



## TECHNICAL REPORT

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# Gender Issues Influencing Zika Response in Paraguay

**NOVEMBER 2019**

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This technical report was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Taroub Harb Faramand, Maddison Hall, Elga Salvador, and Tisa Barrios Wilson of WI-HER, LLC under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. The work of the USAID ASSIST Project to improve Zika-related health services is made possible by the generous support of the American people through USAID.



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## Acronyms

ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CSaZ	Congenital Syndrome associated with Zika
ENDSSR	The Paraguayan National Sexual and Reproductive Health Survey ( <i>Encuesta Nacional de Salud Sexual y Reproductiva</i> )
FP	Family Planning
GBS	Guillain-Barre Syndrome
GBV	Gender-based violence
GDP	Gross Domestic Product
HDI	Human Development Index
iDARE	Identify, Design, Apply/Assess, Record, Expand
IPV	Intimate partner violence
LAC	Latin America and the Caribbean
MSPyBS	Ministry of Health and Social Welfare ( <i>Ministerio de Salud Pública y Bienestar Social</i> )
PAHO	Pan American Health Organization
QI	Quality improvement
STI	Sexually transmitted infection
URC	University Research Co., LLC
USAID	US Agency for International Development
WHO	World Health Organization

## EXECUTIVE SUMMARY

After initial detection in Brazil in May 2015, the recent emergence of Zika virus rapidly swept across the Americas, arriving in Paraguay later that same year. By February 2016, the World Health Organization declared Zika virus infection a Public Health Emergency of International Concern due to its association with microcephaly and other neurological disorders. As of the last Pan American Health Organization (PAHO) report on Zika cases in January 2018, there were 715 suspected cases of Zika, 139 cases of related Guillain-Barré syndrome and two cases of lab confirmed congenital syndrome associated with Zika (CSaZ) in Paraguay, although this is probably underreported. The Paraguayan national monitoring system for Zika has continued to monitor cases and has reported even higher numbers, with 886 notifications related to Zika in 2018.

There are various programs that promote practices to prevent vector-borne and sexually-transmitted Zika and link families with children affected by Zika to the care they need. However, to respond to these needs most effectively, and to design initiatives that will best help families protect themselves from Zika, Zika response 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 in Paraguay and provides insights and initial recommendations based on the findings. Factors in the Zika response addressed in this review are:

***Gender and the Division of Labor and Care:*** Gender norms influence the roles that men and women have in the formal and informal division of labor, particularly regarding child care responsibilities for children with CSaZ. The labor force participation rate for women in Paraguay is substantially lower than it is for men, and women are paid much less than men. While men are perceived as the financial providers, women are expected to take care of the home and the children. Women on average spend 28.5 hours per week on unpaid work while men only spend 11.8 hours per week on unpaid work. This burden of care could be further skewed in families that have children with CSaZ and other disabilities that require higher social, financial, and labor costs for the primary takers, in most cases the mother, but also potentially higher financial costs for the father. The burden is potentially different for men and women, and this should be considered when health providers support families and bring them together as couples. Single-headed households also need special consideration as the burden of care can be enormous.

***Gender and Reproductive Health:*** Gender norms contribute to the autonomy of women, which can impact women's ability to access health services, particularly reproductive health services. Limitations in access to reproductive health services also affect women's capacity to take preventive measures related to Zika, either by preventing unwanted pregnancies through contraceptives and/or by using condoms during intercourse during pregnancy to protect from exposure to Zika virus. There is high contraceptive coverage, particularly among young women ages 15 to 24 with 91% of unmarried women and 81% of married women using contraception during their last sexual encounter. Condom use, which is particularly important to prevent sexual transmission of Zika, is still high among unmarried young women (80%) but only 37% of married young women use condoms. No data is available on rates of condom use during pregnancy, when it is particularly important for Zika prevention. Under traditional gender norms, where women are expected to be faithful, this could cause tension and discourage both women and men from asking their partner to use a condom.

***Gender-Based Violence:*** Among ever-married women ages 15 to 44 in Paraguay, 36% report experiencing verbal abuse from a current or past partner in their lifetime, 18% report experiencing physical abuse, and 5% report experiencing sexual abuse. Reflecting trends globally, these numbers are likely an underestimation since most gender-based violence goes unreported and few incidents are officially documented. Since the impact of Zika is still recent, evidence on the association between gender-based violence and Zika infection is limited. However, research demonstrates links between GBV and other sexually transmitted infections (STIs), such as HIV, particularly as related to women's limited control or power to negotiate methods to prevent pregnancies and STIs.

**Maternal Child Health Systems:** Early and regular attendance at antenatal care appointments are critical for pregnant women to access information about and support for Zika prevention. During antenatal care, condoms are distributed for prevention of sexually-transmitted Zika, and early screening is available for Zika infection and microcephaly. In Paraguay, 96.3% of pregnant women attended at least one antenatal care visit, and 90.5% of pregnant women attended at least four antenatal care visits. Little is known about rates of male-partner engagement in antenatal care appointments and any affects this may or may not have on the uptake of Zika prevention practices. Regular attendance at well-baby care appointments and a strong screening and follow-up system are also critical for identifying developmental delays that may be caused by Zika. In Paraguay from 2007 to 2008, 76% of women who had given birth in the year preceding reported attending a postpartum health visit.

**Vulnerable Populations:** Youth and indigenous populations experience several challenges that can make them more vulnerable to Zika infection and less likely to access care and treatment. Many youth face barriers when trying to access contraceptives and condoms to prevent pregnancy and STIs, including Zika, such as stigma from health providers, conflicts with parental consent, and financial constraints. The indigenous population in Paraguay experiences high rates of poverty and low health care access, which compounds their risk of Zika transmission and reduces their access to health education and Zika prevention efforts. Indigenous populations also have limited access to health insurance, and most communities do not have their own health facility.

## I. INTRODUCTION

The USAID Applying Science to Strengthen and Improve Systems Project (ASSIST) has worked globally since 2012 to improve the quality and outcomes of health care and other services by enabling host country providers and managers to apply quality improvement methods. ASSIST seeks to build the capacity of host country service delivery organizations in USAID-assisted countries to improve the effectiveness, efficiency, client-centeredness, safety, accessibility, and equity of the health and family services they provide.

As part of USAID's emergency response to Zika, ASSIST has been implementing health systems strengthening efforts in Latin America and the Caribbean since 2016. ASSIST works to improve the capacity of Zika-related health services to deliver consistent, evidence-based, respectful, high-quality care with a focus on pregnant women, newborns, and women and girls of reproductive age.

ASSIST achieves improved capacity by supporting Ministries of Health and Social Security Institutions in the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Nicaragua, Paraguay, Peru, St. Vincent and the Grenadines, St. Kitts and Nevis, Antigua and Barbuda, and Dominica to:

- Increase health care provider and client knowledge about Zika risks and prevention measures, such as condom use to prevent sexual transmission during pregnancy;
- Improve clinical screening for signs and symptoms of Zika infections during pregnancy and implementation of recommended care;
- Improve clinical screening for microcephaly and other manifestations of congenital Zika syndrome in newborns and increase the number and proportion of affected infants receiving recommended care; and
- Strengthen the provision of high-quality psycho-emotional support services for women and families affected by Zika.

During 2017-2019, the USAID ASSIST Project worked in Paraguay to support local actors to improve the capacity of health service providers to deliver consistent, evidence-based, respectful, high-quality Zika-related care with a focus on pregnant women, newborns, and women of reproductive age. The project supported improvements in prenatal care, family planning services, delivery and newborn care, assessment of children's physical growth and development, and care and support to children and families affected by Zika.

WI-HER, LLC, a women-owned small business and international development consulting firm, provided technical leadership on integrating gender into the Zika emergency response under the USAID ASSIST Project. To integrate gender, WI-HER developed an innovative, results-oriented approach that draws directly from the science of quality improvement, called iDARE, which is an acronym for Identify, Design, Apply/Assess, Record, Expand [1].

The *Identify* and *Design* steps ensure that contextually appropriate interventions are implemented. These steps have a gender perspective that takes the different needs and behaviors of women, men, girls, and boys into consideration. The final three steps ensure that this approach is continuously examined, evaluated, and adjusted to ensure consistent effectiveness and improved development and humanitarian outcomes. The iDARE approach has been proven effective at multiple levels and across 35 countries in Africa, Asia, Eastern Europe, Latin America, and the Middle East.

To improve the effectiveness of the program in reaching women and vulnerable populations, WI-HER conducted an extensive desk review of gender-related barriers to Zika prevention and care in Paraguay. Findings listed below with accompanying recommendations, were incorporated into a gender-integration training for ASSIST staff and subsequently for health providers in the health facilities where they work.

This review revealed issues that affect the quality and effectiveness of family planning, antenatal care, and male engagement in reproductive health. Some of these issues included: limited decision-making power of women and girls over their sexual and reproductive health; resistance to condom use by couples in long-term relationships, including during pregnancy; and unequal division of unpaid labor and child care.

These issues need to be addressed as part of quality improvement of the Zika response at health facilities and through community-based activities to reach populations with limited access to health facilities. It is critical to ensure that women, men, girls and boys can take the steps necessary to prevent and respond to Zika through access to comprehensive family planning services, screening, and education.

## II. BACKGROUND

Zika is a flavivirus transmitted by the *Aedes* species mosquito that was first discovered in Uganda in 1947. 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, arriving in Paraguay later that same year. 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. By February 2016, the World Health Organization declared Zika virus infection a Public Health Emergency of International Concern due to its associations with microcephaly and other neurological disorders.

The Centers for Disease Control and Prevention in the United States identifies multiple Zika transmission pathways [2]:

- Through the bite of an infected *Aedes* mosquito;
- From a pregnant woman to her unborn child during pregnancy or around the time of birth. Zika transmission during pregnancy can cause Congenital Syndrome associated with Zika (CSaZ), which can include microcephaly and a range of other fetal brain defects and developmental delays;
- Through breast milk, though it is important to clarify that there have been no reports of health problems in babies resulting from breast milk from a mother with Zika virus infection;
- Through sex, from a person who has Zika to his or her partners;
- Through blood transfusion;
- Through exposure to the virus in a laboratory or health care setting.

International recommendations on Zika prevention and public health response efforts rarely take gender and social context into account. Gender refers to the social norms, roles, relationships, and behaviors attributed to males and females (adults, youth, and adolescents) by society and can influence a person's exposure to Zika infection and subsequent risk of disease and his/her access to prevention and care [3]. Government recommendations that encourage women to avoid or delay pregnancy, practice safer sex using condoms, or abstain from sex during pregnancy assume that women have high levels of reproductive control and autonomy and universal access to contraception [2,4]. However, these recommendations do not reflect the realities in Latin America and the Caribbean, where in some cases there is limited access to contraceptives and other sexual and reproductive health services, high rates of sexual and gender-based violence (GBV), and barriers to autonomous reproductive health decision-making that result in high rates of unintended pregnancies, particularly among youth [5]. Understanding the needs and vulnerabilities of

women, men, girls, and boys helps us tailor responses and dedicate resources where they are most needed.

This is the first analysis of gender issues in the Zika response in Paraguay. Therefore, this report aims to fill an important gap. This document offers an overview of these issues, identifies critical gender concerns, and explains how to address these concerns with contextually appropriate interventions.

### **III. DESK REVIEW**

#### **A. Paraguay: Sociodemographic Overview**

Paraguay is a South American country covering an area of 406,752 square kilometers [6]. The country is land-locked and borders the nations of Brazil, Bolivia, and Argentina [7]. The Paraguay River divides the country into two regions, the Región Oriental (Eastern Region) and the Región Occidental (Western Region or Chaco) [7]. The Región Oriental is divided into fourteen departments, and the Región Occidental has three departments [7]. Flooding, forest fires, drought, and storms impact the nation's population and economy [8].

The last official census in Paraguay in 2012 reported 6,461,041 inhabitants [9]. The Paraguayan Census Bureau (DGEEC) projects the population will reach 7,152,703 in 2019 [9]. The 2017 crude birth rate was 20.8 births per 1,000 residents, and the crude mortality rate for the same year was 5.7 deaths per 1,000 residents [10]. Between 2015 and 2020, the average annual rate of population change is projected to be 1.25% [11]. The projected net migration rate for 2019 is -0.64 per 1,000 residents, which represents a slowing in out migration projected to continue through 2024 [9].

The population of residents under 25 is projected to reach 47.3% in 2020 [11]. The 2018 life expectancy at birth for males is 71 years, and for females it is 76 years [12]. The projected male to female ratio for 2020 is 102.7 males for every 100 females [11].

Paraguay has been experiencing a growing rate of urbanization since 2000 [9]. The annual rate of urbanization between 2015 and 2020 is projected to be 1.71% [13]. Seventy percent of the population is projected to live in urban areas as of mid-2019 [13]. Rural areas report a higher proportion of men than urban areas [13].

As of the 2012 census, 1.8% of the population identifies as indigenous [14]. There are 19 different indigenous groups divided into five linguistic families (Guaraní, Maskoy, Matabo Mataguayo, Zambuco, and Guaicurú) [14]. The largest linguistic group is Guaraní [14].

The country's official languages are Spanish (Castellano) and Guaraní, with 87% of the population speaking Guaraní [14]. Nationally, around half (46.3%) of households use both Spanish and Guaraní in the home, 34.0% of households only use Guaraní, and 15.2% of households only speak Spanish [15]. In rural areas, a much larger proportion of households only speak Guaraní (62.2%) [15].

#### *Economic and Human Development Indicators*

Paraguay is classified as an upper middle-income country, and the country's 2017 GDP was USD 39.667 billion [16]. GDP grew by 4.8% in 2017 and is projected to grow by 2.9% in 2019; GDP growth should remain stable at around 4% through 2020 [16, 17]. As GDP growth continues, poverty rates are projected to continue decreasing [17]. As of 2017, the total poverty rate was 26.4%, with lower rates in urban (20.25%) than rural (36.22%) areas [18]. Extreme poverty stood at 4.41% in 2017, again showing a disparity between urban (1.55%) and rural (8.97%) areas [18].

Income inequality is a cause for concern in the nation, with 53.1% of the income share being held by the highest quintile of residents [19]. The lowest quintile holds only 4.5% of the income share [19]. Paraguay's

2016 Gini coefficient<sup>1</sup> was 49.1, placing it nearly on the center of the continuum between perfect equality and perfect inequality [20].

Paraguay's Human Development Index (HDI)<sup>2</sup> in 2017 was 0.702, which places the country in the high human development group [21]. The HDI for Paraguay increased by 21.0% between 1990 and 2017, representing gains in the quality of life in the country [21]. However, it is still slightly below the HDI of the Latin America and Caribbean (LAC) region (0.758) and the high human development group (0.757) [21].

The inequality-adjusted HDI<sup>3</sup> for Paraguay is 0.522, which represents a 25.5% loss in human development due to inequality [21]. This is a higher level of loss than either the LAC region (21.8%) or high human development group (16.0%) experience [21]. Similarly, the Gender Development Index<sup>4</sup> seeks to capture gender inequality in human development; the Gender Development Index for Paraguay is 0.972, indicating males have slightly higher levels of development [21]. Finally, the Gender Inequality Index, which measures gender-based inequalities through reproductive health (maternal mortality and adolescent birth rates), empowerment (share of parliamentary seats held by women and attainment in secondary and higher education by each gender), and economic activity (labor market participation rate for women and men) is 0.467 for Paraguay [21]. This score puts Paraguay in the low end of the high development countries.

### *Health Indicators*

Health care spending accounted for 7.7% of GDP in 2014; 54.3% of the health care spending was financed by the public sector, while 45.7% was financed by the private sector [14]. The Healthcare Access and Quality<sup>5</sup> Index for Paraguay in 2016 was 56.7 [22]. In 2017, 70.9% of sick or injured Paraguayans reported being able to access health care, with urban residents (72.7%) having slightly more access than rural (68.42%) [23]. However, only 26.76% of the population is covered by some form of medical insurance, and there is a large disparity between coverage in urban areas (34.68%) and rural areas (14.07%) [23]. Uninsured residents are able to access health care services through the Ministry of Public Health and Social Welfare (MSPyBS) [14]. There were 1.286 physicians and 1.049 nurses and midwives per 1,000 residents in 2012, which is low [23, 24].

The top three causes of mortality in 2017 were heart disease, stroke, and diabetes [22]. Interpersonal violence ranks as the 9<sup>th</sup> highest cause of mortality, and neonatal disorders are the 17<sup>th</sup> highest cause of mortality [22]. In the context of premature mortality, heart disease, road injuries, and stroke are the top causes, with interpersonal violence falling to 4<sup>th</sup> and neonatal disorders at 6<sup>th</sup> [22]. The top causes of disability are lower back pain, headache disorders, and anxiety; neonatal disorders are the 9<sup>th</sup> highest cause of disability [22].

Paraguay's total fertility rate in 2018 was 2.4 births per woman [12]. The mean age of childbearing between 2015 and 2020 is expected to be 28.2 years [12]. In 2015, MSPyBS reported a maternal mortality ratio of 81.8 deaths per 100,000 live births in 2015, which differs from the UNFPA reported ratio of 132 deaths per 100,000 live births [12, 25]. MSPyBS also reported a reduction in the maternal mortality ratio in 2017 with 67.3 deaths per 100,000 live births [10]. The 2017 neonatal mortality rate was 9.0 per 1,000 live births, and the infant mortality rate was 12.6 per 1,000 live births [10]. These are comparable numbers to averages of the Latin America and Caribbean region (see **Table 1**).

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<sup>1</sup> The OECD defines the Gini coefficient as "measur[ing] the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution... A Gini index of zero represents perfect equality and 100, perfect inequality." [20]

<sup>2</sup> HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living.

<sup>3</sup> Inequality-adjusted human development index takes into account inequality in all three dimensions of the HDI by 'discounting' each dimension's average value according to its level of inequality.

<sup>4</sup> Gender Development Index is defined as the ratio of the female to male HDI.

<sup>5</sup> The Healthcare Access and Quality Index "provides a summary measure of healthcare access and quality for a given location. This measure is based on risk-standardized mortality rates or mortality-to-incidence ratios from causes that, in the presence of quality healthcare, should not result in death – also known as amenable mortality." [23]

**Table 1. Reproductive health indicators – Paraguay and Latin America and the Caribbean**

	<b>Paraguay</b>	<b>Latin America and Caribbean Regional Average</b>
<b>Infant Mortality Rate</b>	12.6 per 1,000 live births [13]	14.9 per 1,000 live births [26]
<b>Maternal Mortality Ratio</b>	67.3 deaths per 100,000 live births [13]	85 per 100,000 live births [27]
<b>Total Fertility Rate</b>	2.4 children per woman [12]	2.1 children per woman [28]

## **B. The Zika Virus Outbreak: Timeline and Spread**

The World Health Organization (WHO) defines an outbreak as “the occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area, or season. An outbreak may occur in a restricted geographical area or may extend over several countries. It may last for a few days or weeks, or for several years” [29]. When tracking the Zika virus outbreak and spread specifically, the WHO uses the following terms:

- **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 or a history or 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 [30]

Zika was first detected in Paraguay in October 2015 [14]. By 2017, Zika had spread and had been reported in Asunción, Central, Alto Paraná, Amambay, and Paraguari provinces [31]. As of the last Pan American Health Organization (PAHO) report on Zika cases, published in January 2018, there were 715 suspected cases of Zika, 20 lab confirmed cases of Zika, no reported deaths, 139 cases of Guillain-Barré syndrome, and two cases of lab confirmed Congenital Syndrome associated with Zika (CSaZ)<sup>6</sup> [31,32,33].

In 2018, the Paraguayan national Zika monitoring system received 886 notifications related to Zika [34]. Of these notifications, four cases were confirmed, three cases were deemed probable, and 146 were classified as suspected [34]. There were also 79 notifications of microcephaly in 2018 [34]. One case was confirmed to be microcephaly associated with Zika, one case was classified as probable, seven cases are still under review, and the rest were dismissed [34]. There were also 98 notifications of neurological symptoms associated with Zika in 2018, 93 of which corresponded with GBS [34]. One of the cases is confirmed to be associated with Zika, one is classified as probable, 45 remain classified as suspected due to inconclusive investigations [34]. Due to the asymptomatic nature of Zika, confusion of symptoms with other diseases like Dengue and Chikungunya, and difficulties procuring Zika tests and laboratory confirmation, Zika and cases of children with CSaZ are likely underreported.

## **C. Zika Response Programs**

The MSPyBS of Paraguay established a Zika protocol in 2016 that includes information and guidelines related to identification and notification of suspected cases [35]. Notably, in listing methods of prevention, the protocol does not include the utilization of barrier methods, such as condoms, to prevent sexual transmission; the manual mentions the potential for sexual transmission in discussing modes of transmission but attributes only a minimal risk [35]. MSPyBS has incorporated communications about Zika into their arbovirus programs around Dengue and Chikungunya; the two main focal areas of the messaging

<sup>6</sup> Using PAHO case definition of confirmed case of congenital syndrome associated with Zika virus [33].

from the Dirección General de Vigilancia de la Salud (DGVS) are to prevent mosquito breeding and to utilize personal mosquito repellent and mosquito nets [36]. Further, MSPyBS messaging encourages women and their partners who reside in areas at risk of Zika transmission and who intend to become pregnant to consult with their physicians before becoming pregnant, or to consider delaying pregnancy [37]. Additionally, Zika has been included in the latest national manual on family planning and the prenatal care protocol. The manual recommends the use of latex condoms during pregnancy to prevent Zika transmission in addition to other protective measures [38].

USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project has collaborated with MSPyBS to develop guidelines and materials relating to Zika and health care since 2017. The project published and distributed an educational reference booklet for health workers about Zika and a guide on the provision of psychosocial support for pregnant mothers affected by Zika and for mothers of children affected by CSaZ.

## **D. Factors to Consider in Zika Response**

### *Gender and the Division of Labor*

One of the factors influencing the spread of Zika in Paraguay is the variance in behavioral and social expectations for men and women proliferated by traditionally conservative gender norms and “machismo.” In the LAC region, “machismo” dictates that men act strong, aggressive, both socially and sexually, and are the primary providers and protectors of the family. This often manifests as male social domination over women [39]. Women are expected to be faithful, produce and raise children, and to manage domestic duties. “Machismo” perpetuates gendered power relationships and reflects and reinforces inequalities in the social, political, and economic realms. It imposes specific ways of acting and thinking, that in some cases can limit female agency over their lives and bodies, including family planning decision making. It can also be restricting for men too, resulting in negative health and social outcomes for women and girls but also boys and men [39,40].

These gender norms are entrenched in society. The 2008 Demographic and Reproductive Health Survey (DHS) (ENDSSR in Spanish) asked women ages 15 to 44 about beliefs related to family structure and autonomy [41]. Over a quarter of the respondents said that women should obey their husbands even if they disagreed [42], although only 9.4% of women reported that wives are obligated to have sexual relations with their husbands and 20.2% of respondents agreed wife beating is acceptable for at least one reason, with rural women reporting higher rates of acceptability (32%) [42].

Gender norms also influence the division of unpaid labor in the household, where women are often expected to care of the home and children and men are expected to be the financial provider [43]. This often translates into overall, women have far lower labor force participation rates than men in Paraguay; the national labor force participation rate is 70.2%, with 83.7% of men participating and 56.9% of women participating [44]. The existing wage gap between males and females is 27% when controlling for low work hours [44]. Over half of women (51.5%) cited housework as the reason they are not employed [45]. On average, women spend more time on unpaid work than men in Paraguay, although it is more balanced than in other countries in the region. Women spend 28.5 hours per week on unpaid work and 18.1 hours on paid work per week [46]. In comparison, men only spend 11.8 hours per week on unpaid work and spend 35.4 hours on paid work per week [46].

This burden of care could be further skewed in families that have children with CSaZ and other disabilities. Slower brain development may lead to problems progressing in speaking, learning, moving, and playing and these children need specialized services, resources, and additional home care needs. These babies may also need additional tests, exams, and therapies from various specialists; some of which may be difficult to reach or find. The family may require the assistance of a social worker, insurance provider, friends, and other family and community members to help with transport, care, and services. Looking at long-term care, it is evident that raising a child affected by Zika can come at a high financial and social cost

for the caretaker and the family [47,48]. Based on other studies in the region, childcare typically falls to the mother or other female relatives in her network. The extra care involved for a child with disabilities places higher time and labor costs on the mother and potentially higher financial costs for the father [46,47]. The burden is potentially different for men and women and this should be considered when health providers support families and bring them together as couples.

The financial, labor, and social burden for caring for children with CSaZ is also exacerbated in single parent and female-headed households. Around 33.1% of households have a female head of household [45]. Overall basic needs are met in a similar level of male headed and female headed houses, but female headed households are more likely to have unmet needs in terms of their capacity to subsist economically, which becomes exacerbated in rural areas [49]. Female heads of household also have much lower rates of formal employment compared to male-headed households. Only 38.9% of female-heads of households are considered part of the UN's definition of the economically active population, which can be defined as "supplying labor for the production of economic goods and services," compared to 83.9% of male heads of households [49,50]. In other studies in the region (the Dominican Republic and Brazil), there are reports of spouses abandoning the other if there is a child with CSaZ, most often the father [47,48]. More research is needed to understand if these trends also apply to Paraguay. However, communication and outreach programs need to account for this vulnerable population. Depending on what other kinds of family and community support they single parent may have, they may have challenging having the time, money, and transportation to attend a health facility and they may have unique psychosocial support needs.

Finally, gender norms manifest themselves in the way that men are involved in parenting, which is important to consider in the context of antenatal and postnatal in Zika. While there is a lot of research globally that links male involvement in antenatal and postnatal activities to positive health benefits to the mother, the child [51], and the family, not much is known about the Paraguay-specific context. There are some structural factors that also reinforce this idea that men are not the primary caregivers. For example, men were only recently granted 14 days of paternity leave under the Promotion and Protection of Maternity Leave and The Support of Breast-Feeding Law 5508/2015 [52]. There have been efforts to promote male participation by establishing "the male prenatal care program" aimed at motivating fathers to have an active role in both, prenatal care and during delivery, however, these efforts are still limited to certain geographic areas.

### *Gender and Reproductive Health*

Gender norms also impact both men and women's ability to access and choose health services and take preventive measures related to Zika, including preventing unwanted pregnancies through contraceptives. The first line of defense for preventing CSaZ is to help women and families prevent unwanted pregnancies in the first place. The contraceptive prevalence rate in 2019 was 72% for any method and 68% for modern methods which is comparable to countries in the region like Brazil and Colombia [12]. UNFPA reports that 9% of women ages 15 to 49 have an unmet need for family planning, and 89% of family planning demand is satisfied (85% satisfied by modern methods) [12]. For unmarried young women, 91% used contraception in their last sexual experience; 81% of married young women used contraception in their last sexual encounter [41]. Paraguay has a balanced mix of contraceptive methods, with no one method representing more than a quarter of users [46]. As of 2008, 22.7% of contraceptive users used oral contraceptives, 20.8% used injectables, 16.6% used condoms, 15.5% used IUDs, 12.5% used sterilization, 5.2% used periodic abstinence, 1.1% used other modern methods, and 0.5% used other traditional methods [53]. The most common reasons women use contraception are to space births (52%), not to have more children (29.9%), and to protect against STIs (12.2%) [41].

Knowledge of contraceptives is much higher than usage rates. Almost all of women (99%) ages 15 to 49 knew about male condoms, 97.9% knew about oral contraceptive pills, 97% knew about injectables, 89.6% knew about sterilization, 87.8% knew about IUDs, 61.9% knew about lactation amenorrhea, 54.8% knew about female condoms, 48.1% knew about vasectomy, and 21.3% knew about the patch [41]. Knowledge

of traditional methods was high, with 82.9% knowing about 'yuyos' or traditional herbs, 76.4% knowing about the rhythm method, 76.2% about withdrawal, and 31.3% about the Billings method [41].

Women access contraception in the public health facilities (42.3%), pharmacies (41.3%), private health facilities (10.7%), and other locations (5.7%) [41]. Access to contraception is free under the national plan for sexual and reproductive health, which includes emergency contraception [54].

Condom use is a contraception method that is particularly important in the context of Zika because it also protects against sexually-transmitted Zika. As previously mentioned, in 2009 99% of women had heard about condoms, and 16.6% of women who use contraceptives prefer condoms [41]. Young women engaging in premarital sex most commonly use condoms (80%), while only 37% of married young women use condoms [41]. In terms of vulnerable populations, UNAIDS reports that 96% of female sex workers in Paraguay use condoms (96%) [55]. However, recent data on condom use and preferences among men and pregnant women is not available, and therefore it difficult to infer population-level trends in Paraguay. In the broader LAC region, condoms are a difficult method to promote in stable and long-term partners because having sex without them is often sign a trust in a partnership. A married person asking his or her partner to use a condom can be construed as an accusation that they are unfaithful or a sign that she or he has been unfaithful. Under traditional gender norms, where women are expected to be faithful, this could cause tension and discourage both women and men from asking their partner to use a condom [56,57,58].

### *Gender-Based Violence*

Both Intimate Partner Violence (IPV) and Gender-based Violence (GBV) can limit women's autonomy and their ability to navigate decision-making in sexual relationships. Women's fear of violence when requesting condom use is a pathway that links IPV to inconsistent condom use. Since the Zika outbreak is quite recent, there are not yet studies examining the association between IPV and Zika infections, however similar comparisons have been drawn between HIV and IPV and given that both diseases are transmitted sexually the connection is relevant. A WHO systematic review of the of the global HIV epidemic determined that women and girls who experience IPV have at least a 50% increased risk of HIV infection, and some studies have found that IPV quadruples the risk of HIV infection [59]. Not only do IPV and GBV increase the risk of STI transmission, but STIs can also increase a woman's risk for experiencing violence [60]. Further, forced sex is directly linked to HIV transmission, and women with earlier ages of sexual debut are more likely to have had a non-consensual first sexual encounter [61].

IPV during pregnancy in the broader LAC region has been associated with lower access to prenatal care. In Peru, patients who had experienced IPV were eight times more likely to attend fewer than six prenatal care visits when compared to patients who had not experienced violence [62]. More research is needed to understand if this trend is relevant in the Paraguayan context, however it is important to understand within context of Zika transmission, as prenatal care visits provide women with the opportunity to gain health education about Zika risk and prevention. It is possible to infer that women who experience violence may be less likely to access prenatal care and, thus, would be less likely to receive health messaging about Zika during pregnancy.

Among ever married women ages 15 to 44, 36% report experiencing verbal abuse from a current or past partner in their lifetime, 18% report experiencing physical abuse and 5% report experiencing sexual abuse [41]. Lifetime rates were higher than rates women reported in the year before the Paraguayan National Sexual and Reproductive Health Survey (ENDSSR) with 18% of women reporting verbal abuse, 7% physical abuse, and 2% sexual abuse [43]. Reflecting trends globally, these numbers are likely an underestimation since most of gender-based violence goes unreported and few are officially documented [63].

Of all women ages 15 to 44 (regardless of marital status), 4% report having been raped in their lifetime, and an additional 4% report having experienced another type of sexual abuse [41]. Of these women, 35% of women sought help either the last or only time they were raped, with 59% from family, and 14% from a neighbor and 21% sought help from either the police or a community leader [41].

The majority of women experienced sexual violence perpetrated by someone they knew. Women who reported having experienced sexual violence most frequently named a spouse (24%), ex-spouse (16%), or boyfriend/ex-boyfriend (12%) as the perpetrator. Other perpetrators included another known person (friend, employer, family, stepfather, or neighbor) at 35% and 13% was someone unknown [41].

Women in a union (unmarried but living with their partner) are at a higher risk of emotional and physical IPV than legally married women [64]. The unemployment of a male partner has been identified as a significant risk for emotional and physical violence [64]. Women who have partners who drink alcohol at least once a week are at the greatest risk of experiencing violence of all types [64].

The 2017 homicide rate in Paraguay was 7.4 per 100,000 inhabitants [10]. For males, it was 12.8 homicides per 100,000 inhabitants, and for females it was 1.9 per 100,000 inhabitants [10]. The Women's secretariat reported 146 cases of femicide between 2016 and 2018 [65]. There were 57 cases of femicide in 2018, and 55 attempted cases of femicide [65]. Femicide is most common in the districts of Central, Amambay, and Alto Paraná [65].

The Government of Paraguay passed a law in 2016 to officially declare violence and discrimination against women illegal and explicitly mentions femicide [66].

### *Maternal and Child Health Systems*

Early and regular attendance at antenatal care appointments are critical in reaching pregnant women about Zika prevention, distributing condoms for prevention of sexually-transmitted Zika, and for early screening for Zika infection and microcephaly. Between 2006 and 2017, 96% of births were attended by skilled health personnel [12]. Between 2008 and 2012, 96.3% of pregnant women attended at least one antenatal care visit while 90.5% of pregnant women attended at least four antenatal care visits [67]. In 2017, MSPyBS reported that 85.3% of pregnant women attended at least four antenatal care visits [10]. According to the 2008 DHS, 76% of women who had given birth in the year preceding reported attending a postpartum health visit [41]. The relatively high rates of maternal health access provide healthcare practitioners with the opportunity to provide Zika education and screening for mothers and newborns to help prevent transmission during pregnancy. However, little is known about rates of male-partner engagement in antenatal care and any affects this may have on the uptake of Zika prevention practices.

Regular attendance of well-baby care appointment and a strong screening and follow-up system is also critical for identifying developmental delays that may be caused by Zika. In terms of screening infants, 76% of all births between 2005 and 2012 were officially registered [67]. The MSPyBS is charged with administering the national a neonatal screening program in Paraguay; the current iteration of the program was legally established in 2016 [68,69]. Under the previous iteration of the screening program, 76.1% of infants with registered births were screened for primary congenital hypothyroidism, phenylketonuria, and cystic fibrosis [70].

Finally, psychosocial support services are important for mothers and families that have children with CSaZ. There is not a law that guarantees access to mental health services in Paraguay, but there is a national policy and plan for mental health [71, 72]. There are 14.0 mental health care workers per 100,000 residents [73]. As of 2014, there were no functioning, national level mental health programs [73]. Additionally, actors like UNICEF have incorporated psychosocial support into their short-term flood response efforts in Paraguay [73]. The relative lack of mental health services in Paraguay has implications for families affected by Zika, particularly for families with children affected by CSaZ. The USAID ASSIST Project supported the MSPyBS Mental Health Department in the design and production of a psychosocial support guidance for families affected by Zika, along with job aids, and health providers were trained on how to provide proper psychosocial support within the context of Zika.

## **E. Vulnerable Populations**

### *Adolescents and Youth*

As of 2018, 29% of the population in Paraguay was between the ages of 10 and 24 [12]. The adolescent birth rate between 2006 and 2017 was 62 births per 1,000 women ages 15 to 19 [12]. In 2015, 19% of all registered births were to mothers ages 10 to 19, and around half of those births were unplanned [74].

A significant age difference in partners can also lead to uneven power dynamics that may impede a woman's ability to negotiate a condom with her partner to either prevent pregnancy or prevent Zika transmission. The legal age of marriage in Paraguay was recently raised to 18, but legal exceptions to this law still remain [75]. Parents and guardians are able to give authorization for marriages before the age of 18 through the legal system [75]. As of 2017, 2% of girls were married by age 15 and 18% of girls were married by age 18 [76]. Girls who are married early may face greater power imbalances in their marriages due to age, which could impact their ability to negotiate conversations about condom use and family planning.

Youth, and particularly adolescent girls and young women, face additional challenges in accessing and utilizing contraception to prevent unwanted pregnancy, including to protect themselves from sexual transmission of Zika. Many face barriers when trying to access contraceptives and condoms to prevent pregnancy and STIs, including Zika, such as stigma from health providers, conflicts with parental consent, and financial constraints. Sixty-two percent of adolescent girls and young women ages 15 to 24 report engaging in sexual relationships and 71% of adolescent and young women ages 15 to 24 who had premarital sexual relations used contraception in their first sexual encounter [41]. For those who were married, 57% used contraception in their first sexual encounter [41]. In addition, 80% of young women ages 15 to 24 report having received a course on sexual and reproductive health in school or in college [41].

A small study in the metropolitan area around Asunción among high-school aged youth (males and females) found mixed results on condom use [77]. Out of the students surveyed, 18% reported never using condoms with an occasional or casual partner, 27% only used condoms sometimes and 55% said they always used condoms in an occasional or casual relationship [77]. The 2017 *Encuesta Global de Salud Escolar* in Paraguay asked over 3,000 students about their sexual activity [78]. Thirty percent of students had had sexual relations (39.0% of men and 21.5% of women), 21.5% of these students had their first sexual encounter before they were 14, and 14.4% had been in sexual relationships with more than one person [78]. Around two-thirds of those who had participated in sexual relations in the last 12 months had used a condom in their last encounter, and 42.3% used another form of contraception [78]. Youth are having sex, some have multiple partners, and while condom use is relatively high for this population, it can still be improved.

While there is specific guidance to protect access to contraception for youth, there are still barriers [79]. Youth are guaranteed the right to access contraception within the health system [79]. However, adolescents under the age of 14 may need to secure parental consent for contraception [79]. Adolescents under 14 are able to appeal to waive the parental consent requirement [79]. Barriers to contraception access are important to address in the context of Zika to prevent pregnancy.

Youth are also vulnerable in other ways. Some 76% of youth ages 15 to 29 do not have any form of health insurance [74]. The youth labor force participation rate in 2017 was 56.4% [44]. Youth unemployment stands at 10.8% (9.8% for men and 12.6% for women), and 18.1% of youth are not in employment, education, or training [44]. This percentage is higher for women (27.3%) than for men (9.6%) [44].

### *Indigenous Groups*

Indigenous communities in Paraguay experience high rates of poverty and low health care access, which compounds their risk of Zika transmission and reduces their access to health education and Zika prevention efforts. Poverty rates among indigenous populations are extremely high at 66.16% in 2017, and 32.91% of indigenous populations are in extreme poverty [80].

Indigenous communities also have problems accessing health services in general; 455 of the 711 indigenous communities do not have health facilities of any kind and 85.05% of indigenous residents have

no health insurance [80, 81]. In addition, only 71.41% of the indigenous population who had been sick or had an accident in the last 90 days consulted medical help [80]. Of those who didn't seek care, 10.81% cited lack of nearby care as the reason they did not seek care [80].

#### **IV. CONCLUSION**

Actors engaged in Zika prevention and response should pay special attention to gender norms and cultural practices that may affect the success of efforts to promote contraceptive uptake, family planning, and condom use; family dynamics in decision-making and childcare; gender-based violence; and vulnerable groups such as youth, indigenous, and minority populations who face their own unique challenges in protecting their health. These gender considerations can complement the efforts of the MSPyBS and partners in efforts to strengthen health systems and address the impacts of Zika.

Evidence presented in this report indicates that the relationships, norms, and behaviors between women, men, partners, families, and health care providers can impact a woman's access to and choice to use contraception, the prevention of Zika during pregnancy including the likelihood of sexual transmission of the infection or risk of sexual transmission where GBV is present, and the division of child care practices, particularly for children with CSaZ and disabilities. This report also highlights that gender is not the only factor that is important to consider – identities are intersectional, and age, ethnicity, socioeconomic background, and sexual orientation all affect a person's ability to access and utilize health services and adopt Zika prevention practices. Programming and communication materials about Zika should be tailored to different populations and should be structured to address gender norms. Health providers should be trained on how to provide gender-sensitive, stigma-free, confidential, and human right-based health services for all.

This report has also revealed several areas where additional research and information would be beneficial. There is little formal research on male engagement in antenatal care and well-baby care services, and what impact it could have on adopting Zika prevention practices and for a child's development in Paraguay. There is also little information about men's perception of and use of condoms, and patterns of condom use during pregnancy, both which are key in Zika prevention.

Ultimately, Paraguay is making strides to implement Zika response efforts, and considering gender and social inclusion can help provide more equitable health information and services so that children, families, and communities can be educated, make informed decisions, and prosper.

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