

Mid-term Review of the Malaria Elimination Programme

Vanuatu



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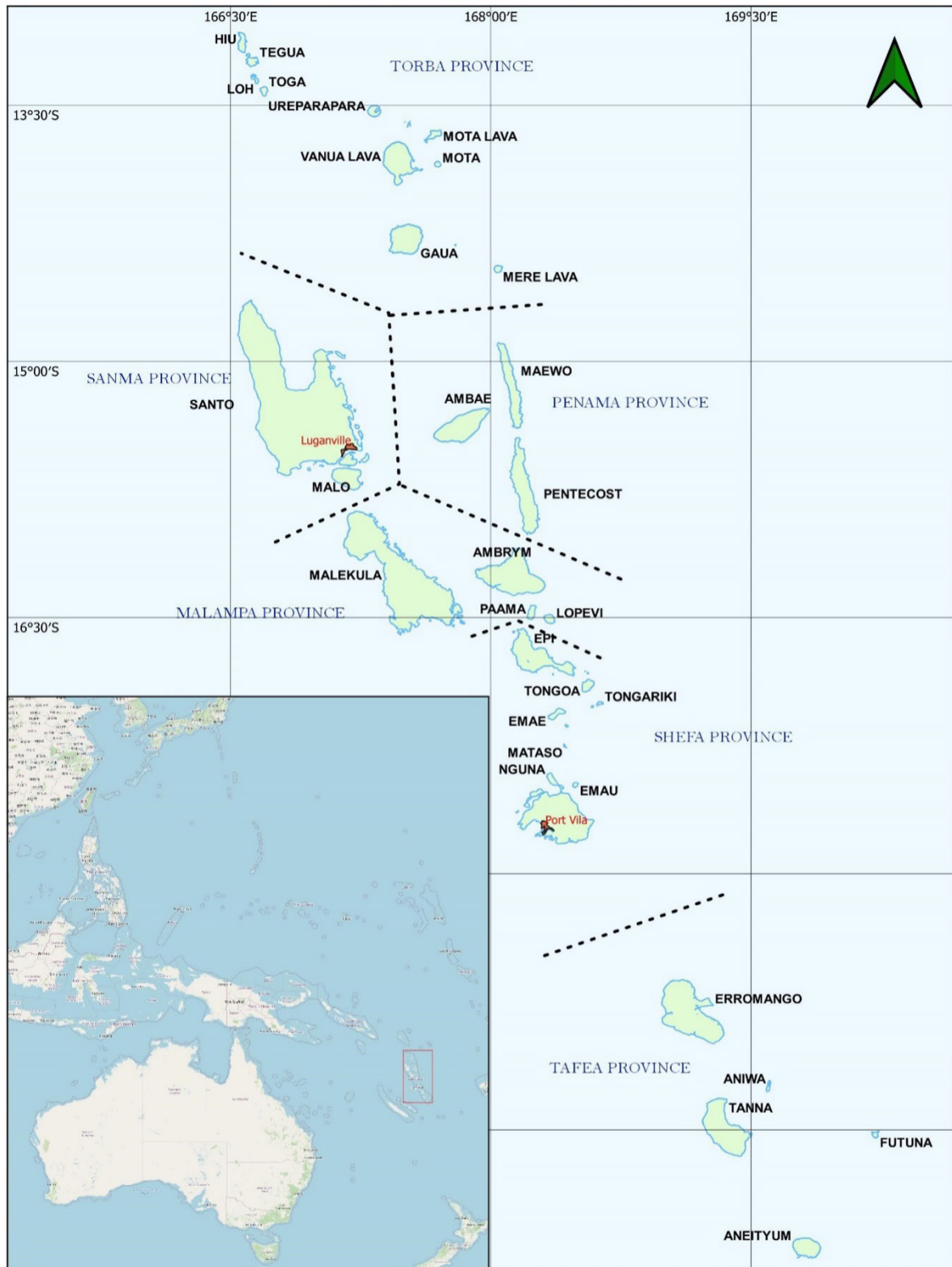
Vanuatu

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Map of the Republic of Vanuatu



Provinces north to south: Torba - Torres and Banks; **Sanma** - Santo and Malo; **Penama** - Pentecost, Ambae and Maewo; **Malampa** - Malakula, Ambrym, and Paama; **Shefa** - Shepherd, Epi and Efate; **Tafea** - Tanna, Aneityum, Futuna, Erromango and Aniwa

Abbreviations and acronyms

Acronym	Meaning
ACD	Active Case Detection
ACT	Artemisinin-based Combination Therapy
ANC	Antenatal Care
API	Annual Parasite Incidence
APLMA	Asia Pacific Leaders Malaria Alliance
APMEN	Asia Pacific Malaria Elimination Network
BCC	Behaviour Change Communication
CBO	Community-Based Organisation
CCM	Country Coordinating Mechanism
CD19RM	Covid-19 Response Mechanism
CMS	Central Medical Stores
CP	Chemoprevention
COVID-19	Coronavirus disease of 2019 (caused by SARS-COV2)
CSO	Civil Society Organisation
DFAT	Australian Department of Foreign Affairs and Trade
DHIS2	District Health Information System 2
DOT	Directly Observed Treatment
DP	Development partner
DSA	Daily Subsistence Allowance
EPR	Epidemic Preparedness and Response
FBO	Faith-Based Organisation
FR	Funding Request
GDP	Gross Domestic Product
GF	Global Fund
GFATM	Global Fund for HIV/AIDS, Tuberculosis and Malaria
GOV	Government of Vanuatu
G6PD	Glucose-6-phosphate Dehydrogenase
HR	Human resources
1-7-60	Cases reported within a day of detection; investigated, classified and responded to within 7 days; and followed up within 60 days after detection
iCCM	Integrated Community Case Management
IDSR	Integrated Disease Surveillance and Response
IEC	Information Education Communication
IMCI	Integrated Management of Childhood Illness
IPTi	Intermittent Preventive Treatment in Infants
IPTp	Intermittent Preventive Treatment in Pregnancy
IPTsc	Intermittent Preventive Treatment in School-aged Children
IRS	Indoor residual spraying
ITN	Insecticide-treated mosquito net
LFA	Local Fund Agent (GFATM)
LLIN	Long-lasting insecticidal net

LMIS	Logistics Management Information System
MALAMPA	Malakula, Ambrym, and Paama
M&E	Monitoring and evaluation
MDA	Mass Drug Administration
MEAG	Malaria Elimination Advisory Group
MEMTI	Malaria Elimination in Melanesia and Timor-Leste Initiative
MEO	Malaria Elimination Officer
MESC	Malaria Elimination Steering Committee
MOFEM	Ministry of Finance and Economic Management
MOH	Ministry of Health
MMLL	Monthly Malaria Line Listing
MPR	Malaria Programme Review
MTR	Mid Term Review
NDMO	National Disaster Management Office
NFM4	Global Fund New Model 4
NGO	Non-governmental organization
NSDP	National Sustainable Development (“People’s”) Plan 2016–2030
NSP	National Strategic Plan
NSPME	National Strategic Plan for Malaria Elimination (2021-26)
NSO	National Statistics Office
NVBDCP	National Malaria and other Vector Borne Diseases Control Program
QA	Quality Assurance
p.	Plasmodium
PacMOSSI	Pacific Mosquito Surveillance Strengthening for Impact
PCD	Passive Case Detection
PENAMA	Pentecost, Ambae and Maewo
PIRMCCM	Pacific Islands Regional Multi-. Country Coordinating Mechanism
PMC	Perennial Malaria Chemoprevention
PMS	Provincial Malaria Supervisor
PMU	Programme Management Unit
PPE	Personal Protective Equipment
PR	Principal Recipient (Global Fund grant)
PSC	Public Service Commission
PSM	Procurement and supply chain management
RAM	Rotarians Against Malaria
RDP	Role Delineation Policy
RDT	Rapid diagnostic test
RSSH	Resilient and Sustainable Systems for Health
SANMA	Santo and Malo
SBCC	Social and Behavioural Change Communication
SDG	Sustainability Development Goals
SHEFA	Shepherd, Epi and Efate
SMC	Seasonal Malaria Chemoprevention
SOP	Standard Operating Procedures
TA	Technical assistance
TAFEA	Tanna, Aneityum, Futuna, Erromango and Aniwa

ABBREVIATIONS AND ACRONYMS

TB	Tuberculosis
TC	Tropical Cyclone
TOR	Terms of Reference
TORBAT	Forbes and Banks
UHC	Universal Health Coverage
UNDP	United Nations Development Programme
VAHP	Vanuatu Australia Health Partnership
VBDCP	Vector Borne Disease Control Programme
VCCM	Vanuatu Country Coordinating Mechanism
VHW	Village Health Worker
VMW	Village Malaria Worker (Cambodia)
VNHS	Vanuatu National Health Strategy
VRCS	Vanuatu Red Cross Society
WHO	World Health Organization

Acknowledgements

The independent consultant would like to express her sincere appreciation to all involved in the Mid-term Review. Implementing a malaria programme in one of the most disaster-prone countries in the world is no mean feat; and conducting in-country consultations amid two severe tropical cyclones in two days was just as difficult. While Provincial visits were impossible, broad-ranging consultations with the Ministry of Health were made possible by the dedicated staff despite their need to attend to their own household situations, as well as to the Ministry's disaster response.

The staff in the Ministry of Health and the Malaria Programme Team, in both Port Vila and in the provinces, gave generously of their time, shared insights and clarified issues, thus contributing significantly to the review. A range of stakeholders and development partners were met, all of whom shared valuable information and perspectives.

The review was considerably enriched by the invaluable assistance of the two staff from the United Nations Development Programme (UNDP) Pacific Office in Fiji. Their supportive role in the review, and their companionship during the in-country visit was much appreciated.

Executive Summary

The Vanuatu National Malaria Programme aims to eliminate indigenous malaria transmission from Vanuatu through: vector control and personal protection; case-based surveillance and prevention of re-establishment; early and effective case management and health promotion.

Strategic objectives include: maintaining very high levels of coverage with long-lasting insecticidal mosquito nets (LLINs), and to rapidly reduce malaria transmission in selected higher-incidence areas and foci using indoor residual spraying (IRS); to roll out case-based surveillance and response nationwide using the '1-7-60' approach; to test all fever cases for malaria by rapid diagnostic test (RDT) or microscopy, and provide prompt radical treatment and care for all confirmed cases; to mobilize communities through health promotion and leverage the support of all stakeholders in a multi-sectoral effort to accelerate the control and eventual elimination of malaria; and to ensure that malaria and other vector borne disease prevention, surveillance and case management are well integrated into disaster preparedness and response activities.

The Mid-term Review (MTR) assesses progress towards the objectives; provides guidance for the development of the next Global Fund Request (2024-2026) and informs future provincial and national malaria planning. The MTR was conducted through: inception planning; thematic desk review; in-country data collection, stakeholder consultations, and validation of findings by stakeholders. Extensive national level consultations were undertaken but planned provincial visits, a stakeholder workshop and a validation meeting to consider the findings and discuss the recommendations were cancelled due to twin cyclones (Judy and Kevin). Widespread damage was caused especially in Shefa and Tafea. Flights were cancelled and/or severely disrupted, water and power was cut and staff and other stakeholders needed to support the emergency response, as well as attend to their own personal and housing needs. The Aide Memoire and the draft report were widely circulated and feedback incorporated into the final draft report. Despite the methodological and logistical limitations, the review report presents the current malaria situation and logical and feasible recommendations to improve the strategy and implementation.

Key findings

Until 2021, Vanuatu was making remarkable progress towards malaria elimination; had no reported malaria deaths since 2012; and was among 8 countries in the Western Pacific likely to eliminate malaria by 2025 (the E-2025 initiative)¹. The goals of Vanuatu's National Malaria Plan were to achieve zero indigenous malaria cases in all provinces by the end of 2023; and to receive WHO certification of malaria-free status by 2026. This now seems unlikely due to an upsurge in cases in four provinces, and interruption to implementation during the period when COVID-19 closed borders and funds and malaria staff were reportedly redirected to COVID-19 activities. Currently 100% of the population of Vanuatu is at risk of malaria transmission; and the Annual Parasite Incidence (API) has increased from 1.3 in 2021 to 5.03 in 2022.

In November 2022, the Director of Public Health presented an Executive Committee Paper to the Ministry of Health (MOH) Executive seeking endorsement for an emergency response to the malaria upsurge currently occurring throughout the country. The paper stated that 'Vanuatu is now off-track to meet the elimination target set for the end of 2023'. The malaria team, including Provincial Health Managers from Malampa, Penama, Sanma, Shefa and Torba; and Malaria Provincial Supervisors from Malampa, Penama (acting), Shefa, Sanma (acting), Tafea, and Torba met from 14 to 18 November 2022 to discuss the critical situation and identify actions to address upsurges and to get back on track to elimination.

¹ World Malaria Report 2022, WHO

Performance against the 7 impact indicators shows that reported deaths from malaria have been maintained at zero; and that the number of reported foci were below target at 11 (target 18). No outcome targets have been achieved (11); there are 4 indicators with data not collected (surveys required for bednet access and usage). Of the 20 output/coverage indicators, only distribution of bednets in 2022 was on target (following limited distribution in 2021) and 7 indicators contain no assigned data. Malaria treatment targets were achieved in 2022 but microscopy is problematic with delays in procurement of microscopy consumables. In summary, of the 44 indicators, 9 had achieved the targets; 23 had not; and for 12, no data was available.

Prevention activities: Coverage of long-lasting insecticidal bednets (LLINs), indoor residual spraying (IRS), and the use of larvicides, were insufficient to prevent transmission locally and from imported cases. Bednets have not been equitably distributed even to active foci sites with distribution limited during COVID-19 (2021). The opportunity to test people with fever who displayed a negative result to COVID-19 testing was missed when they were not then routinely tested for malaria.

Case Management: Treatment for P.vivax is artemisinin combination therapy (ACT) plus a 14 day course of primaquine. Compliance for completion of primaquine treatment is low and communities have not been mobilised to assist with testing and directly observed therapy (DOTs). With primaquine treatment available only from hospitals, dispensaries and health centres, populations around aid posts often experience great difficulty in accessing these higher-level facilities so treatment is sometimes not pursued.

Surveillance has been constrained by lack of malaria staff in some provinces and funding constraints for teams to travel to active foci. Case investigations were conducted in 100% of cases in 2022 in Malampa and Penama only; but active and passive case detection is continuing. Terrain, weather and perceived lack of funds prevent access to some affected areas.

Critical **community engagement** activities have not yet been started with the draft national strategy still to be finalised. Opportunities to have village malaria committees and trained village health workers to administer and supervise treatment, and to be ready for outbreaks have been missed.

Management

Programme **planning** occurs on the basis of available funding. This means that a significant number of planned essential malaria activities are 'unfunded'. Significantly in 2020 and 2021, 59% of activities were reported as unfunded and 20% in 2022. Available funds are allocated to provinces and the national level, and activities are implemented accordingly. **Staffing** is not in place in some provinces (Sanma and Penama) further delaying or limiting what can be implemented. Opportunities to engage 10 malaria elimination officers offered by the Global Fund have been missed. Four Australian volunteers have been recruited to support management, case management and clinical operations in Port Vila, Penama, Malampa and Torba from July 2023.

While current levels of **funding** from GoV will remain at the same level and GF funding will be decreased by 17%, some provinces are accessing the DFAT Vanuatu Australia Health Partnership Programme (VAHPP) direct provincial funding arrangement for specific activities within their provincial business plans e.g. supervisory visits and emergency response activities in foci areas. The intention of the DFAT VAHPP is to fill funding gaps and support local solutions not available through current GOV budget allocations; target neglected or underserved populations and issues often overlooked due to funding constraints.

These funds are paid to the provincial government and are managed and acquitted by the provincial finance officers. Tuberculosis and HIV programmes are also accessing this funding source. Provincial managers report that accessing and acquitting the DFAT funds is easier than from GF. National level malaria staff maintain oversight and support for the activities funded in this way.

WHO continues to support the **technical** aspects of the programme as well as development of operating procedures and surveillance oversight. Concern over the efficacy of the current rapid diagnostic test (RDT) - Bioline Malaria Ag P.f/P.v.; the feasibility of G6PD testing and the 14 day primaquine treatment are issues for further investigation, particularly in the current emergency context. Consideration may also have to be given to mass drug administration (MDA) in some selected active foci areas.

Conclusions and Recommendations

The current emergency response to outbreaks in four provinces requires urgent and innovative attention. Surveillance will be a key intervention and the expansion of activities, particularly effective treatment, to reach underserved communities. Mobile malaria elimination officers, trained VHWs, community leaders and civil society must be mobilised to ensure availability of surveillance and full treatment as close to villages as possible.

Needs-based planning at the provincial level is a top priority so that adequate funding can be sourced and allocated from the available funding sources, particularly from DFAT. Coordination at the national level must be stepped up and political will increased so that GoV understands and appreciates the consequences of interrupting routine malaria practice.

The recommendations below reflect the need for urgent action to get the malaria programme back on an elimination track. The main thesis of the recommendations and the report is that despite some dwindling funds for malaria programming, it is feasible to plan at provincial and national level (needs-based) for a comprehensive malaria programme and to access existing funding sources to fund the activities in full. A variety of funds can be accessed – GOV, GFATM, DFAT and RAM. Enhanced focus on provincial-level, needs-based planning and ensuring full access to the funding sources available are critical ways to get the programme back on track. It is also the only way to achieve universal health coverage and equity in the programme.

There are five critical areas for recommendations:

1. Contributing to decentralisation of services and funds to provincial level; integration of public health programmes; and needs-based planning for universal access to malaria interventions, particularly at village level.
2. Accessing funds for planned activities – both routine and emergency response – through existing sources, particularly DFAT Direct Provincial Funding Arrangement.
3. Achieving a full complement of malaria staff at national and provincial levels; and training of health facility staff, VHW and other volunteers in case management.
4. Urgently reviewing the efficacy and effectiveness of current malaria testing and treatment for P. vivax, and to ensure case management is as close to villages as possible, especially aid posts.

Recommendations:

Prevention

- With 100% of the population at risk of malaria, ensure mass distribution of bednets to high-risk areas; and continuous distribution to all provinces (including Tafea) following annual review of coverage data, and household LLIN needs assessments; LLINs and IRS spray and equipment be stockpiled at provincial centre and health centres to be on-site for outbreaks and for ease of LLIN distribution to pregnant women and children.

- Consideration be given to include in provincial malaria planning, CSOs (e.g. Red Cross) for provincial distribution of LLINs, including DSA for volunteers.

Case Management

- Malaria case management training be provided for all nurses (undergraduates and in-service) in collaboration with MOH nursing services and the Provincial Health Office with input from the Malaria Team; and for VHWs and other community volunteers in areas that are hard to reach.
- Supportive supervisory health facility visits must proceed on a 6-monthly basis in all areas, including those with no/low malaria cases; and even more regularly in active foci.
- In-bound inter-provincial traveller screening to prevent importation (prevention of re-establishment of transmission strategy) to be initiated in selected areas.

Testing and Treatment

- In the light of the emergency response and the concerns raised about the effectiveness of the current RDT, microscopy be considered as a diagnostic backup, and microscopes/reagents provided at all health centres and dispensaries (117 facilities). This could be done in collaboration with the TB programme.
- To improve testing and treatment urgent consideration be given to: validation of the current RDT (Bioline Malaria Ag P.f/P.v.); an alternative RDT sensitive to P.vivax if found necessary; an alternative treatment regimen e.g. 7 day primaquine, tafenoquine (one dose) or MDA approaches; simplified training in G6PD testing; and training for VHWs to administer and monitor primaquine treatment at aid post level following prescription of the treatment by health centres and dispensaries.
- A list of malaria commodity stocks, projections and needs to be developed between CMS, provincial stores and the Malaria Program, and these supplies along with buffer stocks delivered to the provinces.
- The Vanuatu Malaria Diagnosis and Treatment Guidelines be revised to reflect any changes to testing and treatment regimens.

Surveillance

- In order to enhance the information collected on malaria cases: the Malaria Programme MEF be revised according to the endorsed recommendations in the MTR; and to reflect actual interventions that achieve outcomes for an emergency response with realistic indicators and targets; annual reports include more detail on location of active foci (village, health zone, Area Council); all DHIS2 data to be reported by gender and age; and annual reports include a routine section on equity of interventions; and the malaria team collaborate with provincial and national MCH staff to access data on women attending ante-natal care and children who receive malaria prophylaxis and bednets.
- The Integrated Disease Surveillance and Response (IDSR) currently being trialled, be rolled out as soon as possible to: speed up malaria reporting via the MMLL especially from remote areas, and increase compliance with the 1-7-60 approach.
- Consideration be given to utilising the TA available through the DFAT Centre for Health Security (CHS) for MEF revision, vector control, vivax, surveillance and response.

- UNDP urgently recruit the in-country Programme Analyst to improve support and monitoring of GF activities.

Community Participation

- The draft Advocacy, Communication and Social Mobilisation Strategy be urgently revised to include provision of: national media strategies and IEC resources for malaria to be routinely included and budgeted for in the business plans of VBDCP and implemented through the malaria programme and HPU unit; social mobilization at village level in all provinces including recruitment of community leaders and volunteers (VHW and Red Cross volunteers etc.) to assist with testing, case management and treatment/DOTS; and payment or incentives for VHWs and DSA for volunteers to be included in routine and emergency response planning.
- A communication campaign to publicise the findings and recommendations of the Mid-term Review be undertaken to reach all provinces, Area Councils and MOH Directorates so implementation can be tracked.

Planning and Funding

- Needs-based routine and emergency response national and provincial malaria planning be undertaken and costed to ensure universal, provincial-specific malaria needs are planned for on the basis of local data, and fully funded through existing funding sources. This includes activities funded by development partners.
- Emergency malaria response intervention package (as for dengue) be approved and costed ready for immediate funding to provinces through DFAT or GF for use in outbreak areas.
- Provincial health and malaria managers be encouraged and supported to access DFAT VAHPP funds for critical routine activities as well as for emergency response.
- MOH and UNDP/GF negotiate six monthly reports on GF funds and activities for the next Sub-recipient (SR) agreement (2024-2026).

Staffing

- The Public Service Commission (PSC) urgently renew contracts for existing contract staff; and approve and recruit the 10 mobile MEO positions; the Deputy Malaria Coordinator position and the Community Mobilisation Officer.
- Public Health Directorate consider reallocating public health staff to assist with malaria including through the integrated response; and reallocate national or provincial malaria staff in lower risk areas to high-risk areas that need urgent action. Malaria and Public health vehicles be preferentially allocated to urgent malaria case response areas.

All the recommendations in this MTR align with the MOH Health Sector Strategy, MOH Role Delineation Policy, Vanuatu NSP for Malaria Elimination, GF Funding Strategy 2024-2026, the GF Investment Approach for the next funding cycle, WHO Technical Strategy for Malaria, WHO 'Toward UHC', Case Study of Successful Elimination of Malaria in Tafea Province and DFAT Investing in a Strong and Healthy Region².

² <https://www.foreignminister.gov.au/minister/penny-wong/media-release/investing-stronger-healthy-region>.

1. Introduction

1.1

Background

Malaria has historically been one of the leading causes of ill health in Vanuatu. In 1990, this mosquito-borne disease infected an estimated 198 per 1,000 people and caused many deaths; as recently as 2010, it was among the top five notifiable diseases nationally. Malaria is a burden to communities and individuals. It can increase poverty and inequality due to lost productivity or income associated with illness or death. Effective population coverage of interventions is vital for affected populations especially for the disadvantaged and those hard to reach. In Vanuatu, malaria elimination is also vital to maintain and encourage tourism to the country.

The Vanuatu Government is committed to achieving Sustainable Development Goals (SDG) 3.3 – to end malaria by 2023; and SDG 3.8 – to achieve Universal Health Coverage (UHC). Currently Vanuatu’s rating for UHC is moderate – 72 - accounting for coverage of essential health services and catastrophic health spending following destructive cyclones, volcanic eruptions and the COVID-19 pandemic. Vanuatu is projected to lose a staggering 20 per cent of Gross Domestic Product (GDP) annually due to disasters³.

Equitable health service coverage is extremely difficult to achieve given the 83 islands, the transportation challenges and the vast spread of villages along coastlines where malaria is rife. Increasing population growth will also increase disease burden and this has been documented in the 2020 Vanuatu Census. The three provinces of Shefa, Sanma and Tafea have population growth rates of more than 2⁴. These are good reasons to accelerate the GoVs decentralisation approach.

In 2008, dedicated malaria elimination efforts were implemented in the whole of Tafea province. These efforts involved: 100% coverage with all malaria interventions; improved surveillance, case finding and case investigation; strong provincial and community engagement; additional staff (Malaria Elimination Officers); and strong attention to program management, monitoring, evaluation and reporting. These extra efforts were made possible by significant targeted financing by development partners (DPs), as well as technical and implementation support from WHO and academia. Although Tafea Province recorded one imported case in 2017 and one in 2021, no locally acquired cases have been detected since 2014. The Tafea elimination model was recommended in the previous Malaria Programme Review (2018) to be rolled out in all other provinces for elimination status to be reached by 2023. This has not occurred.

As recently as 2022, the WHO World Malaria Report advised that due to case reductions in 2020-21, Vanuatu was among eight countries in the Western Pacific Region on track to reach elimination by 2025. Since then, COVID-19 priorities; health system challenges including restricted funding and the hacking of the government system causing cessation of funding for two months at the end of 2022; decreasing funding from the Global Fund (GF); rising fuel and malaria commodity costs and supply chain disruptions have all threatened progress towards elimination.

Populations vulnerable to malaria are the majority of rural people living close to the coast. The species of mosquito *Anopheles Farauti* s.s., which is known to be the only vector of malaria in Vanuatu, exists and breeds almost exclusively within a few kilometres of the coast. Based on their behaviour, including frequent indoor resting, the vector control strategy is a combination of both long-lasting insecticidal mosquito nets (LLINs) and indoor residual spraying (IRS).

3 UN Office for Disaster Risk Reduction (UNDRR) Press Release, 9 March 2023

4 Population Growth Rates: Shefa 4; Tafea 3.1 and Sanma 2.3, Vanuatu 2020 Census, Vanuatu National Statistics Office

1.2

National Health System and National Malaria Program

Vanuatu MOH Role Delineation Policy (2019) clearly defines the roles of different levels of health facilities and a feature of the policy is decentralisation of services and Universal Health Coverage (UHC). This is essential in considering malaria services as provincial management teams are responsible for planning and coordination of integrated service delivery within the province, inclusive of those services provided through implementing partners external to the government⁵. This ensures that malaria services reach all provinces, health zones and villages. It is even more essential when there is an upsurge in cases and all active foci need to be reached.

Management of the malaria programme is the responsibility of the Vector Borne Diseases Control Programme (VBDCP) in the Ministry of Health (MOH); and implementation is the responsibility of the provincial municipal government including the provincial health services. Due to the intersectoral nature of malaria, many directorates of the MOH, other ministries and community sector organisations are involved making for complex coordination and management.

Table 1: Roles in Malaria Programming

Priority Malaria Interventions	Staff responsible for implementation
Planning for malaria	Provincial Health Manager and MOH Vector Borne Diseases Control Programme (VBDCP) Directorate – malaria activities in Provincial annual business plans and National business plans and annual work-plans
Financial management	MOH Corporate Directorate, MOH VBDCP Directorate, Provincial Finance Officers
Malaria testing	Provincial health facility staff and Village Health Workers (VHWs)
Malaria treatment	Provincial health facility staff – dispensaries and health centres
Case management and surveillance	Provincial health facility staff and Provincial malaria staff; training by VBDCP Directorate and Nursing/Curative Services; and in some provinces, VHWs e.g. Torba
Vector control (LLINs and IRS)	Provincial malaria staff and Civil Society Organisations (CSOs)
Procurement of malaria equipment and consumables; malaria drugs	MOH Central Medical Stores; MOH Pharmacy, VBDCP Directorate
Community Mobilisation, advocacy and communication	MOH Health Promotion Unit (HPU); provincial HPU/VHW staff; Malaria Elimination Officers, VHWs, village leaders, CSOs, volunteers
Reporting	Provincial health facility staff, Provincial Health Manager, MOH VBDCP malaria team
Oversight of the Malaria Programme	VBDCP Directorate, Malaria Elimination Steering Committee (MESC) and MEAG (Malaria Elimination Advisory Group)

All levels of malaria services are represented at the provincial level through primary health care services.

Oversight of the malaria programme is provided through the Malaria Elimination Steering Committee (MESC)⁶ and the Malaria Elimination Advisory Group (MEAG)⁷. The MEAG's role is technical review of malaria trends, broad effectiveness of Program implementation and progress towards elimination. The role of the MESC is to periodically review progress against malaria elimination strategies, and to direct

5 Role Delineation Policy (2019) Ministry of Health – 'Provincial Management teams are to plan and coordinate integrated service delivery within the province, inclusive of those services provided through implementing partners external to the government, in consultation with all stakeholders', p.9

6 MESC members comprise key MOH and malaria programme staff who review the program and strategies and direct planning and coordination.

7 MEAG members are representatives from MOH, the Vector Borne Diseases Division, DPs and NGOs.

the planning, detailed implementation, resource utilization and partner coordination to address issues or gaps. A report from a MESC meeting in September 2021 was sighted but it does not appear to meet regularly. This meeting report did recommend that funding for malaria needed to be decentralised and that Malaria Elimination Officers be based close to active foci.

The MOH works closely with the National Disaster Management Office (NDMO) to develop and maintain malaria- and VBD-related preparedness and rapid response mechanisms for affected areas and populations. This was seen in practice when the National Health Emergency Operation Centre (NHEOC) reported the need for additional bednets after the recent twin cyclones to the NDMO.

The **provincial structure** includes health zones and area councils which are comprised of clusters of villages and health facilities. Currently health zones are used to define transmission foci (outbreak areas) but these are soon to be replaced by area councils and villages. All health facilities have a role in malaria management with diagnosis and testing done through hospitals, health centres, dispensaries and aid posts; and radical treatment in all facilities except aid posts. VHWs are community-based and staff the aid posts where they are responsible for health education, prevention of communicable and non-communicable diseases, sanitation, mother and child care, treatment of simple medical problems. The communicable disease role includes malaria testing and tuberculosis treatment and Direct Observed Therapy (DOTs). Red Cross volunteers are also in every province and are trained in broader health issues including malaria. Vanuatu Family Health Association has community educators and volunteers in Shefa, Torba, Santo and Tafea.

In addition to this plethora of stakeholders, Development Partners (DPs) provide about 70% of funds for the malaria programme and all have their own processes and reporting requirements. This is proving onerous for the VBDCP and for the Provincial Managers. Delays in acquittal of funds can seriously delay implementation and cause interventions to stall and be ineffective. Provincial and national staff are required to acquit GFATM finds quarterly and the next tranche is not provided until this occurs.

Table 2: Roles of Development Partners

Development Partners	Role of Development Partners
Global Fund (UNDP)	Funds for surveillance; vector control (LLINs); case management training; national and provincial malaria positions; risk communication for Malaria and COVID19
WHO	Operational research; technical assistance to MOH; DHIS2 improvements; some provincial staff
DFAT – Vanuatu Australian Health Partnership	Direct Financing arrangement with provincial health managers; provides malaria emergency response activities in the provinces; surveillance and IRS commodities
DFAT – Partnerships for a Healthy Region (2023-2027); AUD350m over 5 years for the Asia Pacific Region	A new programme aiming to decrease disease burdens and respond effectively to health emergencies; in particular, to anticipate, prevent, detect and control communicable disease threats
Rotarians against Malaria and Rotary Global Grant	IRS equipment and printing of information materials; topping up of allowances for Australian volunteers

1.3

The National Strategic Plan for Malaria Elimination (NSPME)

The National Strategic Plan for the Elimination of Malaria (and other vector borne diseases) (2021-2026) aims to eliminate indigenous malaria transmission from Vanuatu by the end of 2023. In 2021, in preparation for specific elimination activities, a revised stratification approach was developed. This entailed the identification of foci areas using the parameters of parasite rate (API), test positivity rate (TPR), case counts and foci classifications. New criteria were also agreed for stratifying by receptivity with high being >2 API.

Key interventions in the NSPME include:

- Malaria vector control and personal protection
- Case-based surveillance for elimination and prevention of re-establishment
- Early and effective case management
- Health promotion
- Comprehensive malaria services as part of Vanuatu's disaster relief package⁸.

Goals and Objectives of the NSPME

Goals:

1. Prevent re-establishment of transmission in all provinces where transmission has been interrupted.
2. Achieve zero indigenous malaria cases in all provinces by the end of 2023.
3. Receive WHO certification of malaria-free status in 2026.

Strategic Objectives:

1. To maintain very high levels of coverage with long-lasting insecticidal mosquito nets (LLIN); *and* to rapidly reduce malaria transmission in selected higher-incidence areas and foci using indoor residual spraying (IRS)
2. To roll out case-based surveillance and response nationwide using the '1-7-60' approach.
3. To test all fever cases for malaria by rapid diagnostic test (RDT) or microscopy and provide prompt radical treatment and care for all confirmed cases according to the National Malaria Diagnosis and Treatment Guidelines.
4. To mobilize communities through health promotion and leverage the support of all stakeholders in a multi-sectoral effort to accelerate the elimination of malaria.
5. To ensure that malaria and other VBD prevention, surveillance and case management are well integrated into disaster preparedness and response activities.

⁸ Vanuatu National Strategic Plan for Malaria Elimination: Malaria and other Vector Borne Diseases Control Program 2021-2030, Ministry of Health, Vanuatu Government

Two further **supporting objectives** aim to strengthen the health system and programming.

- To maintain a high level of political commitment to malaria elimination; *and* to strengthen program management at national level and implementation at provincial and local levels through improved mechanisms for workforce management, program planning, disbursement of funds, information and data management, technical assistance and cooperation, procurement and supply chain management, and performance monitoring.
- To leverage technical partnerships in support of innovation by generating new knowledge and applying it to improve delivery and quality of malaria services.

Annex 2 provides the policies and procedures that guide the strategy now and in the future.

1.4

The Mid-Term Review (MTR)

The purpose of the MTR is to:

- Assess the progress of the national malaria control programme towards the epidemiological and entomological impact targets of the NSPME;
- Review the level of financing of the national malaria programme;
- Review the capacity of the national malaria control programme to implement planned activities;
- To review the attainment of programme outcome targets;
- Evaluate the extent to which service delivery systems (health facility and community) deliver quality services; and identify gaps;
- Define the programme implications of the lessons learned in the implementation of the NSPME.

The MTR was conducted in four phases: Planning; Thematic Desk Review; In-country data collection, consultations, field visits, and validation of findings through stakeholder consultations; and Programme Strengthening. National level consultations were conducted, and sub-national field visits were planned but unable to be undertaken due to two cyclones in two days – TC Judy and TC Kevin.

A stakeholder workshop was scheduled where national malaria staff, relevant MOH staff, provincial malaria staff, provincial health managers and civil society organisations (CSOs) were to come together to share experiences and suggest innovative ways to improve implementation. This was also disrupted by the disasters. Instead, virtual meetings were conducted, and the Aide Memoire and Draft Report were widely circulated for comments, and these were incorporated into the final draft as appropriate.

2. Assessment of Progress Towards Epidemiological and Entomological Impact

2.1

Findings

Until 2021, Vanuatu was making remarkable progress towards malaria elimination; had no reports of inpatient malaria deaths since 2012; and was among 8 countries in the Western Pacific likely to eliminate malaria by 2025 (the E-2025 initiative)⁹. The goals of Vanuatu's National Malaria Plan were to achieve zero indigenous malaria cases in all provinces by the end of 2023; and to receive WHO certification of malaria-free status by 2026. This now seems unlikely due to an upsurge in cases in all provinces except for Tafea.

2.1.1

Progress towards epidemiological impact

Performance against the 7 impact indicators shows that reported deaths from malaria have been maintained at zero; and that the number of active foci (health zones) are below target at 11 (target 18). Currently 100% of the population of Vanuatu is at risk of malaria transmission; 55% at high risk of transmission¹⁰; and the Annual Parasite Incidence (API) has increased from 1.3 in 2021 to 5.03¹¹ in 2022. The number of provinces with zero locally transmitted cases of malaria has decreased from 2 in 2021 to 1 (Tafea) in 2022. The malaria Test Positivity Rate (TPR) decreased to 1% in 2021 but has since risen to 5.8% in 2022.

Table 3: Test Positivity Rate 2019-2022

Year	# Cases	TPR
2019	576	2.4%
2020	502	3.2%
2021	413	1%
2022	1143	5.8%

TPR Formula: Number of confirmed cases against the tested population

Malaria cases were decreasing until 2022 when cases tripled to 1143. The reasons provided include: interruption to malaria services and elimination activities due to the priority on COVID-19; relapses from suboptimal radical treatment of P.vivax with primaquine; consumable stockouts; human resources gaps in some provinces; and reporting and funding delays on GF-funded activities. All provinces had cases in 2021 except Penama; and only Tafea had zero cases in 2022.

The following tables outline cases by species, province and mode of transmission.

⁹ World Malaria Report 2022, WHO

¹⁰ Malaria Programme Annual Report, 2022, MOH

¹¹ Note: These figures are verified by UNDP/GF

Table 4: Cases by Province and Mode of Transmission

Table: Province	Cases	% of cases by province	Imported	Local
Malampa	181	15.8%	4	177
Penama	13	1.1%	13	-
Sanma	486	42.6%	1	485
Shefa	213	18.6%	8	205
Tafea	0	0	0	0
Torba	250	21.9%	15	235
Vanuatu	1143	100%	41	1102

Source: Annual Malaria Programme Reports, MOH

Table 5: Malaria Cases by Province, Age and Gender 2020-2022

	Malampa		Penama		Sanma		Shefa		Tafea		Torba		Vanuatu	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Number of cases														
2020	79	76	2	2	167	120	21	30	1	0	5	5	275	231
2021	24	22	0	0	46	34	7	5	1	0	3	1	81	62
2022	70	93	0	0	258	246	58	72	0	0	103	77	489	488
Total < 5 yrs														
2020	25	16	0	0	31	17	1	1	0	0	1	0	58	34
2021	1	1	0	0	6	2	1	2	0	0	0	0	8	5
2022	11	9	0	0	44	37	9	11	0	0	6	1	70	58

Source: DHIS2

It is noted that the number of cases is relatively equally distributed between males and female overall, confirming the fact that adult men and women are equally biologically vulnerable to malaria, except for pregnant women and adolescent girls. However, amongst under 5 year olds, more boys (58%) than girls are infected which runs counter to the fact that the 2020 Census found that more boys (<5years) in all provinces slept under a LLIN¹² (See Annex 3 – Equity Assessment). In total, Census analysis found that 73.4% of these boys slept under a bednet compared with 56.8% of girls of the same age.

Table 6: Reported malaria cases by species 2019-2022

Species	2019	2020	2021	2022
Indigenous cases	567	493	312	1143
P.falciparum	36	38	0	0
P. vivax	531	469	312	1143
Mixed cases	0	0	0	0
Imported cases	9	14	10	

Source: Annual Malaria Programme Reports, MOH

12 2020 National Population and Housing Census Basic Tables, Volume 1, Table 5.19

The API for 2022 is off track in all provinces except Penama and Tafea with Torba, Sanma and Malampa well above target and at the highest level since the beginning of the malaria programme.

Table 7: API by Province

Province	2019	2020	2021	2022
Malampa	4.9	3.8	1.07	4.18
Penama	0.03	0.05	0	0.35
Sanma	4.2	4.7	2.24	7.55
Shefa	1.0	0.56	1.24	1.98
Tafea	0.03	0.03	0	0
Torba	0.97	0.87	0.34	20.95
Vanuatu	1.9	1.7	1.3	5.03 ¹³

API formula: Total malaria cases/Total population/1000

Source: Annual Malaria Programme Reports

Annual reports provide the health zone locations of outbreaks but pinpointing the village locations within these zones is difficult from the reports and mapping is unclear. Malaria outbreak areas according to MOH website (July 2022) are on the following islands:

- NE and west coasts of Santo (Sanma) – no roads
- SE Malekula (Malampa) – no roads
- Paama (Malampa) – no roads
- Ambrym (Malampa) – no roads in the north and SE
- Epi Island (Shefa) – no roads, truck track in SW
- SE Vanua Lava (Sola, Torba) – road in the south only
- Vanua Lava (Torba) - road in the south only
- Ambae (Penama) – road around the island

Refer to the map at the front of this report. It is apparent that most of these islands are distant from the provincial capitals and require extensive truck, boat or air transport to be reached. This is expensive and time-consuming but vital to reach for implementation of a malaria programme routine and emergency response. Planning must include reaching these areas with prevention, treatment, case management, supervision and support for community involvement. This is an equity (UHC) issue.

Diagnostic Testing

Malaria testing is carried out by health facility staff and VHWs using Rapid Diagnostic Tests (RDTs); and in hospitals using either RDTs or microscopy. Currently the Bioline Malaria Ag P.f/P.v is the RDT used in Vanuatu. This RDT is a WHO pre-qualified product for detecting *P. falciparum* and *P. vivax*.

During outbreaks case-based management involves investigation of cases and this is done by Passive Case Detection (PCD) in a health facility or Active Case Detection (ACD) where potential cases are

¹³ Note: 2022 API verified result by UNDP/GF; amended in 2022 Annual Report

actively sought by VHWs or provincial Malaria Elimination Officers (MEOs), especially in the outbreak areas.

There are concerns from the national/provincial malaria teams and the health facility staff that RDTs are showing false negatives in people clearly febrile and even convulsing. Health facility staff have expressed doubts about the efficacy of the current RDT to detect *P. vivax*. This could mean there are more cases than recorded; and cases that are not diagnosed are not treated.

WHO Guidelines for Malaria (2023) advocates that, for *P. vivax*, a combination RDT should be used if quality assured malaria microscopy is not readily available; and that microscopy is ‘field standard’¹⁴. In Vanuatu, microscopy is available in all six provincial hospitals and is the only way to confirm malaria cases. It was noted that Penama province does not currently have a microscopist and that Torba has recently acquired the microscopist from the National Reference Laboratory in Port Vila. Prior to the advent of RDTs, all health centres had microscopes and staff trained to use them. Until health staff can be confident in the RDT being used, microscopy should be available in health facilities as a backup for case detection. Data on diagnoses by microscopy were difficult to source.

Table 8: Parasitological Tests 2020-2022 by Detection Method

Province	Microscopy			RDT			Total		
	2020	2021	2022	2022	2021	2022	2020	2021	2022
Malampa			549			2441		3329	2990
Penama			-			905		3287	905
Sanma			61			3506		12364	3567
Shefa			25			3837		3862	3862
Tafea			22			267		-	289
Torba			6			1450		10	1456
Total			663			12406		24748	13069

Source: VBDCP Annual Reports

Table 9: Malaria Tests by Province 2022

Province	ACD	PCD	Total
Malampa	1261	2717	3978
Penama	463	4325	4788
Sanma	2496	5486	7982
Shefa	1949	5455	7404
Tafea	408	1313	1721
Torba	37	265	302
Total	6614	19561	26175

ACD – Testing during surveillance; PCD – health service testing;

Source: VBDCP Annual Reports

Note: The high testing rate in 2022 could be related to emergency response activities and testing of fevers during COVID in some areas.

14 WHO Guidelines for Malaria (14 March 2023), WHO Global Malaria Programme; p.151 “Where *P. vivax* malaria is common and microscopy is not available, it is recommended that a combination RDT be used that allows detection of *P. vivax* (pLDH antigen from *P. vivax*) or pan-malarial antigens (Pan-pLDH or aldolase)”.

The number of active foci (health zones) are below target but cases are high. Locations of foci are Torba (1), Sanma (4), Malampa (4) and Shefa (2). The programme will soon move the definition of foci to villages/area councils instead of health zones. This will facilitate easier identification of foci as villages and their associated health facilities. As of this month (March, 2023) there are 11 health zones that have ‘hot spots’.

Table 10: Active Foci as at February 2023

Province	Torba	Sanma	Malampa	Shefa	Total
Health Zones	3	1,4,6,7	1,2,3,4	1,4	11
No. of Foci	1	4	4	2	11

Source: VBDCP Annual Report 2022

The following table presents the malaria situation in the provinces and compares the situation from 2021 to 2022. The dramatic increase in cases and API is noted, as is the limited bednet distribution in 2021. See Annex 4 for key data for each province.

Table 11: Malaria Situation in the Provinces

Province	Population ¹⁵		# HHs (2020)	# Health Facilities	#Foci 2022	Cases/ Investigated		Cases/ Investigated		API 2021/ 2022	LLIN distribution	
	2020	2022				2021	2022	2021	2022			
Malampa	42499	43611	9664	9 HC, 19 disp. 47 AP	4	46	46	181	181	1.07/4.18	2,990	28,241
Penama	35607	36538	7812	6 HC, 23 disp. 40 AP	1	0	0	13	13	0/0.35	4,170	17,493
Sanma	60884	63716	12696	8HC, 18 disp, 49 AP	4	140	91	486	410	2.24/7.55	5,912	44,964
Shefa	103987	112472	22100	5 HC, 13 disp. 45 AP	2	131	30	213	202	1.24/1.98	21571	15,831
Tafea	45714	48952	8214	4 HC, 13 disp. 40 AP	0	1	1	0	0	0/0	0	3,775
Torba	11330	11718	2390	3 HC, 5 disp. 24 AP	0	4	4	250	235	0.34/20.95	2,497	9,043
Vanuatu	301695	316647	62876	-	11	413	172	1143	1030	1.05/5.03	37,140	119,347

Source: Malaria Programme Annual Reports

2.1.2

Progress towards entomological impact

Anopheles farauti s.s. is the vector of malaria in Vanuatu and is found within a few kilometres of the coast. It is characterized by early outdoor biting, and studies suggest that due to its frequent blood-feeding, it is expected to be affected by insecticidal interventions such as LLINs and IRS. There is no

¹⁵ Vanuatu 2020 Census, Population projected from 2020 using growth rates in Census Results

known resistance in the mosquito to pyrethroids used on long-lasting insecticidal nets (LLINs) or indoor residual spraying (IRS), therefore ensuring the effectiveness of the vector control interventions.

Plasmodium falciparum and Plasmodium vivax are both present in Vanuatu, but P. vivax has become the predominant species (100% of all cases since 2021).

There are six outcome indicators relating to LLINs and their usage by people vulnerable to malaria. Most of these indicators require a survey and apart from the Vanuatu Census in 2020; and a 2020 study of bed net access and usage in 5 provinces where 7480 individuals in 1841 households were surveyed, these surveys have not been regularly conducted.

Analysis of Census data reveals that results for all indicators were below target especially for the vulnerable (pregnant women, children under 5 years and children under 15 years). The proportion who slept under a bednet the previous night (Census 2020) by age and vulnerability was:

Children <5 years - 64.7% (target 90%)

Children 5-14 years – 67.4%

People > 15 years – 69.5%

Pregnant women – 60% (target 90%)

Girls under 5 years – 56.8%

Boys under 5 years – 73.4%

Access to LLINs was also examined and results were lower than targets. Equity and universal health coverage are also issues with LLINs as some areas were found to have not had LLIN distribution for years. Anecdotal evidence from people consulted around Shefa was that they were not aware that bednets were available and were free of charge. Others stated that bednets were used for fishing and window dressing.

Further data on bednet usage and access is included in Annex 3 - the Equity Assessment.

3. Programme Financing

3.1

Findings

The current National Malaria Programme has not been fully funded since its inception in 2019. Recurrent funds from GOV have not increased and will remain the same (12%) in the near future; and the Global Fund investment will decrease by 17% in the next funding cycle (2024-2026). This means that prioritisation was always needed so unfunded activities were common. This has led to inequitable access to interventions and may also be a cause of the recent upsurge in cases. However, future policies and funding options seem to be potentially more positive.

The National level focuses on national planning and policy, monitoring, evaluating and supporting provincial service delivery. The Provincial level focuses on implementation and service delivery for community-based activities, and training and support for malaria diagnostics and case management for staff at the health facilities and VHWS. The following table outlines historical funding responsibilities within the malaria programme.

Components of Funding Responsibility for Malaria Programme 2020-2022

Fund Provider	Funded areas
Govt of Vanuatu	Staffing; Programme management; procurement of diagnostics and other malaria consumables; case management training; surveillance reporting and M&E; coordination of community awareness/advocacy; disaster preparedness
Global Fund	Support for surveillance; vector control (LLIN distribution); case management training; GF program management (Principal Recipient - UNDP); HR for health (staff); WHO Special Service Agreements for technical assistance, operational research and some staff
GF COVID Response Mechanism	Risk communication for Malaria and COVID-19; surveillance; case management; 10 Provincial Malaria Officers (USD 745,684 - unspent)
RAM + Rotary Global Grants	IRS consumables and equipment; support for Australian volunteers to Vanuatu malaria programme
DFAT (Vanuatu Australia Health Partnership Programme)	IRS equipment; Rapid Provincial Response;

Annual Reports indicate that approximately 60% of malaria activities were unfunded in 2020-2021; with 20% unfunded in 2022. This includes some malaria funds which were redirected to the COVID-19 efforts.

Table 12: Total Funds 2020-2022 (VUV)

	Total	Committed	Unfunded
2020	39,224,111	16,201,712 (41%)	23,022,399 (59%)
2021	39,224,111	16,201,712 (41%)	23,022,399 (59%)
2022	51,038,330	40,670,530 (80%)	10,367,800 (20%)

Source: Annual Reports for 2020, 2021, 2022

Note: Amounts for 2020 and 2021 were identical in Annual Reports

Note: The budgeted amount for local staff funded either through domestic (recurrent) funds or from development partner contributions is not included in this budget, which focuses on operational activities. Funding allocated for malaria diagnostics or drugs is also not covered in this table as this budget area is managed through the Central Medical Stores (CMS) and Pharmacy.

In Quarter 4, 2022 the government finance system was hacked and funds were not available for any activities. Some staff were not paid during that time. All malaria activities were curtailed.

Table 13: Summary GF Budget (USD) by Year and Component¹⁶

Component	2021	2022	2023	Grand Total	% of Grand Total
Case Management	147,150	302,236	208,813	658,198	22.2%
Program Management (PR)	172,224	304,904	208,309	685,437	23.1%
RSSH: HR for Health	12,008	59,792	54,239	126,038	4.2%
RSSH: Integrated service delivery and QA	74,572	202,446	78,795	355,813	12.0%
Vector Control	328,003	622,726	192,113	1,142,881	38.5%
Grand Total	733,957	1,492,143	742,268	2,968,368	100%
GF Covid19 Response Mechanism					
Risk communication for Malaria and Covid; surveillance; case management; 10 Provincial Malaria Officers		372,842.12 (unused)	372,842.12 (unused)		
GF Malaria Elimination in Melanesia and Timor Leste (MEMTI)					
Salaries:					
Vector and Surveillance Officer (Nat. Level)	WHO Special Service Agreement (SSA) Positions				
Malaria Surveillance Officers – Malampa, Sanma, Shefa	WHO SSA Positions				
Total:	65,456	65,456	65,456	196,368	

3.1.1

Funding Analysis

Currently 71% of health finance and support for malaria is provided by DPs, including the GFATM and the WHO¹⁷. The current phase of the GF funding cycle covers the period of 2021-2023, with funding from the Global fund through a USD 2,968,368 grant. The next round of GF funding (2024-2026) will be USD 2,461,679 – a decrease of 17%.

The health sector in Vanuatu is said to be the best resourced sector in the country so national and provincial managers must become more adept at seeking the funds.

Sources of Funds for Malaria Programme include:

- Government of Vanuatu (recurrent)
- MOH Contingency Response Fund for emergencies – VUV 19m
- GFATM Malaria Programme

¹⁶ UNDP Programme Revision 2020-2023, December 2022

¹⁷ Op cit

- DFAT Vanuatu Australia Health Partnership
- DFAT Partnerships for a Healthy Region (2023-2027) – AUD 620m over 5 years
- Rotarians against Malaria and World Rotary Fund

Timely access to funds for implementation of malaria activities (including case investigations, supervision and continuous LLIN distribution) is a key issue. While some Pacific countries have moved to a grant-based system for funding sub-national malaria activities based on quality-assured annual work plans, Vanuatu still relies on the use of imprests for specific activities. Ministry of Finance imprest policies are complex and restrictive and this also often results in delays in the receipt of funds.

GF administrative processes have also reportedly been restrictive in that expenditure must be acquitted quarterly before the next tranche is released. This has been particularly problematic with activities planned for the first and last quarters of the year. Realistically this leaves 6 months for implementation. There are acquittals outstanding from 2022 and GF funds yet to be disbursed. According to UNDP, the GF policy on quarterly acquittals is not negotiable for the duration of this Sub Recipient agreement (until December 2023). It is noted that the quarterly reporting is relevant to the GF funded activities only.

It seems possible for UNDP's cash transfer methodology to be changed for the next GFATM round (2024-2026). The frequency of cash transfer can be agreed between the MOH and UNDP office at the outset of the project and specified in the project agreement¹⁸. The cash transfer modality can be changed from project level control and audits to a method of assurance derived from risk-based assessments and audits¹⁹. This revised Harmonised Approach to Cash Transfers (HACT) aims at closer alignment of development aid to national priorities; strengthening national capacity for management and accountability; and reducing the reporting burden on implementing partners. It also heralds a gradual shift to national systems when MOH takes over as GFATM Principal Recipient in the future.

GF is set to consider requests for locally targeted packages - Subnational Tailoring (SNT²⁰) – whereby interventions are tailored to the local context based on local evidentiary data; and aligned with National priorities. Such packages could be useful for unfunded malaria provincial activities, particularly targeting active foci. With more community engagement it could also resolve the challenge of reaching remote islands and villages.

DFAT Vanuatu Australia Health Partnership Programme (VAHPP) – formerly the Vanuatu Health Program - also utilises such a strategy. It means that funds target the provincial level, so are accessible for quick and easy access for outbreaks and emergencies and activities are implemented by communities, health facility staff and provincial malaria staff. The intention of the DFAT VAHPP is to fill funding gaps and support local solutions not available through current GOV budget allocations; target neglected or underserved populations and issues often overlooked due to funding constraints.

The key to unlocking these funds for provincial level is evidence-based proposals based on local data and local needs. The mechanism aligns with GOV's policy on decentralisation; the Role Delineation Policy and the strong movement towards UHC. Some provinces are already utilising the DFAT VAHPP funds for surveillance and emergency response. It means that there should no longer be unfunded activities and that interventions can potentially reach all parts of Vanuatu.

18 UNDP Programme and Operations Policies and Procedures (POPP): Direct Cash Transfers and Reimbursements, Periodicity of Advances. p.3

19 UNDP Programme and Operations Policies and Procedures (POPP): Harmonised Approach to Cash Transfers (HACT) 2020, UNDP

20 Information Note Malaria Allocation Period 2023-2025 Date published: 29 July 2022 Date updated: 2 December 2022, GFATM

3.1.2

Expenditure Analysis

Accessing funds is not the only finance issue to be addressed. Absorption rate is low indicating that service delivery needs to be increased and management improved. For example, in 2021 only 58% of GF funds were spent; and in 2022, 41% was spent (Note: the GOV system was down for the last quarter of 2022 and no funds were accessible).

In 2021 and 2022, GF offered 10 Malaria Elimination Officer positions for the provinces and this offer has not yet been taken up. The Director Public Health advised that these positions were approved by the Public Service Commission (PSC) but not yet recruited. Similarly funding for the position of Deputy Coordinator was provided by GF and has not yet been recruited reportedly due to a two-year delay within the MOH Human Resources Directorate and the PSC.

Table 14: Expenditure by component and year 2021-2022

Component	Absorption Rate*	
	2021	2022
Vector Control	54%	42.5%
Program Management	20%	17%
Diagnosis/Case management	14%	26.4%
Surveillance & M&E	7%	13.2%
Community awareness & advocacy	5%	0.9%

Source: Malaria Programme Annual Reports 2021 and 2022

*% of budgeted funds spent

3.2

Conclusions and Recommendations

Access to regular funding from GOV and GF for malaria interventions will not improve so alternative sources must be utilised based on comprehensive national and provincial needs-based and evidence-based planning. Decentralising more funds to the provincial level will make it more accessible and on hand for emergency responses.

Provincial health and malaria managers must be encouraged and supported to access DFAT VAHPP funds for routine planning as well as for emergency response.

Recommendations:

- **Needs-based routine and emergency response national and provincial malaria planning be undertaken and costed to ensure universal, provincial-specific malaria needs are planned for on the basis of local data, and fully funded through existing funding sources. This includes activities funded by development partners.**
- **Emergency malaria response intervention package (as for dengue) be approved and costed ready for immediate funding to provinces through DFAT or GF for use in outbreak areas.**
- **Provincial health and malaria managers be encouraged and supported to access DFAT VAHPP funds for critical routine activities as well as for emergency response.**
- **MOH and UNDP/GF negotiate six monthly reports on GF funds and activities for the next Sub-recipient (SR) agreement (2024-2026).**

4. Capacity to Implement Planned Activities

4.1

Findings

Both COVID-19 and the serious hacking of the GOV finance system have impaired the VBDCP's capacity to implement malaria interventions. Despite these drawbacks in 2021, the GF Local Fund Agent (LFA) has rated the average performance in all indicators as moderate (72%). Specifically selected indicators were allocated the following ratings:

Table 15: Programme Performance against selected indicators - 2021

Indicator	Rating 2021
# LLINs distributed to at-risk populations through mass campaigns	63% of the target
# LLINs distributed to at-risk groups through continuous distribution	4% of the target
Proportion of malaria cases that received a parasitological test at public health facilities	100%
% of confirmed cases investigated and classified	59%
Proportion of confirmed cases that received first line antimalarial treatment at a public health facility	94%
Completeness of facility monthly reports received	86%
% of malaria foci fully investigated and classified	100%

Source: Programme performance GF Funds, GF LFA

Poor performance at providing bednets to at-risk groups needs to be a focus now that mass distribution will be needed to address current outbreaks. Proposed storage and distribution of bednets through health facilities will also facilitate this. Planning at the local level will improve equitable distribution.

4.1.1

Rate of Implementation of Objective Level Activities

Achievement of outcomes and rate of implementation have been difficult to assess due to the lack of completeness of data in the M&E framework and in Annual Reports. Consultations have been useful in gaining an insight into issues around implementation.

Objective 1 - To maintain high levels of coverage with LLINs and to rapidly reduce malaria transmission in selected high-incidence areas and foci using IRS.

High levels of LLIN coverage are not apparent from data found. Two surveys were done in 2020 before the upsurge in cases. However, even in 2020, coverage was below target. The surveys were the 2020 Vanuatu National Census and the 2020 Evaluation of Bednet Access and Usage²¹ conducted in five provinces and 1841 households.

Lack of accessible funds for transport and Daily Subsistence Allowances (DSA); COVID-19 disruptions; irregular funds flow from GOV and GF; and hard to reach active foci have reportedly impeded bednet distribution. Table 11 illustrates that bednet distribution was accelerated in 2022. The recent twin

²¹ Evaluation of the Access and Use of ITNs (2020), Vanuatu Red Cross, Ministry of Health and WHO

cyclones could further disrupt distribution in Shefa, Malampa and Tafea where they will be needed urgently.

The national malaria team have indicated that a comprehensive survey will be undertaken in 2023 using reprogrammed GF funds from 2022.

Objective 2 – To rollout case-based surveillance and response nation-wide using the 1-7-60 approach

The 1-7-60 approach ensures that cases are reported within a day of detection; investigated, classified and responded to within 7 days; and followed up within 60 days after detection. Consultations revealed that it is not always possible to report cases within one day due to lack of connectivity and phone reception; and that confirmed cases referred from aid post level to dispensary of health centre for treatment may take days to be transferred. Some may not be able to afford the transport for the referral. For this approach to be effective, treatment needs to be as close as possible to villages where people are infected.

Data against the four indicators for this intervention indicate that 80% of cases in 2022 were notified within one day; 90% of confirmed cases were investigated, classified and managed within 7 days of notification; and 60% of these were followed up within 60 days. All results were below target.

It is unclear how the initial MMLL form (which is filled in by the health facility staff) gets to a provincial malaria staff within one day, particularly in remote areas; and why it is the malaria staff who enters it into the DHIS2 system. In the interests of integrated public health, it would be logical that the data should be entered by provincial health information officers and then malaria staff are notified to undertake case-based surveillance.

Annual Reports need more detail on the location of the active foci, apart from the health zone, it would be useful to know the case distribution, the geography of the region, the distance to health facilities and transport option in the case of referral to the next level of care for radical treatment. This information can also inform the feasibility of the 1-7-60 approach.

Timely disbursement of DSA for malaria officers dispatched to undertake case-based surveillance is often an issue which precludes or delays immediate investigations. For case investigations in active foci, Mobile MEOs should be based in the active areas until the outbreak has been resolved. Alternatively, nurses and VHWs within the village or area could undertake the investigations given appropriate training.

Objective 3 – To test all fever cases for malaria by rapid diagnostic test (RDT) or microscopy, and provide prompt radical treatment and care for all confirmed cases according to the National Malaria Diagnosis and Treatment Guidelines.

Diagnostic testing is done at all levels of the health system, including aid posts. Concerns about the efficacy of the RDT being used is discussed above. All cases are now known to be *P. vivax*, so require radical treatment with ACT and a 14 days course of primaquine. Currently the primaquine can only be provided by nurses at dispensaries and health centres. The travel to higher levels of health facility is often prohibitive for villagers in terms of time and cost so the risk is that treatment is not attended to promptly, incomplete or not sought at all.

This could be resolved by training VHWs at aid post level to provide the radical treatment after prescription by health centre or dispensary. VHWs already provide the treatment for Tuberculosis (TB) and are trained in using the Directly Observed Therapy (DOTs) to ensure completeness of cure.

Objective 4 – To mobilise communities through health promotion and leverage the support of all stakeholders in a multi-sectoral effort to accelerate the elimination of malaria

Community participation is a cornerstone of primary health care and is valuable in all areas of public health. Provinces have their Health Promotion units and staff and implement IEC and community mobilisation activities for many public health issues. Many villages and Area Councils have community committees for health issues, including malaria and these resources need to be refreshed and encouraged to assist with the current upsurge in cases.

The role of the national Health Promotion Unit is to support the malaria programme with Information, Education and Communication (IEC) resources for malaria, funded from the annually planned IEC activities for malaria.

Implementation of community mobilisation and IEC activities has been limited as the development of the Advocacy and Communication and Social Mobilisation Strategy is still in progress.

Objective 5 – To ensure that malaria and other VBD prevention, surveillance and case management are well integrated into disaster preparedness and response activities.

The M&E matrix and Annual Reports advise that the Malaria and VBD disaster response plan developed in line with NDMO has been drafted in 2021.

Objective 6 – To maintain a high level of political commitment to malaria elimination; *and* to strengthen program management at national level and implementation at provincial and local levels through improved mechanisms for workforce management, program planning, disbursement of funds, information and data management, technical assistance and cooperation, procurement and supply chain management, and performance monitoring.

The discontinuation of the malaria programme during COVID-19 indicates that political commitment and understanding of the dire consequences of interrupting malaria interventions is lacking. High level advocacy is needed to be included in the Advocacy and Communication Strategy to address this. Programme management at national level and provincial levels are expected to be strengthened with the appointment of four Australian volunteers – one at Port Vila with the national malaria team; and three in the provinces of Torba, Malampa and Penama.

Planning

All malaria activities at National and Provincial levels need to be included in the respective Business Plans, including any activities to be supported by DPs. This is why it is critical that all routine malaria activities are planned for and costed within the plans – not only the activities for which there are existing funds. Similarly forward planning demands that costed emergency response plans are also included so that immediate funding can be sought in the event of an emergency outbreak. National and provincial managers can then negotiate with GOV or DPs to implement these plans as needed.

Planning must be based on actual needs not what has been planned for in past years or what there is funding for. The malaria situation is changing rapidly, populations in some provinces are increasing, and disasters can strike at any time. Provinces have different geographical situations and needs so plans must be province specific. National and Provincial managers should have fully funded routine programmes, and emergency modules ready for implementation in the event of an outbreak.

Staffing for the National Malaria Programme

At National level, there are currently 14 positions. Eight (8) are funded by DPs (UNDP/GF/WHO); and six funded by the GoV. Of these, 4 positions are currently vacant – three are GoV funded and 1 is UNDP/GF funded. The position of Deputy Program Coordinator with funding from UNDP/GF has been vacant for over a year and recruiting this position would provide support to the Programme Coordinator during this emergency response period.

In the provinces, there are currently 34 positions in total with 18 of these vacant. In those provinces where the most cases exist (Sanma, Torba, Shefa and Malampa), there are 13 vacant positions (see Table below).

The following tables provide an historical view of staffing over the past 4 years. Of GoV funded positions (30), 6 are vacant. While the numbers of malaria positions have increased, mainly through the addition of DP funded positions, so have the number of vacancies. Currently there are 35 provincial malaria positions with 18 vacant. At national level, of 14 malaria positions, 8 are funded by DPs and 4 are vacant.

Table 16: National Level: Malaria Staffing Situation 2019-2022

Year	# malaria positions	# funded by GOV	# funded by DPs	# Vacant
2019	12	7	3	2
2020	11	6	3	2
2021	12	7	3	2
2022	14	2	8	4

Source: Malaria Programme Annual Reports 2019-2022

Table 17: Provincial Level: Malaria Staffing Situation by Province 2019-2022

Year	Province	# positions	# funded by GOV	# funded by DPs	# Vacant
2019	Tafea	4	3	1	0
	Shefa	4	3	1	0
	Malampa	6	5	1	2
	Sanma	5	3	2	2
	Penama	3	3	0	1
	Torba	3	3	0	
	Total		25	20	5
2020	Tafea	4	3	1	0
	Shefa	4	3	1	0
	Malampa	6	4	2	2
	Sanma	5	3	2	2
	Penama	3	3	0	1
	Torba	4	4	0	1
	Total		26	20	6

Year	Province	# positions	# funded by GOV	# funded by DPs	# Vacant
2021	Tafea	4	3	1	0
	Shefa	4	3	1	0
	Malampa	6	5	1	2
	Sanma	5	3	2	2
	Penama	3	3	0	1
	Torba	4	4	0	1
Total		26	21	5	6
2022	Tafea	4	4	0	0
	Shefa	4	3	1	1
	Malampa	4	4	0	1
	Sanma	5	5	0	2
	Penama	4	4	0	3
	Torba	4	4	0	1
Total		24	23	1	8

Source: Malaria Programme Annual Reports 2019-2022

Achieving an effective malaria programme is jeopardised by the number of vacancies.

The GoV Role Delineation Policy (2019) clearly describes that the role of the national level is policy, overall planning and quality control; while the province level is responsible for annual business planning, implementation, including integrated planning within the province which is inclusive of services provided through implementing partners external to the government. The implications of this policy on staffing are that fewer staff should be required at the national level and more at provincial level, particularly mobile staff who can service the active foci areas.

The actual planning for implementation of malaria activities occurs at the provincial level so minimising staff needed from the national level to go to the provincial level. This would also serve to reduce the budget spent on travel and DSA paid to national level staff for those functions. Provincial and national managers consulted were supportive of this approach and agreed that it would improve timely implementation of activities.

The programme is expected to benefit from July 2023 by the appointment of four Malaria Elimination Officers (Australian Volunteers) who will be stationed in Port Vila, Torba, Penama and Malampa to assist with the emergency response. The provincial roles will be clinical and will support planning, coordination, data analysis, implementation of activities and reporting. The national volunteer will support planning, budgeting, coordination and reporting. The volunteer positions are funded by DFAT with some support from RAM.

If the 10 MEOs to be provided through GF funds can be mobile malaria workers, all active foci could be reached for case-based surveillance and management.

Recommendations:

- **The Public Service Commission (PSC) urgently renew contracts for existing contract staff; and approve and recruit the 10 mobile MEO positions, the Deputy Malaria Coordinator position and the Community Mobilisation Officer.**

- **Public Health Directorate consider reallocating public health staff to assist with malaria including through the integrated response; and reallocate national or provincial malaria staff in lower risk areas to high-risk areas that need urgent action. Malaria and Public health vehicles be preferentially allocated to urgent malaria case response areas.**

Objective 7 - To leverage technical partnerships in support of innovation by generating new knowledge and applying it to improve delivery and quality of malaria services.

WHO continues to support the technical aspects of the programme as well as development of operating procedures and oversight of surveillance. Updating of the DHIS2 is continuing; the Operational Manual has been updated; WHO undertook surveillance activities in Malampa and will now shift surveillance activities to Shefa and Torba.

The process for replacement of the WHO Technical Officer for the Malaria Programme will not begin until June. However, a temporary technical officer from WHO Fiji will arrive in March.

Concern over the efficacy of the current rapid diagnostic test (RDT), feasibility of the 14-day primaquine treatment and the rollout of the G6PD point-of-care quantitative tests are issues for further technical investigation, particularly in the current emergency context. Consideration may also have to be given to mass drug administration (MDA) in selected active foci.

4.1.2

Status of Implementation of the Recommendations of the Last Programme Review

The findings of the last Malaria Programme Review (2018) were remarkably similar to those of this review:

- The Programme needs to fully and efficiently utilize the funds available and additional funding needs to be mobilized.
- Significant human resource issues need to be addressed including recruitment to fill key posts at the national level and for Provincial Malaria Supervisors to enable surveillance to become fully functional.
- Critical need to improve drug supply chain management from national to provincial level
- Supervisory visits to health facilities also need to be ensured.
- Affected zones should be the first to receive new nets and coverage verified by rigorous supervisory visits.

Annex 7 contains the list of recommendations from the 2018 review and the status of implementation as provided by the Malaria Programme team. It can be clearly seen that: implementation has not been achieved for most recommendations; and that implementation of all the recommendations could have maintained the elimination trajectory and had Vanuatu closer to a malaria-free status.

To ensure that the recommendations from this review are not dismissed, a recommendation (see Section 5.5) is made that the findings and recommendations are communicated widely especially to Provincial managers, Area Councils and malaria staff. Annex 8 provides a one-page summary of the results of the MTR for circulation to MOH managers, the provincial managers, Area Councils and malaria staff.

5. Review of the Effectiveness of the Health System in Delivering Malaria Services

5.1

Vector Control Outcome Targets

Vector control is the main strategy for prevention of malaria. It comprises access to and use of LLINs; Indoor Residual Spraying (IRS) and larvaciding. Entomological surveillance includes vector control in malaria-free areas to prevent re-establishment of malaria²².

The outcome indicators for vector control and the results in the table below indicate that targets have not been achieved. It is noted that the data in the Census (which was nation-wide) is lower than those from the evaluation in 5 provinces. The number of persons per LLIN is the result of routine microplanning and not assessment of actual persons per LLIN from distribution. Planning for numbers of bednets distributed per province has reportedly not changed for three years.

Table 18: Outcome Indicators, Targets and Results for Vector Control

Indicator	Baseline (Year)	2020		2021		2022	
		Target	Result	Target	Result	Target	Result
Proportion of population that slept under an insecticide-treated net the previous night (Survey-derived only)							
	44.3% (2013)	70%	68.4%	80%	68.4% ²³ 46.7% (Census)	80%	No survey
Proportion of children under five years old who slept under an insecticide-treated net the previous night (Survey-derived only)							
	51% (2013)			90%	64.7% ²⁴		No survey
Proportion of pregnant women who slept under an insecticide-treated net the previous night (Survey-derived only)							
	40.5% (2013)			90%	60% ²⁵		No survey
Proportion of population using ITN among those with access							
	68.4% (2020)		68.4%	60%	46.7% (Census)	70%	No survey
Proportion of population with access to an ITN within their household (Survey-derived only)							
	83% (2013)			95%	57% (Census)	95%	No survey
Number of persons per LLIN distributed in areas targeted for distribution (Routine programmatic monitoring)							
	1.35 (2019)	1.25	1.35	1.25	1.25	1.25	1.25

22 WHO Technical Strategy for Malaria 2016-2030; 2021 Update

23 Evaluation of the Access and Use of ITNs (2020), Vanuatu Red Cross, Ministry of Health and WHO – 7480 individuals surveyed in 1841 households in 5 provinces

24 Ibid

25 Ibid

5.1.1 Findings

Malaria programme annual reports reveal that distribution of LLINs ceased during COVID and many areas have not had bednets for 3 years. In 2022, distribution was resumed with 120,000 LLINs distributed across all provinces. Table 11: Malaria Situation in the Provinces compares distribution in 2021 with 2022.

Table 19: LLIN Distribution 2022 by Province

Item	Total	Torba	Sanma	Penama	Malampa	Shefa	Tafea	Total
Mass LLIN	59090	6430	39442	13869	23595	9879	-	93215
Continuous Distribution to Schools	2995	591	1182	887	1182	1477	591	5910
Continuous Distribution ANC	5866	1161	2323	1742	1742	2322	2322	11614
Outbreak and disaster buffer stock	2954	591	1477	591	1182	1477	591	5908
Continuous distribution to active foci areas	900	270	540	405	540	675	270	2700
Total	71765	9043	44964	17493	28241	15831	3775	119347

Source: Malaria Programme Annual Reports

Analysis of these data shows:

- Evidence of the formula used for distribution planning was not based on households, age of children, pregnant women etc.
- No obvious accounting for population growth rates in provinces. Some provinces have high population growth rates e.g. Sanma, Shefa and Tafea.

The following table exemplifies some of the issues with bednet distribution. Currently the number of bednets distributed is 1.25 per household. Household size is seen to warrant a larger number to be distributed to each household especially in Penama, Torba, Malampa and Shefa to ensure coverage for the whole household. Planning for distribution has been the same for at least three years and it's time that microplanning is replaced by a more accurate estimation of bednets per household as recommended in the 2018 review.

Table 20: Bednet Coverage by Distribution and Household, 2022

Province	Total Population projected to 2022	Number of households	Average No. people per household	Bednets distributed 2022	Average No. bednets per household 2022	% of family covered
Malampa	43611	9664	4.5	28241	2.9	64%
Penama	63716	7812	8.1	17493	2.2	27.1%
Sanma	36538	12696	2.8	44964	3.5	>100%

Province	Total Population projected to 2022	Number of households	Average No. people per household	Bednets distributed 2022	Average No. bednets per household 2022	% of family covered
Shefa	112472	22100	5.1	15831	.71	13%
Tafea	48592	8214	5.9	3775	.45	7.6%
Torba	11718	2390	4.9	9043	3.7	75%

Source: Malaria Programme Annual Reports

Table 21: National and Provincial Bed Net Data from 2020 Census

	Vanuatu	Rural	Torba	Sanma	Penama	Malampa	Shefa	Tafea
Access to treated nets	172135 57%	151814 64.8%	9613 85%	36346 84%	28888 81%	39140 92%	22514 41%	15313 33.4%
Sleep under treated nets	140128 46.7%	128781 55.2%	8704 76.8%	32811 76%	25986 72.9%	39652 93.3%	14908 27.1%	10720 23.4%
Have access and sleep under	81.4%	84.8%	90.5%	90.2%	89.9%	101.3%	66.2%	70%
Have no access	121828 44.4%	76282 33.4%	1602 14.2%	5899 13.9%	5235 15.3%	2366 5.7%	31594 58.3%	29586 56.9%

Source: Vanuatu 2020 Census, Analytical Report, Vol. 2

The Census analysis identifies the regions where there were large numbers of people in 2020 who had no access to bednets²⁶. For example, in Sanma there were 3,780 people in East and South-east Santo with no access to bednets; and in West Ambae there were 1,444 people without access. This is a useful database to use as a check to ensure all regions are now covered. It may be significant that Santo and Ambae are two islands now experiencing malaria outbreaks.

These results by province, show that Shefa and Tafea have more than half their populations with no access.

Table 22: Lack of access to bednets by Province, 2020

Province	Total Population		No access at all to bednets %
	Males	Females	
Malampa	20969	20537	5.7%
Penama	17283	16840	15.3%
Sanma	21834	20411	13.9%
Shefa	27157	26950	58.3%
Tafea	22468	22431	65.8%
Torba	5645	5570	14.2%

Source: Vanuatu 2020 Census, Analytical Report, Vol. 2

In 2020, an evaluation was done by Vanuatu Red Cross, WHO and MOH²⁷ on access to and use of LLINs. Village populations (7,480 individuals) in all provinces except Tafea were surveyed where the average household comprised 4 persons (1841 households).

26 2020 Census Basic Tables, Volume 1. Table 5.16; 2020 National Population and Housing Census, Vanuatu National Statistics Office

27 Evaluation of the Access and Use of ITNs (2020), Vanuatu Red Cross, Ministry of Health and WHO

The survey found that 92% of those surveyed had at least one LLIN, although some foci villages had no distribution for three years. Distribution was not aligned with population need or vulnerability. Only 64.8% had slept under a bednet the previous night, and that 60% of pregnant women slept under a bednet the previous night. This figure was low in all provinces. More boys than girls slept under a bednet.

Table 23: Access and Use of Bednet 2020²⁸

Province	Had at least 1 LLIN	Slept under a bed net the previous night
Torba	99%	88.7%
Sanma	85.6%	67%
Malampa	97.8%	74.8%
Shefa	90.65%	54.1%
Penama	96.2%	71.2%

Source: Evaluation of the Access and Use of ITNs (2020), Vanuatu Red Cross, Ministry of Health and WHO

Regular IRS has not been possible due to a lack of funds for urgent operations, PPE and shipping of non-pyrethroid sprays via DP procurement. Alternative funding (VAHP, RAM) has been sought.

5.1.2

Conclusions and Recommendations

Distribution of LLINs is best planned and organised at provincial level where actual household needs can be accommodated and where communities can be engaged to assist. Local distributors can provide vital information on use and benefits of using bednets, and ensure full coverage as long as stocks are available close to villages.

IRS can contribute to malaria control and elimination if rigorously applied. It is conducted in houses of confirmed cases and neighbours to prevent and reduce transmission. IRS is usually used in foci with an API of >5/1000. If high coverage is needed, more than 85% of structures in the targeted areas need to be sprayed²⁹.

As the equity analysis (Annex 3) concluded, comprehensive routine planning for malaria at the provincial level must include provision for equitable access to prevention and treatment for all people in Vanuatu. Emergency response must also be implemented in all health zones and villages designated as active foci. Funding must be applied to the entire provincial routine malaria plan; and swift accessible funding be available at the provincial level for emergency response in the event of an outbreak or a disaster.

Universal health coverage will not be attained until these inequities are addressed.

Recommendations:

- **With 100% of the population at risk of malaria, ensure mass distribution of bednets to high-risk areas; and continuous distribution to all provinces (including Tafea) following annual review of coverage data, and household LLIN needs assessments; LLINs and IRS spray and equipment be stockpiled at provincial centre and health centres to be on-site for outbreaks and for ease of LLIN distribution to pregnant women and children.**

²⁸ Evaluation of the Access and Use of ITNs (2020), Vanuatu Red Cross, Ministry of Health and WHO

²⁹ Indoor Residual Spraying: An Operational Manual, 2015, WHO

- **Consideration be given to include in provincial malaria planning, CSOs (e.g. Red Cross) for provincial distribution of LLINs and IRS, including DSA for volunteers.**

5.2

Chemoprevention Outcome Targets

As recommended by WHO, chemoprevention is a highly cost-effective strategy for malaria for the most vulnerable (pregnant women and infants), as is chemoprophylaxis for travellers (WHO Technical Strategy for Malaria 2016-2030, 2021 Update).

The MOH Maternal and Child Health Directorate reported that this regimen for pregnant women and infants is being followed (even during COVID-19). These data on chemoprophylaxis for pregnant women and infants would not be recorded in a MMLL but on the ANC and child health records.

Chemoprophylaxis for travellers between provinces and testing on entry into provinces with active foci is considered difficult and labour-intensive, so more imported cases are likely unless testing on entry to these provinces can be implemented.

5.2.1

Conclusions and Recommendations

MCH Directorate and health facility staff are important partners in the malaria programme and need close collaboration nationally and within provinces. See recommendations in Section 5.6.1.

5.3

Case Management Outcome Targets

Table 24: Case management Indicators, targets and results

Indicator	Baseline (Year)	2020		2021		2022		Target 2023
		Target	Result	Target	Result	Target	Result	100%
Percentage of active and residual non-active foci and percentage of population living in receptive areas covered by appropriate vector control (IRS and/or LLINs), by year (Elimination settings)								
	TBC			TBC	N/A	100%	100%	100%
Percentage of cases notified to provincial officers within 24 hours of confirmation (Elimination settings)								
	100% (2019)			100%	100%	100%	80%	100%
Percentage of confirmed cases investigated, classified and managed as per national protocol within 7-days of notification (Elimination settings)								
	100% (2019)			90%	100%	95%	90%	100%
Among cases investigated, classified and managed as per national protocol within 7 days of notification, the proportion that are followed up within 60 days (Elimination settings)								
				75%	50%	90%	60%	100%
Percentage of malaria foci fully investigated, classified and managed as per national protocol (Elimination settings)								
	100% (2019)			90%	100%	95%	90%	100%

Source: Malaria Programme MEF

5.3.1

Findings

According to the M&E framework (2022), it is unknown how many malaria cases receive first-line antimalarial treatment at health facilities; 80% of cases were notified within 24 hours; 90% were investigated within 7 days of notification; 60% were followed up within 60 days; and 90% were fully managed as per national protocol.

The case management 1-7-60 approach requires every case of malaria to be notified to the Provincial Malaria Office within 24 hours of diagnosis and for a case investigation to be completed within 7 days of notification in order to: a) determine whether an infection was acquired locally and b) whether ongoing local malaria transmission is occurring or if not, imported.

A case investigation consists of: 1) Completing the case Investigation form for the index case, 2) Reviewing epidemiological data from previous cases in the same locality, 3) Conducting case detection / contact screening of households within 200 meters radius of the index case, 4) Conducting vector control observations in LLIN access and usage, including identification of potential vector breeding sites, 5) Case classification (local or imported), and 6) Foci identification.

The malaria program team clarified that MMLL forms with details of cases are forwarded to the provincial centre by the 15th of the following month. Most MMLL forms are delivered personally to the provincial level by health centre staff. This means that it's not possible for all cases to be reported within 24 hours of diagnosis, especially from remote areas. For this reason, the reporting rate for 2022 was 60%. The Public Health restructure will include the Integrated Disease Surveillance and Response (IDSR) digital tool which will decrease the time taken for data to reach the provincial centres. IDSR is meant to cost share between disease programmes who cannot conduct surveillance due to lack of funds. This is being trialled now. This should speed up the reporting.

In the provinces, it's the role of the malaria staff to conduct the investigation and report on the data collected. Given the shortage of malaria staff in some provinces this is a difficult process to implement within the times stipulated, especially in remote and difficult-to-reach areas. Malaria staff need to be mobile and stay in the area for some time to complete the follow-up. This is difficult to achieve in 7 days especially if the MMLL reaches provincial level once per month.

The WHO Technical Strategy suggests that training and deployment of community health workers (VHW in Vanuatu) can substantially complement and extend the reach of public health services, particularly in rural and remote areas, where health infrastructure tends to be the weakest and malaria transmission the highest. This could be trialled in Vanuatu and could make case management more sustainable, closer to villages and supervised by community malaria committees.

5.3.2

Conclusions and Recommendations

Until the digital transmission of cases data can be introduced, the 1-7-60 approach is not feasible and data collected may not be valid.

Recommendations:

- **Malaria case management training be provided for all nurses (undergraduates and in-service) in collaboration with MOH nursing services and the Provincial Health Office with input from the Malaria Team; and for VHWs and other community volunteers in areas that are hard to reach.**

- **Supportive supervisory health facility visits must proceed on a 6-monthly basis in all areas, including those with no/low malaria cases, and even more regularly in active foci.**
- **In-bound inter-provincial traveller screening to prevent importation (prevention of re-establishment of transmission strategy) to be initiated in selected areas.**

5.4

Procurement Supply Management Outcome Targets

No data was available for the two indicators on procurement and supply chain management. It is unknown what proportion of health facilities had no stockouts of ACT and primaquine; and how many have stocks of RDTs and G6PD tests. A key issue from the Executive Paper to the MOH Executive Committee was the lack of primaquine which has severely constrained the ability of provincial teams to contain outbreaks. In 2022 WHO assisted in emergency procurement of primaquine to fill a gap.

5.4.1

Findings

Malaria consumables are procured and distributed to health facilities through the standard drug supply system, with storage in Port Vila and Luganville (Santo). Lack of land precludes building storage facilities in other provinces. Stock is ordered by the health facilities/provinces every two months and shipping to the provinces is reportedly difficult with the delivery time to distant facilities often extended to several weeks resulting in frequent stock-outs and expired goods.

Nurses at health facilities often forget to order malaria consumables thinking that that will be done by the malaria programme staff. This lack of integration of malaria services into public health is a concern and may be addressed by the Public Health restructure due to be completed by April/May this year. This will include public health integration in the provinces.

Consultations with Central Medical Store manager considers that the mSupply system has improved the drug supply management system where there is good internet connectivity. As internet connectivity improves mSupply will become more reliable. It is understood that all provinces have internet, but it is not reliable.

DFAT and MOH will soon undertake a master planning exercise for health facilities. Part of this could be to ensure that all health facilities are provided with StarLink (the satellite internet system) which is now commonly used in rural and remote areas of the world. This would revolutionise the supply chain system.

As discussed above, microscopes and microscope consumables need to be procured urgently as a back up to the RDT while awaiting technical advice on the RDT efficacy. Given the long waiting time because of UNDP/GF procurement processes, the malaria team advises that CMS can procure these items and distribute them to health centres and dispensaries. This can be done in collaboration with the TB programme.

5.4.2

Conclusions and Recommendations

Recommendations:

- **In the light of the emergency response and the concerns raised about the effectiveness of the current RDT, microscopy be considered as a diagnostic backup, and microscopes/**

reagents provided at all health centres and dispensaries (117 facilities). This could be done in collaboration with the TB programme.

- **To improve testing and treatment urgent consideration be given to: validation of the current RDT (Bioline Malaria Ag P.f/P.v.); an alternative RDT sensitive to P.vivax if found necessary; an alternative treatment regimen e.g. 7 day primaquine, tafenoquine (one dose) or MDA approaches; simplified training in G6PD testing; and training for VHWs to administer and monitor primaquine treatment at aid post level following prescription of the treatment by health centres and dispensaries.**
- **A list of malaria commodity stocks, projections and needs to be developed between CMS, provincial stores and the Malaria Program, and these supplies, along with buffer stocks, delivered to the provinces.**
- **The Vanuatu Malaria Diagnosis and Treatment Guidelines be revised to reflect any changes to testing and treatment regimens.**

5.5

Social Behaviour Change Communication Outcome Targets

At provincial level community participation is a major component of primary health care and is already established around many health issues. The national Health Promotion Unit and provincial health promotion staff are ready resources to assist with implementation.

One of the key principles of malaria control and elimination is leadership with meaningful community participation. With the dearth of malaria and health facility staff in some provinces; the distances between health facilities and the difficult terrains that must be negotiated in Vanuatu, the formal health system cannot be solely responsible for malaria control. People deserve to be informed and engaged in the potential risks to their health and to be part of the solutions.

5.5.1

Findings

In the past, and in some cases the present, there have been community malaria committees, community health committees and volunteers who step up when emergencies occur. This was planned for in the Malaria Programme but has not yet been implemented. A draft Advocacy, Communication and Social Mobilisation Strategy has been prepared but not yet finalised or endorsed.

Village task forces can be ready for malaria emergencies to assist health facility and malaria staff with case management, LLIN distribution, IRS, DOTs and reporting. Community leaders can be involved in communicating information and DOTs. Red Cross and other village volunteers (including women's groups and faith-based groups) can distribute bednets, assist with IEC and DOTs for malaria treatment.

The role of the VHW in this work is critical in many countries, and in Vanuatu VHWs are a valuable and well-respected resource and trained in PHC. They staff the aid posts as well as contribute to general health information sharing in villages. It has already been discussed that VHWs have a potential role in not only testing but also in radical treatment when distance, time and cost prohibit patients from travelling to the next level of care. Provincial HPU/VHW staff can coordinate training for VHWs in these activities and support their work. The vital work of VHWs should be done on a paid/incentive basis.

5.5.2

Conclusions and Recommendations

Recommendations:

- **The draft Advocacy, Communication and Social Mobilisation Strategy be urgently revised to include provision of: national media strategies and IEC resources for malaria to be routinely included and budgeted for in the business plans of VBDCP and implemented through the malaria programme and HPU unit; social mobilization at village level in all provinces including recruitment of community leaders and volunteers (VHW and Red Cross volunteers etc.) to assist with testing, case management and treatment/DOTS; and payment or incentives for VHWs and DSA for volunteers to be included in routine and emergency response planning.**
- **A communication campaign to publicise the findings and recommendations of the Mid-term Review be undertaken to reach all provinces, Area Councils and MOH Directorates so implementation can be tracked.**

5.6

Surveillance, Monitoring and Evaluation and Operations Research

Surveillance

The programme utilises the DHIS2 system for managing data. There are two forms completed by health facility staff and submitted to the provincial centre monthly. One form collects basic PCD data on tests and positive cases (<5 yrs and >5 yrs); while the MMLL provides more detail needed for management and investigation. The IDRS system (under trial) will streamline this data collection. See 5.3.1 above.

WHO will recruit a consultant to update the DHIS2 to add more data such as: population by province and health zone (or Area Council); age groups, standard village lists; identification of confirmed cases as new or relapsed; and stock management of drugs and RDTs.

Monitoring and Evaluation Framework

The M&E Framework (MEF) currently contains 44 indicators – 7 impact indicators; 11 outcome indicators; 20 output/coverage indicators; 2 quality of care indicators; and 4 elimination milestone indicators. All but two of the outcome indicators are related to LLINs. This seems to be the UNDP/GF activities and if so, the number of LLIN outcome indicators are excessive when other essential outcome indicators are not included, such as: proportion of the population at risk protected by indoor residual spraying within the past 12 months; proportion of pregnant women who received intermittent preventive treatment of malaria while attending antenatal care; proportion of patients with suspected malaria who receive a parasitological test; proportion of patients with confirmed malaria who receive first-line antimalarial treatment according to national policy; proportion of expected health facility reports received at national level; proportion of malaria cases notified within 24 hours; proportion of cases investigated; proportion of foci investigated. Note: Some of these outcome indicators are in the output section of the MEF. See Annex 5 for the M&E Framework.

With Vanuatu's malaria programme off-track for elimination, the five elimination milestone indicators may be retired until the current outbreaks are under control. Indicators against the Advocacy, Communication and Social Mobilisation Strategy have yet to be developed.

Of the 44 indicators in the MEF, 7 (15%) targets have been achieved in 2022 with 37 not achieved (85%). This poor achievement is considered by the malaria team to be due to: climatic conditions favourable to vector proliferation; interruptions to delivery of malaria services and elimination activities due to a focus on COVID-19; and constraints to rapid response due to malaria commodity stockouts, human resources gaps, and reporting/funding delays³⁰.

Support from the Principal Recipient

UNDP (PR) has not had an in-country Programme Analyst for two years and this impacts local support for the malaria team. Currently the team communicates with UNDP office in Suva and it is considered that a local UNDP staff would better understand the constraints and barriers to implementation, and the difficulties in negotiating government systems. It was hoped that a local PA would be appointed by now, but this has again stalled. In the interest of reducing administrative burden on the Malaria team, this should be urgently expedited.

Operations Research

WHO provides the technical assistance and undertakes operational research while capacity is built within the VBDCP. The WHO Technical Assistance Officer position is in the process of being recruited and will not be appointed for at least 6 months. An interim TA Officer will be in place from April for three months. Several technical issues were raised by the malaria team and health facility staff during the consultations which will be addressed by the WHO TA. This is considered urgent in the current emergency context.

These include:

- Concerns in three provinces over the efficacy of the current rapid diagnostic test (RDT).
- Feasibility of the 14-day primaquine treatment (particularly due to access and poor compliance).
- The rollout of the G6PD point-of-care quantitative tests and their ease of use.
- Consideration of mass drug administration (MDA) in selected active foci.

The bio efficacy of bednets.

DFAT has also advised that TA is available through the Indo-Pacific Centre for Health Security (CHS) to the Vanuatu Malaria Programme for the following:

- High level advocacy on malaria elimination to advance subregional malaria control and elimination (through the Asia Pacific Leaders Malaria Alliance - APLMA)
- Small grants to enable 'peer-to-peer' technical assistance between Vanuatu Malaria Team and technical partners based in the Asia Pacific on Vector Control, Vivax, and Surveillance & Response (through the Asia Pacific Malaria Elimination Network (APMEN)). For example, revising approaches for case investigation; reporting and/or MEF; assist with vivax testing and treatment compliance; support in planning around optimal use and distribution of LLINs and other vector control products.

30 Malaria in Vanuatu: update to 31 October 2022; Wesley Donald (MOH Malaria Program Coordinator); Tessa Knox (WHO Malaria Technical Advisor)

- TA to strengthen vector control skills and capacity (through James Cook University – PacMOSSI (Pacific Mosquito Surveillance Strengthening for Impact)).
- TA collaboration with PNG Institute of Medical Research which has conducted significant research on the bio efficacy of bednets distributed in Papua New Guinea.

Some of these TA resources could be used to implement the recommendations above.

5.6.1

Conclusions and Recommendations

The DHIS2 update should enable the MEF to generate gender- and age- disaggregated data and better manage stock and consumables.

Given the current upsurge in cases, the pathway back to elimination will need to be reconsidered and the NSP and MEF revised accordingly.

Further support and monitoring in-country be provided by UNDP through the urgent appointment of the UNDP Programme Analyst to be based in Port Vila. TA options are available through WHO and the Indo-Pacific Centre for Health Security (CHS).

Recommendations:

- **In order to enhance the information collected on malaria cases: the Malaria Programme MEF be revised according to the endorsed recommendations in the MTR; and to reflect actual interventions that achieve outcomes for an emergency response with realistic indicators and targets; annual reports include more detail on location of active foci (village, health zone, Area Council); all DHIS2 data to be reported by gender and age; and annual reports include a routine section on equity of interventions; and the malaria team collaborate with provincial and national MCH staff to access data on women attending ante-natal care and children who receive malaria prophylaxis and bednets.**
- **The Integrated Disease Surveillance and Response (IDSR) currently being trialled, be rolled out as soon as possible to: speed up malaria reporting via the MMLL especially from remote areas, and increase compliance with the 1-7-60 approach.**
- **Consideration be given to utilising the TA available through the DFAT Centre for Health Security (CHS) for MEF revision, vector control, vivax, surveillance and response.**
- **UNDP urgently recruit the in-country Programme Analyst to improve support and monitoring of GF activities.**

5.7

Functionality of Programme Management Support System

The structure of the reporting system was reviewed. The two output/coverage indicators did not meet the targets for any year.

Table 25: Reporting indicators, targets and results

Indicator	Baseline	2020		2021		2022	
	(Year)	Target	Result	Target	Result	Target	Result
Completeness of facility reporting: Percentage of expected facility monthly reports (for the reporting period) that are actually received							
	70% (2019)			80%	65%	85%	64%
Timeliness of facility reporting: Percentage of submitted facility monthly reports (for the reporting period) that are received on time per the national guidelines							
	70.6% (2019)	90%	72%	80%	65%	85%	35%

Source: Malaria Programme MEF

Table 26: Reporting by Province 2020-2022

Province	2020		2021		2022	
	Target	Result	Target	Result	Target	Result
Malampa	90%	64%	90%	71%	85%	85%
Penama	90%	49%	90%	52%	85%	50%
Sanma	90%	79%	90%	84%	85%	53%
Shefa	90%	86%	90%	81%	85%	87%
Tafea	90%	76%	90%	60%	85%	56%
Torba	90%	70%	90%	44%	85%	25%
Vanuatu	90%	72%	90%	69%	85%	62%

Source: Malaria Programme Annual Reports

5.7.1

Conclusions and Recommendations

The reporting for malaria is complex and the transmission of reports is arduous until some form of digital transmission is introduced. Completeness should improve with the updating of the DHIS2.

6. Programming Implications of Lessons Learned

6.1

Lessons Learned and implications for the Malaria Programme

Lessons Learned	Implications for Malaria Programme
Leadership in malaria is never ceasing routine malaria practice and emergency response to outbreaks	Advocacy needed to political and health leaders to increase understanding and political will to eradicate malaria through continuous implementation of interventions.
Implementation (especially towards elimination) CANNOT be ceased during other emergencies.	Elimination is now in jeopardy. Strategies will need to be redefined and scaled up. Vanuatu no longer one of the 8 countries in the Western Pacific to eliminate malaria by 2025 (E-2025). Number of cases have tripled since 2021.
A negative test for COVID could indicate fever is caused by malaria	SOPs for COVID do include a malaria test for fever for all negative COVID tests but this has not been enforced.
Ensuring universal access to malaria prevention, diagnosis and treatment is an essential part of UHC	Rate of UHC in Vanuatu could be improved through rapid integration of malaria services into primary health care at the village levels. This will require more community leadership and participation.
Elimination and emergency response cannot progress without increased funding.	Despite under-utilisation of GF funds, current and future GF funds are accounted for through the malaria programme. Emergency response and elimination activities will require additional planning and funding from other sources, especially DFAT.
Funding is not a limiting factor in malaria programming. Funding exists that is not being accessed. There is no need for unfunded activities.	Provinces have access to the DFAT direct funding arrangement; and GF funds through Covid 19 Response Mechanism (C19RM) that could have been used for 10 Malaria Elimination Officers in the provinces.
Annual planning of activities should be needs-based (particularly in active foci) not based on funds available.	Priority must be given to active foci and for preventing re-establishment of malaria in low prevalence areas. Annual planning of activities must begin at the Area Council/provincial level. Needs and funding will be different in different provinces. Active foci may need specific packages of interventions, particularly if they are in remote areas.
LLIN planning/distribution must be updated and increased annually to account for population growth rates and increased number of cases. This planning can only be done at the Area Council/village level.	Household assessment on numbers, pregnant women and under 5 years children must be done annually at the village level. These vital activities could be contracted to VRCS who have strong networks of volunteers in all health zones or through community malaria committees.

Lessons Learned	Implications for Malaria Programme
<p>Implementation of the recommendations from the 2018 Malaria Programme Review could have improved implementation and strengthened the pathway to elimination over the past 4 years:</p> <ul style="list-style-type: none"> • Operational planning for LLINs based on HH assessment at health zone level and not microplanning model at national level • LLINs available at health centres between distribution rounds • Provincial staff able to draw on funds quickly to respond to outbreaks • Resolve problems in generating and retiring imprests • Tafea model for elimination rolled out in all provinces supported by DFAT • Continuation of full coverage of ITNs to prevent re-establishment of malaria • Additional funding for elimination • MEOs established in every province to undertake surveillance, coordination and response activities • Improve supply chain and forecasting • National promotional campaign for elimination. 	<p>Opportunities to improve the programme and to expend unused funds have been missed. The MOH and bodies responsible for oversight of implementation of the malaria programme must take these recommendations seriously. Endorsed recommendations should be circulated to all malaria staff, relevant Directorates of MOH and provincial authorities.</p>
<p>Occurrence of natural disasters clearly exemplifies why implementation activities should be as close as possible to Area Council/village level. Non-reliance on supply of goods and services from national level must be achieved (decentralisation).</p>	<p>Consideration be given to storage of malaria goods within Area Councils or villages, similar to what is done for disasters. For example, LLINs stored with VRCS disaster supplies and health centres; and other malaria good (drugs, insecticides etc) stored at health centres. This may necessitate additional infrastructure (such as shipping containers or demountable buildings) to improve storage.</p>
<p>Health delivery systems are not fit for purpose – distribution of health and malaria workforce; non-functional health facilities; lack of digital means; and weak supply chain means poor quality prevention, care, and reporting services.</p>	<p>The intersectoral nature of malaria prevention and treatment requires communities to be engaged to advocate for improved health services and strengthened planning and supply chains.</p>
<p>Adherence to the Role Delineation Policy would ensure national level responsible for policy and planning only; provincial level responsible for implementation of malaria strategies and health service delivery.</p>	<p>HR in MOH should review all job descriptions of malaria programme workers (national and provincial) to ensure they align with the Role Delineation Policy.</p>
<p>Malaria strategies must include: integration (multi-sectoral issue); equity (reach all populations at risk); and people-centred activities (the needs of target populations must inform the design of interventions).</p>	<p>Malaria service planning should engage community leaders, local health centre staff and provincial managers. This will ensure that the vertical malaria programme is integrated into the overall health plans.</p>
<p>Social mobilisation means more than information and advocacy for community leaders.</p>	<p>In areas of active foci, community volunteers must be recruited and trained in prevention, testing (and treatment) by health and provincial staff</p>
<p>Gender and equity analyses of the strategy would ensure that all people and both females and males equally benefit from the programme.</p>	<p>Reports must include gender-disaggregated data especially on access to goods and services and treatment and care. Malaria services must reach all villages in Vanuatu.</p>

The following case study also provides some valuable lessons learned for the Vanuatu Malaria Programme.

Case Study – Cambodia³¹

Mid-term Review of the malaria programme (2023) findings

- API = 0.26 in 2021; 0.12 in 2022
 - On track for elimination in 2025 – how?
 - Village malaria workers (VMW) and mobile malaria workers (MMW) do 80% testing, treatment, and case detection; case diagnosis at Health Facilities (HF) is just 40%.
 - VMWs are given performance-based incentives and do outreach.
 - VMW are mobilized in each active foci; and trained by HF staff who are trained by PHO staff who are trained by MOH nursing staff; integrated (public health) VMW work in low-risk areas.
 - Intensification plan targeted hard to reach areas –ACD/PCD case detection increased; cases fell by 93% in 2021; weekly active screening in active foci.
 - MOH quantifies current and future funding needs then identifies funding sources.
 - All donors align with Cambodian government policies and the national strategy.
-

Lessons learned:

- Testing, treatment, and case management must be as close to villages as possible; prioritise hard to reach areas where people are infected.
 - Malaria activities did not stop during COVID.
 - Social mobilization is much more than advocacy/information.
 - Malaria staff at province level should be mobile and able to assist HF staff to train VHW.
 - Coordination with other departments within MOH is critical e.g. Nursing, HPU, Public Health.
 - Needs based planning and budgeting is necessary – then seek funds for unfunded activities.
-

6.2

Future Strategic Directions

Dealing with the emergency

Given the current state of the malaria programme and the upsurge in cases, elimination of malaria by the end of 2023 does not seem possible. The Malaria Team including provincial health managers and provincial malaria staff, advised the MOH Executive that the essential outputs³² required to improve the situation are:

1. Sufficient, continuous and predictable funding, including an increase in recurrent fund allocation.
2. Excellent malaria commodities stock management with zero stock outs.
3. All essential malaria positions filled, especially Provincial Malaria Supervisors.
4. Rapid case investigation and response enabled for every outbreak through available transport, funds, and personnel.
5. High patient adherence to full primaquine treatment.
6. Indoor residual spraying implemented to high quality and high coverage in all areas with ongoing transmission.
7. Good community knowledge and acceptance of the importance of preventing, testing, and treating malaria.

³¹ Mid-term Review of the Malaria Elimination Action Framework 2, Kingdom of Cambodia, UNDP, September 2022

³² Executive Paper to MOH Executive - Emergency response to malaria upsurges in Vanuatu, November 2022, MOH

8. Strong support through engaged community leaders to support consistent use of bednets, compliance with IRS, rapid testing and complete treatment.

To achieve this, the recommendations from this MTR will need to be implemented; and the targets and timelines in the NSPME will need to be updated. Ironically, many of the MTR recommendations are already policy within the NSPME. Annex 9 provides guidance on planning and funding for implementation of the recommendations.

This MTR has suggested that (if recommendations are agreed and endorsed) funding exists to cover routine malaria programming as well as funding for emergency response. Provincial managers and national malaria staff need to access these funds through the development of sound national and provincial needs-based, evidence-based plans which provide realistic assessments of what is needed to achieve comprehensive universal health coverage for malaria reaching all villages in Vanuatu.

These plans will be fully costed and funded – the emergency plans ready to be implemented in the event of an outbreak. Integration of public health programmes (especially surveillance) is soon to be operationalised through the PH restructure which will include the rolling out of the Integrated Disease Surveillance and Response (IDSR). This will significantly improve reporting and response. Plans will also include full staffing for malaria programming, including 10 mobile MEOs to be deployed to active foci areas to assist health facility staff with the response.

At community level, community mobilisation and ownership will be strengthened and VHWs and other volunteers utilised for LLIN planning and distribution. Trained VHWs will provide radical treatment and DOTS, and community leaders will be actively engaged in IEC and advocacy.

7. Conclusions

Implementation of the five key interventions over the past five years have not prevented or controlled transmission of malaria in five provinces. Only Tafea remains malaria-free. High levels of coverage with LLINs have not been maintained; case-based surveillance using the '1-7-60' approach has not been feasible due to the difficulties in getting timely data on cases from health facilities; all fever cases have not been tested for malaria; the effectiveness of the current RDT is of concern; microscopy has not been possible in all provinces and a shortage of microscopy consumables has prevented microscopy even in provinces that have a microscopist; radical treatment for *P. vivax* and care for all confirmed cases has not been possible due to the need for referral to the next level of care; communities have not yet been mobilised to contribute to the malaria control effort; and perceived funding shortfall have left many vital interventions unfunded.

The current emergency response to outbreaks in four provinces requires urgent and innovative attention. Surveillance and community engagement will be key interventions as well as the expansion of effective treatment to affected villages, to reach the geographically unreached. Mobile malaria officers, VHWs well trained in malaria, community leaders and civil society mobilised to address the situation as close to villages as possible are urgent interventions. VHWs at aid post level must be able to monitor radical treatment once primaquine has been prescribed; to supervise compliance with treatment regimens; and to improve equity and universal health coverage.

Needs-based planning at the provincial level is a top priority so that adequate funding can be sourced and allocated to routine malaria planning from the available funding sources. Costed emergency response modules must be planned for in the provincial business plans and ready to be funded at the provincial level immediately an outbreak is detected. Coordination at the national level must be stepped up and political will increased so that GoV understands and appreciates the dire consequences of interrupting routine malaria practice.

Following endorsement of the recommendations in this MTR, the NSP will need to be updated and the M&E Framework revised to reflect outcomes and outputs more accurately.

All the recommendations in this MTR align with the MOH Health Sector Strategy, MOH Role Delineation Policy, Vanuatu NSP for Malaria Elimination, GF Funding Strategy 2024-2026, the GF Investment Approach for the next funding cycle, WHO Technical Strategy for Malaria, WHO 'Toward UHC', Case Study of Successful Elimination of Malaria in Tafea Province and DFAT Investing in a Strong and Healthy Region³³.

33 <https://www.foreignminister.gov.au/minister/penny-wong/media-release/investing-stronger-healthy-region>.



United Nations Development Programme Pacific Office in Fiji