
HC3 Landscaping Report on Zika Communication and Coordination: Dominican Republic, April 11-15, 2016



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Table of Contents

ACRONYMS	4
I. INTRODUCTION	5
II. BACKGROUND INFORMATION	6
COUNTRY BACKGROUND.....	6
OVERVIEW OF DENGUE, CHIKUNGUNYA	7
Dengue and Chikungunya	7
Zika Epidemic in the Dominican Republic.....	8
Zika Risk Perception.....	8
III. NATIONAL ZIKA RESPONSE	9
Government Stakeholders.....	9
Non-Government Stakeholders.....	10
<i>Coordination: Inter-sectoral Humanitarian Response Committee</i>	10
<i>Center of Emergency Operations</i>	10
<i>United Nations Agencies: PAHO, UNICEF and UNFPA</i>	11
<i>The Red Cross</i>	11
<i>Adventist Development and Relief Agency</i>	12
<i>World Vision</i>	12
<i>The Media</i>	12
IV. CHALLENGES AND OPPORTUNITIES.....	13
Vector Control	13
Infrastructure	14
Reproductive Health and Family Planning.....	14
Laboratory and Health Care Services.....	14
Social and Behavior Change Communication	15
V. RECOMMENDATIONS.....	16
Communication Strategies.....	16
Formative Research and Monitoring and Evaluation	17
Message Fine Tuning and Communication Platforms	17
Coordination	19
DOMINICAN REPUBLIC CONTACT LIST.....	21

ACRONYMS

CCP	Johns Hopkins Center for Communication Programs
COE	Center of Emergency Operations
CDC	Centers for Disease Control and Prevention
CENCET	National Center of Tropical Disease Control
CIPESA	Journalist Health Circle
DIGESA	General Direction of Epidemiology
DIGPRES	General Direction for Health Promotion and Health Education
DR	Dominican Republic
DSC	Department of Strategic Communication
DPS	Provincial Director of Health
GBS	Guillain-Barre Syndrome
HC3	Health Communication Capacity Collaborative
JICA	Japan International Cooperation Agency
MOH	Ministry of Health
NGO	Non-Governmental Organizations
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PAHO	Pan American Health Organization
SBCC	Social and Behavior Change Communication
SICA	Central American Integration System
SNS	National Health Service
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WV	World Vision

I. INTRODUCTION

Zika is a communicable disease transmitted by the *Aedes aegypti* species of mosquito, which is native to Latin and Central American countries and also transmits the dengue and chikungunya viruses. The female *Aedes* mosquito bites mostly during the day and breeds in “clean” or standing water often found in containers in and around people’s homes. While the Zika virus is not a new virus, the current outbreak is the largest ever reported and it continues to spread rapidly throughout the Americas. Eighty percent of people infected with Zika are asymptomatic. The remaining 20 percent experience mild symptoms in the form of a fever, rash, joint pain and conjunctivitis (pink eye).

The Zika outbreak has also coincided with a rise in reported cases of Guillain-Barre syndrome (GBS) and microcephaly, two severe neurological conditions. Based on research to date, the scientific consensus is that Zika virus is a cause of microcephaly and GBS¹. No cure or vaccine exists for Zika, so preventative measures focus on vector control and awareness of risk and risk reduction for at-risk populations.

In response to a United States Agency for International Development (USAID) request, the Health Communication Capacity Collaborative (HC3) – based at the Johns Hopkins Center for Communication Programs (CCP) – conducted a social and behavior change communication (SBCC) landscape exercise for Zika in the Dominican Republic on April 10-15, 2016. Due to the urgent nature of Zika, HC3 moved quickly to conduct this landscaping visit immediately after the Easter holidays.

This was not a lengthy situational analysis, but rather an agile observation visit to quickly take the pulse of the Zika situation and the local response. The team of three SBCC professionals that conducted the landscaping have expertise in mosquito-borne diseases, *Aedes aegypti* vector control, risk communication, strategy design and implementation of a range of SBCC, as well as experience in the regional Central American context, family planning/reproductive health and journalism.

Over the course of one week, the HC3 team met stakeholders from the Dominican Republic public, non-governmental organizations (NGOs) and private sector. These interviews were not exhaustive of every group involved in Zika control, but rather representative of the main stakeholders. Despite the rapid pace of the visit, a picture of the Zika situation emerged. This report covers the observations and impressions gleaned by HC3 during the landscaping exercise in Santo Domingo, as well as concrete recommendations for USAID to consider as it formulates its strategy to support the Dominican Republic in its efforts against Zika.

¹ World Health Organization, 2016. Zika Virus, Microcephaly and Guillain Barre Syndrome, Situation Report 7 April 2016. http://apps.who.int/iris/bitstream/10665/204961/1/zikasitrep_7Apr2016_eng.pdf?ua=1.

II. BACKGROUND INFORMATION

COUNTRY BACKGROUND

With a population of 10.6 million, the Dominican Republic (DR) is one of two island nations sharing Hispaniola, along with its neighbor, Haiti. The country has a high volume of tourism year round and a large gap between rich and poor. Similar to other low- and middle-income countries, the DR is undergoing health reform, shifting budgets and responsibilities from the central level to the regions and provinces, which in turn delegate the management of the service network to the regional level. Provincial offices are charged with coordinating surveillance and community vector control. These changes have implications for any coordinated country-wide health and emergency response and it is important to work alongside these local authorities to strengthen the response.

Santo Domingo residents manage many infrastructure challenges around water supply and waste collection in order to access adequate water amounts at home. Barriers include old pipes that break easily, illegal connections, and unauthorized punctures, which result in low water pressure that is inadequate to reach up to multi-story apartment buildings. Faced with intermittent and unpredictable municipal water distribution, residents install large plastic lidded water storage tanks on their roofs (“tinacos”) or subterranean cement cisterns which, filled by a pump or gravity, ensure a continuous home water supply. Hurricanes and strong winds will often blow the lids off the tanks, creating ideal undisturbed *Aedes* habitats. Some residents lack municipal water supply altogether and must structure their daily lives around water availability, waiting until the water returns or buying water from commercial water trucks. This water is commonly stored in 35-gallon repurposed metal or plastic drums (“tanques”) that are often reinforced with a cement lining to extend their useful life. Plastic drums usually come with a tight fitting lid, but metal drum users typically have to devise clandestine versions of covers with scrap metal to protect their water from dirt and pests. These improvised covers are rarely hermetic and thus cannot prevent *Aedes* from laying eggs inside these containers. Moreover, partial covering may enhance rather than reduce egg-laying, because it provides protection and shade for this container-adapted mosquito.

Waste collection services in Santo Domingo and other large urban centers are also challenged by personnel shortages, overfilled public dumps and inadequate receptacles and practices for waste storage at the household level. The recycling of plastic containers or used tires is not a common practice.

Clogged sewage systems or standing open sewage also create the ideal conditions for the propagation of *Culex* mosquitoes, the species that bites at dusk and is often more noticed and loathed by the population – but the *Culex* is not the known vector of concern for the dengue, chikungunya or Zika virus. This felt nuisance can result in confusion about *Aedes* versus *Culex* mosquitoes, not only by the population but often by civic authorities themselves, resulting in misdirected mosquito control efforts to the wrong mosquito type.

Regarding reproductive health, use of family planning is high in the DR, with a contraceptive prevalence rate with modern methods of 68 percent². However, access challenges remain for specific populations, including youth and the highly mobile Haitian migrant group along the Haitian-Dominican border. The government has a generally positive institutional attitude towards access and use of all modern contraceptives. Family planning methods are purchased by the United Nations Population Fund (UNFPA) for the DR Ministry of Health (MOH), and are then distributed at no cost by government clinics. Generally, condoms and hormonal contraceptives (the pill and injectables) are consistently available. However, stock outs do occur, depending on how well the National Health Service (SNS) and the Provincial Director of Health (DPS) coordinate with the MOH to place a timely order with UNFPA. Contraceptives are also easily available from private pharmacies.

OVERVIEW OF DENGUE, CHIKUNGUNYA

Dengue and Chikungunya

To understand the landscape of the Zika outbreak in the region, it is important to understand it in the context of the ongoing and historical public health response to dengue and chikungunya. These three diseases are not only transmitted by the same vector, but are also seen as one public health crisis. All three together cause significant morbidity and loss of productivity and resources to the region. In the same respect, the global public health interest and response to the current Zika outbreak is seen as not only a necessity but an opportunity to make strides in beating back all of the *Aedes*-borne diseases.

Dengue fever outbreaks have been a perennial problem in country for a long time, with increasing or decreasing cases of dengue and dengue hemorrhagic fever from year to year, due to multiple serotypes of the virus in circulation, varying degrees of pre-existing immunity in the population and ineffective vector control. Generally, only a portion of the clinically reported cases are confirmed in the lab because the number of suspected cases likely exceeds the diagnostic capacity of available labs. Many of the clinical symptoms and signs, when present, overlap with other febrile illnesses, resulting in over-reporting by the public and clinicians alike, while a high number of asymptomatic and mild cases results in under-reporting. The most recent dengue outbreak peaked in October 2015.

Vector control authorities and the general population report a seasonal increase of all types of mosquitoes during and right after a period of rain due to water accumulating in natural crevices and discarded containers, such as scrap metal of varying size, cans, jars and tires strewn in the open. On the other hand, both authorities and the population report more mosquitoes in the water storage containers within the home during the drier periods due to the shortage of other habitats available to *Aedes aegypti* at such times. DR experienced an important chikungunya virus outbreak that started in 2014 and peaked in February 2015.

Chikungunya, which was recently introduced in the region, paints a very similar picture to dengue, but with the following important differences:

1. Lack of pre-existing immunity, therefore a very large number of cases.

² PRB Data Finder 2015 for Dominican Republic

2. Causes chronic joint pain that persists long after the febrile period, increasing perceived severity for the population compared to classical dengue, but the lack of hemorrhagic or shock syndrome decreases the perceived severity for the public health establishment.
3. Circulation of a single serotype, granting life-long immunity and delineating chikungunya outbreaks more clearly over the perennial endemic dengue picture.

Zika's acute signs and symptoms are similar to classic dengue and chikungunya with two important differences:

1. More conjunctivitis (pink eye)
2. Less joint pain

A rash may occur with both dengue and Zika.

Zika Epidemic in the Dominican Republic

At the time of HC3's landscape review, the DR had reported 1,674 suspected Zika cases and 72 confirmed, although underreporting was assumed. Of those suspected, 85 cases were among pregnant women, but no cases of Zika-related GBS and microcephaly had been reported. Adolescents without access to family planning services and Haitian migrants who don't speak the language are high-risk groups who remain difficult to reach. Zika cases among Haitian migrants (including pregnant migrant women) may be more under-reported than in the general population, as their temporary and often illegal status negatively affects their general and antenatal care-seeking at health facilities. The number of reported Zika cases was still increasing/at a high plateau in April 2016, and seemed to follow along the country's highway system.

Zika Risk Perception

The population seems concerned about Zika, but many people are reportedly puzzled as to why, if the same mosquito transmits Zika, dengue and chikungunya, one does not get sick with all three viruses at the same time, revealing a lack of full understanding of what a vector is. Others have difficulty reconciling the felt presence of Zika disease all around them, yet receiving no information about confirmed cases. There may also be confusion on the best Zika prevention approach since communities have received both general sanitation messages as well as messages focused on breeding site eradication.

III. NATIONAL ZIKA RESPONSE

The Dominican Republic's established protocol for fighting dengue, chikungunya and Zika is threefold:

1. Community-based source reduction interventions and authority-based chemical or biological control.
2. Perifocal vector control of suspected and confirmed cases through similar authority-based activities, as well as application of space adulticides inside the home of confirmed cases and its neighbors.
3. Pro-active periodic entomologic surveillance to detect the degree of *Aedes* mosquito vector infestation.

Government Stakeholders

The Vice-Minister of Health has been leading and coordinating the bulk of the response regarding case monitoring with the General Direction of Epidemiology (DIGEPI), case management and vector control at the national level. The Vice-Minister provides weekly updates to the other MOH units, NGOs, the private sector, bilateral organizations, multi-lateral UN-based organizations and the media through the Inter-sectoral Humanitarian Response Committee and the Center of Emergency Operations. He mentioned the elimination or control of 400,000 container breeding sites and the distribution of drum covers thanks to recent community mobilization activities. The Minister of Public Health advised the public to postpone pregnancies until 2017 to avoid developmental complications to the unborn fetus as reported in other Zika-affected countries. This advice received a mixed response in the media.

Two MOH units are responsible for vector control efforts nationwide: the National Center of Tropical Disease Control (CENCET) and the Department of Environmental Health (DIGESA). CENCET, originally created for malaria control, is responsible for the national vector control plan and directs appropriate mosquito habitat management, insecticides, and chemical and biological control interventions at the national level. DIGESA shares the vector control leadership role with CENCET, and has personnel in every province which conducts vector control activities, as directed by CENCET recommendations. DIGESA does entomological surveys as directed by CENCET. Whether at the central or provincial level, vector control interventions consist of chemical and biological control, use of covers, as well as training of trainers who in turn coordinate with municipal services to train a large range of volunteers, constituents and affiliates of faith-based and secular NGOs, schools and the army. These trainees are subsequently mobilized for community clean ups and door-to-door visits to counsel families on how to eliminate discardable containers and clean water storage containers to effectively destroy *Aedes* eggs and larvae. Vector control in cemeteries is managed by DIGESA in collaboration with cemetery staff and the local government; they empty flowerpots or put sand in them. Larvivorous fish aid vector control in canals and lagoons but not in drums. CENCET conducts three entomological surveys a year to calculate the House, Container and Breteau Infestation Indices. It reports the 35-gallon water storage drums to be the number-one priority container for *Aedes* Control [actual data not shared]. CENCET's entomological lab has been certified by the Global Fund.

A third MOH unit, the Department for Health Promotion and Health Education (DIGPRES) is also involved in the training of trainers and subsequent community mobilization. DIGPRES provides training materials and produces educational materials for the community or validating materials produced by non-government stakeholders, with the Vice-Minister's approval. For this reason, DIGPRES has an important role in the Inter-sectoral Humanitarian Response Committee. It has produced some of the first Zika response flyers (see cover image) and was in the process of producing more materials at the time of the HC3 visit.

A fourth MOH unit, the Department of Strategic Communication (DSC), is responsible for coordinating with the press and the mass and social media. DSC has been regularly posting Zika information on social media and has produced and aired at least one TV spot. Dr. Jimián, a well-known doctor who runs free clinics for the poor and receives wide public recognition, appears on the TV spot promoting community clean-up campaigns. In April, DSC was producing a second TV spot focused on women.

The Department of Maternal, Child, and Adolescent Health (DIGEMIA) expects microcephaly to peak between August and November 2016. It has been preparing by training staff on measurement of babies' head circumference and ultrasound diagnosis, starting with the two largest hospitals with the highest number of births, to improve microcephaly diagnosis and registry. They will expand the training to the private health sector. They plan to roll out three response packages according to the three phases of the epidemic: counseling pregnant women on preventive measures; targeting babies with head measurements two to three standard deviations smaller for their age; and post-epidemic (February and March 2017) support for children with Zika-related GBS and microcephaly and their families.

Non-Government Stakeholders

Coordination: Inter-sectoral Humanitarian Response Committee

When DR declared Zika a national public health emergency, the Inter-sectoral Humanitarian Response Committee was activated. The Committee meets biweekly in the capital, uniting NGOs, the private sector, bilateral organizations, multilateral UN-based organizations and government agencies, including the Red Cross, Adventist Development and Relief Agency (ADRA), World Vision (WV), Japan International Cooperation Agency (JICA), United Nations Children's Emergency Fund (UNICEF), Pan American Health Organization (PAHO), and DIGPRES from the MOH. The NGOs divide up the community according to where each has the most leverage and take responsibility for promoting community-based vector control in specific areas. A key concern of the Committee was the urgency for validation and endorsement by the MOH of member-produced print materials, and/or the sharing and use of MOH materials to aid the community-based vector control home visits.

Center of Emergency Operations

The DR Center of Emergency Operations (COE) is a government entity which unites 22 local institutions via weekly coordination meetings. COE is mandated by law to lead DR disaster responses. COE told HC3 that Zika is not the first health emergency in which it has played a key role, but that epidemiological emergencies are fundamentally different than the natural disasters it typically confronts. Therefore, a Zika strategy and protocol for coordination with the MOH is a top priority for them. At the time of the HC3 visit, COE was in the process of training

first responders on emerging health issues, such as Zika, and developing a written plan to deal with health/epidemiological emergency responses.

United Nations Agencies: PAHO, UNICEF and UNFPA

PAHO has a risk communication strategy (developed during the recent Ebola outbreak) which includes epidemiological monitoring, vector control and a response system. PAHO offers technical assistance to the Inter-sectoral Committee and COE in terms of human resources training, medicines, finances, installation of equipment to confront GBS, production and training on clinical guidelines. PAHO supports integrated action in DR on dengue, chikungunya and Zika, including lab support and vaccines, technical assistance to CENCET and DIGESA on vector control, to DIGEPI on epidemiologic surveillance, as well as the DR's organization of health services, community organization and risk communication. PAHO has a regional and a local communication consultant in charge of writing talking points for the MOH and giving advice on the development of key messages and supporting communication materials. Among those, sexual transmission is dealt with discreetly, and breastfeeding recommendations have not changed, even when the lactating mother has Zika.

In a joint meeting, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), UNFPA and UNICEF referred to the DR's united response to cholera several years ago as a strong example of coordination across sectors that current stakeholders can live up to in the response to Zika. Due to its mandate, UNICEF works with the DR Ministry of Education on school-based and school-initiated source reduction of *Aedes* in the community. UNICEF said it had a clear plan of action with schools, workplaces and other sectors, but was awaiting MOH approval for the addition of the MOH logo to the UNICEF logo, in order to not lose this added value. All UN agencies were eager to contribute to not just the materials but the whole Zika strategy. UNICEF and PAHO were assisting with accurate tape measures for measuring head circumference to diagnose microcephaly (see DIGEMIA above). UNFPA was working to achieve integration of family planning messages into the strategy and to intensify family planning assistance, especially towards the two most vulnerable groups: adolescents and Haitian migrants.

The Red Cross

Since DR hospitals are unable to handle the Zika case volume, and are at risk of becoming a source of infection for other patients, the Red Cross was working to implement preventive activities over hospital-based care. The Red Cross, an active member in both the Inter-sectoral Committee and COE, said their network of 2,000 volunteers provides targeted rapid response in community hot spots for transmission based on their monitoring of emergency room data on suspected Zika cases, without waiting for MOH confirmation of cases. They also conduct aggressive perifocal elimination of container breeding sites, use bleach, replace metal cemented barrels with plastic and install window screens. They consider applying chemical control a last resort because it hurts bees and the environment. They believe they are able to interrupt transmission due to their fast action strategic focus, without the need to mobilize the whole country. Red Cross also has school- and prison-based programs, as both types of institutions can become highly infested with *Aedes*. They train school children and inmates respectively on mosquito elimination, as well as monitoring and reporting suspected cases. They prioritize pregnant women, children, the elderly and the disabled, protecting them with nets and repellents. The Red Cross does not rely solely on educational materials because "materials help

but don't solve" the problem. Lastly, they work to empower local stakeholders to be part of the solution and rally to resolve local vector control challenges.

Adventist Development and Relief Agency

ADRA categorizes Zika, dengue and cholera as emergencies for which their initial response is within 48 hours. However, they are now following a different strategy, dedicating a whole month to training volunteers to be trainers on Zika prevention where the reported cases are. They have integrated this work into their ongoing water, sanitation and hygiene (WASH), literacy and food security programming. They worked with Abate[®] but only as a last resort. ADRA's 1,000 volunteers distributed 500 kits containing a five percent bleach solution, a cloth for dabbing, repellent, garbage bags and information on vector control. Their volunteers come from 1,033 Adventist churches nationwide and are mostly young women, many of whom are at high risk for early pregnancy or marriage. ADRA organizes youth clubs on health, discipline, order, hygiene and maturity, helping these young women delay marriage or not have children too early. ADRA plans to provide long-term humanitarian support for families of children with Zika-related microcephaly/GBS.

World Vision

World Vision has 360 employees nationally, about half of whom were sick with suspected Zika at the time of our visit. WV was preparing for action, even though they did not have the funds needed. The thrust of WV's work is with 40,000 "godfathered" children nationwide, and with committees on water, sanitation and hygiene (known as CASH groups) in "bateyes," rural agricultural areas of mixed Creole and Dominican descent. WV also plans to focus on community-based prevention through their network of volunteers, as the poor lack access to health facilities, have water shortages (and are therefore compelled to store water) and don't have access to television in the bateyes. WV is not keen on chemical control as it causes harm to people and animals, as well as vector resistance.

The Media

The Journalist Health Circle (CIPESA) mentioned that, as members of this trained group, they write, blog and broadcast, striving to bring correct health information to the public. The press has been regularly writing about Zika but not all are well-informed. CIPESA is committed and wants to work with the Zika stakeholders to receive more training and continue to support all control efforts (e.g., they want to write more about the role of family planning methods to prevent microcephaly/GBS).

IV. CHALLENGES AND OPPORTUNITIES

Many important opportunities were evident in the DR, such as political will to control Zika; the high technical capacity of the country's health scientists training health providers; an active body of partners with strong community roots already engaging in community-based prevention activities ahead of peak transmission time; a health journalist association with high interest in learning and writing about Zika for a public that still buys newspapers and accesses social media; high cell phone use; a good highway system uniting the island and making referral and transport of severe cases achievable; a cadre of skilled social communicators with previous experience in creating successful health communication campaigns and materials; and the influx of new mosquito control methods expanding the range of options at hand.

HC3 identified multiple SBCC challenges brought on by the abundant mosquito vector infestation, the well-documented infrastructure challenges making water storage necessary, and the lack of easy and sustainable vector control measures to promote. The need to inform and protect against microcephaly and GBS add to the complexity.

Vector Control

Vector control challenges include chronic under-staffing and budgeting. Insecticides are not always available at the point of use where they are needed, are expensive, are damaging to the broader environment and prolonged use inevitably causes resistance. It also appears that space spraying continues to be used, despite PAHO recommendations of its reduced effectiveness.

Recommended container cleaning behaviors are labor intensive and need to be repeated frequently which makes them difficult to sustain. Although vector control staff usually understand how to conduct effective household cleaning, when these skills are passed from trainers to other trainers to community volunteers to household members, the skills to perform the cleaning correctly – focused on large water containers and tires – can get lost or misrepresented. Meanwhile, the behaviors easiest to carry out are those for general garbage clean ups, which tends to be a mistaken focus discussed by authorities and seen on TV spots.

A long lag time between case identification and vector control unit notification creates a missed opportunity for perifocal control. CENCET said that they have not been able to conduct insecticide susceptibility trials in a long time.

At the same time, CENCET said this was an opportunity to implement new ideas in the DR. The use of bleach as a larvicide was a good idea, and now they need more, such as testing the release of irradiated sterile male populations (as they have in Brazil), and the utilization of geo-referencing for better targeting of vector infestation and case hotspots. CENCET mentioned an improvement in biological control with *Bacillus thuringiensis israelensis* (BTI), which now comes in bags so it is easier for families to conserve it in stored water for frequent use. DIGESA mentioned an opportunity to implement the use of new larvicides that are safe to drink, are unnoticeable by the population, can be applied inside the water compartment of the water selling trucks and are long-lasting. Another opportunity are the efforts of the Red Cross and the National Autonomous University of Honduras (UNAH) for mosquito source reduction within densely populated institutions, such as schools, prisons and university campuses.

Prevention materials were seen as key by all collaborating partners. Members of the coordinating group expressed frustration that there were not enough government materials for community outreach and the MOH was slow to review and approve messages under development by other donors, multilateral groups and NGOs.

Infrastructure

Infrastructure challenges are well-documented with scarce or unreliable water supply creating the need for water storage, and ineffective waste collection or recycling services. While no one interviewed shared with HC3 mosquito infestation indicators from entomological surveys, the team was shown a list of vulnerable areas based on socio-economic and infrastructure challenges. Used tire importation seemed to be conditional upon prior-certification of absence or control of *Aedes* infestation, but it is unknown to what degree this is being enforced. HC3 learned that car and tire shops are under the regulation of the Ministry of the Environment, not the MOH. HC3 learned of a new opportunity spearheaded by the MOH with cement factories to utilize used tires in their kilns.

Reproductive Health and Family Planning

Due to the associated link between Zika and microcephaly, there is considerable concern regarding family planning use and access during this outbreak, as well as the availability of reproductive health services for pregnant women. Fetal neurological defects are caused in the first and second trimesters of pregnancy, prolonging the critical personal protection window for pregnant women. It is unknown whether continuous or prolonged use of repellent and protective clothing will be feasible in the DR, but there may be an opportunity for bednet use (in the case of daytime resting).

The positive attitude towards modern contraceptives is an opportunity to expand family planning access and prevent any unplanned pregnancies during the Zika outbreak. The challenge is expanding coverage to adolescents and highly mobile Haitian migrants. Consistent condom use is the only method to prevent sexual transmission from men to their pregnant partners, though local partners were not focused on addressing sexual transmission. Monitoring efforts have found that there are challenges in availability of condoms at health service facilities and that family planning supplies can be scarce in primary care settings.

Laboratory and Health Care Services

Zika has specifically challenged in-county and global diagnostics due to: (a) lack of reagent for a hitherto relatively unknown disease; (b) cross-reactivity with dengue and chikungunya antibodies in immunoassays when present; (c) short window of detection both for antibody and for viral Ribonucleic Acid (RNA), before and after which the lab test is inconclusive. As a result, the number of confirmed cases remains minimal, causing rumors and lack of trust towards public health authorities in the local press and social media, as well as the population, and even among practicing clinicians. The epidemiologists interviewed mentioned that many of their colleagues remain unconvinced that Zika has indeed invaded the DR, while others speak of data censorship.

DR health services face their own challenges with the general difficulty in lab confirmation, as well as the lack of equipment to manage severe GBS at large scale, and to diagnose and respond to congenital sequelae due to Zika, forcing them to focus on prevention through ANC. The

implications of GBS and microcephaly for any heads of household, child or caregiver are particularly concerning to everyone.

Social and Behavior Change Communication

As previously stated, there may be a lack of focus when messaging and TV spots insist on clean up campaigns of small but not very productive containers instead of the larger drums and tires. Prevention materials were seen as key by all collaborating partners. Members of the coordinating group expressed frustration that there were not enough government materials for community outreach and that they were still waiting for the MOH to review and approve messages under development by other donors, multilateral groups and NGOs.

V. RECOMMENDATIONS

Communication Strategies

- Multiple stakeholders are involved in the Zika response in the Dominican Republic. Their communication efforts may benefit from the development or refinement of a **National Zika Communication Strategy** and a corresponding **National Zika SBCC Operational Plan**. The **primary role** of the national strategy and plan would be to: coordinate and harmonize communication activities across all stakeholders and groups communicating about Zika. Technical assistance can support these processes.

The **National Zika Communication Strategy** should include not only specific communication objectives, but also:

- Key messaging (including, specific “calls to action”);
- Guidance on key audiences, channels and tone (creative briefs); and
- Identification of leadership, responsibilities and distribution of efforts across partners and geographic areas.

The **National Zika SBCC Operational Plan** ensures that collaboration amongst partners does not stop at the strategy design phase, but that there is continued coordination, mapping and reporting of activities.

There are many benefits of the development of such a national Zika communication strategy and operational plan, with the involvement of key partners and technical stakeholders:

- Greater consistency of communication messages
- Coordinated roll-out of activities, such as community outreach.
- Consistency and coordination help maintain public and partner trust in the Zika response.

The key partners and technical stakeholders can include:

- MOH (including Zika leadership and/or coordinating body, vector control, surveillance/epidemiology, health promotion, service providers, etc.);
- NGOs and other entities working in SBCC,
- Community mobilization and advocacy (including faith based organizations and private sector);
- University and/or research representatives; and
- Organizations responsible for family planning distribution and placement.

The process can also include local leaders (especially in decentralized health systems) and democracy and governance partners where appropriate.

- While officials were concerned about an inevitable resurgence in Zika cases once the rainy season arrives, it did not appear stakeholders were informed of the long-term planning that was or was not taking place. The DR would benefit by developing a detailed plan as soon as possible for a second wave of Zika and a possible upsurge in microcephaly/GBS cases. Both overall planning and SBCC specific planning should include a focus on:

- Resource mobilization and allocation through and beyond the rainy season
 - Vector control plan based on possible scenarios of the epidemic (and according to phases)
 - Service provider needs and priorities
 - Family planning and reproductive health focus, including wider access to services and methods
 - Microcephaly and GBS management (patient, newborn and family support and counseling)
 - A communication strategy based on possible scenarios of the epidemic (and according to phases) that takes into consideration all of the above issues
- Provide high quality hands-on training to front-line community volunteers on the technical skills to perform mosquito source reduction behaviors, as well as how to teach those behaviors to others, and how to engage members of the community in a constructive dialogue about vector control, with or without educational materials.

Formative Research and Monitoring and Evaluation

- The DR would benefit from rapid formative research to better understand the perceptions, myths and motivations around Zika, mosquito-borne illnesses, breeding site reduction behaviors, use of family planning during the Zika outbreak and other related topics. The World Health Organization (WHO) has put together a resource package that includes a set of key knowledge, attitudes and practice (KAP) questions for Zika, microcephaly and GBS. UNICEF also expressed interest in research on community perceptions around Zika and is supporting a literature review on community participation regarding dengue.

The research should include exploration of knowledge, attitudes and perceptions of vector control outreach workers, community mobilizers and service to better incorporate them as both target audience and disseminators of messages for Zika communication efforts.

- Ensure communication and mobilization activities include monitoring and evaluation that measures not only process indicators (e.g., materials produced and houses visited) but also impact indicators (household larval indices), if at all possible. These efforts could put greater emphasis on the high-burden municipalities and could also support the MOH ongoing SBCC work.

Message Fine Tuning and Communication Platforms

- Overall, messaging should focus on framing Zika control as a reemphasis on the larger *Aedes aegypti* vector control (against dengue, chikungunya and Zika) with a "shared responsibility" tone, outlining specific calls to action for breeding site reduction by the family, and motivational messaging to reposition mosquito-borne illnesses as beatable and not acceptable or inevitable.

Messages should not be positioned as “general clean-up messages.” While these are good for overall and long-term health, for the immediate epidemic this confuses recipients about priority actions. Behavioral content and message positioning could benefit from more standardization as well as the addition of visuals, given the amount of skill required. Preventative behaviors should focus on the most important larval habitats and campaigns should de-emphasize behaviors directed at unimportant habitats. Monitoring (entomological surveys) and recognition campaigns should be based on this as well (i.e., no prizes for a clean yard, just for containers free of larvae/eggs.) Contrary to popular opinions blaming open standing water/puddles and garbage, CENCET reports the 35-gallon water storage drum to be the number-one priority container for *Aedes* control [they did not share the actual data].

Linking Zika to microcephaly and GBS should be done in a way that is empowering, realistic within the local context and not fear based, with an emphasis on family planning access and informed choice and use. More attention should be paid to family planning messages in the Zika context for women and couples who choose to postpone pregnancy. Currently sexual transmission is not addressed in the region but this should be integrated into counseling guidelines.

At the same time, specific messages for pregnant woman to avoid Zika, as well as women and couples who are thinking about having children in the near future, need to be stepped up and proactively integrated into a range of counseling and outreach opportunities.

Prioritize the promotion of target mosquito source reduction behaviors in the homes of pregnant women (and the homes around them), including the option of using nets while resting during the day. Consider similar mosquito source reduction actions/promotions in the workplaces of pregnant women.

- Technical support is needed to identify specific, realistic and effective calls to action to address in their communication strategy. This should include a technical vector control team to assess the available breeding site reduction techniques (e.g., larvicides, “Untadita” solution made with bleach and without detergent, alevines (small fish), house-to-house surveillance and jornadas), and to develop recommendations on priority actions for individuals and vector control teams, including recommended larval reduction techniques by container and geographic location.
- Develop audience-specific materials based on technically sound and global recommendations. Regional guidance documents could be identified or developed for specific SBCC Zika materials, or generic and adaptable creative briefs/materials developed for country adaptation. These could include:
 - Provider jobs aids (family planning and Zika, sexual transmission, prenatal Zika prevention, microcephaly and GBS prevention and treatment)
 - Outreach workers’ *Aedes* breeding site reduction aid
 - Press information packet
- Include Haitians as a priority population and adapt the Zika communication strategy for this audience, including developing outreach materials in Creole. USAID/Santo Domingo

hopes to have access to the materials being developed in Haiti with support from USAID/Port Au Prince to share. Next step will include an action plan for sharing across countries and specific distribution in the DR.

- Train vector control field staff and other NGO outreach workers in interpersonal communication, personal prevention of Zika, chikungunya, dengue, recognition of symptoms and health-care seeking.
- Experience in the recent Ebola outbreak and other risk communication issues has demonstrated the importance of good press communication and education. The DR, if it has not already, should develop a system for regularly updating the press, as well as establish open, transparent communication for questions and timely exchanges. Internews or a similar organization should be explored to develop a media training package and workshop, as well as developing a rumor tracking system as done by HC3 for Ebola.
- Digital platforms should be explored for improving communication and outreach to pregnant women and women of reproductive age via WhatsApp or along the lines of the txt4baby platform. This would be an opportunity to enable women of reproductive age to access information they need related to pregnancy prevention and family planning in the context of Zika. This falls into the context of the SMART client approach, where interventions empower women to answer the questions they might already have, think about what else they need to make decisions, and get access to resources to address their needs (informational and/or family planning services). The platform would need to be promoted, presumably through existing relevant mechanisms.
- Digital platforms can also support providers in family planning counseling and Zika prevention during pregnancy. WhatsApp groups could be organized for providers with Zika frequently asked questions as a job aid.
- Explore the use of regional networks and online platforms (in development) to both share DR materials and identify quality materials that could be adapted from elsewhere on Zika prevention and treatment, including vector control, maternal and child health and family planning, as well as materials from UNICEF, PAHO, WHO and other trusted public health agencies in the region.

Coordination

- Take advantage of the NGO community that has strong links to peri-urban and rural communities. Many of the NGOs use community participation methodologies that empower communities to be proactive in vector control. Bring on more partners who can widen the reach of this community, such as church networks and the private sector, who benefit from a healthy workforce and play a large role in some countries in the tourist industry.

- Support Dominican Republic Centro de Operaciones de Emergencias (COE) to develop an Emergency Response Protocol for health emergencies with possible support from the U.S. Centers for Disease Control and Prevention (CDC) and/or PAHO.
- Accelerate the MOH material approval process (meant to check fidelity to MOH messaging and the SBCC strategy), including materials in Creole, allowing for better coordination among partners and the MOH.
- Improve coordination between the DR DPS and the SNS.
- Interface with the Council of Ministers of Health of Central America and Dominican Republic (COMISCA) and the health arm of the regional coordinating body, Central American Integration System (SICA), to increase consistency in Zika prevention, especially prevention messages for pregnant women, family planning messages for couples and vector control messages for families, as well as to share lessons learned in Zika prevention and best practices as they emerge.
- Advocate for an ecological approach to vector control that goes beyond the household. For example, explore and expand new initiatives with the private sector such as collaboration in the collection and disposal of old tires and partnerships with the tourist industry.
- Utilize environmental and ecotourism movements to forge alliances, especially with the private sector. A social responsibility consortium of private sector organizations exists and this can be leveraged to disseminate materials and more.

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