Regional Genomics for malaria in Elimination 8 countries (RegGE8)

Request For Proposals: Country Projects

13 August 2021

From: SADC Malaria Elimination Eight (E8) Secretariat and UCSF Malaria Elimination Initiative (MEI)

To: National Malaria Control Programs (NMCPs) and Public Health Research Institutions (PHRIs) in the following SADC E8 countries: Angola, Botswana, Eswatini, Namibia, South Africa, Zambia and Zimbabwe

Request for Proposals

The purpose of this Request for Proposals (RFP) is to enable National Malaria Control Programs (NMCPs) and Public Health Research Institutions (PHRI) within the Elimination 8 (E8) region (within Angola, Botswana, Eswatini, Namibia, South Africa, Zambia and Zimbabwe) to generate evidence and build capacity around the use of malaria molecular surveillance (MMS) to inform programmatic decision-making. Mozambique has separate MMS investments from the BMGF, so is not included in this specific funding opportunity.

Part 1: Submission of Letter of Intent

Background

Recent advances in laboratory technologies and bioinformatics have made the rapid generation of genomic data to inform real-time decision-making a cost-effective option for many disease control programs. The current global SARS-Cov-2 pandemic has highlighted how genomic epidemiology can be integrated into routine surveillance to support effective decision making by filling critical gaps left by current case-based reporting while providing crucial new data on strain variation and transmission dynamics. Genomic epidemiology has been routinely used to understand transmission and drug resistance patterns of HIV and TB and presents valuable opportunities for disease surveillance within malaria control programs in southern Africa.

In line with new guidance from the World Health Organization (WHO), NMCPs are moving past the “one size fits all” approach and recognizing the need to better target and tailor interventions based on local epidemiology, to maximize impact and respond to changing transmission dynamics. Unfortunately, current surveillance data that inform decision-making are often incomplete, of low quality, and frequently unable to provide critical information that would be available through modern genotyping. Modern parasite and vector genomic data can “fill in the gaps” in routine surveillance data as well as generate a novel and rich data source that can provide NMCPs with a more comprehensive, accurate picture of what is happening at a very granular level. Examples of modern genotyping applications include:

1. Early detection of drug or insecticide resistance
2. Early detection of diagnostic resistance (pfhrp2/3 deletions)
3. Understanding transmission patterns
    a. Who is transmitting malaria to whom

    b. Impacts of human migration
    c. Differentiating imported malaria from local infections
4. Understanding the impact of malaria interventions

A number of MMS use cases have been identified, that can be deployed in different transmission settings to support programmatic decision-making. However, in order to support wider uptake and use of genomic data by NMCPs, there remains a need to capacitate NMCPs and in-country partners to design, analyze and interpret MMS applications and demonstrate its programmatic relevance.

The Malaria Elimination Initiative (MEI) at the University of California, San Francisco (UCSF) and the SADC Malaria Elimination 8 Secretariat (E8S), with funding from the Bill & Melinda Gates Foundation and in partnership with Africa CDC Pathogen Genomics Initiative (PGI), is launching a collaborative portfolio of work to build capacity, establish consensus and generate evidence around the use of MMS in southern Africa. This project will bring a new focus to NMCPs by building in-country capacity and expertise in the use of genomic data to inform programatic decisions. The project is part of larger investments across Africa to use pathogen genomics to improve surveillance in disease control programs. Africa CDC is key to this and has established a network of regional pathogen sequencing hubs across the continent. Parallel to the country projects which this RFP relates to, is a regional project, which will collect genomic data from malaria parasites across the E8 region to establish a baseline reference genomic database for E8 NMCPs/PHRIs on drug and diagnostic mutations as well as connectivity between parasite populations. The RegGE8 Regional Project will include all interested NMCPs, nominated PHRIs and sub-regional MMS experts.

Preparation, Submission and Review of Letters of Intent (LOI)

This call for proposals is for *country level* Malaria Molecular Surveillance projects. The proposal will consist of 2 phases:

- Phase 1: Letter of Intent (this stage)
- Phase 2: Full proposal (successful applicants can expect to be notified by end-August 2021 to develop full proposals)

Phase 1: Letter of Intent (LOI)

1. Letters of intent (LOI's) are invited from E8 National Malaria Control Programs (NMCP) and Public Health Research institutes / Universities (PHRI) that support the malaria control program in Angola, Botswana, Eswatini, Namibia, South Africa, Zambia and Zimbabwe. There are two options for the partnership aspect of RegGE8 country projects:
    a. NMCP-only: Where there is sufficient capacity within NMCPs to carry out data collection and support analyses (with training and technical support), NMCPs may select to submit LOIs without partnering with a PHRI.
    b. NMCP-PHRI partnership: LOIs may be submitted by either the NMCP or PHRI, with the LOI identifying both institutions. Where a PHRI submits the LOI, the PHRI will need to demonstrate an existing working relationship with the NMCP in order to be considered for selection.
2. LOI's should present a project that addresses an NMCP question or decision point that can be answered by MMS. Examples of the types of questions expected for the LOI are shown below in Table 1, and references are provided with further detail.
3. Project implementation is expected to occur between April 2022 and March 2024. Projects that require a longer time frame will not be considered.
4. Funding for the Country projects will support data collection and analyses of genomic data, with standardized sequencing and bioinformatics services provided at no additional cost by

an Africa CDC identified regional genomic hub at National Institute for Communicable Disease (NICD) in South Africa.

5. Budget envelopes for each project should be no more than US$200,000 including overheads. Note that costs of genotyping and supporting bioinformatics will be supported cost-free by the NICD in South Africa and other institutions.

LOI's should not exceed 1750 words in length and should consist of:

- Country project title (indicating the problem the study aims to address)
- Name of focal points in both the NMCP and PHRI
- Name of the NMCP and PHRI
- Background to the problem (500 words maximum)
- Problem statement (250 words maximum)
- MMS Use case (See Table 1). It is possible that a project may have several use cases.
- Project design and implementation plan (750 words maximum) including an overview of the proposed project strategies for; sampling, training, dissemination of results, translating results into policy and project sustainability.
- If desired, a statement requesting support with proposal development and specific areas requesting technical support (i.e. sampling design, analysis plan, etc.)
- Annexes specific to LOI content (i.e.; CVs of focal points in the NMCP and PHRI, MOUs/letters of partnership between the PHRI and NMCP, overview budget, project timelines, proposed training plan)
- Statement of agreement of the following principles
    i. Subscribe to material transfer agreements to allow sequencing and bioinformatics at a regional genomics hub supported by Africa CDC
    ii. Participate in training and capacity building activities provided by this grant
    iii. Agree to open access data requirements defined by the funder

Table 1: Selected parasite genomics MMS use cases for RegGE8 country projects.

#	**Use case**
1	Determine origin of parasite (local versus imported)
2	Determine transmission characteristics of a malaria foci or cluster of cases
3	Reconstruct transmission chains to identify key transmission drivers
4	Determine connectivity of parasite populations across a country

NOTE: Proposals must include at least one use case from this list to be considered for funding. Drug resistance and diagnostic resistance will be tested as part of the regional project and other use cases will be considered on presented merits (see Part 2 full proposal guidance for details).

LOI's will be reviewed and a selection invited to submit a full proposal, based on the following criteria:

1. Evidence (e.g. signed Memorandum of Understanding, signed letter from MOH) of NMCP/PHRI partnership (to be included as an Annex to the LOI)
2. Evidence that the use case for testing will answer a question or support a NMCP decision
3. Evidence that the project can be completed in the stated timeframe with the stated budget envelope

4. The reviewers will not penalize LOI's for quality of writing, English language, scientific hypothesis writing, referencing
5. The reviewers will look favorably on NMCP-PHRI partnerships that strive to answer programmatic questions
6. Reviewers will look for representation of different use cases across the portfolio of projects
7. Reviewers will assess existing capacity and gaps so as to identify priorities within and across projects to inform the design of tailored capacity development interventions (e.g.; through workshops, mentorship)

LOI Submissions must be received before 17:00 (Central Africa Time) on 1 September 2021. All submissions are to be emailed to mchisenga@sadce8.org

Information session

The SADC E8 and UCSF MEI team will host a webinar for potential applicants to receive further information and ask questions. The details of the webinar are:

Date and time: 24 August 2021, 16:00 CAT

Zoom Link:
https://us02web.zoom.us/j/87291747941?pwd=WWt1UE9JUUFPOHJSdDR3cW0wdlBmZz09

Meeting ID: 872 9174 7941

Password: 873711

Send questions in advance to: lvanwyk@customisedconsulting.org

Preparation, Submission and Review of Full Proposals

Following review of LOI's, a selection of projects will be chosen to move forward to develop full proposals in Phase 2.

Phase 2: Full proposal development

1. Projects selected to move forward with full proposal development will be eligible to request technical support, project management support and mentorship to be facilitated by the RegGE8 team. This support aims to ensure a wide range of well written appropriately referenced competitive applications are submitted for review.
2. Submitted proposals will be reviewed by an external review panel that include reviewers from the WHO, Africa CDC, African institutes that specialize in genomics, and the Bill and Melinda Gates Foundation.
3. Selected Proposals will go forward for contracting and, subject to UCSF funding regulations, will be funded.
4. Selected proposal implementation will go forward with the full support of the RegGE8 team. RegGE8 will provide training on MMS and analyses of genomic data, translation of results into public health action proposals, and project management throughout the duration of the project to support RegGE8 aims and in-country capacity building.
5. Further details for Phase 2 including guidance on the proposal format will be made available following the selection of successful LOIs.

Submission of an LOI or a Full Proposal is not a guarantee that the NMCP and/or PHRI will be awarded funds through the RegGE8 project.

Part 2: Submission of Full Proposals

This section of the RFP outlines the approach (following submission and evaluation of LOIs) for PHRIs in collaboration with NMCPs invited to submit detailed proposals to implement priority MMS use cases. Proposals should address research questions and use cases outlined in the LOI and should propose a relevant design for sample and epidemiological data collection.

The MMS use cases that will be considered for funding include a subset of those identified by MMS Stakeholders during the June 2019 WHO Technical Consultation on the role of parasite and vector genetic and genomic data in malaria surveillance, and can leverage data collected as part of the regional project. Use cases that will be considered for funding can answer decision points include:

1. Distinguish imported and local cases to better target interventions and track local transmission in elimination settings.

2. Identify local transmission: identify focal areas of high transmission and clusters of infections to inform resource deployment

3. Reconstruct transmission chains: elucidate contributing factors (e.g. seasonality, migrants, asymptomatic cases, and highly infectious individuals) to ongoing transmission patterns to inform intervention selection, resource deployment, surveillance, and case investigation

4. Determine connectivity of parasite populations within a country: assess degree to which transmission is linked sub-nationally due to linked parasite populations to inform program planning and resource deployment

For more detailed discussion on the above use cases, please refer to key publications[1, 2]. If there are compelling use cases that are not listed above, including monitoring drug resistance gene flow, detection of insecticide resistance or defining vector species composition, then they may be considered if there are existing data sources (including historical samples) or entomologic surveillance programs that could be leveraged. Relevant use cases around detection of drug resistance and HRP2/3 deletions are not listed because they are being directly addressed by the regional project. Please contact the RegGE8 Team with any queries.

Funding will be provided for data collection and to support analyses of genomic data, with standardized sequencing and bioinformatics services provided by a regional genomic hub at NICD. Data collection and project aims can leverage data from the E8 Regional MMS project to support the application. Training on MMS and analyses of genomic data will be provided as well as technical assistance throughout the duration of the project to support project aims and in-country capacity building.

<u>The timeline for funding through this RFA will be April 2022 – March 2024.</u>

Please note that all applications considered for funding must:

- Propose one of the priority use cases identified for this project, or alternative use cases as discussed with the RegGE8 Team.

[1] Malaria Policy Advisory Committee Meeting. Technical consultation on the role of parasite and anopheline genetics in malaria surveillance. 5–7 June 2019, Geneva, Switzerland. WHO/CDS/GMP/MPAC/2019.17

[2] Dalmat, R., Naughton, B., Kwan-Gett, T.S. et al. Use cases for genetic epidemiology in malaria elimination. Malar J 18, 163 (2019). https://doi.org/10.1186/s12936-019-2784-0

- Include a principal investigator from one of the named E8 countries (i.e.; Angola, Botswana, Eswatini, Namibia, South Africa, Zambia and Zimbabwe)
- Include evidence of explicit partnership with the NMCP, MOH or other authority responsible for malaria surveillance and control within the country
- Subscribe to material transfer agreements to allow sequencing and bioinformatics at a regional genomics hub supported by Africa CDC
- Participate in training and capacity building activities provided by this grant
- Agree to open access data requirements defined by the funder

Instructions for Full Proposal Development

Required Elements

The following elements are required in an application for funding:

1. Proposed Scope of Work (10 pages maximum)
    a. Rationale, MMS use case and specific project aims
    b. Details of proposed activities
    c. Implementation plan
    d. Ethical considerations, including plans for IRB approval
    e. Material Transfer Agreements in place
    f. Capacity needs
2. Detailed Budget, with Budget Justification
3. Key Personnel Profiles

These elements should include:

1. Proposed Scope of Work

Technical assistance to develop and refine the scope of work for the full submission will be made available to all applicants.

Please address the following in the scope of work:

a. How the proposal addresses a program priority using a specific MMS use case; explain the rationale for and potential benefits of using MMS data in this setting
b. Include representation from the NMCP and provide a description of their role and engagement throughout the project
c. Statement of specific analytic aims
d. Description of the data/sample collection activities, including site selection, sampling strategy, study population and types of data collected. Integration with routine surveillance activities for malaria or other diseases (community or health facility) and existing sentinel sites will be viewed favorably. *Note: Due to the timing of malaria transmission and the duration of this grant, data collection funded through this mechanism can only be 2022-2023. Samples collected prior to this period as part of routine surveillance or through other studies (IRB allowing) can be leveraged also to allow looking at longitudinal trends.*
e. Description of analytic strategies used to accomplish aims

f. An implementation plan, including a description of by whom, how and when key activities will be carried out. This should include a description of roles and responsibilities of key personnel and partners.
g. Ethical considerations relevant to the proposal, with a full description of planned ethical review and IRB approvals required
h. Copy of material transfer agreements which will be signed by all partners to ensure sample transport and data sharing meet funder stipulations. These do not need to be fully executed by the time of submission, but must be reviewed and verbally agreed. Completed material transfer agreement(s) will be required for all subcontracts set up under this funding source.
i. Capacity building requirements around analysis and interpretation of genomic data, which will help the RegGE8 Team develop a detailed capacity building plan for each selected applicant.

2. Detailed Budget, with Budget Narrative

A detailed, itemized budget and narrative (Appendix A) should be presented for activities related to the proposed Scope of Work. Country proposals will be awarded a maximum of $200,000 contingent on quality and scope of submission. It is important to note that all funds that are awarded must be fully expended by 31 March 2024.

Eligible Activities for Funding

Funding is available for all eligible institutions to implement a defined scope of work supporting activities including:

- In-person-time for co-investigators and staff to support data collection and analyses of genomic data
- Training costs
- Transportation costs for data collection
- Domestic travel and associated costs for progress and dissemination meetings
- Data bundles to support communication and remote mentorship with international partners.

Ineligible Activities for Funding

Equipment expenses are discouraged and will need exceptional approval. Refer to Appendix A for the definition of Equipment. Items with a per unit cost less than US$ 500 should be included in the Supply line-item budget.

Travel expenses will be reviewed critically considering COVID-19 safety precautions and restrictions on movement.

3. Key Personnel Profiles

Please provide a short description of each key person's responsibilities as well as their contact information. The RegGE8 team strongly recommends that all proposals include a team-based, interprofessional approach to project leadership that promotes gender equality and flattens

traditional hierarchies. The RegGE8 team strongly encourages diversity and inclusion of under-represented minority groups.

Please also provide a CV for the two most senior/key persons supporting the project.

Full Proposal Submission Information

Please provide your submission into a single PDF, except for the budget which should be submitted in Excel, and emailed to mchisenga@sadce8.org by 29 October 2021, 17:00 Central Africa Time.

Key Dates

- RFP release date: 16 August 2021
- RFP Q & A webinar: 24 August 2021
- Letter of intent due date: 1 September 2021
- Application due date: 29 October 2021
- External Review: 18 – 22 October 2021
- Notification of Selection: mid-December 2021
- Confirmation of Award: by 8-10 January 2022
- Participation in MMS training and SOP development workshop: Date TBD 2022 and 2023
- Start Date: 1 April 2023
- End Date: 31 March 2024

Award Information

This RFP is open to NMCPs and PHRIs within Angola, Botswana, Eswatini, Namibia, South Africa, Zambia and Zimbabwe. Mozambique has separate MMS investments from the BMGF, so is not included in this specific funding opportunity. All applications must include the NMCP of the country and the NMCP can apply without a partnership with a PHRI.

Contact information

Questions regarding this RFP can be sent to:

Lesley-Anne van Wyk: lvanwyk@customisedconsulting.org

Mukosha Chisenga: mchisenga@sadce8.org

Appendix A: Budget Justification Template

Project Name

Project Date

A. Salaries and Wages:

Name, Credentials, Principal Investigator is xxxxx. Dr. xxxxx has expertise in xxxxx. Co-investigator is xxxxx. Dr. xxxxx has expertise in xxxx. Dr xxxxx and Dr xxxxx will xxxxx. We request X% ($amount) salary support for this position.

B. Relevant Fringe Benefits:

Fringe benefits are calculated at xxx% for staff.

	Salary Requested	% Benefit Rate	Total Fringe Benefits
Total Staff Salaries	$xxx	xx%	$xx

C. Consultant Costs:

1. Name of Consultant
2. Organizational Affiliation (if applicable):
3. Nature of Services to Be Rendered:
4. Relevance of Service to the Project:
5. The Number of Days of Consultation (basis for fee):
6. The Expected Rate of Compensation (travel, per diem, other related expenses) – list a subtotal for each consultant in this category:

D. Travel:

A total of $xxx to support project-related travel is requested. Planned trips include:
xxx (# of roundtrip tickets) for xxx people (Names) to go to xxx for xxx days to conduct data collection. xxx (# of roundtrip tickets) for xxx people (Names) to go to xxx for xxx days to attend a dissemination meeting. Each roundtrip flight will cost approximately $xxx, lodging will cost no more than $xx/night and per diem is $xx/day (based on xxx). Ground transport and communication cost $xx/trip.

E. Equipment:

Equipment is considered tangible non-expendable personal property (including exempt property) charged directly to an award having a useful life of more than one year AND an acquisition cost of $500 or more per unit.

F. Supplies:

Project-specific supplies: We are requesting funds to provide sufficient project specific supplies to the project staff, including supplies for project personnel and data collection supplies. [***Add text to include project specific supplies****.]* We are requesting a total of $x to cover the cost of project related supplies.

G. Contractual Costs:

A subcontract for $xxx will be established with (name of organization). Please see Appendix A for name of contractor, method of selection, period of performance, method of accountability, and itemized budget and justification.

All subcontracts have been selected due to their expertise in specific areas including extensive experience providing technical assistance in resource-constrained settings. All subcontracts will be reviewed and held accountable per the standards outlined in the appropriate guidelines and procedures including University A-133 audit standards.

H. Other:

Data packages: Funds are requested to provide data bundles through xxxxx company at a cost of $xx per person to provide xxGB of data over xx months. This is sufficient to provide data for co-investigators and staff to engage in remote mentorship and communication with international partners.

I. Total Direct Costs

	Total $xxx
Salaries and Wages	$xx
Fringe Benefits	$xx
Consultant Costs	$xx
Training costs for data collection	$xx
Travel	$xx
Supplies	$xx
Contractual Costs	$xx
Other	$xx