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INTEGRATED DATA ANALYTICS, VISUALIZATION, AND EVALUATION

BACKGROUND:

Vector control interventions are critical to maintaining malaria control gains and for continued progress towards elimination. Using data to inform decisions can support efficient use of resources to ensure high vector control coverage. Data use is key to developing strategies to adapt to changes in insecticide resistance and can facilitate effective use of the expanded toolbox for vector control as new indoor residual spray (IRS) and insecticide-treated net (ITN) products are introduced. Conducting timely evaluations of vector control interventions is important in the current context of new IRS and ITN products, including dual insecticide and piperonyl butoxide (PBO) ITNs to address pyrethroid resistance. Although evidence is critical for effective malaria vector control strategy development and implementation, relevant data are often not integrated and readily available to decision makers in easily accessible and actionable reports or data dashboards.

INTEGRATED DATA ANALYTICS, VISUALIZATION, AND EVALUATION:

PMI VectorLink is working with national malaria programs to compile, analyze, and visualize data to guide vector control decisions and strategies. This includes answering questions about the impact of IRS and ITN interventions on malaria burden. National program and partner datasets are integrated for review and analysis, including entomological, epidemiological, intervention coverage, and climate data. The goal of this work is to increase the use of evidence in malaria vector control decision-making with a focus on better use of existing data.

To achieve project goals, PMI VectorLink is addressing barriers to data use by integrating datasets to produce reports and/or dashboards that make relevant data more easily accessible, digestible, and action-oriented. The dashboards facilitate data review at the more granular levels optimal for planning, stratification, and targeting (i.e. to the district or sub-district level).

The PMI VectorLink team facilitates data review meetings with a focus on interpreting and using data for strategic and operational planning. Individuals making vector control decisions, including national malaria programs, PMI, and PMI VectorLink, are the target users for data dashboards and evaluation reports. Use cases may include:

- Supporting national vector control strategy, for example selecting approaches or products to meet program goals.
- Stratification and targeting for specific vector control interventions such as IRS and ITN campaigns.
- Optimizing vector control implementation, for example informing strategies to achieve coverage targets.
- Addressing and managing insecticide resistance through insecticide rotation.

DATA ANALYTICS & VISUALIZATIONS FOR PROGRAM PLANNING

In 2021, PMI VectorLink will continue support to vector control program planning in Zambia through developing IRS campaign monitoring and insecticide choice dashboards and supporting the integration of entomological data in the National Malaria Elimination Program's District Health Information Software (DHIS2).

November 2021

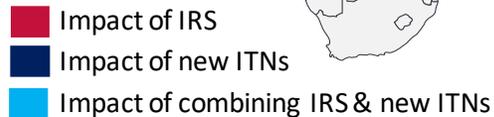
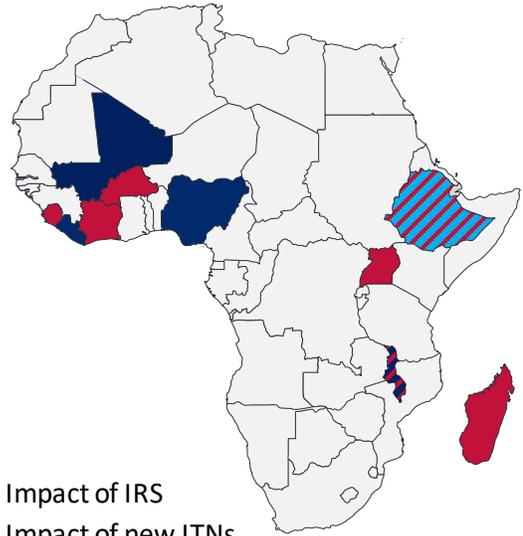


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IMPACT EVALUATIONS

In 2021, PMI VectorLink is conducting observational evaluations of the impact of IRS and ITN campaigns on malaria case incidence using formal statistical analyses, in the following PMI-supported countries:

- **Burkina Faso:** PMI VectorLink is preparing dashboards for the impact evaluation of the 2018-2021 **IRS campaigns** in two districts.
- **Cote d'Ivoire:** PMI VectorLink is preparing for dashboards to monitor and evaluate the impact of the 2020-2021 **IRS campaign**. Preparations will include a data quality audit to compare facility records with malaria case data in the national DHIS2 to determine suitability of DHIS2 data for the evaluation.
- **Ethiopia:** PMI VectorLink is updating dashboards that examine the impact of **IRS campaigns** in Benishangul-Gumuz and Gambela regions in 2017-2020. PMI VectorLink is also developing dashboards summarizing the baseline period for an evaluation in the Amhara region comparing IRS and standard pyrethroid ITNs to PBO ITNs.
- **Liberia:** A national universal coverage **dual insecticide ITN campaign** (Interceptor® G2) will be conducted in 2021. PMI VectorLink is developing a program monitoring dashboard with visualizations that summarize relevant data for monitoring pre- and post-campaign levels of malaria burden, risk, and coverage.
- **Madagascar:** PMI VectorLink will evaluate the impact of PMI-supported **IRS campaigns** conducted between 2018-2020, looking at the impact of IRS, and withdrawal of IRS among areas that received the interventions.
- **Mali:** PMI VectorLink will evaluate the impact of the **dual insecticide ITN campaign** (Interceptor® G2) compared to standard pyrethroid ITNs distributed in the Sikasso region in late July 2020.
- **Malawi:** PMI VectorLink will evaluate the impact of the **dual insecticide ITN campaigns** (Interceptor® G2, Royal Guard), **PBO ITN campaign**, and **IRS campaigns** that will occur in different districts in 2021.
- **Nigeria:** PMI supported a universal **PBO ITN campaign** in 2019 in Ebonyi State. PMI VectorLink is developing program monitoring dashboards that summarize relevant data for monitoring pre- and post-campaign levels of malaria burden, risk, and coverage in Ebonyi State.
- **Sierra Leone:** A national universal coverage PBO ITN campaign will be conducted in 2020. In 2021, PMI will support IRS implementation in Bo and Bombali districts. PMI VectorLink will evaluate the impact of the **2021 IRS campaign** in the context of the 2020 universal PBO ITN campaign.



For more information regarding this work, please contact Dr. Sarah Bumett (sburnett@path.org).