Malaria Zero Overview and Update

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Malaria Zero Overview

- Primary objective: Interrupt local transmission of malaria by 2020

- Malaria Zero began in 2015 but builds on past progress and countries’ existing commitment to reach elimination

- Principal approach → identify parasite infections in people (asymptomatic) and ensure delivery of “intervention package”

- Activities aligned with National Strategic Plan; coordinated with Global Fund activities
Malaria Zero: Package of Key Interventions

Emphasis on:
- Surveillance strengthening
- Prompt diagnosis and treatment
- Highly focal mass drug administration
- Targeted vector control

Highly selective foci with highest transmission

National coverage

Robust passive surveillance & timely case management

Focal MDA +/- vector control

Proactive surveillance

Reactive case detection
Work In Progress

MAIN TECHNICAL AND SCIENTIFIC ACTIVITIES
Malaria Zero: Main Activities (1)

- **Mapping areas of malaria transmission**
  - Updated *maps based on surveillance* data, population distribution, ecological factors – improving as surveillance gets better
  - “Opportunistic” testing (e.g., LF TAS, national surveys) to get as many data points as possible
  - Adaptation of active surveillance and mapping cases pilots for possible broader implementation
Updated Maps for Malaria Risk Stratification (draft)

Source: MSPP surveillance data; CHAI; Malaria Atlas Project
LF TAS in Saut d’Eau Commune (n=1,230; 6-7yo in schools)

(4) RDT+/qPCR+
(3) RDT+ only
(5) qPCR+ only

Source: PNCM/CDC
Malaria Zero: Main Activities (2)

- Targeting interventions (fMDA and targeted vector control)
  - Operations research studies assessing using convenient sentinel populations (e.g., schools, churches, etc.)
  - Household survey with spatially weighted sampling to characterize transmission foci → information will help us develop sampling strategy and proactive surveillance
Household Survey: Enumeration of Households (Day 6)

Source: PNCM/CDC
Household Survey: Enumeration of Households (Day 11)

Blue: days 1-7
Red: days 8-11

Source: PNCM/CDC
Household Survey: Enumeration of Households (Day 20)
Household Survey: Enumeration Results

- **Final census results**
  - 19,569 households (estimated 140K residents)
  - 1277 points of interest

- **Sample**
  - 7227 households
  - 37,633 individuals (estimated)

- **Analysis to compare different methods of developing a sampling frame for selection of households (secondary objective)** → can we use remote images (satellite) to develop sampling frame?
Hurricane Matthew Response

- Contributed to emergency response
  - Rapid phone assessment to provide information from inaccessible areas
  - Supported MSPP in developing malaria/VBD response plan
  - Responded to MSPP request for RDT shortage (60,000 RDTs provided)
  - Household enumeration data shared with emergency responders for emergency relief planning

- Studies interrupted for 6 months
Malaria Zero: Main Activities (3)

- Development of focal MDA intervention
  - Qualitative study on hard to reach populations, acceptability of MDA, and factors related to adherence; household survey will collect complementary information
  - Develop community engagement strategy and campaigns
  - Mathematical modeling to help guide when (which level of transmission) to implement focal drug administration
  - Develop effective vector control strategy as a component of intervention package
Malaria Zero: Main Activities (4)

- Measuring transmission
  - Testing **combination of antigens** (short- and long-lasting) for serology
  - Possibility of testing **new diagnostic tools** with higher sensitivity for low parasite density (e.g., ultrasensitive RDT)
Capacity Building at Haiti’s National Public Health Laboratory (LNSP)

Three Experienced LNSP Technicians Dedicated for Malaria Work

Training completed:
- Sample organization and database construction
- DNA extraction and storage
- Real-time PCR assay and interpretation
- Luminex® multiplex serology assay
Concordance Between LNSP and CDC Laboratories

Initial results from CQ Resistance Study:

In Summary: LNSP provides quality PCR results that will aid in malaria elimination efforts
Establishment of Multiplex Serological Capacity at LNSP

Room within LNSP Parasitology section dedicated for Malaria Zero work

Setting up laboratory, October 2016
PNCM/MSPP Vector Control Team Accomplishments

- **Insecticide resistance**
  - Data for 2014/15 WHO’s World Malaria report
  - CDC bottle bioassays on 1,900 Anopheles albimanus against the insecticides permethrin, malathion and DDT
  - No insecticide resistance detected

- **Vector biting studies completed**
  - More outdoor than indoor biting at 3 sites (Nord-Est, Artibonite, Grand Anse)

- **Larval breeding site mapping (national)**

- **Coordination of activities and resource across Zika, malaria, lymphatic filariasis**
Work in Progress

ADDITIONAL OPERATIONAL ACTIVITIES
Support to Maximize Resources

- Coordination across donors (GF, USG, MZ) and regional initiative (EMMIE)

- Engage private sector
  - Survey of private health providers to develop engagement strategy
  - Landscaping of private sector partners in country

- Resource mobilization
  - Current resources are not sufficient to reach elimination
Operational and Programmatic Support

- **Reorienting the malaria program towards elimination**
  - Malaria elimination workshops in Haiti and DR at central and departmental levels
  - Updating malaria elimination curriculum

- **Operational planning**
  - Develop central and departmental level plans to implement malaria elimination activities

- **Surveillance strengthening**
  - Working with Ministry units responsible for surveillance to include case base reporting
Timeline to Reach Local Interruption of Transmission

2016
- Research to Inform Malaria Elimination Approach

2017
- Enhance Active/Passive Surveillance Systems and Lab Capacity
  - Operational Research Household Survey
  - Focal MDA Targeted vector control

2018
- Piloting Malaria Elimination Activities
  - Focal MDA Targeted vector control

2019
- Phased Scale-Up of Malaria Elimination Activities
  - Focal MDA Targeted vector control
  - Active surveillance

2020
- Local Interruption
Summary & Main Next Steps

- Initiated key studies and activities to develop evidenced-based plan for malaria elimination
  - Due to hurricane, determine alternate study sites
  - Continue reinforcing case management and surveillance in high transmission communes (Grand Anse)

- Provided technical and operational support to plan and carry out program activities for elimination (e.g. risk map stratification, entomology, lab capacity)

- Coordinated plans and activities across major donors
  - Develop additional collaboration for scale up
  - Support GF application development