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DESK REVIEW

Jamaica: Gender Considerations in the Context of Zika Emergency Response Programming

DECEMBER 2019

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Acronyms

ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CDC	U.S. Centers for Disease Control and Prevention
CSaZ	Congenital Syndrome associated with Zika
ESP	Early Stimulation Program
EW	Epidemiological Week
GBS	Guillain-Barré Syndrome
GBV	Gender-based Violence
GDI	Gender Development Index
GII	Gender Inequality Index
IPV	Intimate Partner Violence
LAC	Latin American and Caribbean
MOHW	Ministry of Health and Wellness
PAHO	Pan American Health Organization
RHS	Reproductive Health Survey
STI	Sexually Transmitted Infection
UN	United Nations
UNFPA	United Nations Population Fund
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

After arriving in Brazil in May 2015, Zika virus rapidly swept across the Americas. By January 2016 it had reached the island of Jamaica, and according to statistics reported to the Pan American Health Organization (PAHO) and the World Health Organization (WHO), there were 203 confirmed cases of Zika in Jamaica between January 2016 and January 2018.

Infants born to mothers infected with the Zika virus can suffer severe microcephaly, brain damage, severe damage to the back of the eye, congenital contractures, and hypertonia. Children affected by the developmental disabilities caused by the Zika virus, called congenital syndrome associated with Zika (CSaZ) will need long-term access to health and specialized services. Families will need financial and psychosocial support to meet extended care needs and emotional issues. To respond to these needs most effectively, and to design initiatives that will best help families protect themselves from Zika, Zika response and prevention programs will need to integrate gender-sensitive interventions that address the variances of needs and behaviors of women, men, boys, and girls. This desk review looks at several key Zika prevention and response areas where gender plays a role and provides insights and initial recommendations based on the findings.

Contraceptive uptake and family planning: According to the World Bank, nearly 69% of women in Jamaica between the ages of 15 and 49 use some form of modern contraceptive method. Most, including condom, oral contraception, and injectable options are available at both public and private health facilities. While family planning methods are available often, some women and adolescents in Jamaica still face an unmet need. Condoms are used more by men in non-steady partnerships than women, but in steady partnerships can be perceived as unnecessary or undesired. Increasing the use of condoms is essential, as they are the only form of contraception that prevents the sexual transmission of Zika and are recommended to be used even throughout pregnancy.

Gender norms and power dynamics: Societal, cultural, and familial expectations of men and women play an important role in Jamaica. Men are often socialized to initiate sex early and have multiple partners. They are also more likely to engage in risky sexual behaviors, including unprotected sex. Women have mixed views about the roles of women and men in families. 77.4% of women of the 1,340 interviewed in the Women's Health Survey 2016 agreed that "it is natural that men should be the head of the family" and 70.2% said, "a woman's role is to take care of her home". Conversely, 93% of the women interviewed agreed that "women and men should share authority in the family", and 92% believe that "a woman should be able to spend her own money". Traditional gender norms- widespread risky sexual behaviors, male dominance, and unequal balances of power within the family and in the society - can influence both Zika prevention and care and must be considered when addressing the epidemic.

Childcare and support for families of children affected by Zika: While many Jamaicans would cite a strong family unit as important, the reality is much more complicated. Marriage rates are falling in Jamaica, and in 2014, according to the Registrar General's Department, 32,264 out of 36,996 births (almost 90%) were to unmarried women of which 9,288 had no father registered on the birth certificate. Many unmarried women, however, are in long-standing live-in or live-out relationships with their partners. Gendered norms regarding women as the nurturers and caregivers are widely prevalent in the country. While both parents are legally responsible for the maintenance of their child/children, mothers (particularly single mothers) carry a disproportionate burden of care for children. In the context of Zika, children affected by the virus need physical therapy, cognitive stimulation therapy, and extra assistance with everyday activities, which can result in an increased financial and care burden, limited caretakers' non-caregiving pursuits, and need for additional emotional support.

Impact of disability: Persons with disabilities in Jamaica face several challenges, particularly with regards to medical care, education, training, employment, housing, and recreation. Of the one million affected by at least one disability, the Jamaica Council for Persons with Disabilities estimates that only 400,000 have at least one supporting family member. Negative perceptions and attitudes towards disability have resulted in the isolation and exclusion of persons with disabilities from mainstream society.

Children are amongst the most vulnerable who are at risk of abuse and abandonment. Zika virus infection during pregnancy can cause severe birth defects and developmental delays. Services such as early stimulation are important particularly for children with developmental disabilities because it helps prevent or lessen adverse delays.

Mental health, support services, and stigma: Mental health is a determinant of physical health, well-being, and socioeconomic outcomes. In Jamaica, mental health disorders are often associated with stigma influenced by beliefs or cultural norms related to spiritual wrongdoing, personal failing, and supernatural forces. While many organizations have conducted awareness campaigns on mental health and mental disorders, stigma still exists and can serve as a barrier to persons who need and want support. People with greater access to interpersonal relationships and support tend to have more positive mental health outcomes, but despite stereotypes of extended Caribbean families, many mothers are not involved in a wide network of support. In the context of Zika, mental health is critical. Caretakers who are raising children with delays may face societal stigma and discrimination; and because of that stigma, many do not seek professional services. Many rely solely on informal support of friends and family.

Gender-based violence (GBV), Zika, and sexually transmitted infections (STIs): Since the impact of Zika is still recent, evidence on the association between GBV and Zika infections is limited. However, research demonstrates links between GBV and other infections that can be transmitted sexually, such as HIV, particularly as related to women's limited control over their bodies and power to negotiate methods to prevent pregnancies and STIs. In Jamaica, 27.8% of women ages 15-64 have experienced intimate partner physical and sexual violence in their lifetime (Women's Health Survey 2016). Further, women who have been pregnant are more likely to be subjected to severe violence than women who have never been pregnant. While the majority of women who have suffered relationship violence tell someone, 18.4% remained silent and only 37% actually seek professional help. In the context of Zika, the fear of violence when requesting condom use can result in some women not using condoms or using them inconsistently. Women experiencing GBV may also be less likely to attend regular or prenatal sessions, receive education about Zika prevention, and utilize early screenings to detect possible fetal abnormalities.

Youth: Youth in Jamaica face their own set of unique health challenges. Current policies limit access to sexual and reproductive health services for adolescents younger than 16 years, and youth can face provider bias when accessing reproductive care. Young girls have been refused contraception in health facilities while boys of the same age are provided with preventative methods such as condoms due to providers' comfort with boys' sexuality and discomfort towards young girls engaging in sexual activity. 52.2% of women in Jamaica who have ever had sex, first had sexual intercourse between 15-17, while 34.1% had their first sexual experience at 18 years or older (Women's Health Survey 2016). One-third of women who reported being under 15 when they first had sex stated it was forced. Sexually active youth frequently reported engaging in risky behaviors such as inconsistent condom use, multiple sex partners, and transactional sex. Perceptions of vulnerability to HIV and other sexually transmitted infections and knowledge of sexual risks have been reported low and often incorrect among youth populations. In the context of Zika, youth must not be overlooked as their limited health knowledge and risky sexual behaviors may increase the likelihood of pregnancy and subsequent Zika-related complications.

We cannot overlook the importance of Zika preventative measures to discourage future disease spread. Based on the currently available information, actors engaged in Zika prevention should pay special attention to gender norms and cultural practices that may affect the success of efforts such as contraceptive uptake and family planning; power dynamics between men, women, partners, families, and providers; support provided to families affected by Zika virus infection and GBV; and the risk of STIs and vulnerable groups such as adolescent girls and youth populations. These gender considerations can complement vector control methods implemented across the country by the Ministry of Health and Wellness and other partners to ensure Zika control and eradication in the country.

I. INTRODUCTION

Zika is a flavivirus transmitted by the *Aedes* species mosquito that was first discovered in Uganda in 1947 ^a. Between the 1960s and 1980s, human infections were found across Africa and Asia. In 2007, the first large outbreak of the infection was reported in the Federated States of Micronesia. As the infection spread across the Pacific researchers started to link it to other health challenges such as Guillain-Barre syndrome (GBS), an illness affecting the nervous system that can result in muscles weakness and paralysis. In 2015, Zika virus infection made its way to South America arriving first in Brazil in May. By July, Brazilian health authorities reported an association between Zika and GBS, and by October the infection was linked with another significant health challenge - microcephaly, a congenital birth defect whereby a baby's head is smaller than expected when compared to babies of the same age and sex. (Microcephaly has also been associated with other birth defects and neurological conditions in children and adults.) Zika virus infection quickly swept across the Latin America and Caribbean region, arriving in Jamaica in January 2016. By February 2016, the World Health Organization (WHO) declared Zika virus infection a Public Health Emergency of International Concern due to its associations with microcephaly and other neurological disorders.

According to statistics reported to the Pan American Health Organization (PAHO) and the WHO, there were 203 cases of confirmed Zika virus infection in Jamaica between January 2016 and January 2018 ^b. Since then there has been one confirmed case in October 2018, but no new cases reported in the country as of January 2019 ^c. Though reported active Zika cases have trended downward, the long-term impacts of the virus on populations must not be overlooked. Some children born to mothers who had Zika virus infection during pregnancy may have had birth defects evident at birth, but others may still be at risk of developing neurological delays as they continue to grow. Prevention efforts should be maintained at health facilities, but in addition, it is necessary to prepare for families who may have been missed and who will need services in the future.

Children affected by the developmental disabilities caused by the Zika virus, called congenital syndrome associated with Zika virus (CSaZ) will need long-term access to health and specialized services. Families will need financial and psychosocial support to meet extended care needs and emotional issues. To respond to these needs most effectively, and to design initiatives that will best help families protect themselves from Zika, Zika response and prevention programs will need to integrate gender-sensitive interventions that address the variances of needs and behaviors of women, men, boys, and girls. This desk review pulls from literature and data to illustrate important factors to consider in Zika response initiatives.

^a WHO. (2016). Bulletin of the World Health Organization. Zika: the origin and spread of a mosquito-borne virus. https://www.who.int/bulletin/online_first/16-171082/en/.

^b PAHO/WHO. Zika cases and congenital zika syndrome associated with zika virus reported by countries and territories in the Americas, 2015-2018. Cumulative cases. https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=cumulative-cases-pdf-8865&alias=43296-zika-cumulative-cases-4-january-2018-296&Itemid=270&lang=en.

^c PAHO. PLISA Health Information Platform for the Americas. Cases of Zika Virus. https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=cumulative-cases-pdf-8865&alias=43296-zika-cumulative-cases-4-january-2018-296&Itemid=270&lang=en.

II. SOCIODEMOGRAPHIC OVERVIEW

Jamaica is an island in the Caribbean Sea located just south of Cuba and west of Hispaniola with an area of 10,991 square kilometers. It is the third largest island in the Caribbean after Cuba and Hispaniola^d.

The population of the island is 2,812,090, and growing at a modest rate of 0.7% annually, with a birth rate of 16.5 births/1,000 population. Fifty-five percent of the population is urban, living in the densely populated areas of Kingston, Montego Bay, and Portmore. The population is young, with a mean age of 28.6 years and a life expectancy of 74.5 years. On average, women in Jamaica have their first child at age 21 (though the median age of first birth is between 25-29), and the maternal mortality ratio is 89 deaths per 100,000 live births. Jamaicans speak English, as well as a localized English patois unique to the country, and are predominantly Protestants of many denominations (64.8%), with small Roman Catholic (2.2%) and Rastafarian (1.1%) populations^e.

Although classified as an upper-middle income country, Jamaica's economy has grown on average less than 1% a year for the last 30 years^f ^g. The current Gross Domestic Product (GDP) is roughly \$26 billion, with 17.1% of the population below poverty line. Between 2012 and 2017, Jamaica made progress on its debt-to-GDP ratio and expects to continue the trend through International Monetary Fund agreements and government-led reform programs^h ⁱ. The most recently reported data (2004) shows that the lowest 10% of the population owned 2.1% of the wealth, compared to 35.8% owned by the top 10%, giving Jamaica a Gini index^j of 45.5. In the last 12 years however, the Gini index decreased 10 points (35 in 2016) showing a rise in equality and income^k ^l.

Both the infant mortality rate and the maternal mortality ratio have been steadily falling in Jamaica due to increased investments in health. The 2008 Jamaica Reproductive Health Survey revealed that 87% of pregnant women attended at least four prenatal visits – the WHO

^d Central Intelligence Agency. The world factbook Jamaica. <https://www.cia.gov/library/publications/the-world-factbook/geos/jm.html>.

^e Central Intelligence Agency. The world factbook Jamaica. <https://www.cia.gov/library/publications/the-world-factbook/geos/jm.html>.

^f The World Bank. The world bank in Jamaica. <http://www.worldbank.org/en/country/jamaica/overview>. Updated 2018.

^g Central Intelligence Agency. The world factbook Jamaica. <https://www.cia.gov/library/publications/the-world-factbook/geos/jm.html>.

^h Central Intelligence Agency. The world factbook Jamaica. <https://www.cia.gov/library/publications/the-world-factbook/geos/jm.html>.

ⁱ The World Bank. The world bank in Jamaica. <http://www.worldbank.org/en/country/jamaica/overview>. Updated 2018.

^j This index measures the degree of inequality in the distribution of family income in a country. Numbers closer to zero represent more equal countries.

^k The World Bank. World development indicators. <https://databank.worldbank.org/data/source/world-development-indicators/Type/TABLE/preview/on>.

^l The World Bank. GINI index. <https://data.worldbank.org/indicator/SI.POV.GINI?locations=JM>.

recommendation for prenatal visits during pregnancy. While the majority of women received their prenatal care from government health clinics and hospitals (72% and 4%, respectively), other women received these services in private clinics and hospitals (20% and 3%, respectively). Since 2003, most births have been delivered in health care facilities, with 93% of births occurring in government hospitals^m. The majority of women in the 2008 study reported that their delivery was attended by a midwife or nurse-midwife (65%) or physician (33%). However, the percentage of births with at least four prenatal visits was lower in rural areas than in urban areas, and women with less than 10 years of education were less likely to have births preceded by four or more prenatal visits compared to women with 13 or more years of schooling.

Even so, while Jamaica holds lower infant mortality rates compared to the Latin American and Caribbean (LAC) region, it remains behind the region in reducing maternal mortality rates (see **Figure 1**). The fertility rate is on par with the LAC region, at 2.0 births per womanⁿ.

Figure 1: Key health indicators

Indicator	Jamaica	Latin America and the Caribbean
Maternal Mortality Ratio (/100,000 live births)	89 (World Bank 2015)	67 (World Bank 2015)
Infant Mortality Rate (per 1,000 live births)	13.2 (World Bank 2016)	14.9 (World Bank 2016)
Children Under 5 Mortality Rate (per 1,000 live births)	15.2 (World Bank 2017)	17.7 (World Bank 2017)
Total Fertility Rate	2.0 (World Bank 2016)	2.1 (World Bank 2016)

Source: World Development Indicators. <https://datacatalog.worldbank.org/dataset/world-development-indicators>

Non-communicable diseases have emerged as the leading causes of death in Jamaica. More specifically, the WHO estimates that in Jamaica, they account for 80% of all deaths, with cardiovascular diseases (30%) cancers (20%), and diabetes (12%) at the top.

In 2017, Jamaica ranked 97 out of 189 on the Human Development Index (HDI), capturing aspects of human development such as a long and healthy life, knowledge, and a decent standard of living^o. Jamaica’s Gender Development Index (GDI) (or ratio of females to males in HDI values), which measures differences between male and female achievements in health, education, and command over economic resources, was 0.988 earning them a spot in “Group 1” and reflecting high equality in HDI achievements between men and women. However, gender

^m Serbanescu F, Ruiz A, Suchdev DB. 2010. Reproductive Health Survey Jamaica 2008: Final Report. Atlanta, GA (USA) and Kingston, Jamaica.

ⁿ The World Bank. World development indicators. <https://databank.worldbank.org/data/source/world-development-indicators/Type/TABLE/preview/on>.

^o UNDP. Human Development Index. <http://hdr.undp.org/en/content/human-development-index-hdi>.

inequalities remain a major barrier to human development, as shown by Jamaica's Gender Inequality Index (GII). The GI, which measures gender inequalities in terms of reproductive health, empowerment, and the labor market, helps expose the human development costs of gender inequality. Higher GI values correspond to greater disparities between females and males. In 2017, Jamaica's GI was 0.412, ranking them 95th on the global scale^p. Additionally, the 2017 Global Gender Gap report, which looks at progress in parity across economic participation and opportunity, educational attainment, health and survival, and political empowerment, ranked Jamaica 51 out of 144 countries globally. While Jamaica is close to parity in with regards to the health dimension, its overall score was significantly impacted by inequalities in political empowerment and economic participation and opportunity^q.

III. THE ZIKA VIRUS OUTBREAK: TIMELINE AND SPREAD

The World Health Organization defines Zika virus cases by the following criteria^r:

- **Suspected case** – a person presenting with rash and/or fever and at least one of the following signs and symptoms (arthralgia, arthritis, conjunctivitis)
- **Probable case** – a suspected case with presence of the antibody against Zika virus and an epidemiological link such as contact with a confirmed case or a history of residing in or traveling to a Zika-affected area in the prior two weeks
- **Confirmed case** – a person with laboratory confirmation of Zika virus infection

With the 2015 outbreak and spread of Zika across Latin America, the Jamaican Ministry of Health and Wellness began preparing for Zika even before the disease reached the island. The preparedness activities included an increase in surveillance for Zika and related arboviruses (dengue and chikungunya). The Ministry also released clinical management guidance, namely a specific case definition for clinicians to use in order to identify cases more easily. Other strategies included increased vector control, laboratory capacity strengthening, training and staffing of health centers and hospitals, risk communication and public education, and social mobilization. The Ministry increased its cooperation and sharing of information with PAHO/WHO in order to better contribute to regional data^s.

The first confirmed case of Zika in Jamaica was reported on January 26, 2016 in the city of Greater Portmore in Southern Jamaica^t. The patient was a four-year-old boy who had recently traveled to Texas in the United States^u. He began showing symptoms on the 17th of January,

^p Jamaica Human Development Indicators. (2018). United Nations Development Program.

^q Schwab Zahidi S, Leopold TA, Ratcheva V, Hausmann R, Tyson LD.

^r World Health Organization. Zika virus disease. <https://www.who.int/csr/disease/zika/case-definition/en/>. Updated 2016.

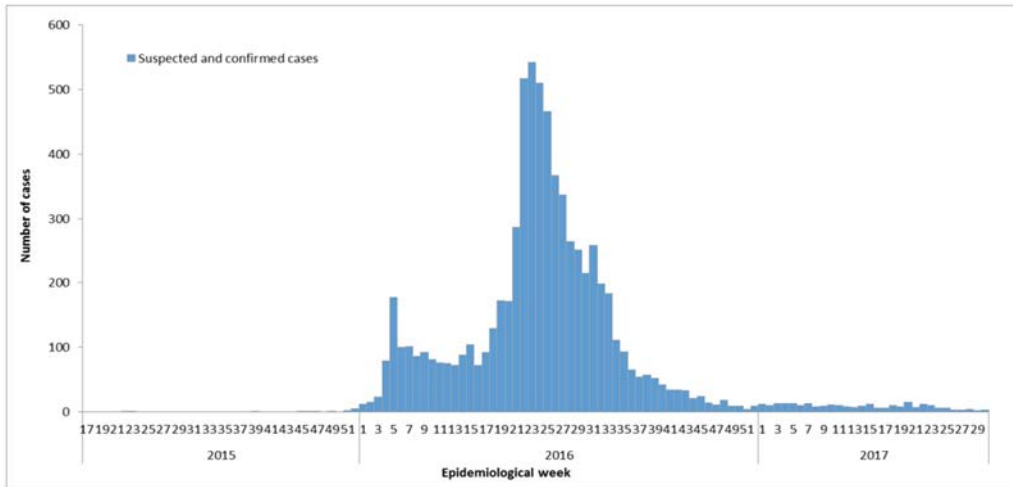
^s Webster-Kerr KR, Christie C, Grant A, et al. Emergence of zika virus epidemic and the national response in Jamaica. *The West Indian medical journal*. 2016;65(1):243. <https://www.ncbi.nlm.nih.gov/pubmed/28375542>.

^t Stanglin D. Jamaica reports its first case of zika virus. *USA Today*. January 30, 2016. Available from: <https://www.usatoday.com/story/news/2016/01/30/jamaica-reports-first-case-zika-virus/79563246/>.

^u The Ministry of Health and Wellness, Jamaica. Zika update as at January 20, 2017. <https://www.moh.gov.jm/zika-update-as-at-january-20-2017/>. Updated 2017.

and his case was later confirmed by the Caribbean Public Health Agency. **Figure 2** shows the timeline of all suspected and confirmed Zika cases in Jamaica, with the outbreak peaking in the middle of 2016 before falling off at the end of the year. **Figure 3** shows the geographic distribution of cases by parish as of September 2017, with the largest concentration of cases in Trelawny and Saint James parishes.

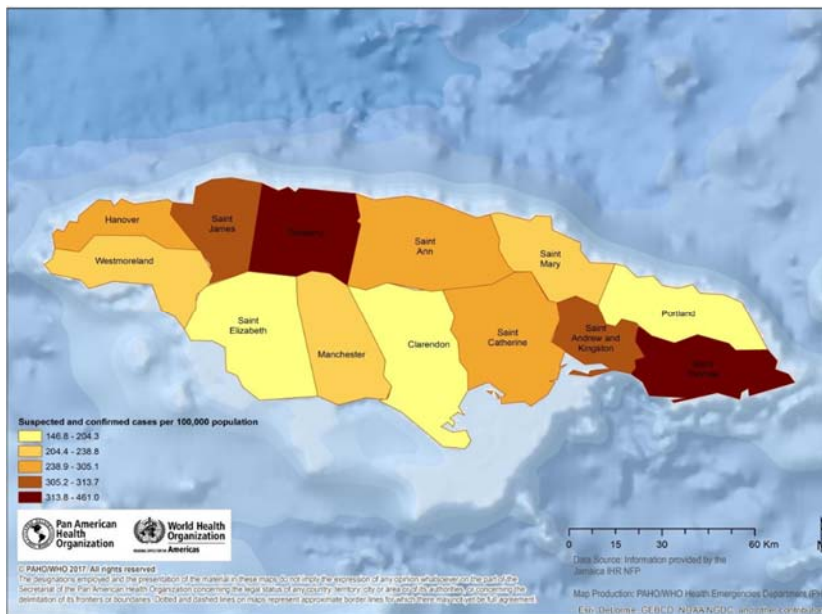
Figure 2: Suspected and confirmed Zika cases by epidemiological week (EW). Jamaica. EW 17 of 2015 to EW 30 of 2017



Source: Data provided by the Jamaica Ministry of Health to PAHO/WHO¹

Source: PAHO/WHO. Jamaica Epidemiological Report September 25, 2017. <https://www.paho.org/hq/dmdocuments/2017/2017-phe-zika-situation-report-jam.pdf>

Figure 3: Cumulative suspected Zika cases per 100,000 population by parish. Jamaica. 2015 to 2017 (as of EW 12)



Source: PAHO/WHO. Jamaica Epidemiological Report September 25, 2017. <https://www.paho.org/hq/dmdocuments/2017/2017-phe-zika-situation-report-jam.pdf>

Zika continued to be reported after the first confirmed case in January 2016. According to a February 7, 2017 press release from Jamaica’s Ministry of Health and Wellness, between the first case and almost a year later (January 20, 2017), the Ministry received 9,605 notifications of possible Zika virus in the country. Of these, approximately 7,371 (or 77%) were classified as suspected Zika cases^v. This same report highlighted 650 cases of suspected Zika in pregnant women of which 77 cases tested positive. The September 2017 PAHO/WHO Zika Epidemiological Report found 712 cases of suspected Zika virus in pregnant women, suggesting an increasing trend for the year^w. Data reported to PAHO/WHO as of January 4, 2018 indicated a total of 7,772 suspected and 203 confirmed cases of Zika between 2015 and 2018; no deaths have been reported among Zika cases^x (see **Figure 4**).

Figure 4: Zika cases and congenital syndrome associated with Zika virus, 2015 - 2018 cumulative cases

	Jamaica
Suspected cases	7,772
Confirmed cases	203
Confirmed congenital syndrome associated with Zika virus infection	0
Cases of Guillain-Barre syndrome	0

Source: PAHO/WHO. (2018). Zika cases and congenital syndrome associated with Zika virus reported by countries and territories in the Americas, 2015 – 2018. Cumulative cases.

https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=cumulative-cases-pdf-8865&alias=43296-zika-cumulative-cases-4-january-2018-296&Itemid=270&lang=en

Understanding the spread of Zika is critical as Zika infection during pregnancy has been linked to developmental disorders and delays in children of affected mothers^y. PAHO/WHO’s September 2017 Zika Epidemiological Report noted that Jamaican health authorities reported 60 suspected and 12 probable cases of Congenital Zika Syndrome, of which 62 microcephaly or severe microcephaly. Guillain-Barré Syndrome (GBS) is a disorder that affects the nervous system where a person’s own immune system causes muscle weakness and in extreme cases paralysis^z. The condition has been linked to Zika in that several countries that experienced Zika outbreaks also experienced an increase in GBS. In Jamaica, 11 cases of GBS were reported,

^v The Ministry of Health and Wellness, Jamaica. Zika update as at January 20, 2017. <https://www.moh.gov.jm/zika-update-as-at-january-20-2017/>. Updated 2017.

^w Pan American Health Organization, World Health Organization. Zika-epidemiological report Jamaica. 2017. <https://www.paho.org/hq/dmdocuments/2017/2017-phe-zika-situation-report-jam.pdf>.

^x PAHO. 2018. Zika cases and congenital syndrome associated with Zika virus reported by countries and territories in the Americas, 2015 – 2018 Cumulative cases. https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=cumulative-cases-pdf-8865&alias=43296-zika-cumulative-cases-4-january-2018-296&Itemid=270&lang=en

^y Centers for Disease Control and Prevention. <https://www.cdc.gov/zika/pregnancy/index.html>.

^z Centers for Disease Control and Prevention. Zika and Guillain-Barre syndrome. <https://www.cdc.gov/zika/healtheffects/gbs-qa.html>. Updated 2016.

with 30 suspected cases where diagnostics were inconclusive. Six of the 11 GBS cases were believed to be a direct result of the Zika virus^{aa}.

IV. ZIKA PERCEPTIONS AND RESPONSE

Few studies exist on public perceptions of Zika and the Zika response in Jamaica. A short article in the *British Medical Journal* reported that Jamaica's decision to warn women not to become pregnant until the threat had passed might be a good strategy given the island's size. A bigger island like Jamaica would likely experience an initial epidemic followed by long period of sporadic cases^{bb}. An article in the *Jamaican Observer* wondered if the government was doing enough to address the spread of the disease, and whether the current testing protocols were sufficient for pregnant women^{cc}. A study in Sint Eustatius^{dd}, Caribbean Netherlands, found that for the population there, mosquitos and the viruses they carry were not a high priority in comparison to other health concerns. Additionally, having knowledge of vector-control practices to eliminate mosquitos did not always mean that the knowledge was put into action. According to the study, only when individuals experienced a mosquito-borne infection did they actually realize how critical it was to prevent and control the mosquito.

While there are few studies that represent Jamaicans' perceptions of Zika, the WHO announced in 2017 that several regional studies are underway and should be published in the coming years as researchers learn of its reach^{ee}. From the 78 proposals the WHO received, one study by Kristen Smith of the University of the West Indies at Mona, titled "Maternal perception and behavior related to reproductive health in the context of Zika in Jamaica", was chosen as a 2016/2017 grantee, but has yet to be published. UNICEF Jamaica has tweeted a call requesting that information and opinions collected during household canvassing campaigns be shared with researchers. These endeavors demonstrate the growing interest in Zika awareness and its impacts on Jamaica's citizens.

Jamaica's public health interventions have focused primarily on vector control to reduce mosquito breeding grounds and hinder the reproduction of *aedes aegypti* mosquitoes, which transmit Zika, dengue, and chikungunya. However, the Ministry of Health and Wellness (MOHW) has launched several innovative public outreach interventions to encourage public engagement in curbing vector-borne diseases. For example, the MOHW partnered with Dr. Michael Abrahams, a Jamaican obstetrician, gynecologist, and singer, to release a song titled

^{aa} PAHO/WHO. Zika-epidemiological report Jamaica. 2017. <https://www.paho.org/hq/dmdocuments/2017/2017-phe-zika-situation-report-jam.pdf>.

^{bb} Dyer O. Jamaica advises women to avoid pregnancy as zika virus approaches. *The BMJ*. January 21, 2016. Available from: <https://www.bmj.com/content/352/bmj.i383>.

^{cc} Blake J. There is much more to be done about zika. *Jamaica Observer*. August 13, 2016. Available from: http://www.jamaicaobserver.com/columns/There-is-much-more-to-be-done-about-Zika_70547.

^{dd} Leslie, T. E., Carson, M., Coeverden, E. van, Klein, K. D., Braks, M., & Krumeich, A. (2017). An analysis of community perceptions of mosquito-borne disease control and prevention in Sint Eustatius, Caribbean Netherlands. *Global Health Action*, 10(1), 1350394. <https://doi.org/10.1080/16549716.2017.1350394>

^{ee} World Health Organization. 12 February 2017. New Zika Research in the American Region of WHO. <https://www.who.int/reproductivehealth/zika/zika-research-in-amr/en/>.

“We Nuh Want Zik V”^{ff}. The reggae song gives people strategies to reduce *aedes aegypti* mosquitoes in their area, such as punching holes in tin cans before throwing them away, changing water for flowers often, tying up garbage, and canvassing the area for possible breeding sites. The song gives “a special shout out to the pregnant ladies” to take extra care. The announcement was played on television and radio, and in movie theaters. The Ministry employed similar strategies to encourage people to control breeding sites, to avoid being bitten, and to use condoms during sexual activity to prevent sexual transmission⁹⁹.

V. FACTORS TO CONSIDER IN ZIKA RESPONSE

A. Health System and Responses

Jamaica’s Ministry of Health and Wellness is responsible for health care delivery across the island. Service delivery is decentralized and split into four regional health authorities that oversee a network of primary, secondary, and tertiary facilities. In 2015, the PAHO/WHO documented that there were 318 public primary care health centers linked through a referral system to the secondary and tertiary care levels, 24 hospitals, and one quasi-government hospital (the University Hospital of the West Indies). Jamaica also boasts a large private health sector with primary and secondary care facilities and diagnostic services^{hh}. A 2013 World Bank report described the health services as divided, with the public sector leading public health and hospital services and the private sector leading ambulatory services and pharmaceuticals provision, but with both sectors involved in many capacitiesⁱⁱ.

In 2015, Janet Farr, then President of the Nurses’ Association of Jamaica, launched a ‘Fixing Health’ series in the *Jamaica Gleaner* news company with an article entitled “Suffering from Ill Health.”^{jj} The article highlighted Jamaica’s health service challenges including customer service, wait times, infrastructure, underemployment of skilled professionals, limited financial resources, brain drain, poor remunerations, deployment of staff, and lack of accountability. More specifically the investigation noted key health system concerns to include:

- **Challenging staff-to-client ratios** due to a combination of an increase in services provided and a removal of user fees. More patients are in facilities but staffing numbers have remained virtually unchanged.
- **A shortage of health care providers** such as doctors and nurses in key service delivery areas, high turnover of skilled personnel, and a growing number of unemployed qualified health professionals.

^{ff} Derla K. Jamaica uses song and dance to spread awareness about zika virus. TECH TIMES. February 17, 2016. Available from: <https://www.techtimes.com/articles/133965/20160217/jamaica-uses-song-and-dance-to-spread-awareness-about-zika-virus.htm>.

⁹⁹ The Ministry of Health, USAID, Health Communication Capacity Collaborative. Message guide for zika communication. 2017.

^{hh} PAHO. Health in the Americas – Jamaica. <https://www.paho.org/salud-en-las-americas-2017/?p=2457>.

ⁱⁱ Chao, S. 2013. Jamaica’s Effort in Improving Universal Access within Fiscal Constraints. Universal Health Coverage Studies Series (UNICO). Washington, DC: World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/13290/75005.pdf?sequence=1&isAllowed=y>

^{jj} Farr J. Fixing health: A gleaner special project. *Jamaica Gleaner*. August 12, 2015. Available from: <http://jamaica-gleaner.com/article/health/20150812/fixing-health-gleaner-special-project>.

- **Inappropriate staff deployments** where staff are placed where their skills are under-utilized and/or are placed where they are duplicating another person's duties.
- **Inadequate funding** for the health system that results in resource limitations, non-functioning equipment, low morale among health providers, and disgruntled clients.
- **Poor remuneration** whereby the money paid for work (services rendered) is not on par with counterparts in other countries. This also contributes to brain drain – qualified individuals leaving to pursue work in another place/country where the pay is higher or conditions are better. According to a 2017 NPR news article^{kk}, Jamaican nurses are often offered free training towards advanced degrees and heavily-subsidized education, but American, Canadian, and European countries frequently “poach” specialist nurses such as those for emergency rooms and pay more competitive salaries.
- **Dips in leadership** as senior nursing personnel and other staff leave facilities and there remain few professionals with expertise to mentor more junior practitioners through advancement. This ultimately impacts service delivery. Additionally, weaknesses in management exist as some managers are underqualified or not familiar with managing health services. This has led to poor accountability.
- **Poor physical infrastructure** such as caregiver rooms, restrooms, and lunch areas can also be demotivating. Overcrowding in clinical wards makes service provision more difficult and maintaining privacy a challenge.

According to a 2013 World Bank report, Jamaica has made significant achievements in improving its population's health status^{ll}. However, Jamaica faces the continued challenge of dealing with communicable diseases while non-communicable diseases also rise. While user fees were abolished in 2008 and public health care in Jamaica is free, Jamaicans often participate in several health plans to improve their health coverage. The 2003 establishment of the National Health Fund, an enrollment-based subsidy program targeting patients affected by the 15 most common non-communicable diseases and persons over 65, for example, covers costs of pharmaceuticals in public and private facilities. These adjustments theoretically made the health system more accessible; however, the low capacity of the health system (in personnel and equipment/space) and the insufficiency of a financing scheme to adequately cover the costs of care, contributed to a downturn in the quality of public services as the facilities were not prepared to respond to increased demands. As a result, Jamaicans of all income levels regularly seek care from private facilities, and actual out-of-pocket costs for care remain high: over 32% of total health expenditures. Most of these costs are spent on pharmaceuticals^{mmm}.

^{kk} Beaubien J. Jamaica says U.S. and others are 'poaching' its nurses. NPR. January 10, 2017. Available from: <https://www.npr.org/sections/goatsandsoda/2017/01/10/508991805/jamaica-says-u-s-and-others-are-poaching-its-nurses>.

^{ll} Chao, S. 2013. Jamaica's Effort in Improving Universal Access within Fiscal Constraints. Universal Health Coverage Studies Series (UNICO). Washington, DC: World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/13290/75005.pdf?sequence=1&isAllowed=y>

^{mmm} Class D, Cavagnero E, Rajkumar S, Ferl K. Jamaica - health financing profile. World Bank Group. 2014.

The Jamaican health care system has been working to improve its maternal and child health services. for both pregnant women and young children. In 2013, the Ministry of Health and Wellness began a partnership with the European Union through a project titled “Programme for the Reduction of Maternal and Child Mortality”, or PROMACⁿⁿ. The program, initially implemented to improve Jamaica’s progress on MDGs 4 and 5 in order to reduce child mortality and improve maternal health, continues to be successful in improving the quality of care. The program specifically focuses on reducing the incidence of neonatal death and aims to build capacity in the health system to create lasting change. Programs with a strong capacity building component for health professionals such as PROMAC can be influential when addressing Zika response and long-term care for affected children and families.

In response to the Zika outbreak, the Jamaican Government launched interventions that supported the psychological and emotional health of pregnant women. For example, the Ministry of Health and Wellness set up two phone numbers to encourage the public, especially pregnant women, to call for support and have their questions answered^{oo}. Former Chief Medical Officer, _____ anxious that they are pregnant at a time when they were advised not to be and are concerned about the future of their child if he or she is born with microcephaly^{pp}.” He announced to the public that many psychologists, child psychologists, pediatricians, obstetricians, and other health care professionals were prepared to provide psychosocial support to parents who were at risk or deliver a child with the condition. Dr. De La Haye encouraged early diagnosis stating that instead of being anxious, pregnant families should “seek the assistance of your health care professional and get tested for the Zika virus.” At the height of the epidemic and now, children and families can be tested at health facilities and receive information related to Zika virus infection and potential health challenges.

B. Contraceptive Uptake and Family Planning

In Jamaica, roughly 52% of females are of reproductive age (15-49 years),^{qq} and the average age of first pregnancy is 20.1 years^{rr}. Nearly 69% of women between 15 and 49 use some form of modern contraceptive method^{ss}. The 2008 Reproductive Health Survey (RHS), which has the most recent available data for many reproductive health indicators, found that most women and men of reproductive age were aware of contraceptive methods. The most popular family

ⁿⁿ The Ministry of Health and Wellness. Programme for the reduction of maternal and child mortality. <https://www.moh.gov.jm/programmes-policies/promac/>.

^{oo} The Ministry of Health and Wellness. National emergency operation center dedicates two numbers for pregnant women to ask questions about zika. <https://www.moh.gov.jm/national-emergency-operation-center-dedicates-two-numbers-for-pregnant-women-to-ask-questions-about-zika/>. Updated 2016.

^{pp} Hibbert K. Baby born with Zika-related microcephaly? *Jamaica Observer*. January 18, 2017. Available from: http://www.jamaicaobserver.com/news/Baby-born-with-Zika-related-microcephaly_86962.

^{qq} United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, custom data acquired via website. <https://population.un.org/wpp/DataQuery/>.

^{rr} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

^{ss} The World Bank. World development indicators. <https://databank.worldbank.org/data/source/world-development-indicators/Type/TABLE/preview/on>.

planning methods in Jamaica include the condom, oral contraception, and injectables, though female sterilization, IUD, and mixed methods are used to some extent^{tt}. Modern contraception methods are available at both public and private health facilities, though most persons seek them from public sector institutions. User fees, which had previously resulted in some women dropping their family planning method, were abolished in public institutions in 2008. While the direct impact on family planning as a result of the abolishment of user fees is uncertain, overall health care use did increase.

With regards to contraceptive use, over 47% of RHS survey respondents reported regularly using condoms for both the purpose of preventing pregnancy and STIs, but young men reported using condoms at a higher rate compared to young women. Ninety-one percent of young men and 54% of young women reported that they used a condom when having sex with a non-steady partner^{uu}. Along these lines, a 2008 study in Montego Bay found that the most common correlates with condom use were employment status and religious organization association, while low condom use more generally correlated with higher numbers of sexual partners.^{vv} While this research is telling, more information is needed to better understand barriers to contraception across the whole country. Between 2004-2008, less than half (47%) of births were unintended. Understanding what drives contraception use is important as results from the RHS indicate that an increase in contraceptive uptake has led to diminishing rates of unintended births. In addition to helping reduce the number of unintended pregnancies, condom use in particular can also help protect against infections that can be transmitted sexually such as Zika. Survey respondents reported that there has been a great improvement in the availability of family planning services at government facilities, with 51% of women reporting that they were available all the time.

Despite progress in family planning uptake, 9.5% of women in unions in Jamaica have an unmet need for family planning (though some variations exist by health region)^{ww}. For adolescents aged 15 to 19 years, the unmet need for contraception fell from 7.1% in 1997 to 3.4% in 2008^{xx}, a welcome trend given Jamaica's large youth population. The unmet family planning need could stem from a variety of barriers ranging from lack of information to low negotiation power with partners. The United Nations reported however in its "Concluding Observations of the Committee on the Elimination of Discrimination against Women" in 2012 that while there have been initiatives to strengthen women's access to health care, there is a lack of data on women's access to primary and secondary services^{yy}. Furthermore, there has been slow progress on

^{tt} Health Policy Plus, USAID. Financing family planning – Jamaica. 2016.

^{uu} Serbanescu F, Ruiz A, Suchdev D. Reproductive health survey Jamaica 2008. National Family Planning Board. 2010.

^{vv}

^{ww} The World Bank. World development indicators. <https://databank.worldbank.org/data/source/world-development-indicators/Type/TABLE/preview/on>.

^{xx} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

^{yy}United Nations. Concluding observations of the committee on the elimination of discrimination against women. Fifty-second session. 2012.

reducing maternal mortality and inadequate access to sexual and reproductive services such as family planning, which reportedly impacts high incidence of teenage and unwanted pregnancies.

In Jamaica, it should be noted that abortion is illegal and criminalized, including in cases of rape, incest, and threats to the mother's life. As such, many women and girls may be at risk of unsafe procedures that could increase infant and maternal mortalities. In June 2018, a bill was presented in Parliament to remove or replace criminalizing sections of the current policy with civil law.^{zz} Jamaican politicians are still fighting to have the current criminalized abortion law changed, and the bill is currently still being debated by lawmakers. As of February 2019, the final input was received from the public, and the Prime Minister's office will decide next steps.^{aaa} Back in October 2018, Minister of Health Dr. Christopher Tufton advocated that abortion had been contentious for too long and efforts were needed to decrease unintended pregnancies and unsafe abortion.^{bbb ccc} According to Tufton, in 2016, there were 1,177 admissions to Victoria Jubilee Hospital (the largest maternity hospital in the Caribbean) for "complications threatening the viability of a pregnancy", many of them due to unsafe abortions. Tufton wrote that sexual and reproductive health services must be far-reaching and include, "counselling and information; education; communication and clinical services; safe motherhood, including antenatal care, safe delivery care (skilled assistance for delivery with suitable referral for women with obstetric complications) and post-natal care breastfeeding; and infant and women's health care. Gynecological care, including the prevention of abortion, treatment of complications of abortion, and safe termination of pregnancy as allowed by law, are among those services."^{zz} Currently, the Ministry of Health and Wellness is pursuing a Sexual and Reproductive Health Policy that will work to identify effective strategies for reducing maternal mortality.

Regionally in Latin American and Caribbean countries, it is common for women to have limited control over their sexual and reproductive health. Men are often the primary decision-makers in the family, including decisions whether contraception should be used^{ddd}. Studies from several countries in the region examined reasons why men might not permit their wives to use

^{zz} International Campaign for Women's Right to Safe Abortion. Jamaica: Health minister calls for compassion for women who seek abortion and announces that the ministry is developing a sexual and reproductive health policy. <http://www.safeabortionwomensright.org/jamaica-health-minister-calls-for-compassion-for-women-who-seek-abortion-and-announces-that-the-ministry-is-developing-a-sexual-and-reproductive-health-policy/>. Updated 2018.

^{aaa} Chappell, Kate. 25 February 2019. Devout Jamaica debates green light for abortion after rape, incest. <https://www.reuters.com/article/us-jamaica-women-abortion/devout-jamaica-debates-green-light-for-abortion-after-rape-incest-idUSKCN1QE00F>.

^{bbb} Christopher Tufton | Abortion war needs dose of compassion. *Jamaica Gleaner*. October 28, 2018. Available from: <http://jamaica-gleaner.com/article/focus/20181028/christopher-tufton-abortion-war-needs-dose-compassion>.

^{ccc} Health ministry developing sexual and reproductive health policy. *Jamaica Observer*. October 25, 2018. Available from: http://www.jamaicaobserver.com/latestnews/Health_ministry_developing_sexual_and_reproductive_health_policy.

^{ddd} WHO, Department of Reproductive Health and Research, London School of Hygiene and Tropical Medicine, South African Medical Research Council. (2013). Global and regional estimates of violence against women.; Marteleto L, Weitzman A, Coutinho RZ, Alves SV. (2017). Women's Reproductive Intentions and Behaviors during the Zika Epidemic in Brazil. *Popul Dev Rev*.43(2):199-227.

contraception, including the fear that it encourages infidelity, myths that some methods cause permanent sterility, and religious beliefs. Threats of violence also limit the power of women to negotiate the use of contraceptive methods. In addition, the social pressure from immediate and extended family networks, local religious groups, and local political organizations also plays a significant role in discouraging women from seeking contraception and using it consistently^{eee}. Regional studies have found that requesting condom use with a stable partner threatens the male authority common in patriarchal cultures. It can be perceived as an offense, lack of trust, accusation of infidelity, and can lead to violent reactions, usually on the part of the male partner to the female partner, including forced unprotected sex^{fff}. In line with this trend, Jamaica's recent (2016) Women's Health Survey reported that "where young women cannot choose when to have sex, they are likely to be powerless to make decisions about contraception methods, including condom use"^{ggg}. Increasing the use of condoms is essential, as they are the only form of contraception that prevents sexual transmission of Zika and are recommended to be used throughout pregnancy.

C. Gender Norms and Power Dynamics

The risk of STIs and Congenital Syndrome associated with Zika make the promotion of attitudes and practices to prevent the sexual transmission of Zika crucial, particularly during pregnancy. In January 2016, the Jamaican Ministry of Health and Wellness advised women to postpone pregnancy, while also promoting preventive behaviors to avoid mosquito bites among pregnant women^{hhh}. While it was discovered that Zika could be sexually transmitted in March 2016ⁱⁱⁱ, many programs and policies were slow to incorporate and publicize this information.

Recommendations that encourage women to avoid or delay pregnancy, use condoms during sex, or abstain from sex during pregnancy, assume that women have high levels of decision-making with regards to their sexual and reproductive health, as well as access to contraceptives^{jjj}. The reality is quite different. Jamaican women – like most women in Latin American and Caribbean countries – face a variety of obstacles that limit their decision-making power around contraceptive use and access to high-quality sexual and reproductive health services. The Zika virus outbreak revealed numerous obstacles to accessing reproductive

^{eee} Bond, J. (2017). Zika, Feminism, and the Failures of Health Policy Volume 73 | Issue 2. *Washington and Lee Law Review Online*.

^{fff} Contreras JM, Bott S, Guedes A, Dartnall E. (2010). Sexual Violence in Latin America and the Caribbean: A Desk Review. PAHO and SVRI.

^{ggg} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

^{hhh} Dyer O. Jamaica advises women to avoid pregnancy as zika virus approaches. *BMJ*. January 21, 2016. Available from: <https://www.bmj.com/content/352/bmj.i383>.

ⁱⁱⁱ PAHO. Timeline of emergence of zika virus in the Americas. https://www.paho.org/hq/index.php?option=com_content&view=article&id=11959:timeline-of-emergence-of-zika-virus-in-the-americas&Itemid=41711&lang=en. Updated 2016.

^{jjj} Davies SE, Bennett B. A gendered human rights analysis of Ebola and Zika: locating gender in global health emergencies; Marteleto L, Weitzman A, Coutinho RZ, Alves SV. Women's Reproductive Intentions and Behaviors during the Zika Epidemic in Brazil. *Popul Dev Rev*. 2017;43(2):199-227.

health and demonstrated the ongoing consequences of a lack of sexual and reproductive health and rights, particularly among vulnerable and marginalized populations.

Following the first confirmed Zika case, the National Family Planning Board increased its procurement of contraceptives. However, they reported that women seeking contraceptives (including birth control) had not increased despite being placed on high alert for the virus^{kkk}. In 2017, the National Family Planning Board-Sexual Health Agency did receive a 1.5 million condom donation from the United States Agency for International Development (USAID) to reduce the risk of sexual transmission of Zika among pregnant women. According to a press release from the U.S. Embassy in Jamaica^{lll}, the condoms were distributed island wide within the antenatal clinics, to be offered free of cost to expecting mothers.

Regional research demonstrates however, that even if people have information about condoms and other contraceptive methods, gender norms tend to prevail during attempts at condom negotiation, and people proceed to have sex even if they do not have condoms^{mmm nnn}. For instance, in some contexts, it is not socially acceptable for women to carry condoms, and those women that do may be considered promiscuous. On the other hand, men are expected to demonstrate their masculinity and take advantage of any occasion to have sex, even if they do not have a condom and even if the partner disagrees^{ooo}. Men who equate masculinity with risk-taking and sexual dominance have been found to be more likely to have multiple partners, to have an STI, and to have negative attitudes towards condom use^{ppp}. Gender norms associate male virility with their number of partners and their number of children.

A 2014 study cited an article in the 2007 *West Indian Medical Journal* stating that, in Jamaica, males are often socialized to initiate sex early and to have multiple partners; these are

^{kkk} Williams S. No rush for contraceptives despite increased supplies in light of Zika threat - family planning board. *Jamaica Gleaner*. April 16, 2016. Available from: <http://jamaica-gleaner.com/article/news/20160416/no-rush-contraceptives-despite-increased-supplies-light-zika-threat-family>.

^{lll} U.S. Embassy in Jamaica. U.S. donates 1.5 million condoms to boost Jamaica's Zika prevention effort among pregnant women <https://jm.usembassy.gov/u-s-donates-1-5-million-condoms-boost-jamaicas-zika-prevention-effort-among-pregnant-women/>. Updated 2017.

^{mmm} Orisatoki RO, Oguntibeju OO. Knowledge and attitudes of students at a Caribbean offshore medical school towards sexually transmitted infections and use of condoms. *The West Indian Medical Journal*. 2010;59(2):171. <https://www.ncbi.nlm.nih.gov/pubmed/21275121>.

ⁿⁿⁿ Hegamin-Younger C, Jeremiah R, Bilbro N. Patterns of Caribbean masculinities and condom compliance among males in Grenada. *American Journal of Men's Health*. 2014;8(4):335-338. <https://journals.sagepub.com/doi/full/10.1177/1557988313516356>. doi: 10.1177/1557988313516356.

^{ooo} UNAIDS. (2015). Reportaje UNFPA, OMS y ONUSIDA: Declaración sobre los preservativos y la prevención del VIH, otras infecciones de transmisión sexual y el embarazo no deseado.

^{ppp} IPPF and UNFPA. (2017). Global Sexual and Reproductive Health Service Package for Men and Adolescent Boys. London: IPPF and New York City: UNFPA.

expectations that demonstrate manhood and serve as proof that they are not homosexuals^{qqq rrr}. The 2014 study explored gender norms and sexual behaviors among men in western Jamaica and found that men were more likely to engage in risky sexual behaviors, including unprotected sex and having multiple sex partners, if they supported inequitable gender norms or masculinity norms^{qqq}. Additionally, researchers found that 55% of participants (males with a mean age of 32) reported multiple sexual partners. The study showed far higher rates of risky behaviors in men who valued overt and traditional masculinity. A 2001 report from the Bernard van Leer Foundation also sheds light on the dynamics between men and women. According to the report, “men generally defend their right to and need for multiple partners...while men saw female infidelity as unacceptable for any reason, and punishable”^{sss}. Conversely, women saw their multiple partnerships as economic necessity. Taken together, these studies and reports suggest that risky sexual behavior is culturally acceptable and encouraged for boys and men, while women may face different standards.

The United Nations Committee on the Elimination of Discrimination against Women (CEDAW), in their 2012 concluding observations after the 52nd Session, noted that adverse cultural norms, traditional practices, and stereotypes concerning the roles and identities of women and men in the family and society in Jamaica undermine women’s social status and limit their equal participation. In addition, the Committee identified that the Jamaican Government has justified these negative beliefs and harmful practices as being cultural despite their adverse effect on the full realization of women’s human rights, particularly as regards issues of non-discrimination and violence against women^{ttt}.

The views of members of the Government reflect findings from the recent Women’s Health Survey 2016 that revealed that women have mixed views about the roles of women and men in families^{uuu}. Some values toward inequitable treatment hold while progress towards gender equality is rising among others. For example, 77.4 percent of women (1,340 interviewed) stated that “it is natural that men should be the head of the family,” and 70.2 percent said, “a woman’s role is to take care of her home”. Additionally, around one-third, or 32.2 percent of women, responded that “a wife should always obey her husband” and 31.4 percent said that “it is a wife’s obligation to have sex with husband”. In sharing views on contemporary gender roles, approximately 93 percent of women respondents stated that “women and men should share authority in the family”, and 92 percent believe that “a woman should be able to spend her own money”. When examining demographic characteristics such as age, area of residence, education, and relationship status, some differences were found. Age did not influence attitudes,

^{qqq} Melonie M Walcott, Ellen Funkhouser, Maung Aung, et al. Gender norms and sexual behaviours among men in western Jamaica. *Sexual Health* (Online). 2014;11(1):42.

^{rrr} Gibbison GA. Attitude towards intimate partner violence against women and risky sexual choices of Jamaican males. *The West Indian Medical Journal*. 2007;56(1):66. <https://www.ncbi.nlm.nih.gov/pubmed/17621847>. doi: 10.1590/S0043-31442007000100012.

^{sss} Brown J, Chevannes B. Redefining fatherhood: A report from the Caribbean. Bernard van Leer Foundation. 2001.

^{ttt} United Nations. Concluding observations of the committee on the elimination of discrimination against women. Fifty-second session. 2012.

^{uuu} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

but education did. Women with higher levels of education were found to have more liberal attitudes towards gender equality.

Qualitative findings from the Women's Health Survey also indicate that some women have come to accept and actively participate in upholding unequal gender relations, which are built on historically unequal notions of women's and men's positioning and place^{vvv}. Traditional gender norms, widespread risky sexual behaviors, male dominance, and unequal balances of power can influence both Zika prevention and care and must be considered when addressing the epidemic.

D. Childcare and Support for Families of Children Affected by Zika

While many Jamaicans would cite a strong family unit as important, the reality is much more complicated^{www}. Marriage rates are falling, with 18,835 marriages in 2013 compared to 22,308 in 2001^{xxx}. When population growth is taken into consideration, this shows a dramatic drop in Jamaicans' choosing to get married. In 2014, 32,264 out of 36,996 births (almost 90 percent) were to unmarried women. However, it must be noted that many unmarried women are in long-standing relationships with their partners, either live-in or live-out^{yyy}. Of the 32,264 births to unmarried women, 9,288 had no father registered on the birth certificate^{zzz}. According to the 2016 Women's Health Survey, 64.7% of respondents reported being in a relationship with a male partner. Twenty-two percent had a regular partner with whom they were not living (visiting relationship), 21.9% were married, and 20.8% were living with a man but not married. Furthermore, 80.7% of the women reported being pregnant at some point in their lifetime^{vvv}.

The traditional nuclear family unit, as described above, is rare in Jamaica, making fatherhood a more complicated role for men. Jamaican men distinguish between "getting" and "having" children, according to an article from the University of the West Indies^{aaaa}. "Getting" children refers to having paternity attributed to a man, while "having" children implies the care and provision for children. While children are a sign of maturity and of sexual prowess, especially if they have different mothers, the ability to care for children does not award any kind of status or reward to men.

^{vvv} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

^{www} Landy, Thomas (2014). Realities of family life contrast with Jamaicans' professed ideals. *Catholics & Cultures*.

^{xxx} Statistical Institute of Jamaica. Marriage & divorce. http://statinja.gov.jm/Demo_SocialStats/marriedivorce.aspx. Updated 2014.

^{yyy} Gray, P. B., Reece, J., Coore-Desai, C., Dinall, T., Pellington, S., & Samms-Vaughan, M. (2017). Testosterone and Jamaican Fathers: Exploring Links to Relationship Dynamics and Paternal Care. *Human Nature* (Hawthorne, N.Y.), 28(2), 201–218. <https://doi.org/10.1007/s12110-016-9283-6>

^{zzz} Registrar General's Department. Birth tables. 2014. https://www.rgd.gov.jm/images/PDF_FILE/Publication/2014%20FINAL%20BIRTH%20TABLES.pdf.

^{aaaa} Brown J, Chevannes B. Redefining fatherhood: A report from the Caribbean. Bernard van Leer Foundation. 2001.

According to UNICEF^{bbbb}, most Jamaican children are born to parents in a common-law or “visiting” relationship, which end before the child reaches five or six years old. Only half of children under six live with their fathers, although four out of five fathers support their children financially. High rates of migration linked to declining social and economic prospects, have contributed to the weakening of family units and community support systems. Many single parent households face social and economic challenges that affect both parent and child^{bbbb}.

In Jamaica, gendered norms regarding women as the nurturers and caregivers are widely prevalent. The United Nations reported that, “while both parents are legally responsible for the maintenance of their child/children, mothers (particularly single mothers) carry a disproportionate burden of care for children because of cultural factors as well as legal and administrative inadequacies concerning child maintenance and a lack of participation by men^{cccc}.” “Given that 45.4 percent of Jamaican households are female-headed, and that these households usually have more children than those that are male-headed, gender-based economic inequality poses a significant problem to Jamaican children. Poverty prevalence is higher in female-headed households (15.9 per cent) than in male-headed households (13.2 per cent), further worsening children’s vulnerability in these households^{dddd}.”

In a study by Gray et al. from 2017, the quality of the relationships between men and the women who mother their children are important indicators of the quality of the relationship between the father and the child^{eeee}. A later study by the same author, which included 30% of all Jamaican men who became fathers between July and September of 2011, showed that a lack of emotional support in romantic and social relationships was associated with depressive symptoms in Jamaican fathers^{ffff}. These studies show that isolation is felt by fathers not in meaningful relationships with either their partners or larger social circles. For men to be positively involved in their children’s lives, they need support not only from the mothers of their children but also from their wider community.

Some programs have begun to address fatherhood and caregiving in the country. A group called “Fathers, Incorporated” arose in Jamaica in response to the need for a space for men to candidly discuss their fatherhood roles. The group began at a workshop at the Caribbean Child Development Centre^{cccc}. Facilitators found that the men were far more open in an all-male environment and were able to air their grievances about being seen as irresponsible by the women in their lives. “Fathers, Incorporated” remains active today, running seminars and workshops for present or soon-to-be fathers, helping them to take their role as a father seriously^{gggg}.

^{bbbb} UNICEF Jamaica. Parenting in Jamaica. https://www.unicef.org/jamaica/parenting_corner.html.

^{cccc}United Nations. Concluding observations of the committee on the elimination of discrimination against women. Fifty-second session. 2012.

^{dddd} Caribbean Policy Research Institute; UNICEF. Situation analysis of Jamaican children - 2018.

^{eeee} Gray, P. B., Reece, J.-A., Coore-Desai, C., Dinnall-Johnson, T., Pellington, S., Bateman, A., & Samms-Vaughan, M. (2018). Patterns and predictors of depressive symptoms among Jamaican fathers of newborns. *Social Psychiatry and Psychiatric Epidemiology*. <https://doi.org/10.1007/s00127-018-1566-2>

^{ffff} Fathers incorporated. https://dogoodjamaica.org/organizations/fathers_incorporated/.

^{gggg} Diniz, D. (2016). The Zika virus and Brazilian women’s right to choose. *The New York Times*, February 8.

Despite interventions, families with absent fathers can face increased challenges when facing Zika. According to a UN press release about inequality in Jamaica, woman-headed households have less access to resources and benefits than male-headed households^{hhhh}. With four in every five babies born to an unmarried woman, there is clear need for policies that protect these single mothers and ensure that they get the care they need for themselves and for their children. This is especially important in the context of Zika where children affected by the virus need physical therapy, cognitive stimulation therapy, and extra assistance with everyday activities, which results in an increased financial and care burden. Their primary caretakers, usually their mother or another female family member, are often unable to work outside the home or spend time on non-caregiving pursuits, like education. This isolation from the workforce can increase the risk of persistent or worsening povertyⁱⁱⁱⁱ. In addition, these women and other family members often lack emotional and economic support to cope with the demands of caring for a child with severe disabilities along with insufficient support or access to services^{jjjj}. This could have particularly devastating economic and emotional consequences on single mothers.

E. Impact of Disability

According to the WHO's 2011 World Disability Report, over a billion people (or 15% of the world's population) are estimated to be living with a disability.^{kkkk} A large majority of the disabled (nearly 80 per cent one study reported) are found in low-income countries. They live in poverty and quite often have very limited access to the basic health and social services they require. Research on disability in developing countries also notes that the disabled are often poorer than the rest of the population and that those living in poverty are more likely to become disabled.^{llll} Furthermore, disability is a complex and dynamic concept, and persons with disabilities are not a uniform group.^{mmmm} Generalizations about "disability" or "people with disabilities" can be misleading. Like their peers without disabilities, persons with disabilities have diverse gender, age, socioeconomic, sexuality, ethnic, and cultural identities.^{kkkk mmmm}

^{hhhh} United Nations. Women's level of participation in Jamaican public life questioned by anti-discrimination committee. January 26, 2001. Available from: <https://www.un.org/press/en/2001/wom1257.doc.htm>.

ⁱⁱⁱⁱ Diniz D (2016). Zika virus and women. (C. S. Pública, Ed.) Thematic Section: Zika and pregnancy 32(5):e00046316; Salvador E (2018). Diagnóstico de actores que integran grupos de apoyo de familias con niños o niñas con Síndrome Congénito del Zika en la República Dominicana. Profamilia. Santo Domingo. In press.

^{jjjj} World Health Organization. Psychosocial support for pregnant women and for families with microcephaly and other neurological complications in the context of Zika virus: Interim guidance for health-care providers. 2016.

^{kkkk} World Health Organization; The World Bank. World report on disability. 2011.

^{llll} Schmid K, Vézina S, Ebbeson L. Disability in the Caribbean. A study of four countries: A socio-demographic analysis of the disabled. Economic Commission for Latin America and the Caribbean. 2008.

^{mmmm} aecid, WEDecide, UNFPA. Young persons with disabilities: Global study on ending gender-based violence, and realising sexual and reproductive health and rights. 2018. https://www.unfpa.org/sites/default/files/pub-pdf/51936_-_UNFPA_Global_Study_on_Disability_-_web.pdf.

While disability correlates with disadvantage, not all people with disabilities are equally disadvantaged.ⁿⁿⁿⁿ People who experience mental health conditions or intellectual impairments appear to be more disadvantaged in many settings than those who experience physical or sensory impairments.ⁿⁿⁿⁿ Women with disabilities experience the combined disadvantages associated with gender as well as disability and may be less likely to marry than non-disabled women.ⁿⁿⁿⁿ Furthermore, disabled women are less likely to have a job or business than disabled men.^{oooo}

Physical, social, and legal barriers continue to limit access to education, health care including sexual and reproductive health (SRH), employment, leisure activities, and family life for millions of persons with disabilities worldwide. These barriers can be most acute for young persons with disabilities. Globally, an estimated 180 to 200 million persons with disabilities are between the ages of 10 and 24. Young persons with disabilities face persistent social disadvantages worldwide stemming from discrimination, stigma and prejudice, and the routine failure to incorporate disability into building policy, and program designs. Persons with disabilities, including young persons with disabilities, are at greater risk of living in poverty than are their peers without disabilities. They are much more vulnerable to violence, including gender-based violence (GBV), and are less likely to attend school.^{pppp}

A 2018 United Nations Population Fund (UNFPA) report on young persons with disabilities noted that girls with disabilities are less likely to receive care and food in the home and are more likely to be left out of family interactions and activities.^{pppp} They are less likely to receive health care or assistive devices than are boys with disabilities and are also less likely to receive an education or vocational training which would enable them to find employment. Girls with disabilities are less likely than their male peers with disabilities to attend school, making these girls less eligible to hold formal employment and to be literate. As women, they are more likely to live in poverty and to be subjected to GBV. They are more likely than their male peers are to think of themselves as disabled and hold a negative self-image. This in turn can make them more vulnerable to harmful social interactions.^{pppp} Young women with disabilities have admitted that they may be more willing to accept a partner who is abusive or mistreats them, if only to have a partner.^{pppp} Studies from around the world have found that women and girls with disabilities are at greater risk of sexual violence and exploitation than are either women without disabilities or men with disabilities.^{pppp}

The Jamaica Information Service notes that Jamaica's National Policy for Persons with Disabilities points out that negative perceptions and attitudes towards disability have resulted in the isolation and exclusion of persons with disabilities from mainstream society^{qqqq}. As a result, persons with disabilities in Jamaica are faced with a number of challenges, especially in the

ⁿⁿⁿⁿ World Health Organization; The World Bank. World report on disability. 2011.

^{oooo} Schmid K, Vézina S, Ebbeson L. Disability in the Caribbean. A study of four countries: A socio-demographic analysis of the disabled Economic Commission for Latin America and the Caribbean. 2008.

^{pppp} aecid, WEDecide, UNFPA. Young persons with disabilities: Global study on ending gender-based violence, and realising sexual and reproductive health and rights. 2018. https://www.unfpa.org/sites/default/files/pub-pdf/51936_-_UNFPA_Global_Study_on_Disability_-_web.pdf.

^{qqqq} Disabilities act to address many concerns of the disabled. Jamaican Information Service. September 28, 2008. Available from: <https://jis.gov.jm/disabilities-act-to-address-many-concerns-of-the-disabled/>.

areas of education, training, employment, medical care, housing, and recreation. Those with disabilities are amongst the most vulnerable in society, especially disabled children, who are more vulnerable to abuse and are more likely to be abandoned. Along these lines, the 2018 UNICEF Situation Analysis of Jamaican Children noted that the incidence and consequences of child poverty are more pronounced among female-headed households and among children living with disabilities^{rrrr}. Jamaica ratified the Convention on the Rights of Persons with Disabilities and signed the optional protocol in 2007, but a 2012 article in the *Jamaica Observer*^{ssss} reported that women and children living with disabilities may continue to battle discrimination. Coming from concerns raised by the International Disability Alliance at the 52nd session of the Committee on the Elimination of Discrimination against Women, women and girls with disabilities are often subject to multiple forms of discrimination including in access to education, employment, health care, and protection from violence. In 2014, Jamaica passed the Disability Act to promote and protect the rights of persons with disabilities^{tttt}.

The impact of disability in Jamaica is far-reaching. According to a 2013 article in the *Jamaica Observer*^{uuuu}, the Jamaica Council for Persons with Disabilities (JCPD) estimates that close to one million individuals in Jamaica are affected by at least one disability. The figures, based on a WHO report, include the 15 to 17 percent of Jamaicans (or 400,000 people) that have at least one disability and at least one supporting family member due to the high impact on families and communities. The article highlighted the country's Early Stimulation Program (ESP) and noted the importance of monitoring a child's development as they grow to identify any potential delays. Specifically, the Director of ESP stated, "early stimulation is important for all children, more so to a child with a developmental disability. Early stimulation helps to prevent or lessen adverse developmental delays. Early stimulation and early intervention lay the foundation for future learning." The Ministry of Labour and Social Security, through ESP, offers services that include developmental assessment, home intervention, special early childhood education, physiotherapy, speech therapy, counselling and numerous programs, and workshops for parents.

Services associated with the Early Stimulation Program and similar efforts are extremely important as it has been recognized that Zika virus infection during pregnancy can cause severe birth defects, including microcephaly, other brain defects, and Congenital Syndrome associated with Zika.^{vvvv} The risk of congenital neurologic defects related to Zika virus infection has been estimated to range from 6% to 42% in various reports. A recent study on pregnancy outcomes

^{rrrr} Caribbean Policy Research Institute; UNICEF. Situation analysis of Jamaican children - 2018.

^{ssss} Wilson N. Concerns abound for women with disabilities. *Jamaica Observer*. August 13, 2012. Available from: http://www.jamaicaobserver.com/magazines/AllWoman/Concerns-abound-for-women-with-disabilities_12151730.

^{tttt} The World Bank. Acting on disability discrimination in Jamaica. April 18, 2016. Available from: <http://www.worldbank.org/en/news/feature/2016/04/18/acting-on-disability-discrimination-jamaica>.

^{uuuu} Budd J. One million J'cans have at least one disability — JCPD. *Jamaica Observer*. April 3, 2013. Available from: http://www.jamaicaobserver.com/news/one-million-j-cans-have-at-least-one-disability---jcpd_13970056.

^{vvvv} Hoen B, Schaub B, Funk AL, et al. Pregnancy outcomes after ZIKV infection in French territories in the Americas. *The New England Journal of Medicine*. 2018;378(11):985-994. <https://www.ncbi.nlm.nih.gov/pubmed/29539287>. doi: 10.1056/NEJMoa1709481.

after Zika infection in the French Caribbean (French Guiana, Guadeloupe, and Martinique) tracked pregnancies of 546 women with confirmed Zika infection between March and November of 2016. Researchers found that neurologic and ocular defects possibly associated with Zika infection were seen in 7% of the fetuses and infants (39 total). Furthermore, microcephaly was detected in 5.8% of the fetuses and infants (32 total), of whom 1.6% (9 total) had severe microcephaly. Neurologic and ocular defects were more common when Zika infection occurred during the first trimester than when it occurred during the second trimester or third trimester.^{www}

F. Mental Health, Support Services, and Stigma

Jamaica has an array of health governance strategies to support mental health issues. For example, an officially approved mental health policy was most recently revised in 2006^{xxx}. Jamaica's mental health plan, last revised in 2009,^{yyy} shifts services and resources from mental health hospitals to community health facilities, where they are integrated into primary health care services and thus made more accessible. Within the Ministry of Health and Wellness, the Mental Health Unit is responsible for developing mental health standards and policies, and reviews and monitors mental health programs across Jamaica^{zzz}.

An assessment conducted by the WHO in 2009 revealed that six percent of health care expenditures by the Government of Jamaica were directed towards mental health, of which 80% benefited mental hospitals.^{yyy} Mental health services in Jamaica are provided by both national and regional health authorities. They are integrated into general health care, with all regions having most of the essential mental health components and medications^{zzz}. Facility types include mental health outpatient facilities, day treatment facilities, general hospitals, community residential facilities, and one mental hospital. The majority of patients are treated in outpatient facilities close to their residence. The mental health workforce includes psychiatrists, other medical doctors, nurses, psychologists, social workers, occupational therapists, and other mental health workers. Most clinics have mental health assessment and treatment protocols, and a large portion of primary health staff receive annual refresher training. Referral procedures for referring persons from primary care to secondary/tertiary care or vice versa exist.

In 2017, Gary Hemmings, President of the Psychiatric Nursing Aide Association of Jamaica, stated that at least three to four out of every 10 Jamaicans have some type of psychiatric or mental disorder, and within the next 10 to 15 years, it is anticipated that mental illness in Jamaica will double or triple due to a combination of economic, social, and environmental

^{www} Hoen B, Schaub B, Funk AL, et al. Pregnancy outcomes after ZIKV infection in French territories in the Americas. *The New England Journal of Medicine*. 2018;378(11):985-994. <https://www.ncbi.nlm.nih.gov/pubmed/29539287>. doi: 10.1056/NEJMoa1709481.

^{xxx} World Health Organization. Mental Health Atlas 2014. Country profile Jamaica. 2015.

^{yyy} World Health Organization. Mental Health Atlas 2011. Country profile Jamaica. 2011. Available from: https://www.who.int/mental_health/evidence/atlas/profiles/jam_mh_profile.pdf?ua=1

^{zzz} World Health Organization, Ministry of Health. WHO-AIMS report on mental health system in Jamaica. 2009.

factors^{aaaaa}. This challenge is compounded by shortages of staff trained in community health mental services that already make it difficult to respond to daily needs.

Mental health disorders like depression account for a significant burden of disease in all societies^{bbbbb}. In the Caribbean region, mental disorders are associated with stigma that has historically been influenced by beliefs or cultural norms related to spiritual wrongdoing, personal failing, and supernatural forces. As a result, a significant number of mental health problems go undiagnosed, unreported, and untreated. Similar beliefs have been found in Jamaica^{cccc}. While the Jamaican government and civil society organizations have conducted public education and awareness campaigns on mental health and mental disorders, stigma still exists towards individuals with mental illness or who seek services related to mental health. As such, stigma can serve as a barrier to persons who need and want support. Jamaicans have generally been found to be reluctant to seek help for mental health issues and would rather rely on themselves than consulting formal psycho-social or mental health services.

Stigma against the mentally ill is reportedly perpetuated by many people including, health professionals, the police, and policymakers^{dddd}. When policymakers for example accept stigma associated with mental illness, they may be likely to allocate fewer resources to mental health care and psychosocial services that can influence the availability care services for everyone. Public attitudes about mental illness particularly in Jamaica, seem to be characterized by a high level of stigma and desire to increase social distance or avoid persons perceived as having even mild mental or emotional conditions.

Conversely, those in the stigmatized group often recognize the potential loss in status or discrimination they may face, and as such may be reluctant to disclose a stigmatized condition^{dddd}. In the case of mental or emotional illness, individuals may avoid seeking needed treatment due to their expectation of rejection or discrimination. Stigmatization may not only act as a barrier to seeking care and adhering to treatment, but it may also lead to lowered self-esteem and reduced social opportunities. Research has shown that people are often embarrassed by mental illness and associate it with weakness, vulnerability, lack of control and personal power, and feeling less human. Experiencing stigma and discrimination may even negatively affect the course of the mental illness.

Gender differences related to mental health conditions and support systems have also been found in Jamaica. For example, men have higher rates of substance abuse including, marijuana

^{aaaaa} Thompson K. Mental illness worry. *Jamaica Observer*. May 24, 2017. Available from: http://www.jamaicaobserver.com/front-page/mental-illness-worry-professionals-say-data-suggest-doubling-of-cases-in-10-years_99700.

^{bbbbb} Lacey KK, Powell Sears K, Crawford TV, Matusko N, Jackson JS. Relationship of social and economic factors to mental disorders among population-based samples of Jamaicans and Guyanese. *BMJ Open*. 2016;6(12): e012870. <https://www.ncbi.nlm.nih.gov/pubmed/27986739>. doi: 10.1136/bmjopen-2016-012870.

^{cccc} Jackson Williams D. Are Jamaicans really that stigmatizing? A comparison of mental health help-seeking attitudes. *The West Indian Medical Journal*. 2013;62(5):437. <https://www.ncbi.nlm.nih.gov/pubmed/24756657>. doi: 10.7727/wimj.2013.074.

^{dddd} Arthur CM, Hickling FW, Robertson-Hickling H, Haynes-Robinson T, Abel W, Whitley R. "Mad, sick, head nuh good": Mental illness stigma in Jamaican communities. *Transcultural Psychiatry*. 2010;47(2):252-275. <https://www.ncbi.nlm.nih.gov/pubmed/20603388>. doi: 10.1177/1363461510368912.

use, hard drugs, and alcohol^{eeee}. For women, major depression was found at a rate twice that of men and has been associated with social and material disadvantage. Additionally, women, particularly those that are single, may face social and life challenges predisposing them to poor mental health conditions. Having multiple responsibilities and tasks, for example, can create added pressure, strain, and increased likelihood of mental health challenges^{eeee}. However, people with greater access to social networks, interpersonal relationships, social resources, and support tend to have more positive mental health outcomes because they are better prepared to manage stress and life events associated with negative mental health outcomes. Many mothers who care for their children are not involved in a wide network of female support.^{ffff} This lack of support risks impacting their emotional and mental well-being, particularly for single parents.

G. Gender-Based Violence (GBV), Zika, and Sexually Transmitted Infections

Findings from the Women's Health Survey 2016 Jamaica,^{gggg} the first-ever survey to measure the prevalence of GBV in Jamaica, showed that one in four (27.8%) women in Jamaica between the ages of 15 and 64 have experienced intimate partner physical and sexual violence in their lifetime^{hhhh} ⁱⁱⁱⁱ. Additionally, one in every four women (25.2%) has experienced physical violence alone at the hands of a male partner. Twenty-three percent of women reported sexual violence from someone who was not a partner. The findings, based on interviews with women across Jamaica, help provide insight and depth to the extent of the problem in the country. Acts of violence include, being kicked, slapped, choked, and burned by their male partners^{jjjj}.

The survey found no significant differences over the lifetime of experiences of women living in urban areas and those living in rural ones. Nevertheless, the survey showed that current prevalence (experiences of physical and/or sexual violence in the last 12 months) is slightly higher in urban areas versus rural ones (6.2 vs. 5.4%)^{gggg}. GBV is not discriminate and affects all age groups. The survey revealed that almost one-third (31%) of women 25-29 have experienced intimate partner violence, making them the group with the highest lifetime

^{eeee} Lacey KK, Powell Sears K, Crawford TV, Matusko N, Jackson JS. Relationship of social and economic factors to mental disorders among population-based samples of Jamaicans and Guyanese. *BMJ Open*. 2016; 6(12): e012870. <https://www.ncbi.nlm.nih.gov/pubmed/27986739>. doi: 10.1136/bmjopen-2016-012870.

^{ffff} Barrow C, Ince M. Early childhood in the Caribbean. Bernard van Leer Foundation. 2008.

^{gggg} Carol Watson Williams. Women's Health Survey 2016 Jamaica. Co-publication of the Statistical Institute of Jamaica (STATIN), the InterAmerican Development Bank, and the United Nations Entity for Gender Equality and the Empowerment of Women (2016). Available online: <http://www2.unwomen.org/-/media/field%20office%20caribbean/attachments/publications/2018/af%2020180618%20jamaica%20health%20report%20for%20web.pdf?la=en&vs=5614>

^{hhhh} Every fourth woman in ja experience gender-based violence – survey. *Jamaica Observer*. June 21, 2018. Available from: http://www.jamaicaobserver.com/latestnews/Every_fourth_woman_in_Ja_experience_gender-based_violence_%26%238211;_survey?profile=1228.

ⁱⁱⁱⁱ UN Women - Caribbean. Press release: Jamaica first national survey on gender-based violence launched. June 21, 2018. Available from: <http://caribbean.unwomen.org/en/news-and-events/stories/2018/6/press-release-jamaica-first-national-survey-on-gender-based-violence-launched>.

^{jjjj} Wilson-Harris N. One in four Jamaican women physically abused - survey. *Jamaica Gleaner*. June 22, 2018. Available from: <http://jamaica-gleaner.com/article/lead-stories/20180622/one-four-jamaican-women-physically-abused-survey>.

prevalence. Women in that age group also have the highest current prevalence, with 12.2% of women experiencing intimate partner physical violence in the last year; twice the national rate (5.8%). Nearly one in five women (18.2%) experienced severe violence, with women who entered their first union at 18 or younger twice as likely to experience it compared to older women. No differences were found related to location, educational level, or employment status when comparing experiences with severe violence. A study on reproductive and sexual health in Jamaica showed that forced first sex was associated with a higher risk of pregnancy, when controlling for other sexual risk-taking behaviors and background characteristics^{kkkkk}. Additionally, the data show that women who have been pregnant are more likely to be subjected to severe violence than women who have never been pregnant^{lllll}.

Regarding women's attitudes on violence, the majority of Jamaican women reject the notion that there are circumstances under which men can justifiably abuse women, though 30.9 percent of respondents stated that violence between husband and wife is a private matter^{mmmmm}. Some demographic variables influence women's beliefs. For example, women living in rural areas were more likely to believe that a woman should tolerate violence to keep her family together. With regards to age, younger women and older women reported similar tolerance to violence from partners. The study found this to be associated with a limited sense of agency that allows them to challenge social norms for adolescent girls and young women and being raised in a society that widely accepts the dominance of men in intimate relationships (including the right to discipline his partner) for women over 55 years old. Women's level of education also influenced their attitudes towards violence against women. For example, women with only primary level education were found to be more tolerant of violence and more likely to believe that a rape victim was somewhat responsible for their rape than women with tertiary education. Finally, women who had lived with a man by the time they were 18 years old held more patriarchal views of intimate partner violence (and were twice as likely to believe that there are situations that justify intimate partner violence) than women who were older at the time they first lived with a male partner.

In Jamaica, as in the rest of the region, sexual and GBV is deeply rooted in gender and social norms characterized by unequal power relations between men and women. These norms, combined with women's attitudes themselves, influence whether or not a woman seeks support. According to the aforementioned Women's Health Survey, almost one-fifth (18.4%) of women who suffered relationship violence remained silent. Other women (81.6%) turned to their friends (40%), mother (35.1%), father (16.9%), siblings (27.8%), children (14.8%), police (19.3%), and neighbors (19.1%). Women in urban areas were more likely to seek support from friends than women in rural areas (48.6 vs. 29%). Although the majority of women tell someone, few (37%)

^{kkkkk} Baumgartner, J. N., Geary, C. W., Tucker, H., & Wedderburn, M. (2009). The Influence of Early Sexual Debut and Sexual Violence on Adolescent Pregnancy: A Matched Case-Control Study in Jamaica. *International Perspectives on Sexual and Reproductive Health*, 35(1), 21–28.

^{lllll} Mittal, M., Senn, T. E., & Carey, M. P. (2013). Fear of Violent Consequences and Condom Use among Women Attending a STD Clinic. *Women & Health*, 53(8), 10.1080/03630242.2013.847890. <http://doi.org/10.1080/03630242.2013.847890>

^{mmmmm} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

actually seek professional help such as from police or the health care systemⁿⁿⁿⁿⁿ. In an accompanying press release, Minister of Gender Grange called for more responsibility to end GBV and for men to be a part of this solution: “We are putting emphasis on men, because they are the main perpetrators of the violence. We need to get them to stop! And men have a unique power to influence their brother, their friend, their colleague, their brethren to change violent behaviors and protect women and girls everywhere”^{ooooo}. Further, in addressing the “culture of silence” surrounding GBV in Jamaica, Grange stated, “men who sexually assault or batter women rely on the rest of us to stay silent and do nothing; and in Jamaica we have been providing them with a strong guarantee of silence... They want us to believe that it's none of our business. But the truth is, it is the business of all of us who care about women, girls, men, boys and creating a country of peace and harmony”. Strong leadership in combatting GBV may also help lead to decreases in Zika exposure.

Since the Zika outbreak is quite recent, there are not yet studies estimating the association between intimate partner violence (IPV) and Zika infections. However, several studies demonstrate that the male control over women limits women’s control over their bodies and their power to negotiate a method to prevent pregnancies and sexually transmitted infections (STIs). For example, the fear of violence when requesting condom use can result in some women not using them or using them inconsistently. For many women, the fear of abuse outweighs the fear of contracting an STI or the desire to practice safer sex^{ppppp}. While IPV has not yet been directly linked to Zika, similar comparisons have been drawn between HIV and Zika because both can be transmitted sexually. A 2013 WHO systematic global review across different HIV epidemic settings found that IPV increases the risk for HIV infection among women and girls by more than 50%, and in some instances up to four-fold. There is a two-way link between GBV and STIs: victims of GBV are more likely to acquire STIs and having an STI makes them more vulnerable to violence^{qqqqq}. In Jamaica, the United Nations has been concerned with the growing feminization of the HIV epidemic noting the disproportionately high number of young women affected by the virus^{rrrrr}. The WHO also reported that forced sex has a direct link with HIV and

ⁿⁿⁿⁿⁿ Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

^{ooooo} Every fourth woman in ja experience gender-based violence – survey. *Jamaica Observer*. June 21, 2018. Available from: http://www.jamaicaobserver.com/latestnews/Every_fourth_woman_in_Ja_experience_gender-based_violence_%26%238211;_survey?profile=1228.

^{ppppp} Koppell, C; USAID. The intersection of HIV/AIDS and gender-based violence: A critical connection. December 5, 2014. Available from: <https://blog.usaid.gov/2014/12/the-intersection-of-hivaids-and-gender-based-violence-a-critical-connection>.

^{qqqqq} Aseguran que el 22.4 % de las dominicanas con VIH ha sufrido violencia sexual. *El Nuevo Diario*. March 3, 2017. Available from: <https://www.elnuevodiario.com.ni/internacionales/420662-aseguran-que-22-4-dominicanas-vih-ha-sufrido-viole/>.

^{rrrrr} United Nations. Concluding observations of the committee on the elimination of discrimination against women. Fifty-second session. 2012.

highlighted that the younger a girl or woman is at the time of her first sexual intercourse, the higher probability she has been forced into sex^{sssss}.

In Latin America, studies associate IPV during pregnancy with a limited number of prenatal care visits. For example, in one of the major maternal perinatal hospitals of Peru, patients that were victims of IPV were eight times more likely to attend less than six prenatal care visits compared to patients that do not experience violence^{ttttt}. In the context of Zika, it is possible to infer that dynamics would be similar, where women experiencing IPV might be less likely to attend prenatal sessions, therefore less likely to receive education about Zika prevention, less likely to have the tools to prevent transmission, and less likely to receive early screenings to detect possible fetal abnormalities.

According to UN Women, “Jamaica is party to seven of the nine core international human rights instruments and has also passed local legislation to complement the rights and protections offered by these international conventions”^{uuuuu}. Jamaica has, in the last few decades, introduced policies and legislation to combat GBV. In 1996, Jamaica passed the Domestic Violence Act, and in 2009 integrated gender into its National Development Plan (2009-2030). In 2011, Jamaica enacted a National Policy for Gender Equality (2011-2015)^{vvvvv}, and most recently launched a 10-year National Strategic Plan to end GBV in Jamaica (2015-2025), its second, which focuses on five strategic priority areas – prevention, protection, intervention, legal procedures, and protocols for data collection. The action plan considers the specific needs of the victims, survivors, and witnesses of violence as well as the specific sociocultural landscape of Jamaica and hopes to combat the perception that GBV is inevitable in Jamaica ^{wwwww}. Despite these efforts, GBV remains widespread, and women and girls continue to suffer a high rate of sexual victimization. High incidence of GBV and violence against women remain major obstacles in the achievement of gender equality, the empowerment of women, and national development^{uuuuu}.

^{sssss} Aseguran que el 22.4 % de las dominicanas con VIH ha sufrido violencia sexual. *El Nuevo Diario*. March 3, 2017. Available from: <https://www.elnuevodiario.com.ni/internacionales/420662-aseguran-que-22-4-dominicanas-vih-ha-sufrido-viole/>.

^{ttttt} UN Women Caribbean. Overview of country gender equality status – Jamaica. <http://caribbean.unwomen.org/en/caribbean-gender-portal/jamaica>.

^{uuuuu} UN Women - Caribbean. Press release: Jamaica first national survey on gender-based violence launched. June 21, 2018. Available from: <http://caribbean.unwomen.org/en/news-and-events/stories/2018/6/press-release-jamaica-first-national-survey-on-gender-based-violence-launched>.

^{vvvvv} UNDP. UN Women. From Commitment to Action: Policies to End Violence Against Women in Latin America and the Caribbean – Regional Analysis Document. 2017. <https://www.undp.org/content/dam/rblac/docs/Research%20and%20Publications/Empoderamiento%20de%20la%20Mujer/UNDP-RBLAC-ReportVCMEnglish.pdf>.

^{wwwww} Wilson-Harris N. National plan to end gender-based violence launched. *Jamaica Gleaner*. December 7, 2017. Available from: <http://jamaica-gleaner.com/article/lead-stories/20171207/national-plan-end-gender-based-violence-launched>.

VI. NATURAL DISASTERS

Like its neighbors across the Caribbean, Jamaica is vulnerable to natural disasters including hurricanes, flooding, and the effects of climate change.^{xxxx} According to the Natural Hazards Atlas of Jamaica, the island nation is susceptible to four main natural hazards – floods, landslides, earthquakes, and hurricanes; with as much as half of the year falling in Atlantic hurricane season^{yyyy}. The problem is so severe that the Global Facility for Disaster Reduction and Recovery cites Jamaica as the third most exposed country in the world to multiple hazards, with over 96 percent of the country's GDP and population at risk from two or more hazards; this poses significant economic development and poverty reduction challenges^{zzzz}. During a recent forum on natural disasters and resiliency, Minister of Finance Nigel Clarke stated, “the vulnerability of Jamaica to the devastation of natural disasters is well known. The Caribbean region is facing more frequent and more intense natural disasters, and our small nations are vulnerable to the damage they inflict, which is often disproportionate with regard to the size of our economies”^{aaaaa}. As identified, there are large economic costs to natural disasters in Jamaica. Between 2001 and 2010 Jamaica experienced 10 disaster events costing an estimated \$1.2 billion; Hurricane Ivan alone surpassed \$350 million ^{aaaaa} ^{bbbbbb}. Costs from extreme weather events such as these impact the overall economy, but also put strains on the daily lives of Jamaican citizens especially the poorest groups who are most vulnerable to shocks. For families affected by Zika, economic dips from natural disasters could limit finances dedicated to health costs and specialized care. In addition to the economic consequences, natural disasters such as flooding and hurricanes may also lead to increased mosquito populations if vector control methods such as reducing stagnant water and breeding sites are not maintained.

VII. VULNERABLE POPULATIONS – YOUTH

Twenty percent of the Jamaican population is between the ages of 10 and 19, and according to UNICEF, 15.5% of them have a child before the age of 18 years of age.^{ccccc} The Women's Health Survey (Williams 2016) reports 20.1 years as the average age of first pregnancy. The adolescent fertility rate, or number of babies born per 1,000 women ages 15-19 years old, is

^{xxxx} The World Bank. The World Bank in Jamaica.

<http://www.worldbank.org/en/country/jamaica/overview>. Updated 2018.

^{yyyy} Atlas highlights Jamaica's vulnerability to natural hazards. *Jamaica Gleaner*. November 25, 2012. Available from: <http://jamaica-gleaner.com/gleaner/20121125/arts/arts4.html>.

^{zzzz} Global Facility for Disaster Reduction and Recovery. Jamaica. <https://www.gfdr.org/en/jamaica>.

^{aaaaa} The World Bank. Jamaica champions climate and financial resilience in the face of natural disaster risks. November 7, 2018. Available from: <https://www.worldbank.org/en/news/press-release/2018/11/08/jamaica-champions-climate-and-financial-resilience-in-the-face-of-natural-disaster-risks>.

^{bbbbbb} PAHO. Health in the Americas – Jamaica. <https://www.paho.org/salud-en-las-americanas-2017/?p=2457>.

^{ccccc} Barriers to contraception in Jamaica: “teenage girls denied contraceptives” (n.d.) » Family Planning. (n.d.). Retrieved August 20, 2018, from <http://stanford.edu/group/womenscourage/cgi-bin/blogs/familyplanning/2008/11/06/barriers-to-contraception-in-jamaica-teenage-girls-denied-contraceptives/>

54.35, significantly lower than the regional adolescent fertility rate of 62.44^{dddddd}. According to the 2016 Women's Health Survey, 52.2 percent of women who have ever had sex, first had sexual intercourse between the ages of 15 and 17 years, while 34.1 percent had their first sexual experience at 18 years or older^{eeeeee}. Under Jamaican law, the age of consent is 16 years old; any sexual intercourse with a girl or boy under that age is considered an offence and statutory rape. Among the women who reported being under 15 years old when they first had sex, almost one-third (32.8%) stated the experience was forced^{eeeeee}.

A study in rural Jamaica that surveyed adolescents ages 15-18 found that sexual attitudes and adolescent behaviors are shaped by cultural and gender norms that impose different standards for males and females. The study examined adolescents' knowledge of sex and sexual risks, perceived vulnerability to sexual risks, use of protection, self-efficacy, and societal expectations. When exploring the notion of abstinence, female adolescents reported feeling restricted by cultural norms, whereas males were less interested in the practice. Both male and female adolescents in the study expressed the view that the family is an important part of an adolescent's life and has a strong influence on sexual behavior. Furthermore, the study found that among adolescents, perceptions of vulnerability to HIV and AIDS and other sexually transmitted infections, and knowledge of sexual risks was low and often incorrect^{fffff}.

One World Bank-led initiative focused on unearthing social and gender norms that influence youth decision-making and behavior in Jamaica found through focus group discussions that young men and women have drastically different views related to sexual violence^{gggggg}. Boys, when faced with pressures to define themselves as "real" men, may engage in risky behaviors to boost their overall sexual achievement. Additionally, some young men were found to believe that women often like "rough sex" and prefer a "hardcore" man to a romantic one. Females themselves reported that violent sex was "unacceptable". Many young men engaged in the study felt however that forcing sex was not needed as it is the "obligation" of girlfriends and wives to provide sex to their boyfriends and husbands. Women, on the other hand, identified this behavior associated with "taking sex" as rape.

As previously mentioned, one in four Jamaican women experience intimate partner violence, but the risk is twice as high when a woman enters a live-in relationship before the age of 18. This is often due to uneven power dynamics in the relationship^{hhhhh}. Eight percent of Jamaican women

^{dddddd} The World Bank. World development indicators. <https://databank.worldbank.org/data/source/world-development-indicators/Type/TABLE/preview/on>.

^{eeeeee} Watson Williams C. Women's health survey 2016: Jamaica. IDB; Statistical Institute of Jamaica; UN Women. 2018.

^{fffff} Smith, D., Roofe, M., Ehiri, J., Campbell-Forrester, S., Jolly, C., & Jolly, P. (2003). Sociocultural contexts of adolescent sexual behavior in rural Hanover, Jamaica. *Journal of Adolescent Health, 33*(1), 41–48. [https://doi.org/10.1016/S1054-139X\(02\)00563-3](https://doi.org/10.1016/S1054-139X(02)00563-3)

^{gggggg} Lundwall, J. (2015). Jamaican youth: taking on gender stereotypes to address sexual violence. World Bank.

^{hhhhh} Mittal, M., Senn, T. E., & Carey, M. P. (2013). Fear of Violent Consequences and Condom Use among Women Attending a STD Clinic. *Women & Health, 53*(8), <http://doi.org/10.1080/03630242.2013.847890>.

aged 20 to 24 years were first married or in union before age 18ⁱⁱⁱⁱ. More than one-third of these women who entered relationships before 18 (34.2%) suffer severe violence, compared to 17.2% of those who first lived with a male partner at age 19 or older^{jjjj}.

Other barriers youth face when accessing reproductive care is provider bias. One study showed that young girls are often refused contraception in health facilities while boys of the same age are provided with preventative methods such as condoms^{kkkkkk} ^{lllll}. The research linked this behavior to providers' discomfort towards young girls engaging in sexual activity. Providers worry that provision of these materials will encourage underage sex in girls, while overlooking the fact that underage sexual activity may be coerced or forced. Taking into account the high rates of sexual violence, practices like these that restrict access to contraception increase the risk of unplanned and unwanted pregnancies, especially in young, vulnerable girls.

A recent 2018 study^{mmmmmm} found that current policies in Jamaica limit access to sexual and reproductive health services for adolescents younger than 16 years. In a sample of 837 Jamaican adolescents and young adults aged 15–24 years, only 21% had never had sex. Among those that had, the study found that high percentages of sexually active youth reported engaging in risk behaviors such as inconsistent condom use (58.8%), multiple sex partners (44.5%), and transactional sex (43.0%). The findings of the study illustrate the potential benefits of access to sexual and reproductive education and services at earlier ages than current policies allow and suggests that interventions before and during sexual debut may reduce sexual risk for Jamaican adolescents and young adults.

VIII. CONCLUSION

While the overall reach of Zika virus is decreasing in Jamaica, we cannot overlook the importance of preventative measures to discourage an upsurge in the epidemic. Based on the currently available information, actors engaged in Zika prevention should pay special attention to gender norms and cultural practices that may affect contraceptive uptake and family planning; power dynamics between men, women, partners, families, and providers; support provided to families affected by Zika virus infection, GBV and the risk of STIs, and vulnerable groups such as adolescent girls and youth populations. These gender considerations can complement vector

ⁱⁱⁱⁱ Essayag S. From commitment to action: Policies to end violence against women in Latin America and the Caribbean. UN Women; UNDP. 2017.

^{jjjj} Mittal, M., Senn, T. E., & Carey, M. P. (2013). Fear of Violent Consequences and Condom Use among Women Attending a STD Clinic. *Women & Health*, 53(8), 10.1080/03630242.2013.847890. <http://doi.org/10.1080/03630242.2013.847890>

^{kkkkkk} Barriers to contraception in Jamaica: “teenage girls denied contraceptives”. <http://stanford.edu/group/womenscourage/cgi-bin/blogs/familyplanning/2008/11/06/barriers-to-contraception-in-jamaica-teenage-girls-denied-contraceptives/>. Updated 2008.

^{lllll} Crawford TV, McGrowder DA, Crawford A. Access to contraception by minors in Jamaica: A public health concern. *North American Journal of Medical Sciences*. 2009;1(5):247-255. <https://www.ncbi.nlm.nih.gov/pubmed/22666704>. doi: 10.4297/najms.2009.5247.

^{mmmmmm} Jarrett S, Udell W, Sutherland S, McFarland W, Scott M, Skyers N. Age at sexual initiation and sexual and health risk behaviors among Jamaican adolescents and young adults. *AIDS Behav*. 2018;22(S1):57-64. <https://www.ncbi.nlm.nih.gov/pubmed/29476435>. doi: 10.1007/s10461-018-2058-9.

control methods implemented across the country by the Ministry of Health and Wellness and other partners to ensure Zika control in the country.

These relationships, norms, and behaviors between women, men, partners, families, and health care providers will impact when families seek health services and early Zika detection, prevention of Zika during pregnancy, including the likelihood of sexual transmission of the infection or risk of sexual transmission where intimate partner violence or other forms of GBV are present, and the support provided to parents born with Zika-affected children.

Women, especially young and/or unmarried women, must be directed to health units, connected with providers, and made aware of services offered at health institutions and nationally across Jamaica through measures such as hotlines to ensure the reach of Zika education and prevention. Interventions should also include partners and families who are considering future families or already affected by Zika virus so that they can receive early preventative information and if needed psychosocial support, guaranteeing the best health outcomes possible for mothers, fathers, babies, children, and all Jamaicans.

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