2022)

- ***Conditional*** *recommendation* ***for, very low certainty evidence*:**

In areas approaching elimination or post-elimination settings preventing re-establishment of transmission, organized or identifiable groups arriving or returning from malaria-endemic areas can be tested and treated soon after entry to reduce importation of malaria.

CONCLUSIONS

The evidence base for malaria elimination interventions in WHO guidelines is limited due to a scarcity of high-quality studies.

- **Challenges** in malaria guideline development include limited availability of high-quality studies, complex integration of contextual factors, and ensuring clarity amidst limited evidence.
- **Lessons learned** emphasize pre-specifying thresholds for meaningful effect sizes, precisely defining PICO questions, standardizing contextual factor consideration, and emphasizing clarity, transparency, and stakeholder input for navigating challenges and ensuring integrity. These efforts aim to enhance guideline robustness and effectiveness in malaria elimination strategies globally.

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