

## RBM VCWG New Challenges New Tools Work Stream

### Work Plan 2020

Co-leaders: Allison Tatarsky and Sheila Ogoma

<b>Project #1: Identification of <i>Anopheles</i> vectors – ONGOING</b>						
Resolving current challenges on identification of malaria vectors. Their work so far focused on both morphological and molecular identification.						
#	Activity description	Timeline	Status	Responsible project manager(s)	Support required	Updates
1	To address the question of morphological and molecular identification of <i>Anopheles</i> mosquitoes, several experts (Smithsonian, NHM (UK), University of Witwatersrand) were contacted for their views on how best to link morphologically and molecularly identified mosquitoes. All agreed that a correct morphological identification of mosquitoes was essential to the determination of the CO1 and ITS2 sequences for that species. Storage of the voucher specimens (with sequencing done from a leg or from other mosquitoes of the same brood) in museums was also considered important. Next steps for the assignment include the determination of a list of the <i>Anopheles</i> species in sub-Saharan Africa (as described in the literature), a list of the CO1/ITS2 sequences from <i>Anopheles</i> species from this region that do not correlate with known species at a 98% or higher rate, and the <b>development of a protocol that researchers can use to ensure that they are correctly associating sequences with mosquito specimens.</b>	2020	Ongoing	Seth Irish (CDC-Atlanta, USA) and Neil Lobo (University of Notre Dame USA)	\$0	A publication on African <i>Anopheles</i> mosquitoes was submitted and is under review.  An update based on what is available in GenBank will be provided during the 15 <sup>th</sup> VCWG meeting Feb 2020.
2	Planned work by Prof. Maureen Coetzee updating of current keys for sub-Saharan African mosquito identification and improving capacity for taxonomy and vector identification.	End of 2019	Completed	Maureen Coetzee, Basil Brooke (Univ of		A manuscript has been submitted with the updated keys.

				Wits, NICD South Africa)		GMP is working to update the WHO 1975 Practical Manual for Entomology.
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<b>Project #2: Develop draft guidelines for measuring residual malaria transmission and its drivers – COMPLETED</b>						
#	Activity description	Timeline	Status	Responsible project manager(s)	Support required	Updates
1	The initial plan by VCWG members was to examine methods used in past, current and new studies on residual malaria transmission in Africa and Asia, and develop draft standardized guidelines to quantify the transmission and its drivers across settings.	2019	Completed	April Monroe (JHU), Fredros Okumu (IHI)	\$0	<p>A set of standardized indicators and procedures for assessing residual malaria transmission have been developed by the JHU and IHI. In addition, a manuscript has been submitted for review in a peer review journal. These indicators and guidelines are already being used by various research groups and have been incorporated into a program-oriented Entomological Surveillance Planning Tool (ESPT) developed by UCSF MEI and partners.</p> <p>A number of studies on this topic have been published including:</p> <ol style="list-style-type: none"> <li>1. Monroe, A., S. Moore, et al. (2019). "Measuring and characterizing night time human behaviour as it relates to residual malaria transmission in sub-Saharan Africa: a review of the published literature." <i>Malaria Journal</i> 18(1): 6.</li> <li>2. Finda, M. F., I. R. Moshi, et al. (2019). "Linking human behaviours and malaria vector biting risk in south-eastern Tanzania." <i>PloS one</i> 14(6): e0217414.</li> <li>3. Moshi, I. R., H. Ngowo, et al. (2017). "Community perceptions on outdoor malaria transmission in Kilombero Valley, Southern Tanzania." <i>Malaria Journal</i> 16(1): 274.</li> <li>4. Moshi, I. R., L. Manderson, et al. (2018). "Outdoor malaria transmission risks and social life: a qualitative</li> </ol>

						<p>study in South-Eastern Tanzania." Malaria Journal 17(1): 397.</p> <p>Residual transmission is being studied in forest populations in Asian countries as well.</p>
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<b>Project #3: Vector control tool and roadmap tracking – ONGOING</b>						
#	Activity description	Timeline	Status	Responsible project manager	Support required	Updates
1	With many vector control tools becoming available on the market and others in development, there is a need to inventory tools for national malaria programs and partners. The inventory should be a live document, ensuring that programs and partners can view the full toolbox, check regulatory and policy status on each tool, and understand the relevant stage of research and evaluation for tools not yet available on the market.	Continuous	Draft inventory is available for review, input, and improvement.	Allison Tatarsky (UCSF)	TBD	This inventory was developed as part of an IVCC-UCSF vector control landscape assessment. Instead of the inventory sitting dormant, UCSF wants this document to be circulated, used, and continuously updated so that it remains relevant to national malaria programs and partners.
2	New paradigms in vector control have been emerging, especially to tackle residual transmission, including attractive targeted sugar baits (ATSBs), spatial repellents, endectocides, among other tools. To understand and make visible the R&D, regulatory, and policy pathways for each paradigm and understand the various products that fit within	Continuous	Ongoing	NTNC Co-Chairs	Additional FTE	Several updates on roadmaps were presented during the 2019 NTNC workstream meeting, including on “bite prevention” (i.e. repellents, insecticide treated clothing, etc.) and endectocides (e.g. ivermectin). The Co-Chairs would like inputs from the NTNC workstream members on the paradigms for inclusion and process for tracking moving forward.

each paradigm, the VCWG NTNC proposes a systematic tracking of paradigm roadmaps, with annual updates to these roadmaps at the VCWG meetings.					
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