

Malaria Zero Overview and Update

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EMMIE Meeting
San José, Costa Rica

Malaria Zero Consortium Partners PLUS



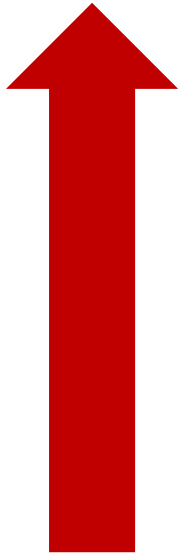
+ UN Foundation, Malaria No More, PSI/OHMaSS, IMA World Health

Malaria Zero Overview

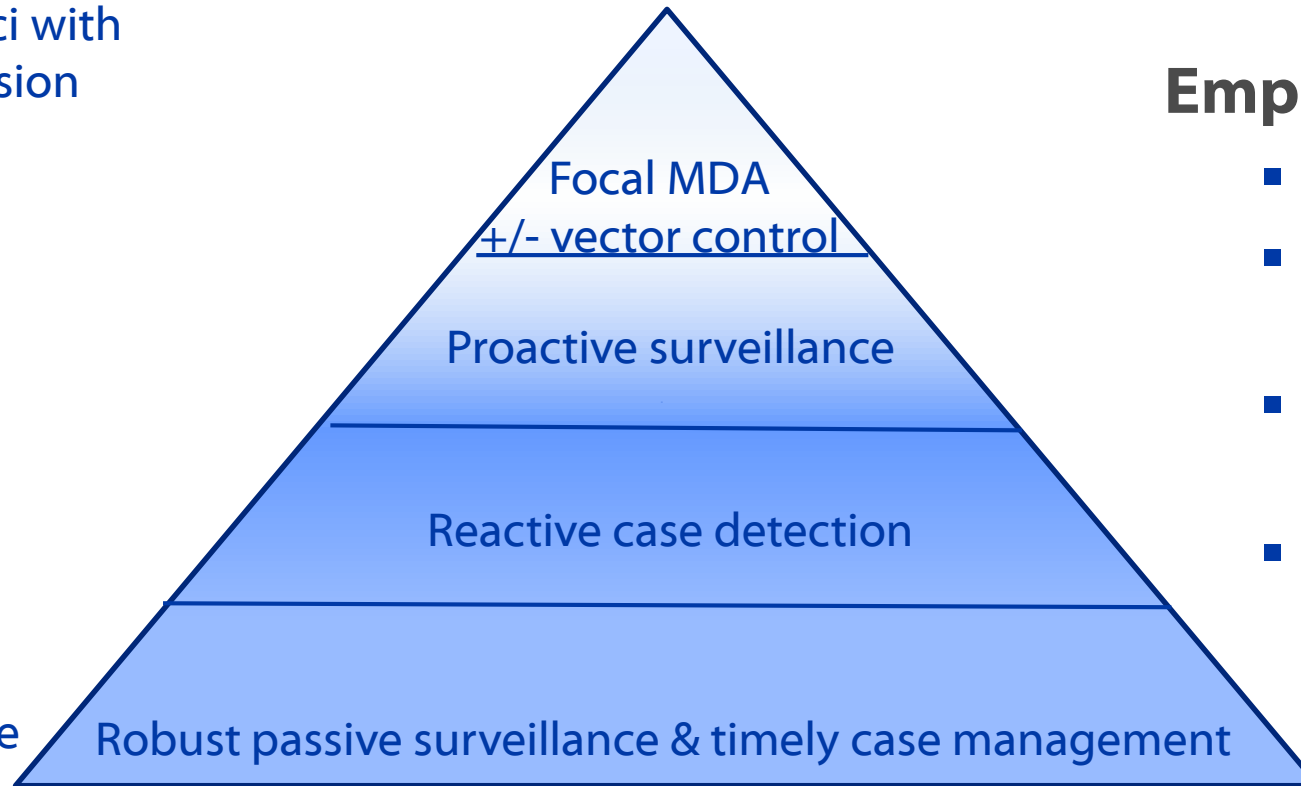
- ❑ **Primary objective: Interrupt local transmission of malaria by 2020**
- ❑ **Malaria Zero began in 2015 but builds on past progress and countries' existing commitment to reach elimination**
- ❑ **Principal approach → identify parasite infections in people (asymptomatic) and ensure delivery of “intervention package”**
- ❑ **Activities aligned with National Strategic Plan; coordinated with Global Fund activities**

Malaria Zero: Package of Key Interventions

Highly selective foci with
highest transmission



National coverage



Emphasis on:

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

Work In Progress

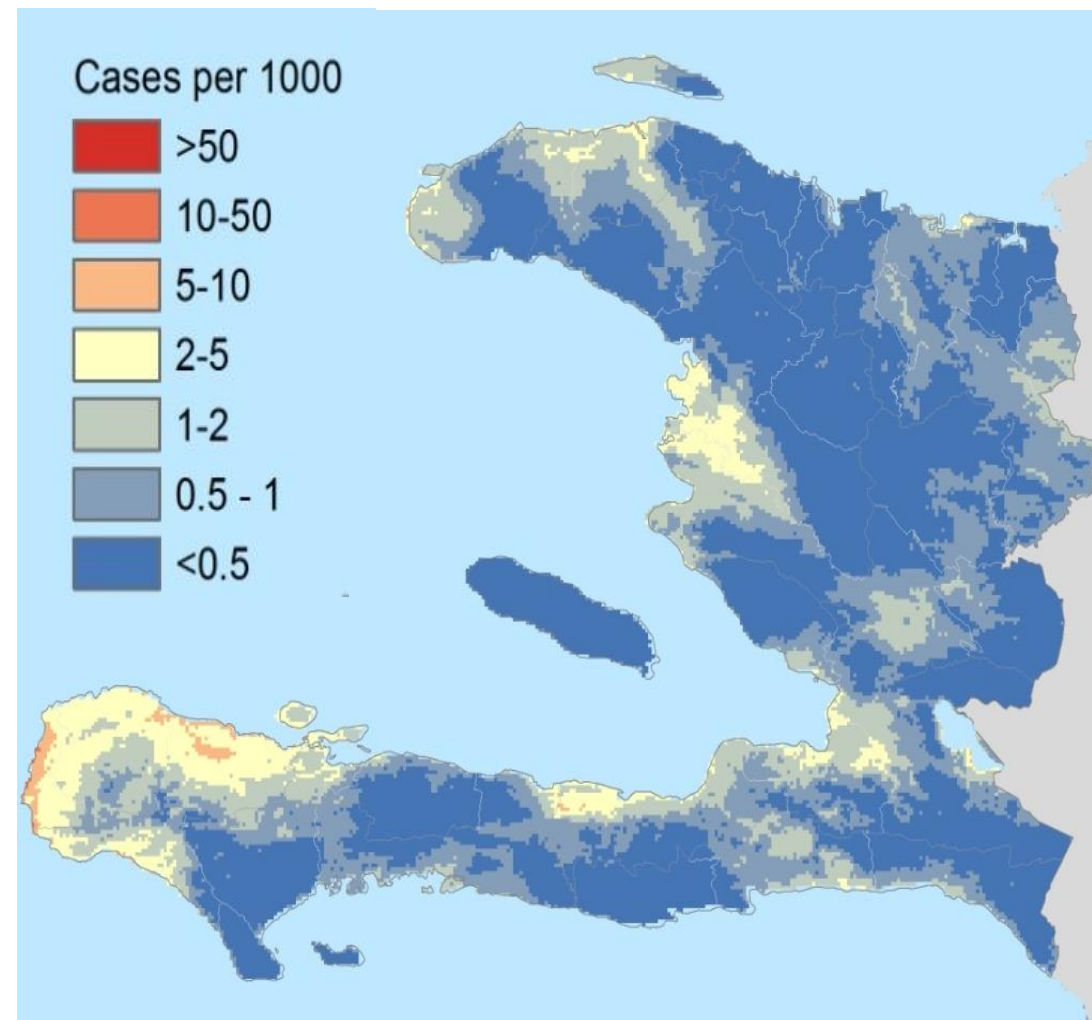
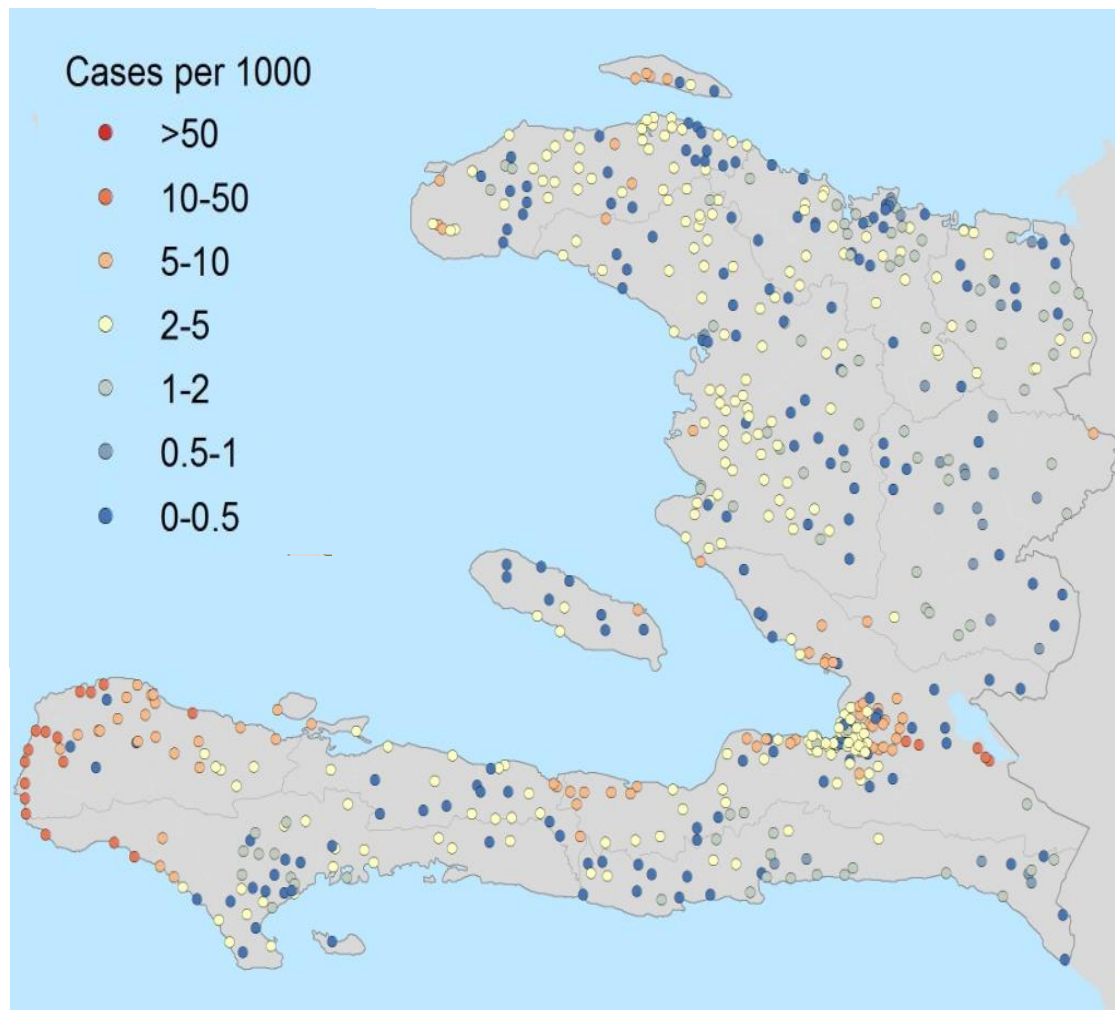
MAIN TECHNICAL AND SCIENTIFIC ACTIVITIES

Malaria Zero: Main Activities (1)

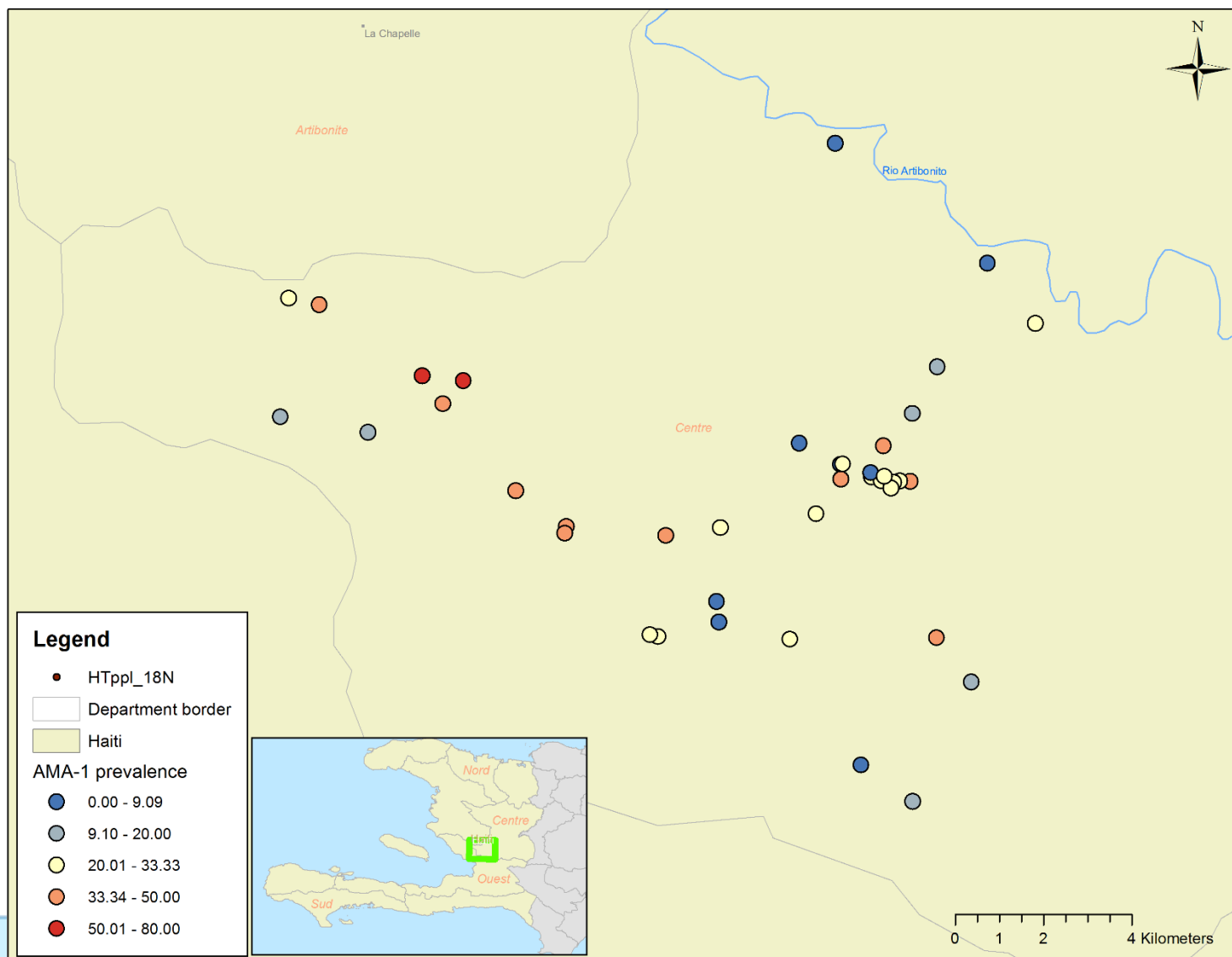
❑ Mapping areas of malaria transmission

- 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)



LF TAS in Saut d'Eau Commune (n=1,230; 6-7yo in schools)



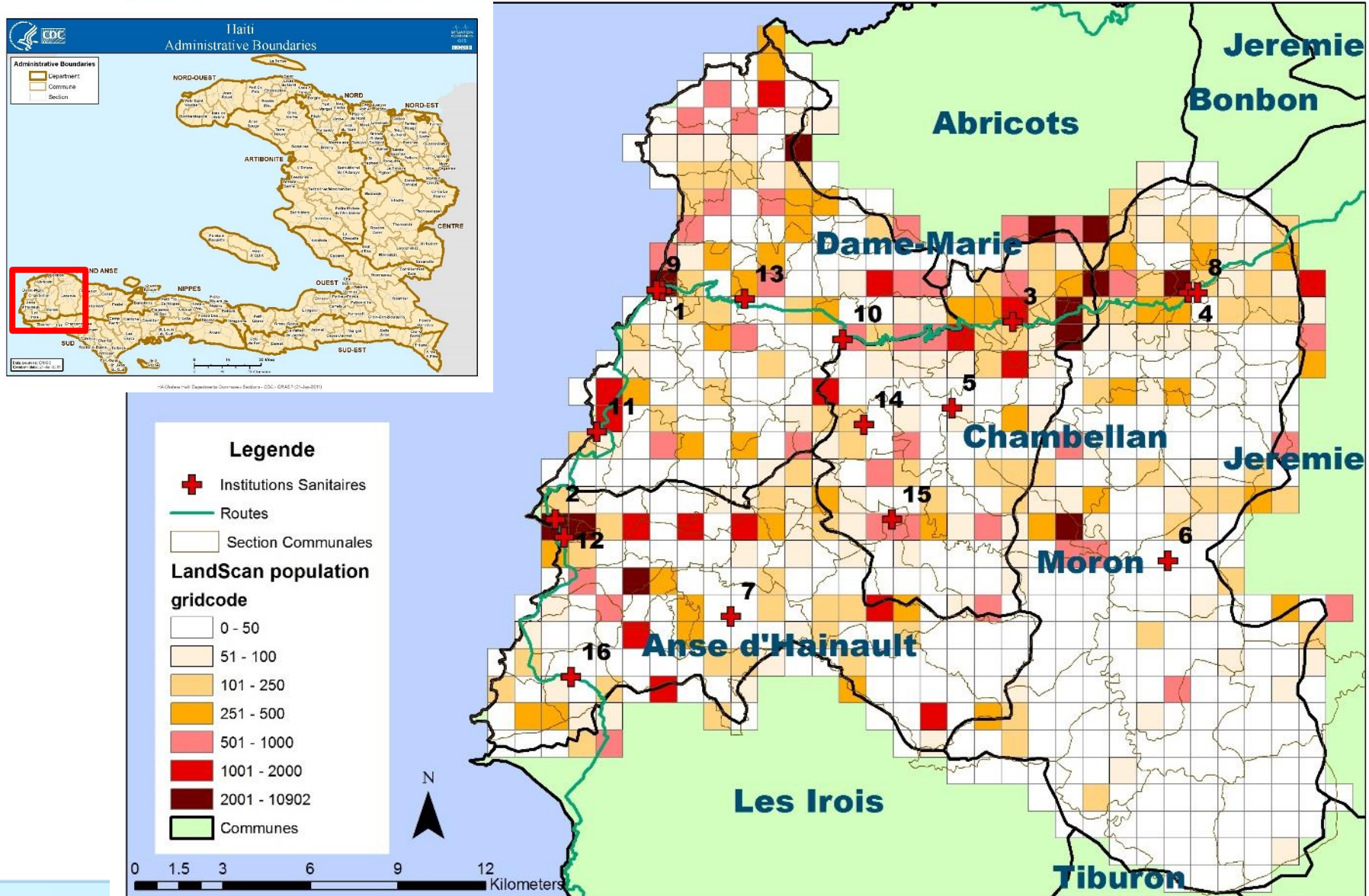
(4) RDT+/qPCR+
(3) RDT+ only
(5) qPCR+ only

Source: PNCM/CDC

Malaria Zero: Main Activities (2)

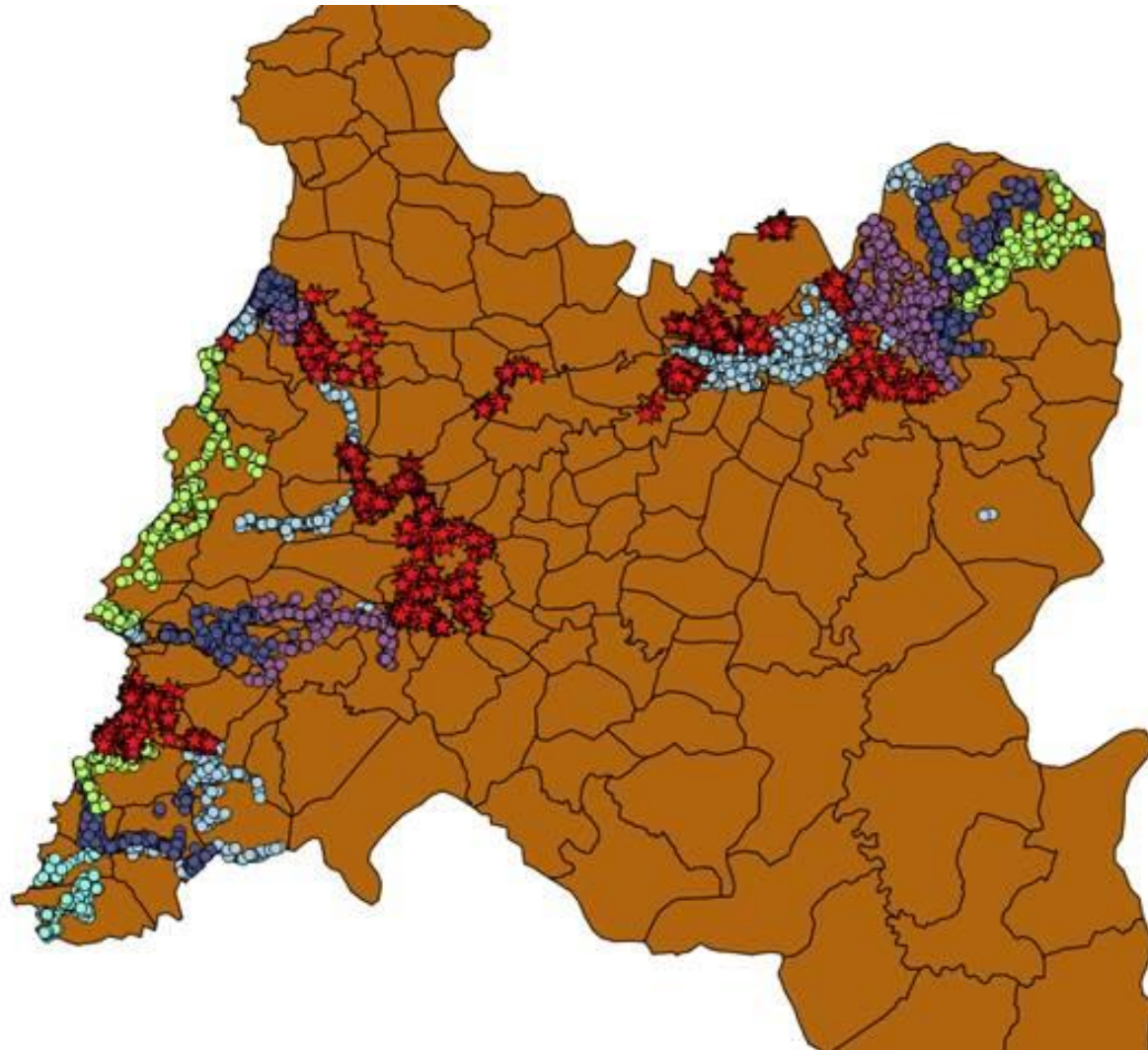
- ❑ **Targeting interventions (fMDA and targeted vector control)**
 - **Operations research studies** assessing using convenient sentinel populations (e.g., schools, churches, etc.)
 - **Household survey** with spatially weighted sampling to characterize transmission foci → information will help us develop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

Household Survey – High Transmission Area



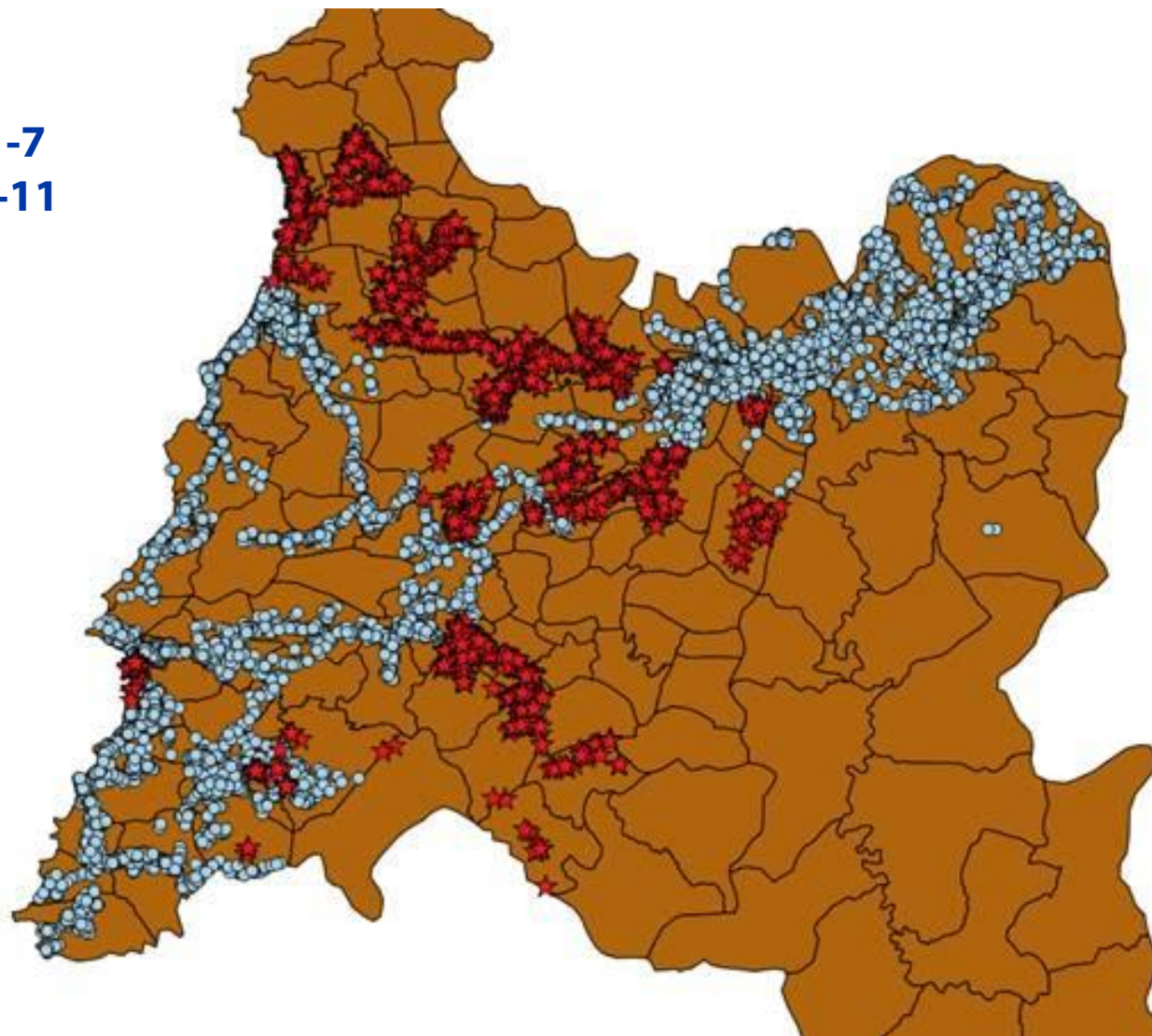
Source:
PNCM/CDC

Household Survey: Enumeration of Households (Day 6)

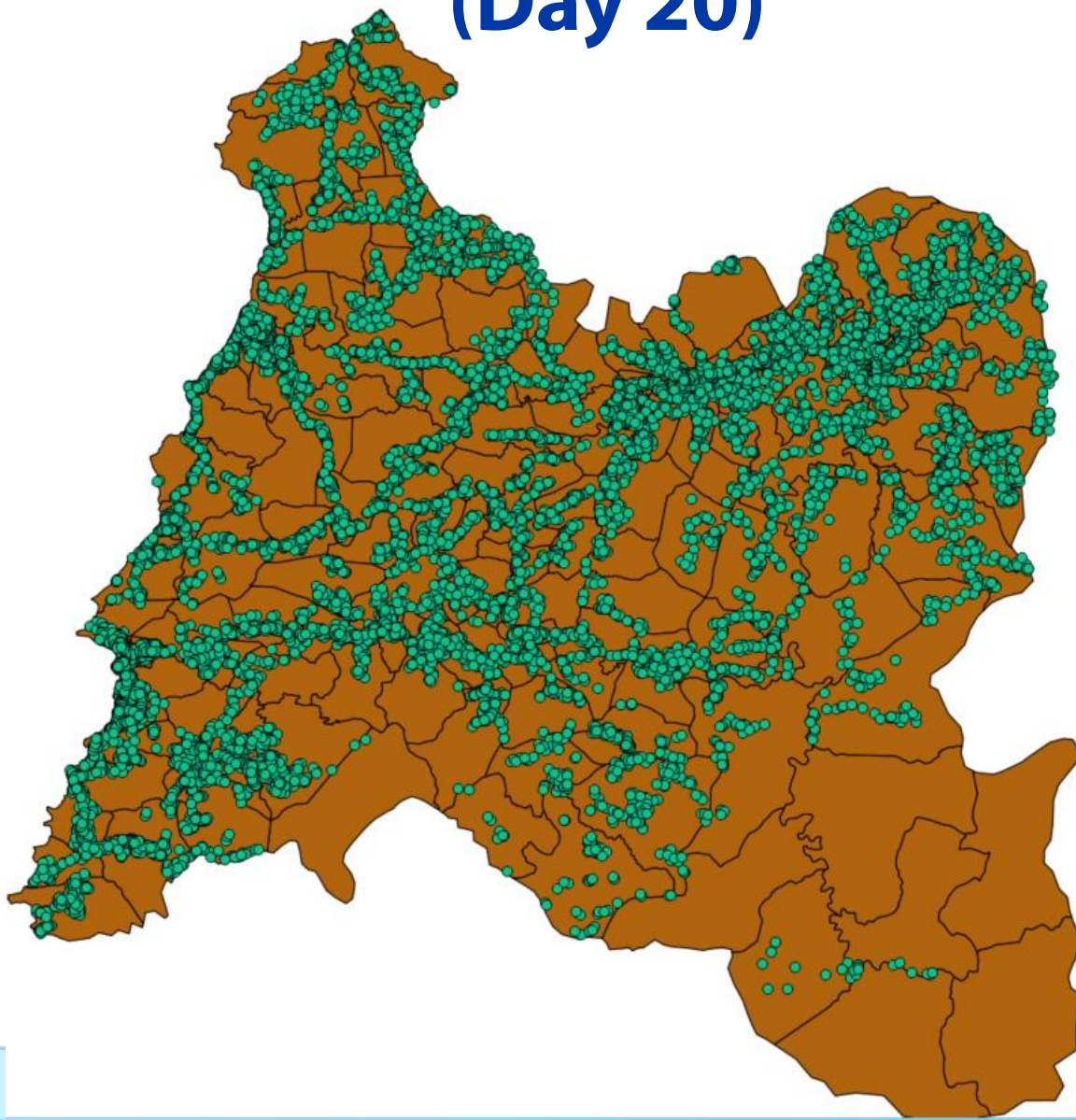


Household Survey: Enumeration of Households (Day 11)

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



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

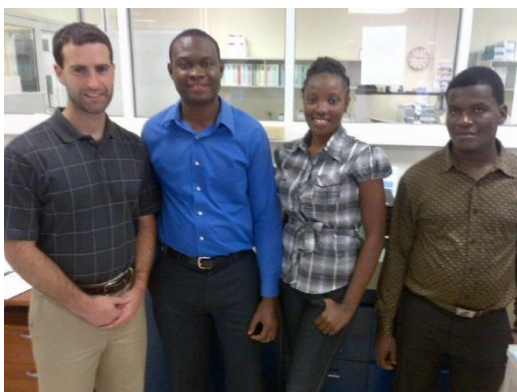
Malaria Zero: Main Activities (4)

❑ 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



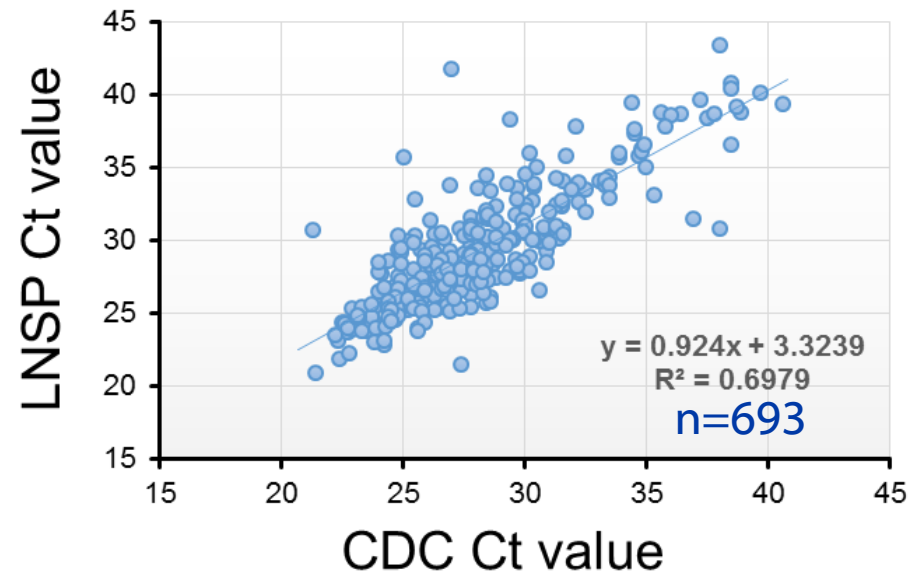
Training completed:

- 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:**

Comparison of PET-PCR Values

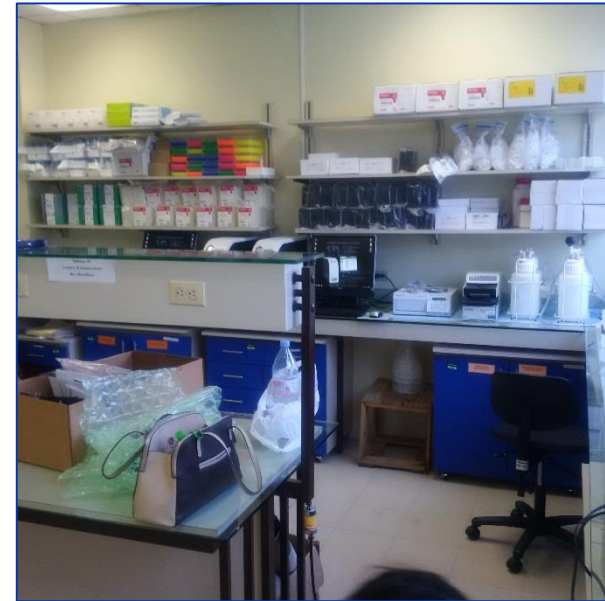


**In Summary: LNSP provides quality PCR results that will
aid in malaria elimination efforts**

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 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

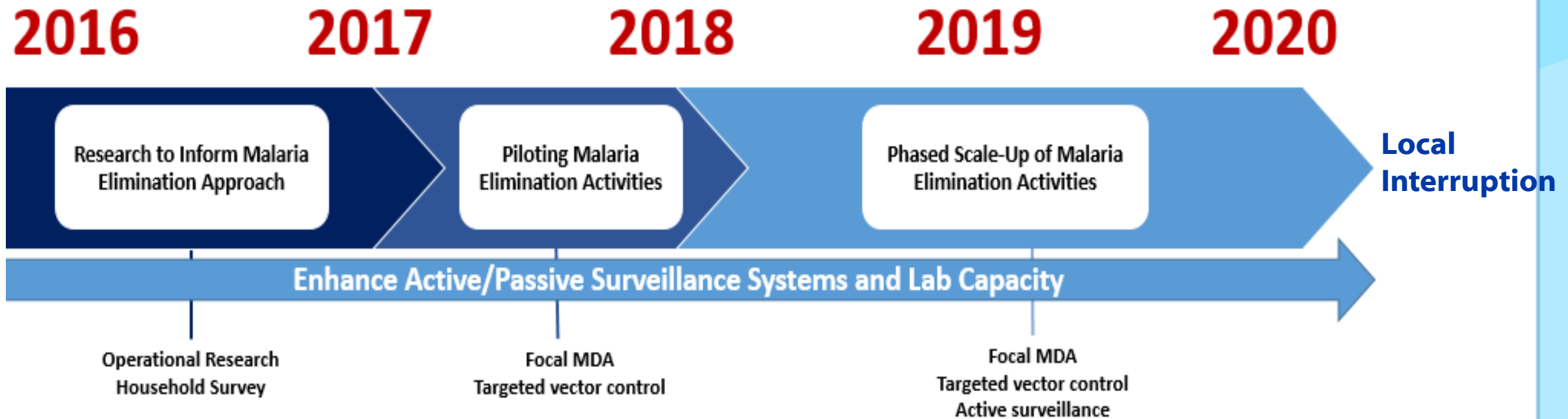
Support to Maximize Resources

- ❑ **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



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

