



MINISTRY OF HEALTH
VANUATU GOVERNMENT



CASE STUDY

SUCCESSFUL ELIMINATION OF MALARIA
TAFEA PROVINCE | VANUATU

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Abbreviations

ACT	Artemisinin-based combination therapy
API	Annual parasite incidence
IRS	Indoor residual spraying
LLIN	Long-lasting insecticidal net
MOH	Vanuatu Ministry of Health
PacMI	Pacific Malaria Initiative
RDT	Rapid diagnostic test
SPC	The Pacific Community
UNDP	United Nations Development Programme
WHO	World Health Organization

Acknowledgements

Elimination of malaria from Tafea province was possible due to the hard work and commitment of community leaders and members, Ministry of Health staff at local, provincial and national levels, and national and international collaborators. This work spanned numerous decades and many people who are too numerous to name here. The Government of Vanuatu also expresses gratitude to the development partners and collaborators who contributed.

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Cover image shows a health promotion activity on Tanna Island, Tafea province.
Image source: Harry Iata/Vanuatu Ministry of Health

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Key Messages

A malaria-free Vanuatu is within reach

- Malaria plummeted in Vanuatu from over 15,000 cases in 2003 to 644 cases in 2018.
- The southern province of Tafea was declared malaria-free in November 2017.
- Due to good progress, national elimination goals will be shifted two years earlier.
- The aim is for zero monthly reported local malaria cases by December 2023.
- Certification of malaria-free status is anticipated three years later, by the end of 2026.

The elimination approach taken in Tafea is hailed as a success

- Elimination resulted from effective and timely delivery of proven interventions by trained personnel - to increase bed net coverage, spray houses with insecticide, ensure rapid diagnosis and treatment, and strengthen surveillance to detect all cases.
- This was enabled by:
 - Strong political commitment and active community ownership and leadership to ensure action and uptake of interventions
 - Enhanced program management capacity at national and provincial levels plus implementation capacity at local level, based on increased personnel, field supervision, and monitoring and evaluation
 - Effective partnerships for technical and programmatic support, especially with the World Health Organization (WHO) and the Pacific Malaria Initiative (PacMI) Support Centre
 - Access to adequate funds to enable activities, with major financial contributions by the Global Fund to Fight Aids, Tuberculosis and Malaria (the Global Fund) and the Australian Government
- Prevention of re-establishment of transmission in Tafea has relied on maintaining capacity for surveillance and rapid response.

The Tafea model needs to be adapted for other settings

- Elimination activities in Tafea were highly resource intensive and capitalised on a low level of malaria transmission.
- The experience in Tafea reiterates that good planning and implementation of standard interventions can achieve impact.
- The model will need to be adapted to different resource settings in other provinces of Vanuatu and malaria-endemic countries of the Pacific.

Current progress is threatened by reduced funding

- For 2015-2020, limited funding constrained implementation of the national malaria strategic plan, leading to insufficient staffing, lack of training and supervisory visits and inability to fully implement proven interventions.
- This has hampered efforts to properly implement interventions successful in Tafea.

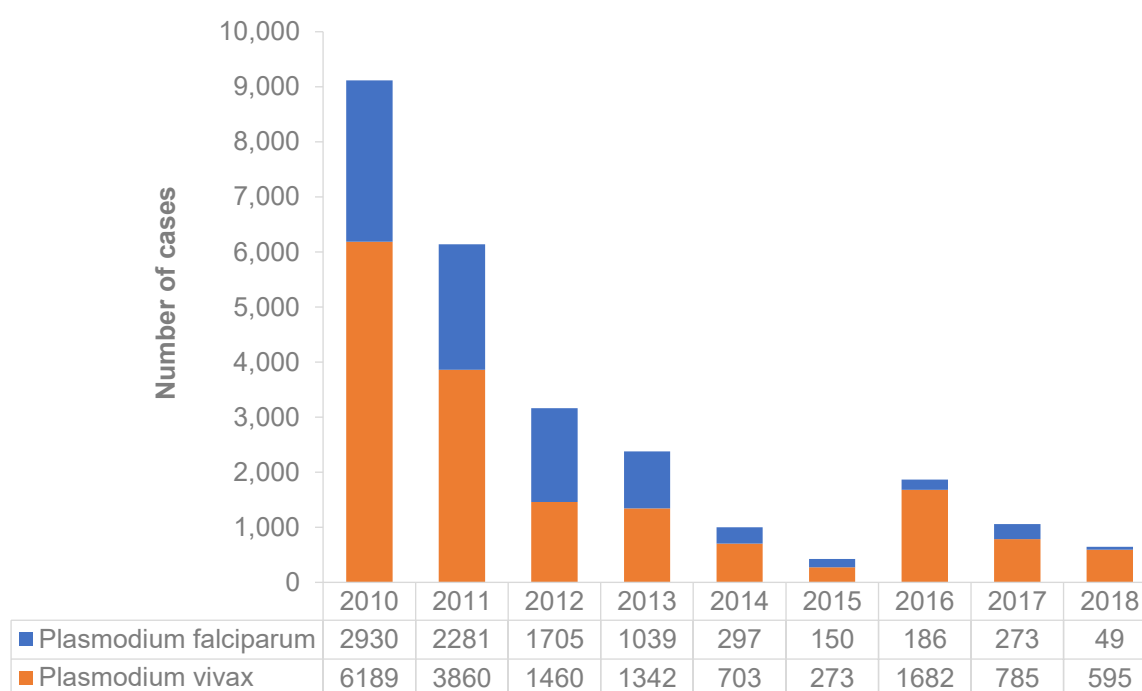
Sustained partner support is crucial

- Political leadership in Vanuatu is fully committed to achieving the vision of a malaria free future.
- Support from development partners is critical to reverse the downward trend in external financing and enable full implementation of a new elimination strategy.

Malaria in Vanuatu

Vanuatu comprises 83 islands in the south Pacific with a population of around 280,000 persons. The islands belong to six provinces, which from north to south are Torba, Sanma, Penama, Malampa, Shefa and Tafea. In 2004, the Vanuatu Ministry of Health (MOH) received support from the Global Fund and WHO for scale-up of bed nets which reduced malaria cases and galvanized further MOH and partner commitments. An intensified program was implemented from around 2008 until 2015. This involved distribution of treated nets, indoor residual spraying, rapid diagnosis and appropriate treatment of confirmed malaria cases, and community engagement and support. The number of cases dropped countrywide from over 15,000 in 2003 to fewer than 1000 detected cases in 2014. In 2015 there was a dip due to disrupted surveillance and control activities resulting from widespread destruction caused by Tropical Cyclone Pam in March 2015. A relative increase in reported cases occurred in 2016 in some provinces. By 2018, there were only 644 cases of which 92% were due to *Plasmodium vivax* (see Fig 1). The last malaria-related death was reported in 2011.

Figure 1. Confirmed malaria cases in Vanuatu from 2010 to 2018



Source: National Malaria and Other Vector Borne Diseases Control Program, MOH

Today, most of the remaining cases are reported from Malampa and Sanma provinces (see Fig 2) though substantial declines have been noted in both provinces in the past two years.¹ The provinces of Penama, Torba and Shefa have reached historic low levels of malaria. In the southern province of Tafea, the last local cases of malaria were reported in 2014. Tafea was declared malaria-free in November 2017 following three years of no local cases.²

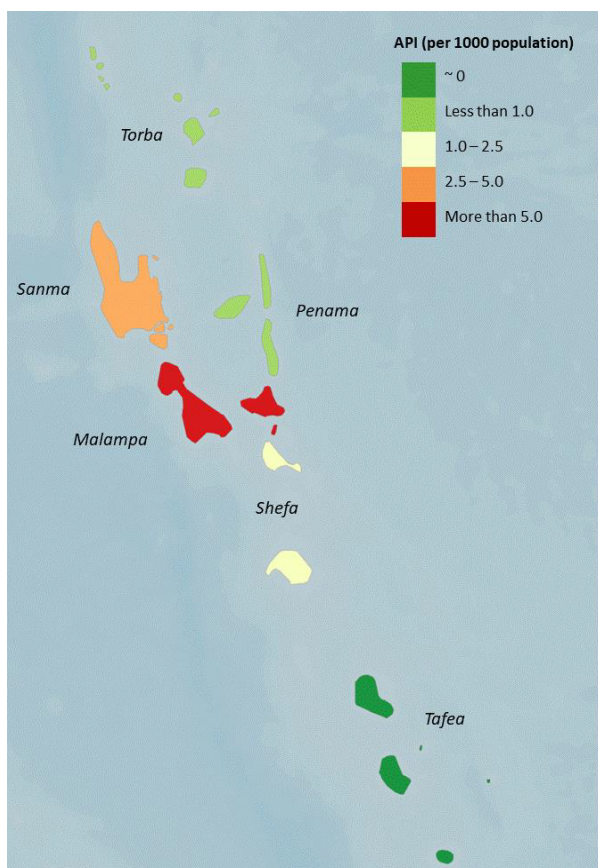


Figure 2. Annual Parasite Incidence (API) for 2018, by province

Source: National Malaria and Other Vector Borne Diseases Control Program, MOH

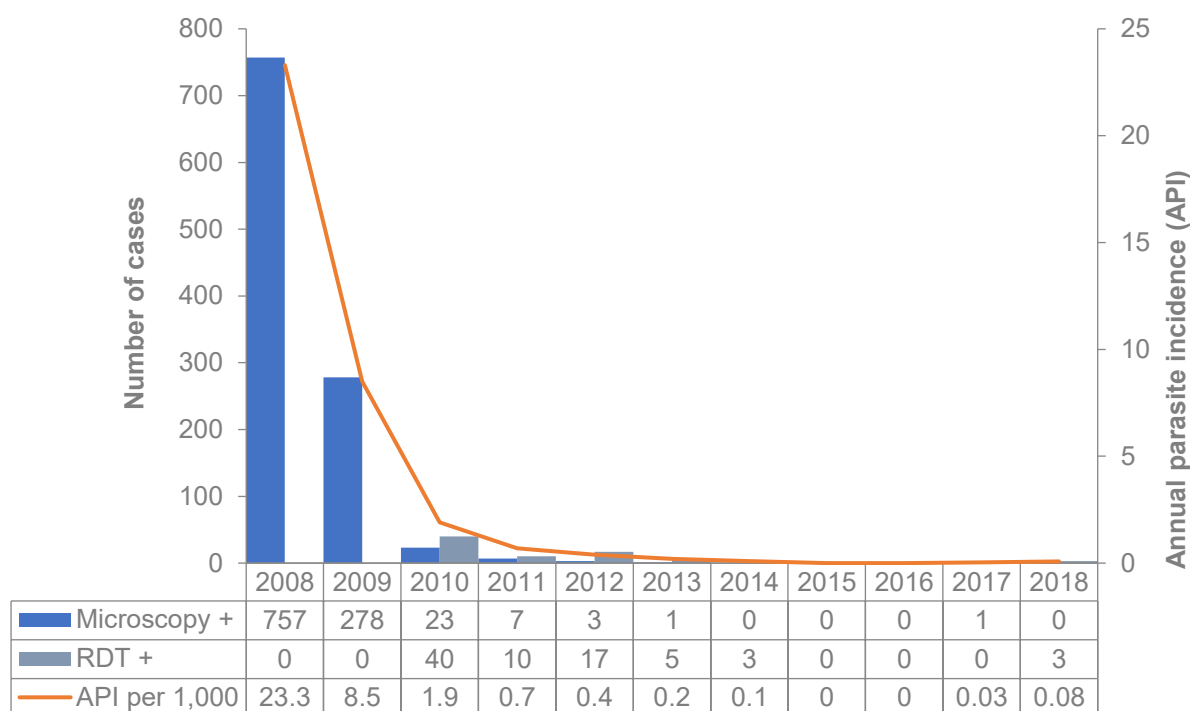
Vanuatu MOH is now targeting zero local malaria cases nationwide by the end of 2023 and certification of malaria-free status by the end of 2026. A new malaria elimination strategic plan for 2021–2026 will map the way to elimination, drawing largely on the experience of successful malaria elimination in Tafea province. This case study outlines the factors that enabled this success, the challenges experienced, and the way forward for malaria elimination in Vanuatu.

Elimination in Tafea Province

Success inspired confidence

On Aneityum island – one of five islands that make up Tafea province – intensified efforts to eliminate malaria started in 1991.³ This involved widescale distribution of insecticide-treated mosquito nets, mass malaria drug administration targeting the entire population of the island, and strengthened malaria surveillance enabled by community-based microscopists. By 1996, zero malaria cases were reported. This success inspired confidence within Tafea province that malaria elimination could be achieved. Elimination of malaria from Aneityum also encouraged cruise ships to visit a nearby uninhabited island, significantly boosting income from tourism for the local community. This success generated further local support for a ramp-up of elimination activities on other islands in Tafea province. In 2008, Tafea was selected as the first province for intensified malaria elimination efforts. Cases dropped rapidly (see Fig 3), with the last local case reported in September 2014.

Figure 3. Malaria case trend in Tafea from 2008 to 2018



Source: National Malaria and Other Vector Borne Diseases Control Program, MOH¹

Timely delivery of proven interventions by trained personnel to achieve high coverage and impact

Intensified elimination activities in Tafea centred on good implementation of proven interventions for high coverage, namely:

- Universal access to long-lasting insecticidal nets (LLINs)
- Targeted indoor residual spraying (IRS) supported by innovative mapping tools
- Testing of all fever cases with malaria rapid diagnostic tests (RDTs) or microscopy in all health facilities down to community level
- Effective and timely treatment using artemisinin-based combination therapy (ACT)
- Rapid reporting of malaria cases to provincial officers to enable timely case investigation and response actions

Although LLINs were distributed throughout Vanuatu, ownership and usage of LLINs was higher in Tafea than other provinces. The 2011 Malaria Indicator Survey showed that 93% of households in Tafea owned at least one LLIN compared with 71% nationwide. Nearly 85% of pregnant women in Tafea slept under a treated net versus 51% nationwide.⁵ Three rounds of IRS were successfully implemented in Tafea in 2009-2011 to achieve high coverage.² The national malaria treatment policy was changed in 2009 to ensure universal access to parasitological diagnosis by RDTs or microscopy and to treatment by ACTs. In 2009, changes were also made to the malaria information system in Tafea with introduction of malaria patient cards, case registers and local mapping of all cases. All these inputs were important elements in successfully combatting malaria in Vanuatu, with a notably high quality of implementation and coverage – and hence impact – in Tafea.

Strong political commitment and effective partnerships

Strong political commitment and leadership from the Government of Vanuatu and effective support from key development partners were instrumental in the success in Tafea. These included ongoing partnerships with WHO, the Australian Government and the Global Fund (administered through The Pacific Community and UN Development Programme), as well as support from UNICEF, Rotary and the Japanese Government. At Prime Ministerial level, commitment was expressed by Vanuatu and Australia to control and progressively eliminate malaria through the Australia-Vanuatu Partnership for Development document issued in 2009.⁶

The Malaria Steering Committee was established by MOH in 2009 and convened every two months to facilitate cooperation amongst the MOH and its partners and to provide a forum for policy and strategy discussions.⁴ Support was provided by the Global Fund and WHO for the development of a single, consolidated malaria MOH workplan that ensured effective coordination of partner contributions.

Increased capacity for program management coupled with strong technical and implementation capacity

The national Malaria and Other Vector Borne Diseases Control Program was well staffed to support malaria control in Vanuatu and elimination in Tafea. Additional MOH administrative and finance staff positions were in place, and additional program support officers funded by the Australian Government through the PacMI Support Centre were seconded to the MOH. In Tafea, new malaria surveillance and malaria elimination positions were created to take on the additional workload associated with a shift to intensive surveillance and response to support elimination. Elimination officer posts were established to carry out case investigations, coordinate response activities and conduct follow-up.² At one stage, eight such officers were engaged in Tafea.³

Technical support by WHO played a critical role in ensuring Tafea – and more broadly Vanuatu – remained on track for malaria elimination. WHO provided key advisory support for strategic planning, resource mobilization, development of technical guidelines and procedures, training, implementation, field supervision, surveillance, monitoring and evaluation, and reporting.

Active community ownership and leadership

Community-oriented campaigns in Tafea have played a key role in eliminating malaria and preventing re-establishment of transmission. Community ownership and leadership has been fostered through involvement of chiefs and other community leaders including church representatives, the Women's Group and the Council of Chiefs. The Tafea Malaria Elimination Committee was established in 2009 to support planning of community awareness activities and to maintain engagement with the community. Multi-disciplinary membership includes representation from the provincial malaria elimination program, provincial health services, provincial government and community members. The Committee has supported behaviour change in the community⁷ and played an important part in promoting universal access to IRS, LLINs, diagnosis and treatment. For example, drug stores and even local citizens have been engaged in tracking cases.

Access to adequate funds and resources

Efforts to eliminate malaria in Tafea benefited immensely from timely availability of adequate funds and resources to enable program activities. From 2004, government funds were supplemented by support from the Global Fund. A significant increase occurred from 2008 to 2014 facilitated by The Pacific Community (SPC) and WHO through a joint Global Fund malaria grant to Vanuatu and Solomon Islands. SPC helped set up the new malaria program human resource structure and procure treated nets, diagnostic tests and antimalarials. Since 2015, the United Nations Development Programme (UNDP) has administered the Global Fund malaria grant and continued support for procurement and infrastructural development, especially to achieve high LLIN coverage with the most recent LLIN distributions in Tafea in 2016.

The Australian Government provided targeted support to Tafea province from 2008 to enable rapid scale-up of elimination activities. Over six years, a significant injection of A\$25 million was provided primarily for malaria elimination in two areas of Solomon Islands and Vanuatu through PacMI. The PacMI Support Centre played an important role in ensuring timely flow of funds and program management support in Tafea. This flexible financing compensated for the occasional gaps due to delayed disbursements of other malaria grants and ensured that the necessary commodities could be procured and distributed on time, especially in 2009 and 2010.⁴ Without this significant investment from development partners, it is unlikely that the Tafea model could have been implemented with such success.

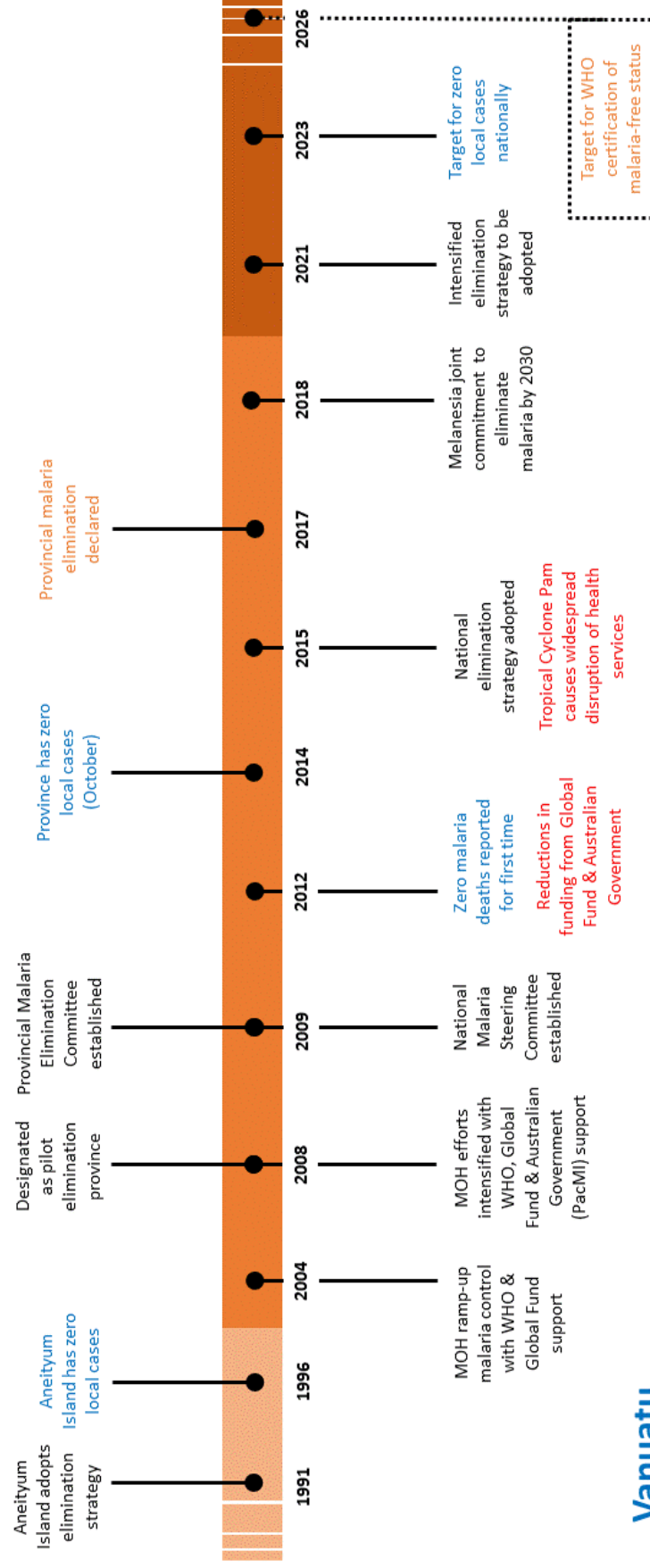
Figure 4: The Tafea Model



Figure 5: Malaria elimination timeline in Tafea Province and Vanuatu

Tafea Province

Major milestones
Major accolades
Major enabling factors
Major challenges



Lesson Learned from Tafea

Intensification is needed

Elimination efforts in Tafea were resource intensive. Success can be attributed in large part to a ramp-up in intervention coverage and activities enabled by sufficient human and financial resources in the move towards elimination. According to a 2013 independent review⁷, *“outcomes and impact of interventions in Tafea are generally much better than in other provinces and nationwide.”* For instance, experience from Tafea indicates that good quality IRS implemented in a defined geographic area, for a limited time, can rapidly and effectively reduce transmission. However, IRS is relatively expensive and optimal impact requires in-depth planning and operations as was enabled through the capacity built in Tafea.

An enabling environment is a must

Intensified program management and administrative support was central to the success achieved in Tafea. Limited access to finances can compromise timely implementation of necessary activities. Poor supply management leads to stockouts that undermine prevention, diagnosis and treatment. Other operational challenges also threaten elimination efforts. Elimination requires an environment that enables efficient malaria service delivery, including sufficient human resources, local leadership and adequate funds. Flexible financing options that complement existing systems can be leveraged to improve efficiency in critical areas.

Local adaptation of the Tafea model is essential

While Tafea offers important lessons, the same model cannot simply be replicated in other settings. Intensive program management and administrative support enabled rapid progress towards malaria elimination. Adaption to specific resource settings and considering epidemiological, social and environmental contexts will be needed, particularly to foster community ownership and leadership in a locally-appropriate way.

Permanent malaria staff are required to drive elimination

Many critical malaria staff positions on the MOH structure – such as Provincial Malaria Supervisors in three of the six provinces – remain vacant. Gaps in key posts at national and provincial levels are an ongoing challenge in Vanuatu. Authors of a 2018 independent review were *“especially concerned that there were no staff to take on the added tasks associated with the intensive surveillance needed for malaria elimination, i.e. who will do the case investigations, follow-up on cases, organize and supervise outbreak and foci response measures.”*² The Tafea experience underscores how crucial adequate staffing is.

Capacity should be maintained following elimination

To protect the gains made and ensure prevention of re-establishment, the capacity for surveillance and response must be maintained in elimination settings. Sustained community leadership and involvement are crucial. Special efforts have been needed to tackle the threat of imported malaria in Tafea. Areas in the capital, Port Vila, with persons expected to travel to Tafea were pro-actively targeted for testing, treatment and IRS to minimize risk of importation of malaria parasites into Tafea. During the recent National Games in Tafea, all attendees were screened and treated if they tested positive for malaria.

Funding gaps need to be filled to maintain gains and achieve elimination

Financial commitments of the Vanuatu Government have been at an all-time high in 2018 and 2019. However, overall the funding picture for malaria in Vanuatu is alarming. Global Fund malaria allocations dropped by over a third between funding rounds in 2012-2014 and 2018-2020, with concurrent declines in contributions from other development partners. This led to an overall reduction of around 36% in the MOH budget for malaria.

This funding crisis has hampered efforts to effectively implement interventions nationwide that proved successful in Tafea. IRS and supervisory visits have not been conducted as needed. It has been impossible to maintain universal coverage with core interventions such as LLINs and IRS. Despite the ongoing risk of re-establishment of malaria transmission, there have been no LLIN distribution campaigns in Tafea since 2016 and no distributions are planned for 2019-2020. The national malaria strategic plan for 2015-2020 has not been fully implemented. Current levels of malaria program impact will be impossible to sustain if the trend in declining funding is not urgently reversed.

Development partner coordination is important

Mechanisms to coordinate MOH and development partner contributions and activities will need to improve if elimination is to be achieved and sustained throughout Vanuatu. According to the 2018 independent review, *“each partner appears to operate in its own little box. This has resulted in the programme having to juggle the specific interests of each partner and deal with different sets of financial rules and procedures.”*² The MOH is in the process of re-instating an independent, external Malaria Advisory Group chaired by the MOH to strengthen coordination and communication with partners and as a pre-requisite for malaria-free certification, with a Malaria Steering Committee also to be established for coordinate within the MOH.

Domestic leadership and sustainability are imperative

As Vanuatu strides towards zero local malaria cases by the end of 2023, the government and development partners are actively working to develop a clear understanding of mutual obligations to maintain the gains made. While an injection of funds will be needed to reach national elimination, sustained commitments will be required to actively prevent re-establishment of transmission. There are numerous examples of a backslide in programs and funding that resulted in malaria resurgences that serve as a warning. Domestic technical and management capacity must be enhanced to drive these efforts and to ultimately reduce reliance on development assistance.

The new malaria elimination strategic plan for 2021-2026 will emphasise this critical component of sustainable systems strengthening enabled by domestic leadership and capacity building in line with the *National Sustainable Development Plan 2016 to 2030*.⁸

Way Forward

Impressive progress has been made in the fight against malaria in Vanuatu. In Tafea province, elimination initiatives have been considered an “outstanding success”.⁹ In 2018, the Prime Ministers of Vanuatu, Papua New Guinea, and Solomon Islands renewed their commitment to a malaria-free Melanesia by mutually endorsing the Asia Pacific Leaders’ Malaria Elimination Roadmap. This resolve at the highest level guided by past success and ongoing progress have catalysed a re-think of malaria elimination in Vanuatu.

A new national elimination strategy will shift the elimination goal to two years earlier than originally planned³, with zero monthly local cases anticipated by the end of 2023 and certification of malaria free status by the end of 2026. Action will be targeted to areas with the highest remaining malaria burden whilst maintaining capacity to prevent re-establishment in provinces that are already malaria free. This will draw heavily on the experience gained and expertise built through the successful Tafea model.

Concerted and coordinated effort will be essential in the final push to finish malaria in Vanuatu. However, overall declines in malaria financing are a major concern. Funding from the Government of Vanuatu is at an all-time high, but partner support has declined and significant gaps remain.

Established development partners including the Global Fund, the Australian Government and WHO are committed to help finish the job in Vanuatu - but further investments are needed. The MOH and partners are in the process of galvanizing support through new initiatives with the Global Fund and other partners such as Rotarians Against Malaria. With additional investments expected to boost efforts in Vanuatu, this is an historic opportunity to end malaria in Vanuatu – for good.

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