

Intervention Area	Current Year (2010)	Planned (within next 5 years)
<b>Case Management</b>		
<b>Diagnosis</b>		
National diagnosis policy (confirmed, clinical)	Microscopy at health facilities for all fever cases	Will increase confirmed cases by microscopy or RDT to 95%; plan to increase access to quality diagnostic coverage in province to 100% of all registered health facilities by 2014
Tools (microscopy, RDT, PCR, parasite genotype, algorithm for clinical diagnosis)	Microscopy and RDT	Will increase use of microscopy and RDT; diagnostic services to be expanded out to all registered health facilities Introduce Improved testing for G6PD to guide safe treatment with primaquine
Monitoring/QA	Consultants recruited for Quality Assurance of microscopy and RDT	Regular batch testing of RDT-pre and post distribution; conduct regular external and local quality assurance assessment and training; set up a national malaria reference laboratory
<b>Treatment</b>		
<i>P. vivax</i> – 1 <sup>st</sup> line treatment protocol (radical cure, type, unit, dose); contraindicated populations (type, unit dose)	ACT (Coartem) 3-day treatment (2 mg/kg of artemether and 12 mg/kg of lumefantrine) and primaquine for 14 days (0.25 mg/kg/day)	Continue current guidelines; increase awareness among patients to discontinue taking primaquine if they observe dark urine; review guidelines based on outcome of efficacy studies for ACT and observational studies on primaquine safety
<i>P. vivax</i> – 2 <sup>nd</sup> line treatment protocol	All cases treated by directly observed treatment include three days of observation of artemether-lumefantrine (Coartem) and 14 days of primaquine	Will use primaquine for radical treatment (14 days of observed treatment)
<i>P. falciparum</i> – National treatment protocol/policy (type, unit dose)	Two doses per day of artemether-lumefantrine (3 days) (2 mg/kg of artemether and 12 mg/kg of lumefantrine); dosage based on weight	Continue current guidelines: 3days (twice daily) regimen based on weight; review policy based on results of two yearly efficacy studies
<i>P. falciparum</i> – Complicated Malaria	Second full course of artemether-lumefantrine; follow up for 3 months	Will use artesunate injections for treatment
Mixed infections – National treatment protocol/policy (type, unit dose)	Full 3- day course of artemether-lumefantrine plus 14 days of primaquine	Continue current guidelines
Directly Observed Therapy (DOT) and Case Follow-up (drug adherence)	Used when 1 <sup>st</sup> line treatment fails	Continue current guidelines for DOT; planned follow-up through microscopy or RDT every 30

		days for 3 months for <i>Pf</i> and 6 months for <i>Pv</i>
G6PD screening	Some G6PD screening in hospitals	Screening is planned to be accomplished with blood test when equipment available or clinical diagnosis from obvious primaquine side effects; if no G6PD tests, <i>vivax</i> patients to be admitted to ward and observed for 72 hours for adverse effect observation; planning to trial and scale-up rapid G6PD test beyond hospital use
G6PD prevalence survey		
Mass screening & treatment/Focal screening	Some mass screening and treatment (MSAT) currently in use	Mass screening and treatment (MSAT) planned to increase in areas with continuing malaria transmission; mass border screenings at local piers and airports in elimination provinces will be conducted; plan to conduct MSAT in at least 30% of communities per year as part of active parasite finding and treatment
Focused Mass Drug Administration (MDA)	Not currently implemented	When clear indication from Passive Case Detection (PCD) data and case investigation results of local transmission, mass drug administration will be used; plan review based on lessons from Sri Lanka and China on MDA to inform way forward for MDA
Monitoring/QA/Policies		
<b>Chemoprophylaxis</b>		
Prophylaxis - travellers	None	None
Prophylaxis – high risk populations	None	None
Prophylaxis – pregnant women	Weekly chemoprophylaxis for pregnant women; distribution of LLINs at ANCs	Will provide more malaria prevention measures; given the low prevalence, policy will focus on screening and treatment backed by use of LLINs and IRS
Intermittent Preventive Treatment – infants (IPTi), Children (IPTc) or in Pregnancy (IPTp)	None	Will provide more malaria prevention measures. Given the low prevalence, policy will focus on screening and treatment backed by use of LINS and IRS
<b>Prevention</b>		
<b>Vector Control</b>		
IRS Strategy (e.g., spatial or temporal rotation)		Temotu & Isabel Provinces: IRS planned in 100%

		household structures located within 2 miles of coastline; but will revise and consider discontinuing 100% IRS in Isabel, and eventually Temotu, due to minimal transmission; IRS will then be reserved for outbreak response
Insecticides	Pyrethroid; Lambda Cyhalothrin	Will revise based on results from efficacy trials and changes in vector behaviour
LLIN	316,000 LLINs in the Solomon Islands,	Continued free mass distribution of 941,000 LLINs, provided by GFATM; mass distribution every three years; top up via health facilities, boarding schools will continue in between countrywide mass distribution; extra LLINs for elimination province for outbreak response and replacement; target of coverage of at least 95% population
Expired LLIN collection & replacement	No policy	Undertake study to explore community views, logistical challenges and environmental implications of replacing expired LLINs; replacement will be done every 3 years
ITN (and insecticides used)	Only LLINs used	Continue to provide only LLINs; continue to monitor the residual efficacy of insecticides to inform change of insecticides if necessary
Larval control & environmental modification	Not consistently implemented	Map breeding sources and implement larviciding where cost effective
QA	Insecticide resistance studies done annually	Scale up bioassays in three sentinel sites outside the elimination provinces
Other		
<b>Advocacy &amp; Education</b>		
Mass media	Mass media used to increase uptake of LLINs	Continue use of mass media in malaria education
IEC/BCC campaigns	49% of schools provided with BCC messages	395 out of 439 schools to receive IEC and BCC campaigns; IEC material on malaria in pregnancy to be produced and distributed nationally to all ante-natal clinics
Community-based interventions	At village level, periodic health awareness talks given by health workers; planning and implementation involves local community leaders and local authorities, community groups (particularly women	Tidy Village Campaign program on Isabel (Isabel Provincial Government, the Church of Melanesia's Diocese of Isabel and the Council of Chiefs) to be expanded and used for malaria education

	groups), religious organizations and other stakeholders	
<b>Surveillance</b>		
<b>Case detection and reporting</b>		
Case reporting system	Establish surveillance system that fully documents every case	All monthly Health Information Surveillance (HIS) & Malaria Information Surveillance (MIS) reports to be received by Provincial Health on time; 100% of cases from health services recorded and reported to VBDCP within 48 hours; will develop community level surveillance and monitoring workers
Active case detection (ACD)		Plan to conduct active case detection through mass blood surveys, routine monitoring; mass screening and treatment in areas of continuing transmission; Active Case Detection to be conducted 5 days/month in each province (excluding Temotu)
Passive case detection (PCD)		Passive Case Detection to be implemented at hospital and clinic level
Case investigation or “re-active surveillance”	Use functioning case reporting system to identify source of infections	Expand and improve diagnosis to pick cases in real time. Explore how to include malaria in ongoing MOH syndromic surveillance of key diseases
Other surveillance (e.g., surveys)		Will create a provincial database to monitor cases
<b>Outbreak (Epidemic) detection and response</b>		
Outbreak/Epidemic Prediction & Response	SOP guidelines for remedial measures to be followed within 10 days of reported case in a village; if multiple cases in one village or nearby villages over a period of 3-6 months, then more extensive remedial measures taken	IRS to be used as emergency measure in response to outbreaks
<b>Entomological Surveillance</b>		
Surveillance vector species, behaviour, or densities	Periodic entomological surveys to measure changes in vector behaviour and/or susceptibility	Parasite genotyping studies needed; plan to establish sentinel sites for entomology studies
<b>Resistance monitoring</b>		
Insecticide and drug resistance activities	Regular drug resistance studies at 3 sentinel sites	Will test main malaria vectors for insecticide resistance (using standard World Health Organization bioassay kits) at 4 sentinel sites
Drug efficacy	Periodic parasitological surveys to measure changes	VBDCP staff to conduct therapeutic efficacy studies

	in parasite resistance to first-line drug	on first line drugs every two years; will establish and implement more pharmacovigilance measures
<b>Prevention of reintroduction</b>		
High risk populations		Pregnant women
Border screening	Some screening at ports of entry	Will screen passengers at Lata airport and coastal points of entry to occur with blood samples for RDTs and films from all arrivals; all positives detected by RDTs will be verified by microscopy and treatment for all positives; Pf cases will be followed up monthly for 6 months, Pv cases for one year
Cross border collaborations	Multi-country Global Fund grant with Vanuatu	Continue relationship with Vanuatu
Vector-control specific POR activities		
<b>Program Management and health systems</b>		
<b>Program Finance</b>		
National elimination goal (by province, district)	Eliminate malaria from Temotu and Isabel by 2014 API for Temotu-6.3 API for Isabel-5.3	Plan to eliminate <i>falciparum</i> and <i>vivax</i> by province by 2014 and to decrease local transmission in Temotu to zero by December 2011
Funding sources and funding budget from each source	Funding for entire country malaria control effort and not elimination specific (in \$ USD): 2010 SIG – total expenditure – 11,941,807 2010 PacMISC (in-country) - \$205,925 2010 PacMISC (external) - \$561,830 2010 GFATM – total expenditure – \$10,992,657 2010 WHO – total expenditure - \$250,000 2010 JICA – total expenditure - \$803,643	Funding trends likely to continue, assuming funding is secured from partners and the Government
<b>Stratification</b>		
Stratification strategies for defining risk areas, to allocate resources & activities	Almost all households mapped in both elimination provinces to help define transmission foci	All households to be mapped using PDA/GIS (Geographic Information Systems) in Temotu and Isabel provinces
<b>Program structure and organization management</b>		
Program management	SPC is the principle recipient of the GFATM grant, with the Ministry of Health as the sub-recipient; most activities are organized at the Ministry of Health level	Will establish administration, management and budgetary processes; Ministry of Health and Medical Services will provide significant support

		for human resource development: plans for local staff, administrative support and maintain resources for national malaria control program
Procurement & supply management	Coartem (ACT) procured through WHO mechanism; LLINS and insecticides procured through SPC, all other procurement through MOH mechanisms	Will strengthen supply channels to improve stock management / minimize stock outs of diagnostic consumables and equipment
Financial management	Financial records rigorously checked and audits completed by outside parties	Continue good accounting and auditing practice; increase finance staff capacity
<b>Program integration</b>		
Level of integration of malaria elimination into public health		Will increase health systems strengthening projects and will help with locally identified health issues
<b>Personnel</b>		
Reorientation, retraining, or restaffing & capacity development		Plan to renovate and build new staff housing for all staff; will review human resource development (HRD) needs and implement plan for VBDCP (including job descriptions, training plans at all levels of service, recruitment and succession plans etc); will develop of standard agreement and wages for community microscopists; will engage Headquarters Administration to implement outstanding issues of salaries, wages and schemes of service for all malaria workers
<b>Legal Framework</b>		
Frameworks/policies/regulation/strategic plans		
Standard Operating Procedures (SOP) – list subject	SOPs created for: -remedial measures -surveillance -case investigation -follow-up -mass screening -treatment	Continue use of current SOPs and revise as needed
<b>Private sector – Providers</b>		
Engagement with formal providers (case management, reporting, other)	Few private clinics and private pharmacies; malaria treatment including artemisinin derivatives available through private practitioners and pharmacies, some	

	of which offer microscopically confirmed diagnosis; cases treated in the private sector are not yet reported to the national malaria control program	
Engagement with informal providers (case management, reporting, other)		
Training		
Other		
Monitoring and QA		
<b>Private sector – Companies/Businesses</b>		
Employee or community programs (e.g., medical services, bed net campaigns)		Plan to use women’s groups and other community based groups to deliver LLINs to local population
<b>Partners</b>		
Funding	Technical and financial partners, 2010: World Health Organization Pacific Malaria Initiative Support Center (PacMISC) AusAid Global Fund (GFATM) Japan International Cooperation Agency (JICA)	Continued support from partners
Implementation (list partners and type of collaboration)	Malaria Reference Group (MRG) Asia-Pacific Malaria Elimination Network (APMEN) Rotarians Against Malaria Secretariat of the Pacific Community World Health Organization Japan International Cooperation Agency Pacific Islands AIDS Foundation	Continued support from International organizations; local partners include: Diocese of Church of Melanesia; Temotu Council of Women; Temotu Development Authority (TDA); TRIPOD; Council of Chiefs (communities) ; Mothers Union group from Isabel Diocese; royal Solomon Islands Police Force, Isabel Province
<b>M&amp;E</b>		
M&E Elimination Plan, indicator development	Elimination plan revised to take into account decreasing transmission and evidence based re-orientation; national malaria M&E guidelines in place	Finalise elimination-specific M&E and surveillance plans; cost and allocate required resources needed to re-orient M&E towards active surveillance and response in elimination provinces
QA/QC (diagnosis, supply chain, etc)		
<b>Other</b>		
	Working to empower women in aspects of malaria prevention	Pregnant women will continue to be provided with LLINs and mothers groups supported to distribute LLINs and conduct health promotion activities

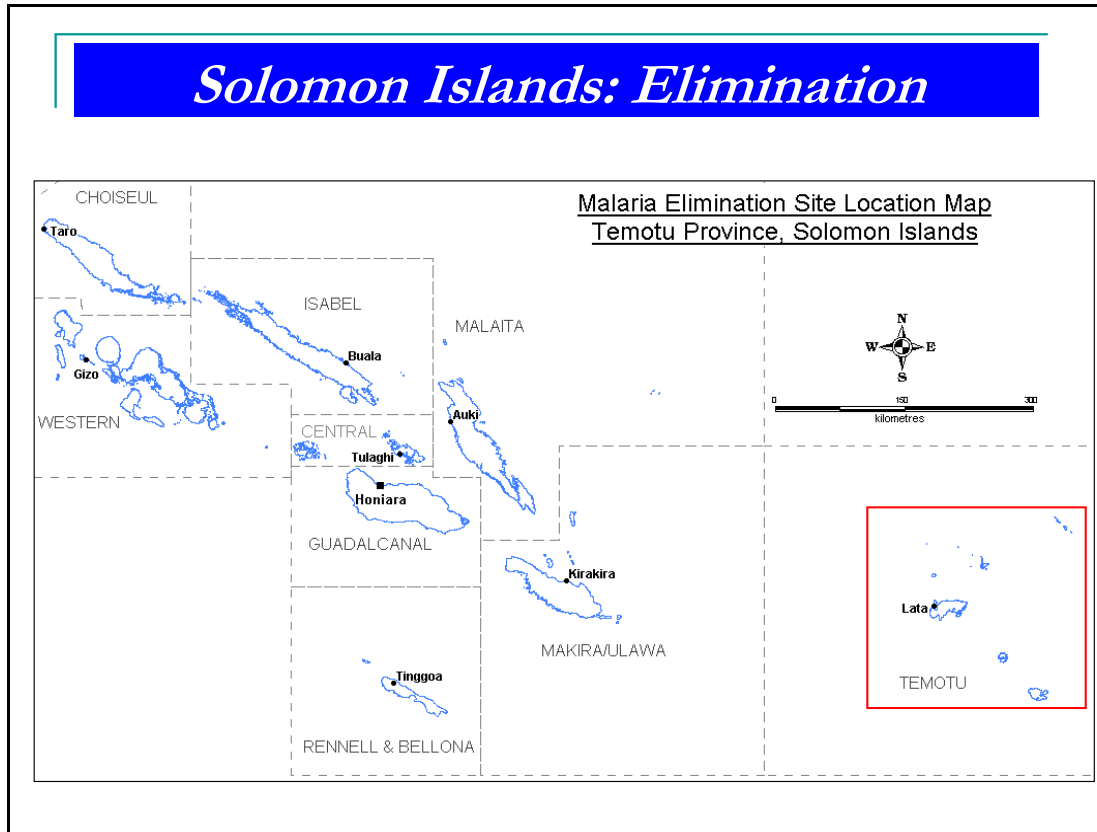
<b><i>Operational Research</i></b>	<b><i>Research in Past 5-10 years</i></b>	<b><i>Present Research Projects</i></b>	<b><i>Planned Research Projects</i></b>
Parasitological research projects, in particular for <i>P. vivax</i> ; list major outcomes and please cite publications when relevant			Annual prevalence surveys in future of school children on the larger islands, entire population for small islands
Entomological research projects; list major outcomes and please cite publications when relevant			Plan to conduct needs-based operational research on vector control; plan to evaluate impact of environmental modification on vector population ecology and disease transmission
Behavioural research projects; list major outcomes and please cite publications when relevant	Research on ACT compliance and acceptability studies completed		Research planned to identify community perceptions, attitudes and beliefs that govern preference and use of LLINs
Other research projects; list major outcomes and please cite publications when relevant		Recently completed a study exploring provider and community responses to new malaria diagnostic and treatment regime (Wijesinghe et al. 2010); Cost consequence analysis and economic evaluation of RDTs and ACTs	
Research Partners (national, regional and international) in operational research projects		Pacific Malaria Initiative (and corresponding Support Center), University of Queensland, Queensland Institute of Medical Research, Australia Army Institute and others	PACMISC

<b>Quantitative Data</b>			
<b>Variable</b>	<b>Data</b>	<b>Source</b>	<b>Notes (include year if not 2010)</b>
Total population	515,870	Solomon Islands Population and Housing Census	2009
Population at risk (PAR): Low	0	World Health Organization, World Malaria Report 2010	2009
Medium	0		At risk: Pregnant women

High	512,829		
Total malaria deaths	53	World Health Organization, World Malaria Report 2010	2009
	2.2 per 100,000	Global Fund Proposal	
Total malaria cases	40,682	Solomon Island Malaria Information System 2010	
Total positive slides – <i>P. vivax</i>	14,050	Solomon Island Malaria Information System 2010	
Total positive slides – <i>P. falciparum</i>	26,431	Solomon Island Malaria Information System 2010	
Total suspected cases	<b>212,329</b> Temotu: 2,977 Isabel: 2,854	Solomon Island Malaria Information System 2010	
G6PD deficiency % population	7.4% males	Nkhoma et al.	2009
# imported malaria cases (national)			
Slide positivity rate (SPR)	Temotu: 2.8 Isabel: 2.3	Action Plan 2010: National Malaria Plan	
Annual blood examination rate (ABER)			
Annual parasite index (API)	75.9/1000	Action Plan 2010: National Malaria Plan	
Parasite prevalence rate	Temotu: 6.3%. Isabel: 5.3%.	Action Plan 2010: National Malaria Plan	

<b>Main Sources (list up to five main sources):</b>
1. Global Fund to Fight AIDS, Tuberculosis, and Malaria, Round 5 Proposal (2005). "Multi Country Response to Malaria in the Pacific."
2. National Vector-Borne Disease Control Program (2010). "Action Plans 2010: National Malaria Plan," (draft documents).
3. Nkhoma, E., "The global prevalence of glucose-6-phosphate dehydrogenase deficiency: A systematic review and meta-analysis." <i>Blood Cells, Molecules, and Diseases</i> 2009 42:267–278.
4. World Health Organization, World Malaria Report 2010.
5. World Health Organization. "Country Profile: Solomon Islands." <a href="http://www.wpro.who.int/sites/mvp/documents/list.htm">http://www.wpro.who.int/sites/mvp/documents/list.htm</a> . Accessed October 28, 2010.
6. World Health Organization Regional Office for the West Pacific. "Solomon Islands Malaria Epidemiology." <a href="http://www.wpro.who.int/sites/mvp/epidemiology/malaria/si_profile.htm">http://www.wpro.who.int/sites/mvp/epidemiology/malaria/si_profile.htm</a> . Accessed October 15, 2010.

## Solomon Islands: Elimination



Map of Elimination in Solomon Islands