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## Community Perspectives on Contraception in the Context of the Zika Virus in the US Virgin Islands: Implications for Communication and Messaging

Anna W. Brittain, MHS<sup>a</sup>, Euna M. August, PhD, MPH<sup>b</sup>, Lisa Romero, DrPH, MPH<sup>a</sup>, Margaret Sheahan, MSN, CNM, MPH<sup>c</sup>, Jamie Krashin, MD, MSCR<sup>a</sup>, Charity Ntansah, MPH<sup>d</sup>, Margaret A. Honein, PhD, MPH<sup>a</sup>, Denise J. Jamieson, MD, MPH<sup>a</sup>, Esther M. Ellis, PhD<sup>e</sup>, Michelle S. Davis, PhD<sup>e</sup>, Eva Lathrop, MD, MPH<sup>f</sup>

<sup>a</sup>Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Reproductive Health, Atlanta, Georgia <sup>b</sup>Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS Prevention, Atlanta, Georgia <sup>c</sup>Department of Health, Family Planning Program, St. Thomas, U.S. Virgin Islands <sup>d</sup>Karna, LLC, Atlanta, Georgia <sup>e</sup>Department of Health, St. Croix Office, Christiansted, U.S. Virgin Islands <sup>f</sup>Centers for Disease Control and Prevention, Center for Global Health, Division of Global Health Protection, Atlanta, Georgia

### Abstract

**Background:** Between January and October 2016, 575 symptomatic confirmed cases of Zika virus infection were reported in the USVI. Zika virus infection during pregnancy can cause serious birth defects. Preventing unintended pregnancy among women who choose to delay or avoid pregnancy is a primary strategy to reduce these adverse outcomes.

**Methods:** A rapid assessment, using one men's and five women's focus groups (N=43), was conducted to inform communication efforts to increase awareness of contraception as a means for preventing unintended pregnancy in the context of a Zika outbreak in the USVI.

**Results:** Findings showed that people of reproductive age were aware of the relationship between Zika virus infection during pregnancy and adverse birth outcomes. However, when discussing methods for prevention, participants did not include preventing unintended pregnancy as a strategy to reduce these adverse outcomes. When asked about family planning in the USVI, participants discussed that for some, planning pregnancies is not common. Participants wanted communications about contraception to include available methods, side effects, costs, and safety. Optimal communication channels included social media and local spokespersons. Participants identified health care providers as a trusted information source.

**Corresponding author:** Anna Brittain, MHS, abrittain@cdc.gov, Address: Centers for Disease Control and Prevention, 4770 Buford Highway, Atlanta, GA 30341.

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**Conclusions:** Findings from this assessment informed the design of a culturally appropriate communication strategy to raise awareness of the prevention of unintended pregnancy as a primary strategy to reduce Zika-related adverse birth outcomes in the USVI.

### Keywords

contraception; birth control; family planning; Zika virus; U.S. Virgin Islands

## Introduction

In October 2015, Brazil announced its first cases of Zika virus infection and soon thereafter, multiple Latin American countries reported cases. In November, Brazil announced a public health emergency as cases of infection continued to grow and were associated with increasing cases of infant microcephaly. By April 2016, scientists confirmed that Zika infection during pregnancy can cause brain abnormalities, microcephaly and other serious birth defects (Rasmussen, Jamieson, Honein, & Petersen, 2016) in the fetus or baby.

In January 2016, the first case of locally acquired infection was reported in the U.S. Virgin Islands (USVI). By October 26, 2016, there were 575 symptomatic confirmed cases<sup>1</sup> of Zika virus infection in the USVI. Of those cases, 54% (n=310) were among non-pregnant females of all ages (U.S. Virgin Islands Department of Health, 2016). Zika virus can be transmitted through the bite of an infected *Aedes* species mosquito, during pregnancy from mother to child, and through vaginal, anal, or oral sex with an infected person, male or female (Centers for Disease Control and Prevention, 2017). CDC recommends that men with possible Zika virus exposure who are planning to conceive with their partner wait for at least 3 months after symptom onset or virus exposure before engaging in unprotected sex, and that women wait two months (Polen et al., 2018). Those infected with Zika may experience mild symptoms, such as fever, rash, headache, conjunctivitis, and muscle pain (Centers for Disease Control and Prevention, 2018).

Preventing unintended pregnancy among women who choose to delay or avoid pregnancy is a primary strategy to reduce Zika-related adverse pregnancy and birth outcomes (Oduyebo et al., 2016). In the USVI, there are an estimated 21,000 women of reproductive age (15 to 44 years) (U.S. Census Bureau, 2012). Using a published model (Tepper et al., 2016), we estimated that 12,000 of these women were at risk of unintended pregnancy (sexually active, not infertile, not currently pregnant, and not seeking/desiring pregnancy) and 5,300 at risk for unintended pregnancy were not using highly or moderately effective contraception.

Although access to contraception is an essential method for preventing unintended pregnancy, USVI health care providers suggest women in the USVI encounter multiple access barriers, including a lack of effective health communication messaging about contraception (M. Sheahan, USVI Department of Health Family Planning Program; C. D. Whitaker, Whitaker Health Center; V. O. Powell, Myrah Keating Smith Community Health Center, personal communication, 2016). Communication interventions have demonstrated

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<sup>1</sup>A laboratory positive reported case with Zika virus-specific nucleic acid in serum and/or IgM antibodies in serum and confirmatory plaque reduction neutralization testing to differentiate potential cross-reactive antibodies.

effectiveness in influencing contraceptive use (Babalola, Folda, & Babayaro, 2008; Blackstone, Nwaozuru, & Iwelunmor, 2017; Witte, 1997). However, the majority of USVI Zika-related communication has focused on vector control and personal protective practices, e.g., using insect repellent and protective clothing. Communication efforts focused on the prevention of unintended pregnancy to reduce Zika-related adverse outcomes have been used rarely, if at all.

In response to this identified need, the authors, in partnership with local organizations, conducted a rapid assessment in November 2016 to guide the development of a culturally-appropriate communication effort to increase awareness of the prevention of unintended pregnancy as a primary strategy to reduce Zika-related adverse outcomes in USVI. Rapid assessments are a means to qualitatively gain insight into the community's perspective on its main needs and to translate these findings into a plan of action within a relatively brief period of time (Beebe, 1995; Murray, Tapson, Turnbull, McCallum, & Little, 1994).

## Methods

### Participants and Procedures

Due to urgent needs associated with working on an outbreak response effort, the field team utilized a rapid assessment approach, designing a purposive recruitment strategy to gather essential data on contraceptive knowledge and access, as well as Zika awareness, within the USVI, conducting a total of six focus groups. Two groups were conducted with women ages 18 to 24, three with women ages 25 to 44, and one with men ages 18 to 24. Recruitment efforts for the men's group took place at the University of the Virgin Islands and as such, no older men were recruited (See Table 1 for focus group details). The number in each group ranged from two to 11, resulting in a total sample of 43 individuals. The women's focus groups were stratified by age to support the examination of age-related perspectives on contraceptive use and access. Young people aged 18 to 24 have been examined as a distinct group previously, given their unique reproductive and other health concerns (Finer & Zolna, 2016; Hindin & Kalamar, 2016; Neinstein & Irwin, 2013; Park, Paul Mulye, Adams, Brindis, & Irwin, 2006). Participants were limited to those who resided in the USVI at the time of enrollment and reported being heterosexually sexually active within the past three months. Women participants were screened to exclude those who were pregnant or planning to become pregnant within the next 12 months, as the goal was to assess attitudes of those for whom contraception would be applicable.

Community-based organizations (CBOs) that served women and/or addressed health issues in the USVI recruited participants. CBOs tried to recruit up to 10 participants for each focus group and utilized local networks to identify participants based on inclusion criteria. In addition, flyers were posted in community venues. CBO staff completed eligibility screening by phone or in-person using a form specifically designed for these focus groups.

Separate focus group guides were developed to facilitate discussions with women and men. The guides consisted of a series of open-ended questions and probes to assess awareness of and perspectives on Zika; pregnancy in the context of Zika; perceptions of reproductive life planning; contraceptive use; barriers and facilitators of contraceptive access; optimal

messaging about contraception in the context of Zika; and the best spokespersons and channels for disseminating information (See appendix for types of questions asked). Authors developed the focus group guides and DOH and CBO staff provided feedback to ensure they were culturally appropriate. Authors trained CBO staff on focus group facilitation, confidentiality, informed consent, and the data collection process and these trained staff co-moderated each focus group with the authors (AB and EA).

Focus group discussions lasted approximately 90 minutes and were audio-recorded and transcribed. Note takers were present at each focus group discussion in order to ensure key points were captured, including any non-verbal cues and focus group dynamics. Participant consent was obtained at the start of each session. Participants received \$25 compensation for their time and transportation costs.

Prior to participant recruitment and data collection, the focus group protocol and materials were reviewed by the Office of the Associate Director for Science in the CDC National Center for Chronic Disease Prevention and Health Promotion and they were issued a non-research determination; therefore, Institutional Board Review was not required.

## Data Analysis

Authors (AB and EA) coded focus group transcriptions using a combination of manual and computer-assisted coding. The coding process was guided by an *a priori* codebook that was developed based on project objectives and the topics addressed in the focus group guides. The same codebook was used to analyze data from all focus groups, with emergent codes added throughout the process. As codes were added or revised, previously coded transcripts were reviewed to ensure that they aligned with the updated codebook.

Transcripts were coded by reading the data line-by-line to assist in identifying the concepts within each statement. A brief code was used to label each section of data according to the concept(s) and used to create a new tree node (Corbin & Strauss, 1998). When the same idea appeared again, this was coded to the same node, creating a list of repeating ideas. As coding developed and themes emerged, nodes were arranged in groups under a parent node labelled with the theme. All transcripts were read and coded independently and were then checked for inter-coder reliability. Authors resolved any discrepancies through discussion.

## Results

### Knowledge and Perceptions of Zika.

Participants reported a high level of awareness of Zika and how to prevent it through personal protection strategies, such as using insect repellent, and vector control strategies, such as removal of standing water. Some participants were aware that Zika could be sexually transmitted, but others were not aware. Additionally, a few participants noted that some people think Zika is really just an issue of concern for pregnant women, pointing out that Zika prevention efforts so far, such as messaging and distribution of Zika kits, seemed to target pregnant women only. For example, a younger woman said, “A guy asked about the kits and they said it’s only for women who are pregnant. They make it seem like it’s something women who get pregnant should worry about it.”

Participants generally understood the relationship between Zika and birth defects. As a young man noted, “Some women, when their babies are born, they may have babies with microcephaly. I read about a study with 300 something [participants] and about 11 babies were born with microcephaly.” Some women shared concerns about Zika and the link with birth defects. An older woman stated, “I think it’s just something that can have an impact on your life for a very long time... The possibility of having offspring with some type of disability – that’s a burden that you’ll have to take on for the rest of your life.” However, the majority of the groups had some skeptical participants. As an older woman said, “There are so many come-and-go diseases – Ebola, Dengue, Chikungunya – when they just come and go... they [people in the community] think conspiracy theory....” Furthermore, some participants questioned whether the connection between Zika and birth defects applies in the USVI, suggesting that perhaps the link was specific to South America. As a younger woman asked, “Is it an environmental or genetic factor in Brazil? More babies born with it in Brazil than here, so maybe we don’t have the environmental factor...so is there something that we have that protects?”

### **Role of Zika in Family Planning.**

Many participants were concerned about Zika during pregnancy. However, many also commented that Zika did not make them think about preventing a pregnancy or create a stronger desire to use contraception. As one younger woman stated, “I find that people worry about it more when they are pregnant, rather than saying, ‘let me prevent it, let me try to not get pregnant right now’....” Furthermore, many noted that pregnancy prevention is generally not considered as a means of preventing the negative outcomes related to Zika. A younger woman noted, “they’re not linking the two.”

Younger women indicated that a desire to prevent pregnancy was primarily driven by reasons other than the Zika virus. As one younger woman stated –

I don’t think that women would say that they don’t want to get pregnant because of Zika...that might be on the bottom of the list. They would probably say, ‘we’re in school, or we’re not financially stable, not in a stable relationship, but maybe the 10th or 20th answer might be Zika.

### **General Perceptions about Family Planning.**

Participants discussed that planning pregnancies is not common in the USVI among some women. As an older women’s focus group participant stated, “It’s just sex, and if you get pregnant, you get pregnant. It just comes, and you deal with it.” Others indicated, however, that they did plan when and how they wanted to get pregnant. One older woman reflected on the decision-making process for her pregnancy; “I had my son when I was 24, and it was planned. We had a long talk about it, and we decided that it was something that we wanted to do. We were in a good work condition. So yeah, we weighed the pros and cons.” In the older women focus groups, some participants focused more on issues of contraception and pregnancy among adolescents, especially their children, such as the importance of educating them and facilitating their getting contraception. As one woman said, “My daughter, when she graduates from high school, next day we’re going to the doctor, she’ll go on BC, because she will not be calling me with no news.” Among the younger women focus groups, some

expressed that parents were a good source of information whereas others shared discomfort regarding talking to parents about contraception.

### **Knowledge and Perceptions of Contraception.**

Women participants were aware of most contraceptive options and knew where to get contraception and how to obtain contraceptive information, citing providers and the Internet as main sources of information. Women shared concerns about side effects. When asked about perceived barriers to contraception access, concern and confusion around contraceptive cost and insurance coverage surfaced across all of the focus groups. As an older focus group participant stated, “Cost is an issue. Insurance is ridiculous.” A younger woman explained, “I don’t think from talking to my own doctor, I could be wrong, but I don’t think that many insurance covers that. Insurance doesn’t cover contraceptive pills.”

Several participants also described fear of lack of anonymity, particularly given USVI’s close-knit nature and small population. For example, some people expressed not wanting to be seen at a clinic or purchasing condoms. Additionally, older women shared concerns about providers/staff failing to maintain confidentiality. As one older woman noted, “I know this one doctor... [laughter, everyone nods their heads to indicate they know this doctor] It’s just known that this one doctor has staff that tells everybody’s business.”

### **Messaging on Contraception and Pregnancy Prevention in the Context of Zika.**

Both men and women suggested that messaging should emphasize the facts, including some statistics; however, scare tactics should be avoided. Women requested specific content, including information on contraceptive costs, side effects, safety, and reversibility (i.e., ability to become pregnant after one stops the method).

Participants further recommended that messages target groups by age. Participants from the men’s focus group recommended involving USVI residents in campaign planning. Participants across all focus groups suggested that the primary channels for dissemination should be websites and social media, including Facebook. Other channels for message dissemination included public events (e.g., carnival events), and local radio programs.

Participants advised that the ideal spokesperson for message dissemination should be someone from the community. As one older woman participant stated, “someone that looks like us... that [the community] can relate to... someone local.”

## **Discussion**

Formative data related to the knowledge, perceptions, and behaviors of a population related to a particular health issue is seen as essential for health communication campaigns (Grier & Bryant, 2005) and is commonly used to inform the development of key health messages and dissemination strategies (Noar, 2006; Noar, Palmgreen, Chabot, Dobransky, & Zimmerman, 2009; Witte, 1997; Woods, Davis, & Westover, 1991). This campaign approach was used in a successful program with similar goals – the Puerto Rico Zika Contraception Access Network. Among other strategies, this program employed a health education campaign, informed by data from focus groups among reproductive-aged women and men, to raise



awareness among women of the prevention of unintended pregnancy as a primary strategy to reduce Zika-related adverse pregnancy and birth outcomes (Lathrop et al., 2018).

Engaging community members in the development of reproductive health interventions is a best practice recommended by the International Conference on Population and Development, which affirmed the involvement of women for whom reproductive health programs are designed, as well as partnering with local non-governmental organizations to promote community participation (United Nations, 1994). Working with local community organizations was an important step in the development of a communication strategy that resonated with its intended audience.

Our findings suggest that pregnancy planning may not be a common practice among some USVI women. This aligns with the most recent publicly available data that indicates that 22% of the 12,000 women at risk of unintended pregnancy in the USVI may not be using any contraception (Bensyl, Iuliano, Carter, Santelli, & Gilbert, 2005). Furthermore, over 44% of USVI women may not be using highly or moderately effective contraception (i.e., implant, intrauterine device, injectable, pill, patch, ring, or diaphragm) (Bensyl et al., 2005). Young women noted that Zika may not be a primary motivating factor for pregnancy prevention. Participants described a perception among some people that Zika is only a concern for those who are currently pregnant. Furthermore, some participants perceived the link between Zika and birth defects as exclusive to South America. (This may have been due to the fact that, at the time of this assessment, no USVI Zika-related microcephaly cases had been reported; the first case was not reported until May 2017 [U.S. Virgin Islands Department of Health, 2017]). These findings underscore the need for communications efforts to increase awareness of Zika's local risks and unintended pregnancy prevention strategies as a primary strategy to reduce Zika-related adverse outcomes. Efforts should also increase awareness of all contraceptive methods and target both men and women, while also recognizing the variety of reasons one may choose to prevent a pregnancy.

Our findings demonstrate that spokespersons from the community and communication through the Internet are preferred strategies for disseminating information. Combined together, these findings suggest that scenarios of "people like me" and why they choose their method of contraception via social media should be considered. Previous research has shown that narrative versus statistical approaches are found to be more believable and convincing (Slater, Buller, Waters, Archibeque, & LeBlanc, 2003) and that use of experiential narratives from someone culturally similar creates trust and credibility (Bailey, Erwin, & Belin, 2000; Janz et al., 1996). In the field of contraception, research has found that video testimonials of women sharing their own experiences with different methods of contraception creates a sense of trustworthiness (Gressel et al., 2014).

Health care providers were highlighted as a key resource in our assessment. Accordingly, communication resources may include a call to action to contact one's health care provider while also conveying information on the contraceptive methods available through providers or the health department. Information should include the basic contraceptive facts, along with clear description of side effects, cost, and coverage options. The target audience of

mothers should be considered, given their potential involvement in contraceptive actions taken by their daughters.

The financial barriers (real or perceived) mentioned by participants also warrant additional attention. Currently, contraceptive coverage options include Medicaid fee-for-service for those that meet income, residency, and other criteria; the Title X publicly funded family planning program; and private insurance (U.S. Virgin Islands Department of Human Services, 2016). Data are limited regarding individuals outside of the Title X system, but Title X data indicate that only 2,714 women in the USVI acquired family planning services in 2017; of these, 44% had public insurance, 7% had private insurance, and 49% were uninsured (Fowler, Gable, Wang, & Lasater, 2018). In addition to communications addressing available subsidies for contraception, the Centers for Medicaid and Medicare Services has encouraged states to explore innovative models that address cost challenges related to providing the full range of contraceptives (The Centers for Medicare & Medicaid Services, 2016), which could be considered in the USVI.

This effort was conducted as part of the CDC's Zika virus response. Given the urgency of working within an outbreak response, a rapid assessment to understand women and partners' views related to family planning was critical for designing a culturally relevant communication campaign in a timely manner. Due to time and budgetary constraints, CBOs were only able to recruit two women in the first focus group, and recruitment efforts for men were restricted to one focus group at the University of the USVI. Furthermore, a purposive sampling approach (the recruitment of participants with particular characteristics to obtain an in-depth understanding of certain phenomenon) was utilized (Hennick, Hutter, & Bailey, 2011). As such, these data are not necessarily generalizable to the perspectives of all USVI women and men of reproductive age, and the data may reflect perspectives of younger, more highly educated, and potentially higher-income men. With only six focus groups, thematic saturation was not achieved across all potential audience segments. Consequently, our ability to gather enough data to inform the tailoring of messages for certain sub-groups was limited. Nevertheless, this assessment provides useful data to inform the development of a communication strategy as part of an emergency response. This assessment also fills a gap in the literature regarding community perspectives on unintended pregnancy prevention in the context of the USVI Zika virus outbreak.

### **Implications for Policy and Practice**

The findings from this assessment suggest that communication efforts have been successful at raising awareness of personal protective and vector control strategies. There is also familiarity with risk of birth defects from the virus during pregnancy, although some questioned this. Thus, the results illuminate a gap in knowledge which communication efforts seemed to have neglected: preventing unintended pregnancy as a strategy to reduce Zika's adverse perinatal effects and sexual transmission. Communication efforts addressing this gap are warranted.

Findings also indicated the need for comprehensive strategies to address broader, systemic challenges that have been called for in other literature (Burke & Moreau, 2016; Darney, Aiken, & Kung, 2017). The most recent data show that many USVI women do not use



contraception at all, and almost half of those at risk for unintended pregnancy do not use more effective methods of contraception (Bensyl et al., 2005). We also found that some women reportedly do not plan pregnancies. While some might be quick to characterize this non-use of contraception among women at risk for unintended pregnancy as negative, recent literature raises an important question about the salience of pregnancy “intendedness,” pointing out that for some groups of women an externally conceived “planning structure” may be inappropriate or irrelevant (Aiken, Borrero, Callegari, & Dehlendorf, 2016; Borrero et al., 2015). Thus, broader strategies should explore and be sensitive to these complexities in the context of Zika. Activities like provider training on assessing reproductive intentions have been called for in other studies in Zika-affected areas (Ali, Miller, & Gomez Ponce de Leon, 2017; Borges, Moreau, Burke, Dos Santos, & Chofakian, 2018; Shaw et al., 2017), but efforts also should prioritize strategies that more broadly situate a woman’s own perspectives on achieving her reproductive goals and be mindful of new models that suggest methods for doing this (Aiken et al., 2016).

The concerns related to confidentiality echo other published USVI research (Callwood, Campbell, Faye, & Radelet, 2012). Comprehensive interventions should ideally include provider and staff training, and policy and procedural approaches to improve the assurance of confidentiality in clinic settings.

Upon conclusion of the assessment, authors worked with a marketing firm to develop initial communication concepts aimed at encouraging women in the USVI to seek information about available contraceptive methods and services as a primary strategy to reduce Zika-related adverse outcomes. Feedback on concepts was obtained through additional consultations with providers and community stakeholders. The final campaign features vibrant images of local models, including a young woman, a group of slightly older women, a heterosexual couple, and a mother and daughter, in recognizable USVI settings. Campaign assets include posters, brochures, radio spots, a website, and social media content, all incorporate messaging on the reasons why women might choose to seek contraceptive services, including Zika, and cover issues related to cost, coverage, side effects, and general facts about all contraceptive methods. Simple evaluation tools were developed including tracking sheets for distribution of materials, webpage views, and community event engagement, as well as Facebook reach, reactions and shares.

## Conclusion

Successful global health security efforts require understanding how best to design communication strategies to address emerging infection in an emergency response. The relatively recent emergence of Zika virus as an infectious disease that can be transmitted sexually and from mother to baby and the fairly uncharted territory of communication efforts to address prevention, along with the diversity of communities impacted, leaves us with a dearth of data to inform effective communication design. This formative assessment was conducted as a fundamental step to better understand community perspectives and provided valuable information for rapid development of a culturally appropriate communications strategy.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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**Table 1.**

## Focus Group Details

Group Gender	Age Range	Number of Participants	Date (2016)	Location
Women	18-24	2	November 29	St. Croix
Women	25-44	8	November 29	St. Croix
Men	18-24	7	November 30	St. Thomas
Women	25-44	5	December 1	St. Thomas
Women	18-24	11	December 2	St. Thomas
Women	25-44	10	December 2	St. Croix