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CARTER CENTER



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SUMMARY
2020 VIRTUAL PROGRAM REVIEW
HISPANIOLA INITIATIVE
DOMINICAN REPUBLIC AND HAITI
MARCH 8-9, 2021
THE CARTER CENTER
ATLANTA, GA

SEPTEMBER 2021

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And to many others, our sincere gratitude.

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ACRONYMS

CDC	Centers for Disease Control and Prevention
CDSM	Chronic Disease Self-Management
CE	Community Engagement
CFA	Circulating Filarial Antigen
CHAI	Clinton Health Access Initiative
CHC	Community Health Council
CHW	Community Health Worker
COR-NTD	Coalition for Operational Research on Neglected Tropical Diseases
COVID-19	2019 novel Coronavirus Disease
DEC	Diethylcarbamazine
FTS	Filariasis Test Strip
GLIDE	Global Institute for Disease Elimination
HELP	Human Engagement Learning Platform
HSC	Hôpital Sainte Croix
ITFDE	International Task Force for Disease Eradication
IRS	Indoor Residual Spraying
IU	Implementation Unit
LF	Lymphatic Filariasis
MDA	Mass Drug Administration
MMDP	Morbidity Management and Disability Prevention
MSP	Ministry of Public Health (Dominican Republic)
MSPP	Ministry of Public Health and Population (Haiti)
NPELF	National Program to Eliminate Lymphatic Filariasis (Haiti)
NTD	Neglected Tropical Disease
PAHO	Pan American Health Organization
PEEL	Plan, Execute and Engage to Learn model
PELF	Program to Eliminate Lymphatic Filariasis (Dominican Republic)
PNCM	National Malaria Control Program (Haiti)
PTS	Post-Treatment Surveillance
RDT	Rapid Diagnostic Test
SMS	Short-Message Service
TAS	Transmission Assessment Survey
TCC	The Carter Center
UNDP	United Nations Development Program
UNICEF	United Nations Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WISH	World Innovation Summit for Health

EXECUTIVE SUMMARY

The seventh annual Carter Center (TCC) Hispaniola Initiative Program Review meeting convened virtually March 8-9, 2021. The purpose of the meeting was to review progress in elimination of malaria and lymphatic filariasis in Haiti and the Dominican Republic in 2020 and to make recommendations for activities in 2021.

Attending the meeting were representative of the ministries of health of Haiti and the Dominican Republic and TCC staff. Partners and donors in attendance included representatives from the U.S. Centers for Disease Control and Prevention (CDC), Clinton Health Access Initiative (CHAI), Corus International, Emory University, Pan American Health Organization (PAHO), PATH, The Task Force for Global Health, United Nations Children's Emergency Fund (UNICEF), University of California – San Diego, University of Florida, Vassar College, Bill & Melinda Gates Foundation, Global Institute for Disease Elimination (GLIDE), Kuwait Fund, Lions Clubs International Foundation, RTI International, World Innovation Summit for Health (WISH), a program of the Qatar Foundation, and United States Agency for International Development (USAID). A full list of attendees can be found in Annex 1.

TCC's Hispaniola Initiative works with the ministries of health in Haiti and the Dominican Republic to eliminate malaria and lymphatic filariasis (LF) from the countries' shared island, Hispaniola. It is the only island in the Caribbean that has not yet eliminated malaria. It also accounts for around 95% of the LF burden in the Western Hemisphere. In 2006, the International Task Force for Disease Eradication (ITFDE) concluded that elimination of malaria and LF from Hispaniola was "technically feasible, medically desirable, and would be economically beneficial" to both countries¹. TCC launched an 18-month pilot project in 2008 to foster binational cooperation by establishing a cross-border initiative in the Ouanaminthe-Dajabon border region and facilitating the creation of binational plans and budgets for malaria and LF elimination by 2020. In the years that followed, TCC supported regular binational meetings to promote coordination between the Haitian and Dominican ministries of health. In 2014, TCC expanded its support for malaria and LF elimination in Hispaniola, including: i) continued support for bi-national cooperation, ii) technical assistance to re-orient the programs from control to elimination, and iii) updating the funding needs to achieve 2020 elimination goals and help the countries to secure the necessary financial support.

The meeting was chaired by Dr. Gregory Noland, Director of TCC's River Blindness, Lymphatic Filariasis, Schistosomiasis, and Malaria programs. The meeting opened with an introductory conversation between Jason Carter, Chairman of TCC Board of Trustees, TCC's new Chief Executive Officer, Ms. Paige Alexander, and new Vice

¹ World Health Organization (2007). "Meeting of the International Task Force for Disease Eradication - 12 May 2006." *Weekly Epidemiological Record* **82**: 25-32.

President of Health Programs, Dr. Kashef Ijaz. The meeting also opened with a goodwill message from Dr. Tedros Adhanom Ghebreyesus, Director General of the World Health Organization.

The dominant event of 2020 was the COVID-19 pandemic. Since first being detected in Hispaniola in early March 2020, a total of 256,062 cases (243,526 in the Dominican Republic and 12,536 in Haiti) and 3,429 deaths (3,179 in the Dominican Republic and 250 in Haiti) due to SARS-CoV-2 virus were reported as of March 8th, 2021. Program reports detailed the impact of COVID-19 on malaria and LF elimination activities in each country and described opportunities for these programs to contribute to COVID-19 response. In Haiti, 2020 also witnessed the continuation of political and social instability that began in late 2018. As a result, many businesses, schools, and government agencies across the country were closed or not fully operational throughout 2020.

RECOMMENDATIONS FOR 2021

1. Make available on Haitian Ministry of Public Health and Population (MSPP) and TCC websites the community health council (CHC) Implementation Manual and Monitoring and Evaluation Handbook developed to assist malaria elimination efforts in Haiti.
2. In Grand Anse Department, fully transition support for CHCs to MSPP. In Sud Department, establish CHCs in high-malaria burden communes.
3. Urge the Dominican Ministry of Public Health (MSP) to finalize and release an updated national strategic plan for malaria.
4. The continued malaria outbreaks in Santo Domingo, Dominican Republic suggests that more aggressive approaches should be considered. This could include expanded community-based testing and treatment, and possible mass drug administration (MDA).
5. Continue ethnographic research in outbreak-affected areas of Santo Domingo to refine community engagement (CE) strategies for interrupting malaria transmission.
6. Resume active engagement in the Ouanaminthe-Dajabon cross-border area to re-invigorate binational cooperation.
7. Conduct LF MDA coverage surveys in Leogane and Gressier, Haiti no later than six months after the December 2020 MDA campaign.
8. Continue collaboration with the Human Engagement Learning Platform (HELP) group at Emory University to improve MDA coverage for LF, including work with systematic non-compliers funded by the Neglected Tropical Disease (NTD)-Support Center at The Task Force for Global Health.
9. Conduct MDA for LF in Leogane and Gressier, Haiti using triple-drug 'IDA'.
10. Support scale-up of LF Morbidity Management and Disability Prevention (MMDP) in Haiti by organizing workshops to train clinical staff and establish designated referral centers for LF care in each of Haiti's 10 Departments with support from WISH, a program of the Qatar Foundation.
11. Complete evaluation of LF-Mental Health Chronic Disease Self-Management (CDSM) pilot project in Haiti with support from the NTD-Support Center at The Task Force for Global Health.
12. Complete unfinished LF Transmission Assessment Surveys (TAS) in Haiti from 2020, along with eligible TAS surveys in 2021.
13. Prepare a manuscript for peer-review publication of TCC-led integrated malaria-LF TAS survey results in Haiti.
14. Submit for publication a manuscript summarizing the history and progress of LF elimination in the Dominican Republic.
15. Complete LF TAS surveys in the La Ciénaga and East foci of the Dominican Republic scheduled for 2020.

16. Conduct the nationwide remapping survey for LF in the Dominican Republic in 2021.
This should include integrated morbidity burden assessment.

MALARIA ELIMINATION IN HAITI

National Malaria Control Program Report - Dr. Marc-Aurèle Telfort (MSPP)

The National Malaria Control Program (PNCM) coordinates malaria elimination activities for MSPP. The goals of the National Strategic Plan for the Elimination of Malaria in Haiti (2016-2022) are to eliminate malaria by 2022, including zero autochthonous malaria transmission and zero malaria deaths by 2020. In 2020, a total of 21,856 cases of malaria and 11 deaths were reported by MSPP (Annex 2). This represents a 74% decrease in cases since 2010, when 84,153 cases were reported following the earthquake in January of that year. However, compared to the previous year, cases increased 134% between 2019 (9,340) and 2020. Geographically, Grande Anse (55%) and Sud (22%) departments accounted for 77% of cases nationally (Annex 3). An additional 10% occurred in the neighboring Sud-Est department, where only 5% of total cases were reported in 2019. All other departments individually accounted for less than 5% of cases nationally. There was an 8.1% increase in number of people tested from 2019 (224,104) to 2020 (245,202). Despite the increase, cases in 2020 likely represent an underestimate due to ongoing political instability and the COVID-19 pandemic that led many individuals to avoid visiting health centers. Reasons for the increase transmission in 2020, which began during the late 2019-early 2020 transmission season, are not clear. Between 2018 and 2020, there was an increase in the number of 'Strata 1' communes reporting zero cases of malaria in the previous three years (from 6 to 19 communes); yet there was also an increase in the number of 'Strata 4' communes reporting more than 50 cases annually in the past three years (from 56 to 60 communes). The Global Fund to Fight AIDS, Tuberculosis and Malaria renewed support for Haiti under a new grant for the years 2021-2023, with the United Nations Development Program (UNDP) named as Principal Recipient. Of the total award amount of \$119 million, \$21 million is allocated for malaria.

Malaria Zero Update – Dr. Michelle Chang (CDC)

Malaria Zero (MZ), a consortium of partners that included the ministries of health from Haiti and the Dominican Republic, PAHO, TCC, CHAI, Tulane University, London School of Hygiene and Tropical Medicine (LSHTM), CDC and the CDC Foundation, began in 2015 with initial seed funding of \$30M from the Bill & Melinda Gates Foundation. The initial investment was intended to fuel the goal of reaching malaria elimination on Hispaniola by 2020. (At that time, 2020 was the target for malaria elimination that was established by the countries.) MZ incorporated a package of interventions that formed the basis of the malaria elimination strategy, including robust surveillance and timely case management; active case finding in selected areas; and targeted MDA and indoor residual spraying (IRS) in communities with persistently high malaria transmission. In 2017, MZ supported surveillance strengthening and transitioning towards case-based surveillance, followed by the augmentation of community health workers (CHWs) in areas that had poor access to health services. The layering of these interventions and technical support was intended to aid the identification of areas that had high transmission and were 'refractory' to the usual

control measures. These high transmission ‘foci’ could then be targeted with an additional intervention such as MDA and IRS.

Under MZ the implementation of the DHIS2 tracker and the reporting of case-based surveillance has been implemented throughout Grand Anse. All health facilities are now reporting into the new system and the data are being used in the ‘situation room’ meetings of the health department. The department now has the ability to identify the sub-communes that have the most cases – this is important because even in Grand Anse with more than 50% of malaria in Haiti, there remain areas that have most of the cases demonstrating that transmission here is still heterogeneous. The augmentation of access to testing/treatment for malaria was accomplished by identifying, training and strategically locating CHWs in areas with the greatest need (far from health facilities and with higher malaria risk). A total of 120 CHWs were supported by MZ and they were located in priority communities throughout all 12 communes of Grand Anse. In the end, MZ helped establish the role of CHWs to test/treat malaria which in turn also improves surveillance as they report into the system.

The targeted interventions under MZ were MDA and IRS; the pilot campaign was conducted in 2018 to assess feasibility, acceptability, safety and effectiveness of this approach in Haiti. The effective coverage of the MDA was 89% and IRS was 75% -- demonstrating that these interventions were feasible to conduct and were accepted by the communities. There were no reports of severe adverse events identified with pharmacovigilance. In 2020, the last year of MZ, the decision to implement another MDA campaign was made to address the increased number of malaria cases that were reported in late 2019-20 transmission season. So the goal incorporated addressing an outbreak in the context of disrupted health systems due to the COVID-19 pandemic. Rather than an IRS campaign to accompany the MDA, the Global Fund-supported bednet distribution was scheduled to occur around the same time. Even though the 2020 MDA campaign ceased early due to unexpected adverse events that are still under investigation, the experience is still informative for Haiti’s malaria program. The work under MZ provides successful pilot experience in using MDA/IRS, in Haiti in conjunction with other interventions, and provides information that can aid in future planning of strategies.

Although malaria elimination was not achieved, MZ likely contributed to the historic decrease in cases noted in 2018. In order to reach elimination, efforts to support a package of interventions needs to be sustained. At minimum, surveillance, case management, IRS or bednet campaigns should be core components of the package. The addition of targeted, highly focal interventions (e.g., MDA) in high transmission areas could be useful as a supplementary tool for malaria control or elimination, if implemented on a recurring basis.

Haiti Malaria Community Engagement & COVID-19 – Dr. Kevin Bardosh (University of Washington)

TCC has supported the implementation of a volunteer-based CE network as part of the MZ initiative. Since 2018, TCC and MSPP have established 71 CHCs in Grand Anse and Sud Departments. Longitudinal data from an original cohort of 23 CHCs reveal that none of these community groups ceased functioning over the two-year period (2018-2021). An average of 0.86 monthly meetings were held with a 78% attendance rate. A high degree of transparency and diversity in membership helped create strong micro-planning and community participation. CHCs conducted an average of 1.8 community-based activities per month, with high levels of fluctuation indicative of local ownership. This included school and church sensitization, environmental sanitation campaigns, mass education, support for case referrals, and community mobilization during MDA and IRS. CHC members helped solve problems during MDA and IRS campaigns, acting as community mediators. A malaria hotline was established for MSPP by TCC, with over 263,473 phone calls answered during the project period and 95,448 Short-Message Service (SMS) messages sent. Results were also presented from qualitative data on the sociocultural and political dynamics of the CHC program, as well as a series of in-depth interviews with CHC members on COVID-19. These interviews explored 8 themes: knowledge and experience of symptoms; stigma and testing; community responses to lockdown restrictions; perceptions and use of masks; impacts and use of the health system (including for malaria); the impact of lockdowns on households; rumors and interpretations of the pandemic; and popular explanations for the lack of severe illness from COVID-19 in Haiti. The implications of these data for the control of COVID-19 and malaria were discussed. The end of MZ in 2020 highlights the opportunity to monitor the continued self-sufficiency of CHCs in promoting anti-malaria activities and other priority health issues in their communities.

MALARIA ELIMINATION IN THE DOMINICAN REPUBLIC

National Malaria Elimination Program Report - Dr. Keyla Ureña (MSP).

The Dominican MSP reported a total of 829 cases of malaria in 2020 (Annex 2). This represents a 36.9% decrease from the 1,314 cases reported in 2019. The resurgence of a malaria outbreak in Santo Domingo that started in late 2019 continued through the first quarter of 2020, with an average of 46 cases per week and a peak of 68 cases in epi week 9 (March), prior to the first reported case of COVID-19 in country.

Geographically, the two main foci of Los Tres Brazos (at the juncture of Santo Domingo East and Santo Domingo North municipalities and the *Distrito Nacional*) and La Ciénaga (in Santo Domingo West municipality) accounted for 79.5% and 8.96%, respectively, of all autochthonous cases nationally in 2020. Yet incidence in all districts was less than 1 case per 1000 persons per year (Annex 4). The reported number of persons tested for malaria decreased from 198,696 in 2019 to 59,544 in 2020 (a 70% decrease). This drastic reduction was attributed to the effects of the COVID-19 pandemic, such as patients with fevers being afraid to go to health centers for risk of contracting COVID-19 and CHWs being temporarily suspended from active and re-active surveillance for malaria. There may also have been fewer persons tested and cases due to lockdown restrictions that kept people in their homes at night and possibly reduced exposure to mosquito bites. The number of imported cases declined from 23 (1.75% of the national total) in 2019 to 3 (0.36% of the national total) in 2020. Countries of origin include: French Guiana (1), Guyana (1) and Venezuela (1). All imported cases were *Plasmodium vivax* and were reported during the first three months of 2020 prior to border closures related to the COVID-19 pandemic.

Malaria Ethnographic Research in the Dominican Republic – Dr. Hunter Keys (TCC)

In the Dominican Republic, malaria is now predominantly found in the capital, Santo Domingo. TCC has supported mixed-methods research there since summer 2017. Findings from immersive fieldwork, interviews, and a cross-sectional survey find that there are major gaps in timely diagnosis and treatment; logistic and administrative hurdles related to the new policy of decentralizing the country's national malaria program; and relatively decent levels of malaria-related knowledge, attitudes, and practices (KAP), even in high-incidence neighborhoods. Ongoing ethnographic interviews suggest a "virtuous circle" in which timely diagnosis and treatment of sick neighborhood residents by trained CHWs inspires more trust among others in the community, leading to their increased engagement with the malaria program. Threats to this virtuous circle are anything that diminishes trust between the trained CHWs and the malaria program (such as delayed pay or poor supervision and lack of respect) and/or diminishes trust between the community and the malaria program (such as failure to reduce malaria, accurately diagnose sick family members, or no longer hold educational sessions for the community).

LYMPHATIC FILARIASIS ELIMINATION IN HAITI

National LF Elimination Program Report - Dr. Marc-Aurèle Telfort (MSPP)

The National Program to Eliminate Lymphatic Filariasis (NPELF) coordinates LF elimination activities for MSPP. By the end of 2020, 121 (86%) of the 140 communes nationwide had stopped MDA by successfully completing TAS-1 and were under post-treatment surveillance (PTS) (Annexes 5 and 6). Of these, 2 communes have also successfully passed TAS-2 and TAS-3). Initially, 12 TAS were planned for 2020, including 6 that were not completed in 2019 due to political instability. Four of the 6 TAS from 2019 were completed in 2020 (3 TAS-1 and 1 TAS-3), and 1 TAS-3 planned for 2020 was completed (Annex 7). All five evaluation units (EUs) passed TAS. Of 5,521 children aged 6-7 years old tested for circulating filarial antigen (CFA) by filariasis test strip (FTS) overall, 16 (0.29%) were FTS-positive, including 8 CFA-positive children detected in TAS-3 surveys across Saut d'Eau and La Tortue communes. The surveys also included integrated testing for malaria by rapid diagnostic test (RDT). Eleven (0.20%) children were RDT-positive. The remaining planned TAS (2 TAS-2 and 5 TAS-3) were not initiated in 2020 due to ongoing political instability and the COVID-19 pandemic.

In 2020, NPELF adopted triple-drug therapy using ivermectin, diethylcarbamazine (DEC), and albendazole (IDA) as the treatment strategy for the 19 communes that still require MDA. However, the delivery of ivermectin was delayed so another round of MDA using albendazole and DEC was required. TCC supported two rounds of MDA in both Léogâne and Gressier, which did not receive MDA in 2019 due to insecurity. The delayed 2019 MDA was conducted in February–March 2020 followed by the planned 2020 round in December (Annex 8). In Gressier, 33,346 persons were targeted in each round with epidemiological coverage of 92% and 77%, respectively. In Léogâne, 182,779 persons were targeted in each round with 76% and 79% epidemiological coverage, respectively. Campaigns in the other 17 communes in need of MDA were postponed due to a combination of COVID-19 and financial constraints.

Community Engagement for LF Elimination – Dr. Jim Lavery (Emory University)

The presentation reviewed HELP's earlier work in Port-au-Prince, which identified the role of some key contextual factors—including mediating factors in the community, stakeholders' experience of the LF MDA program, and stakeholders' reasoning about the program—in LF MDA non-compliance. It then described a novel effort to address persistent non-compliance with LF MDA using HELP's Brokered Design strategy. Brokered Design combines elements of stakeholder theory, human centered design, and knowledge co-production to elicit insights from stakeholders—in this case, those who have been persistently non-compliant with LF MDA—about how the MDA program could be re-designed to make them more likely to participate. This work is funded through a grant from the Coalition for Operational Research on Neglected Tropical Diseases (COR-NTD), which is funded at The Task Force for Global Health by the UK Aid from the British Government. Because of the on-going unrest in Haiti, the MDA

coverage surveys in Léogâne and Gressier to identify participants have been put on hold. They will commence as soon as it is safe to do so.

In response to the on-going travel restrictions and operational challenges in Haiti, the HELP team has worked closely with TCC and MSPP to incorporate some of the key recommendations arising from HELP's earlier work in Port-au-Prince for the design and implementation of the most recent LF MDA in Léogâne and Gressier. These recommendations included: designing and implementing a revised communications strategy; re-examining adverse event response training, materials and procedures; establishing practices that nurture the motivation and determination of drug distribution teams; and revising the budget, and identifying areas for reallocation based on logistical constraints described by program staff. Finally, HELP presented an overview of the Plan, Execute and Engage to Learn (PEEL) model for improving microplanning, geo-specific communications and stakeholder engagement that is being developed for implementation in the fall 2021 LF MDA in Léogâne and Gressier. The strategy involves a partnership between HELP, two private technology companies—Crosscut® and Balcony®—TCC and MSPP. The work is funded by a grant from the NTD Team at the Bill & Melinda Gates Foundation.

Haiti LF Morbidity Management and Disability Prevention – Dr. Madsen Beau de Rochars (University of Florida)

The second pillar of the World Health Organization (WHO) framework to eliminate LF as a public health problem is to alleviate suffering for LF patients through MMDP). WHO guidelines indicate that a country claiming to have eliminated LF as a public health problem should document: i) the number of patients with lymphedema and hydrocele in all endemic areas; ii) the availability of the recommended minimum package of care in areas with LF patients; iii) the readiness and quality of available MMDP services in designated facilities. Only one facility in Haiti, Hôpital Sainte Croix (HSC) in Léogâne, currently provides specialized care for LF patients. A total of 1093 lymphedema patients (38 new and 1055 follow-up patients) were seen at HSC in 2020. No hydrocelectomy surgeries were reported in 2020. Health professionals from two additional communes (Arcahaie and Gonaives) were trained in MMDP services in September 2020 at HSC. Launch of MMDP service delivery in these communes and additional trainings in all 10 departments are planned for 2021. Integrating the psychological aspect with the mental component will continue to be addressed with the expansion plan to offer comprehensive and holistic care for the LF patients.

Haiti LF – Mental Health Project – Ms. Sadie Bazur Leidy (TCC)

In 2019, the Hispaniola Initiative launched a pilot project in collaboration with TCC's Mental Health Program to evaluate the impact of a CDSM program on LF patient well-being across five scales measuring: depression, perceived social support, self-rated health, disability, and CDSM. Baseline evaluation among individuals involved in LF patient support groups (Hope Clubs) revealed that 50% of participants (n=210)

screened positive for symptoms of depressive illness using a locally validated screening tool. In December 2019-January 2020, the CDSM intervention was implemented in Arm 1 before the COVID-19 pandemic and political instability delayed activities. In September-October 2020, Arm 2 received the intervention. It was concluded that implementing the CDSM curriculum is feasible in the Hope Club setting in Haiti. Results will be reported once the study is completed.

LYMPHATIC FILARIASIS ELIMINATION IN THE DOMINICAN REPUBLIC

National Program to Eliminate Lymphatic Filariasis Report - Dr. Manuel Gonzalez (MSP)

In 1998, the MSP created the Program to Eliminate Lymphatic Filariasis (PELF) with the goal of eliminating LF transmission by 2020. Baseline mapping revealed that transmission was limited to 19 municipalities (12% of the national total) clustered into three geographic foci: Southwest and East—two vast agricultural regions—and La Ciénaga, a small urban focus in the national district of Santo Domingo (distinct from La Ciénaga of Santo Domingo West, a current malaria transmission focus) (Annex 6). By 2018, MDA had stopped in all foci (Annexes 6 and 9). PTS surveys conducted in the Southwest (2009, 2012 and 2018) and in La Ciénaga (2011, 2014, and 2018) indicate that transmission is below hypothesized sustainable levels and that MDA remains unnecessary. Additional PTS surveys were planned to occur in 2020 in each of the three formerly endemic areas, but only the survey in the Southwest foci was completed. No one tested positive for CFA among the 1,574 children aged 6-7 years old and 1,591 individuals ages 14 and over tested by FTS. The PTS surveys in La Ciénaga, and TAS-2 in East foci, along with nationwide remapping surveys to confirm the absence of transmission across the rest of the country were postponed to 2021.

ANNEX 1. List of Program Review Participants

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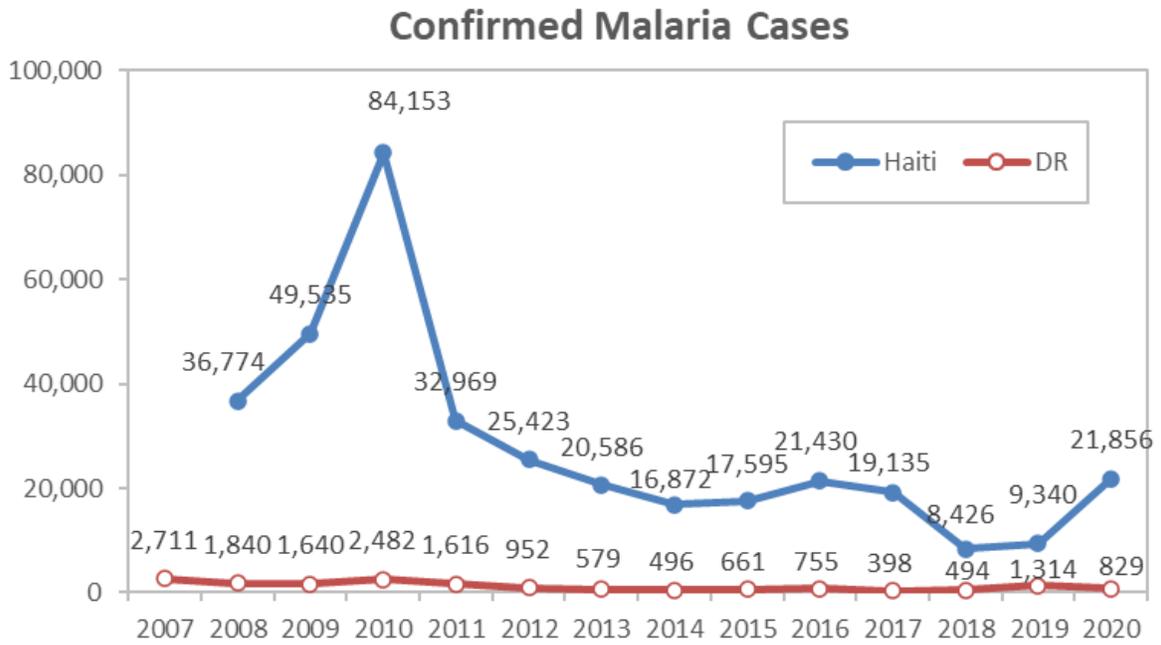
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Ms. Penny Smith
Ms. Emily Toubali

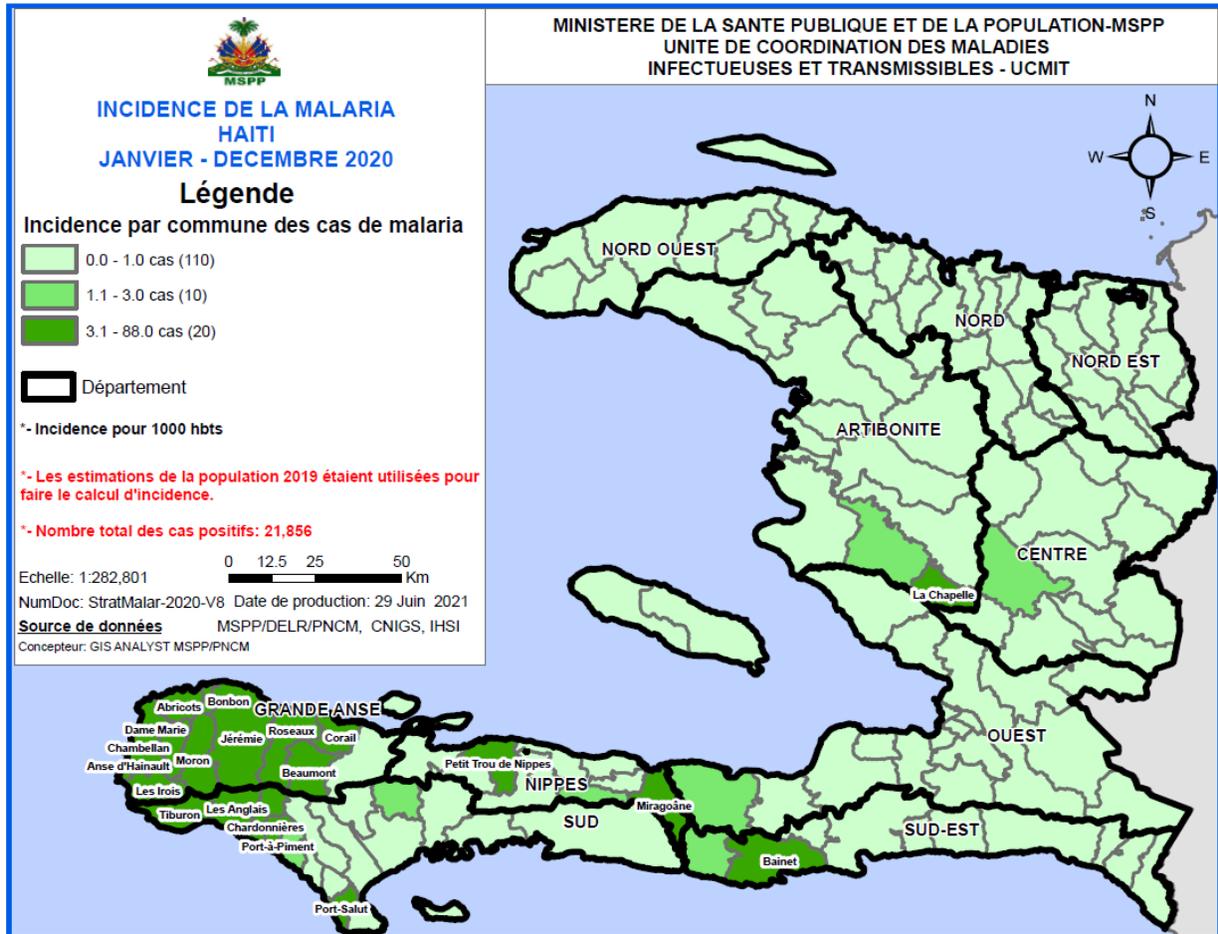
Consultants

Dr. Rubina Imtiaz
Mrs. Teresa Coleman

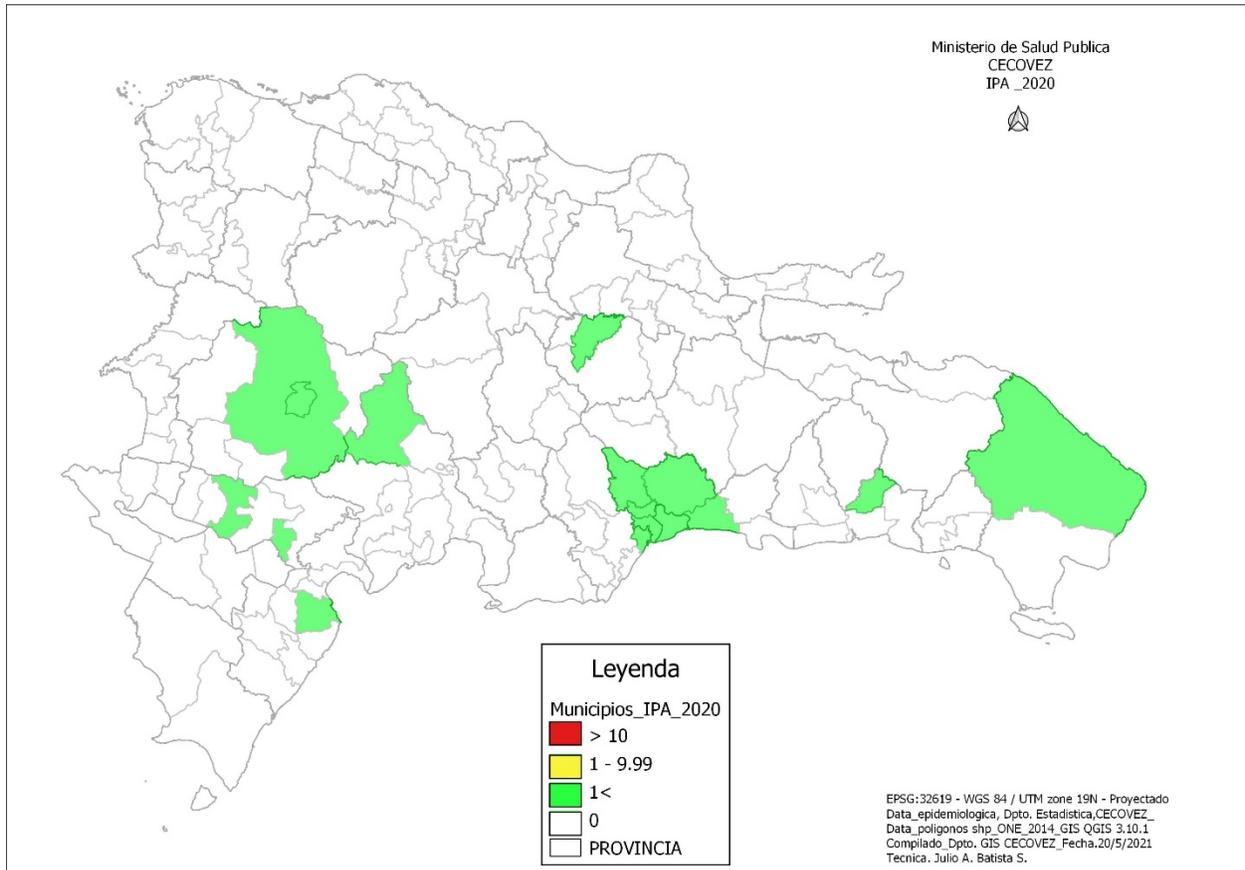
ANNEX 2. Number of Confirmed Malaria Cases in Haiti and the Dominican Republic, by year (2007-2020).



ANNEX 3. Annual malaria incidence (cases per 1000 persons), by district, Haiti, 2020.



ANNEX 4. Annual malaria incidence (cases per 1000 persons), by district, the Dominican Republic, 2020.

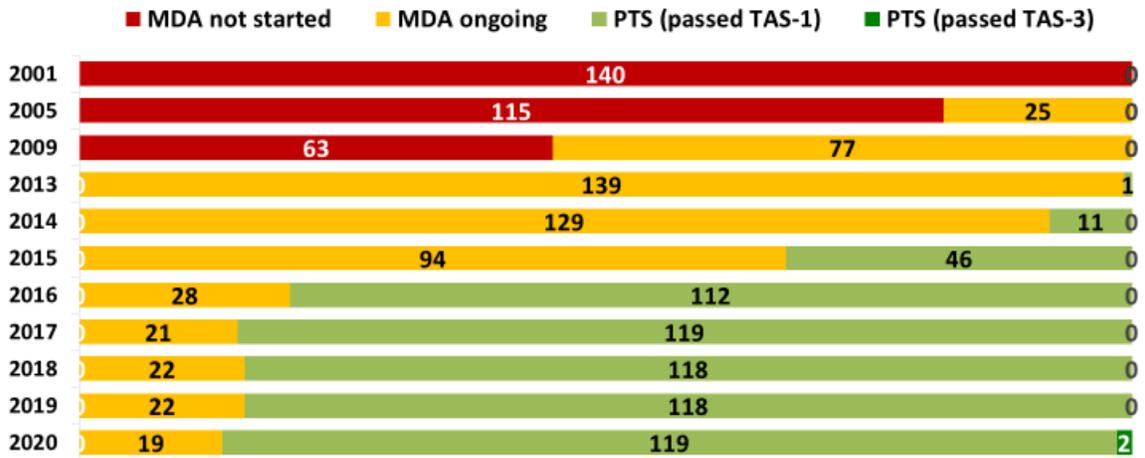


ANNEX 5. Lymphatic filariasis elimination program status over time, by district, Haiti.

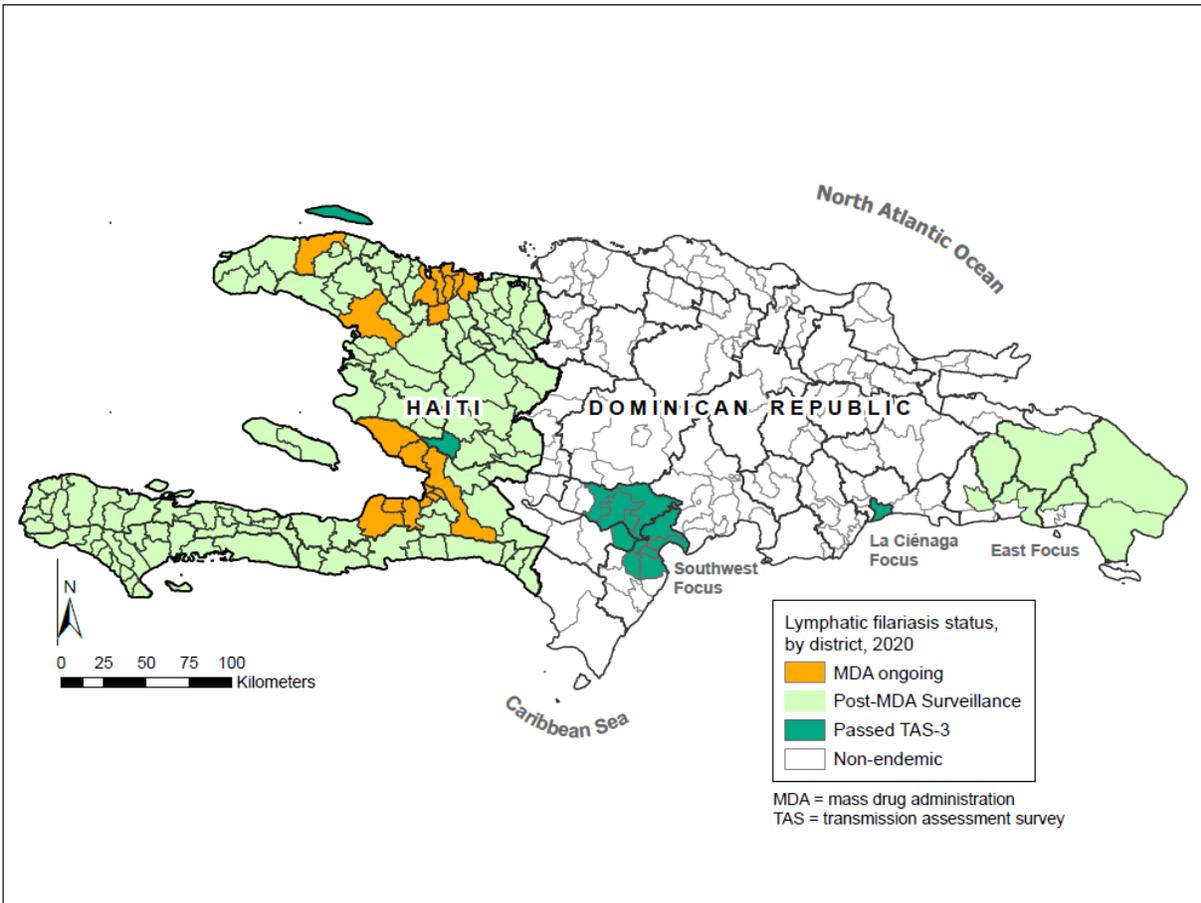
LF Status, by District

Haiti

(n=140 endemic districts)



ANNEX 6. Lymphatic filariasis elimination status, by district, Hispaniola, December 2020.



ANNEX 7. Summary of LF transmission assessment survey (TAS) results in implementation units (IUs) completed in 2020, by evaluation unit (EU), Haiti.

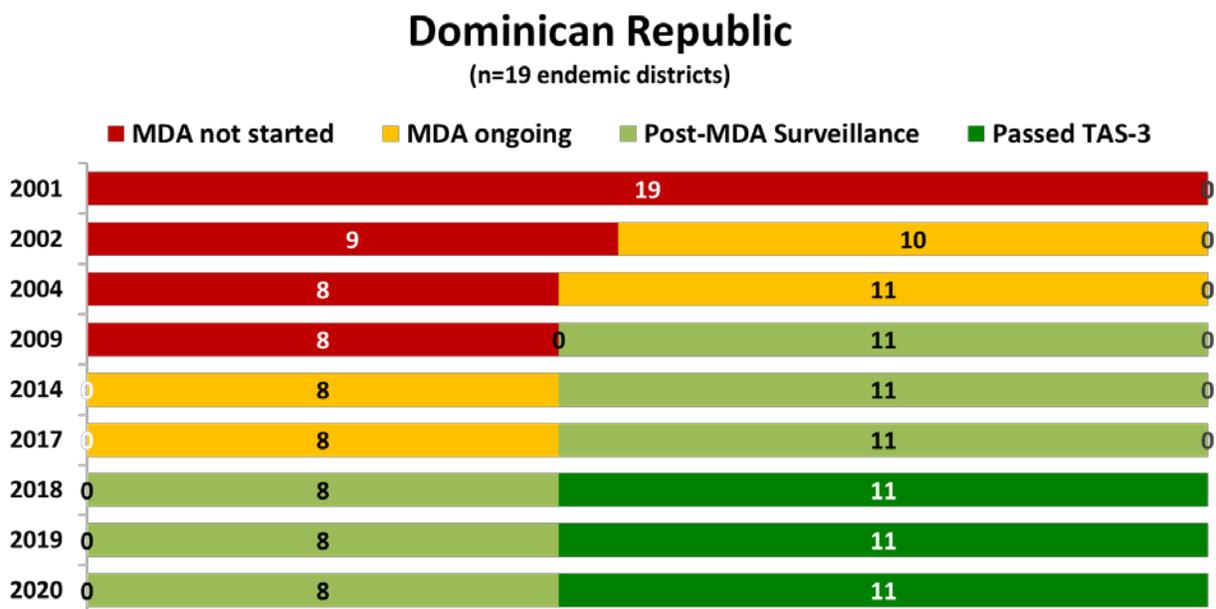
TAS	Department	No. of IUs	IU name(s)	Survey Date	Target Sample Size	TAS Critical Cut-off	Num FTS tested (LF)	Num FTS pos (LF)	Num RDT tested (malaria)	Num RDT pos (malaria)	TAS Result
TAS-1*	Nord	1	Limbe	Jan 2020	1380	16	1384	2	1384	0	Pass
TAS-1*	Ouest	1	Pointe à Raquette	Jan 2020	891	11	892	2	892	1	Pass
TAS-1*	Ouest	1	Anse à Galets	Jan 2020	1380	16	1403	4	1403	2	Pass
TAS-3*	Nord-Ouest	1	La Tortue	Sept 2020	911	11	914	3	914	4	Pass
TAS-3	Centre	1	Saut d'Eau	Sept 2020	911	11	928	5	928	4	Pass
	TOTAL	5			5,473		5,521	16	5,521	11	

* Initially planned for 2019, but completed in 2020.

ANNEX 8. Annual Carter Center-assisted lymphatic filariasis treatments, Haiti, 2020.

Commune	Month	Pop. at Risk	Treatment Eligible Pop.	Number Treated	Treatment coverage (%)	Epidemiological treatment coverage (%)
Léogâne	March 2020	215,034	182,779	163,970	89.7	76.3
Gressier	March 2020	39,230	33,346	36,124	108.3	92.1
Léogâne	December 2020	215,034	182,779	170,892	93.5	79.5
Gressier	December 2020	39,230	33,346	30,190	90.5	77.0

ANNEX 9. Lymphatic filariasis elimination program status over time, by district, the Dominican Republic.



ANNEX 10. Carter Center-Authored Hispaniola Publications

2020 publications shown in bold.

Valdez D, Keys H, Ureña K, Cabral D, Camilo F, Ogando EC, Mercedes L, Noland GS, Blount SB, Lavery JV, Desir L, Puello J. Malaria outbreak response in urban Santo Domingo, Dominican Republic: lessons learned for community engagement. *Rev Panam Salud Publica.* 2020;44:e92 <https://doi.org/10.26633/RPSP.2020.92>

Wodnik BK, Louis DH, Joseph M, Wilkers LT, Landskroener SD, Desir L, Lemoine JF, Lavery JV. The roles of stakeholder experience and organizational learning in declining mass drug administration coverage for lymphatic filariasis in Port-au-Prince, Haiti: A case study. *PLoS Negl Trop Dis.* 2020 May 29;14(5):e0008318. doi: 10.1371/journal.pntd.0008318. eCollection.

Oviedo A, Knipes A, Worrell C, Fox LM, Desir L, Fayette C, Javel A, Monestime F, Mace K, Chang MA, Udhayakumar V, Lemoine JF, Won K, Lammie PJ, Rogier E. Combination of Serological, Antigen Detection, and DNA Data for *Plasmodium falciparum* Provides Robust Geospatial Estimates for Malaria Transmission in Haiti. *Sci Rep.* 2020 May 21;10(1):8443. doi: 10.1038/s41598-020-65419-w.

Keys HM, Noland GS, De Rochars MB, Taylor TH, Blount S, Gonzales M. Perceived discrimination in bateyes of the Dominican Republic: results from the Everyday Discrimination Scale and implications for public health programs. *BMC Public Health.* 2019 Nov 12;19(1):1513. doi: 10.1186/s12889-019-7773-2.

Keys HM, Noland GS, De Rochars MB, Blount S, Gonzales M. Prevalence of malaria and lymphatic filariasis in bateyes of the Dominican Republic. *Infect Dis Poverty.* 2019 May 27;8(1):39. doi: 10.1186/s40249-019-0547-3.

Druetz T, Andrinopoulos K, Boulos LM, Boulos M, Noland GS, Desir L, Lemoine JF, Eisele TP. "Wherever doctors cannot reach, the sunshine can": overcoming potential barriers to malaria elimination interventions in Haiti. *Malar J.* 2018 Oct 29;17(1):393. doi: 10.1186/s12936-018-2553-5.

Keys H, Gonzales M, Beau de Rochars M, Blount S, Noland GS. Building Trust through Lymphatic Filariasis Elimination: A Platform to Address Social Exclusion and Human Rights in the Dominican Republic. *Health Hum Rights.* 2018 Jun;20(1):41-52.

Noland GS, Blount S, Gonzalez M. Post-Mass Drug Administration Transmission Assessment Survey for Elimination of Lymphatic Filariasis in La Ciénaga, Dominican Republic. *Am J Trop Med Hyg.* 2015 Dec;93(6):1292-4. doi: 10.4269/ajtmh.15-0204. Epub 2015 Oct 26.

ANNEX 11. 2020 Hispaniola Initiative Program Review Agenda

Hispaniola Initiative Program Review Agenda

Monday, March 8, 2021

Start	End	Title	Speaker
8:00 AM	8:05 AM	Welcome	Dr. Kashef Ijaz
8:05 AM	8:20 AM	Introductory Conversation	Jason Carter, Paige Alexander, and Dr. Kashef Ijaz
8:20 AM	8:25 AM	Goodwill Message	Dr. Tedros Adhanom Ghebreyesus (WHO)
8:25 AM	8:40 AM	Hispaniola Initiative Overview	Dr. Gregory Noland
8:40 AM	9:10 AM	LF Elimination Progress in the Dominican Republic	Dr. Manuel Gonzales (MSP)
9:10 AM	9:25 AM	Discussion	
9:25 AM	9:55 AM	LF Elimination Progress in Haiti	Dr. Marc Telfort (MSPP)
9:55 AM	10:10 AM	Discussion	
10:10 AM	10:20 AM	BREAK	
10:20 AM	10:40 AM	Haiti LF Community Engagement	Dr. Jim Lavery (Emory)
10:40 AM	10:55 AM	Discussion	
10:55 AM	11:15 AM	Haiti LF MMDP Update	Dr. Madsen Beau De Rochars
11:15 AM	11:30 AM	Discussion	
11:30 AM	11:50 AM	Haiti LF Mental Health Project	Ms. Sadie Bazar Leidy
11:50 AM	12:05 PM	Discussion	
12:05 PM	12:05 PM	Day 1 Closure	Dr. Gregory Noland

Hispaniola Initiative Program Review Agenda

Tuesday, March 9, 2021

Start	End	Title	Speaker
8:00 AM	8:05 AM	Day 2 Introduction	Dr. Gregory Noland
8:05 AM	8:35 AM	Malaria Elimination in Haiti	Dr. Marc-Aurèle Telfort (MSPP)
8:35 AM	8:50 AM	Discussion	
8:50 AM	9:10 AM	Hispaniola Initiative Overview	Dr. Michelle Chang (CDC)
9:10 AM	9:25 AM	Discussion	
9:25 AM	9:45 AM	Haiti Malaria Community Engagement & COVID-19	Dr. Kevin Bardosh (Univ. Washington)
9:45 AM	10:00 AM	Discussion	
10:00 AM	10:15 AM	BREAK	
10:15 AM	10:45 AM	Malaria Elimination in the Dominican Republic	Dr. Keyla Ureña (MSP)
10:45 AM	11:00 AM	Discussion	
11:00 AM	11:20 AM	Malaria Ethnographic Research in the D.R.	Dr. Hunter Keys
11:20 AM	11:35 AM	Discussion	
11:35 AM	11:50 AM	Closing Discussion	Dr. Gregory Noland
11:50 AM	11:55 AM	Closing Remarks	Dr. Kashef Ijaz