

## Estimating Contraceptive Needs and Increasing Access to Contraception in Response to the Zika Virus Disease Outbreak — Puerto Rico, 2016

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Zika virus is a flavivirus transmitted primarily by *Aedes* species mosquitoes. Increasing evidence links Zika virus infection during pregnancy to adverse pregnancy and birth outcomes, including pregnancy loss, intrauterine growth restriction, eye defects, congenital brain abnormalities, and other fetal abnormalities (1,2). The virus has also been determined to be sexually transmitted.\* Because of the potential risks associated with Zika virus infection during pregnancy, CDC has recommended that health care providers discuss prevention of unintended pregnancy with women and couples who reside in areas of active Zika virus transmission and do not want to become pregnant.† However, limitations in access to contraception in some of these areas might affect the ability to prevent an unintended pregnancy. As of March 16, 2016, the highest number of Zika virus disease cases in the United States and U.S. territories were reported from Puerto Rico.§ The number of cases will likely rise with increasing mosquito activity in affected areas, resulting in increased risk for transmission to pregnant women. High rates of unintended and adolescent pregnancies in Puerto Rico suggest that, in the context of this outbreak, access to contraception might need to be improved (3,4). CDC estimates that 138,000 women of reproductive age (aged 15–44 years) in Puerto Rico do not desire pregnancy and are not using one of the most effective or moderately effective contraceptive methods,¶\*\* and therefore might experience an unintended pregnancy. CDC and other federal and local partners are seeking to expand access to contraception for these persons. Such efforts have the potential to increase contraceptive access and use, reduce unintended pregnancies, and lead to fewer adverse pregnancy and birth outcomes associated with Zika virus infection during pregnancy. The assessment of challenges and resources related to contraceptive access in Puerto Rico might be a useful model for other areas with active transmission of Zika virus.

CDC, the Puerto Rico Department of Health, and partners used a comprehensive approach, including key informant interviews and review of existing data, to gather information on contraception services in Puerto Rico, including information on rates of unintended pregnancy, contraceptive use, contraceptive access, and barriers to provision and use of contraception. Discussions were conducted with federal partners, including the Center for Medicare and Medicaid Services, the Office of Population Affairs, and the Health Resources and Services Administration (HRSA). Key stakeholders and family planning providers in Puerto Rico were also consulted, including the Puerto Rico Department of Health, the Puerto Rico Chapter of the American College of Obstetricians and Gynecologists (ACOG), Title X federal family planning grantees, and the Puerto Rico Health Insurance Administration.

Because current data regarding contraceptive use prevalence in Puerto Rico are not available, the number of women in Puerto Rico who desire effective contraception was estimated using several data sources. The estimated number of women of reproductive age (15–44 years) in 2014 was obtained from the U.S. Census Bureau.†† To determine the number of women of reproductive age who are not using one of the most effective or moderately effective contraceptive methods and who might therefore have an unintended pregnancy, a series of assumptions were made. Based on national results from the 2013 Youth Risk Behavior Surveillance System, 50% of women aged 15–19 years were assumed to be sexually experienced, and among these, 90% were assumed not to desire pregnancy and not to be using one of the most effective or moderately effective contraceptive methods.§§¶¶ Among women aged 20–44 years, 65% were assumed to be sexually active, not infertile, not currently pregnant, and not currently desiring to become pregnant (5). The number of women aged 20–44 years who might have an unintended pregnancy was estimated by assuming that 65% were not sterilized (6), and

\* <http://www.cdc.gov/mmwr/volumes/65/wr/mm6508e2.htm>.

† <http://www.cdc.gov/mmwr/volumes/65/wr/mm6505e2.htm>.

§ <http://www.cdc.gov/zika/geo/united-states.html>.

¶ [http://www.cdc.gov/reproductivehealth/unintendedpregnancy/pdf/contraceptive\\_methods\\_508.pdf](http://www.cdc.gov/reproductivehealth/unintendedpregnancy/pdf/contraceptive_methods_508.pdf).

\*\* Most effective = sterilization, intrauterine device, contraceptive implant; moderately effective = injectable contraceptive, oral contraceptive, contraceptive patch, or contraceptive vaginal ring.

†† <http://www.census.gov>.

§§ <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6304a1.htm>.

¶¶ Estimated number of sexually active women aged 15–19 years who might have an unintended pregnancy = (no. women aged 15–19 years) × (50% sexually active) × (90% not desiring pregnancy, not infertile, not using effective contraception).

that among those, 33% are not using one of the most effective or moderately effective reversible contraceptive methods (5).<sup>\*\*\*</sup>

To estimate the percentage distribution of desired contraceptive methods that might be needed in Puerto Rico, data from the Contraceptive CHOICE project, which was designed to remove the financial barriers to contraception, offer all methods and emphasize the most effective methods of birth control, and reduce unintended pregnancy in the St. Louis, Missouri area during 2007–2011,<sup>†††</sup> was used. In this project, women desiring reversible contraception were offered any Food and Drug Administration–approved contraceptive method at no cost along with counseling to promote the use of long-acting reversible contraceptive (LARC) methods (intrauterine devices [IUDs] and hormonal contraceptive implants), because these are the most effective reversible methods. Seventy-five percent of the general study population and 72% of adolescents aged 15–19 years chose a LARC method, resulting in decreases in adolescent and unintended pregnancy (7,8). Demonstration projects in Iowa and Colorado, also designed to increase use of LARC methods, have similarly resulted in increased use of LARCs and decreases in unintended pregnancy.<sup>§§§,¶¶¶</sup> Assuming a distribution of desired methods similar to that observed in the CHOICE project (7,8), if barriers to access were removed, the total number of contraceptive products needed in Puerto Rico to supply all women of reproductive age who are currently not using one of the most effective or moderately effective contraceptive methods and who do not want to become pregnant was estimated.

Approximately 715,000 women aged 15–44 years reside in Puerto Rico, and there were approximately 34,000 births in 2014 (3). A 2008 hospital-based survey of postpartum women in Puerto Rico indicated that 65.5% of pregnancies were unintended in Puerto Rico, compared with 51% in a probability sample of the general U.S. population (the 50 U.S. states and the District of Columbia), according to the 2008 National Survey of Family Growth (4,9). In 2014, among women aged 15–19 years, the birth rate was almost twice as high (40/1,000) in Puerto Rico as in the U.S. overall (24/1,000) (3).

The most recent population-based estimates of contraceptive use in Puerto Rico, from a 2002 Behavioral Risk Factor Surveillance System survey, found that among women aged 18–44 years who used contraception, tubal ligation was the most frequently reported method, used by 46% of women,

followed by oral contraceptives (19%), condoms (11%), calendar-based contraceptive methods (10%), vasectomy (6%), depot medroxyprogesterone acetate (DMPA) (3%), and IUDs (1%) (6). More recent information on services provided by La Asociación Puertorriqueña Pro Bienestar de la Familia (PROFAMILIA), a private non-profit organization that provides reproductive health care to a largely low income population in Puerto Rico, indicated that among approximately 44,000 women receiving contraceptive care in 2009, 80% received oral contraceptives, 8% received the transdermal contraceptive patch, 6% received condoms, 3% received DMPA, and <1% received an IUD (4).

Women access contraception at various sites in Puerto Rico, including community health clinics, private medical offices, university clinics, and Title X family planning clinics (Manuel Vargas, MD, MPH, Puerto Rico Department of Health; Claritsa Malave, MD, MPH, HRSA; personal communications, 2016). Despite the availability of these resources, barriers exist to providing optimal contraceptive coverage. Key stakeholders in Puerto Rico identified the need for increased contraceptive supplies, family planning delivery sites, training for providers on LARC insertion, education for women and men on effective contraception to reduce unintended pregnancy, and decreased financial and administrative barriers for providers and patients (Manuel Vargas, MD, MPH, Puerto Rico Department of Health; Claritsa Malave, MD, MPH, HRSA; Nabal Bracero, MD, ACOG Puerto Rico Section; Ramon Sanchez, MD, MPH, Clinica Preven; Blanca Cuevas, MS, PROFAMILIA; personal communications, 2016). Coverage for all contraceptive methods by federal and private insurers is not universal in Puerto Rico. Certain contraceptive methods can be unaffordable for providers and patients, which has resulted in limited availability of more effective contraceptive options such as LARCs that have higher up-front costs (Manuel Vargas, MD, MPH, Puerto Rico Department of Health; personal communication, 2016). In addition, the cost of IUD and hormonal implant insertion might not be fully covered by public or private insurance, which might also deter women from seeking LARCs. Because of cost, these methods are often not available in physician offices or pharmacies, and therefore most women receive oral contraceptives, DMPA, or condoms. A lack of availability in hospitals has also led to missed opportunities for postpartum initiation of LARCs (Nabal Bracero, MD, MPH, ACOG Puerto Rico Section; personal communication, 2016). The number of health care providers who offer contraception, specifically IUDs and contraceptive implants, has been limited by lack of training and reimbursement (Nabal Bracero, MD, MPH, ACOG Puerto Rico Section; Manuel Vargas, MD, MPH, Puerto Rico Department of Health; personal communications, 2016).

<sup>\*\*\*</sup> Estimated number of sexually active women aged 20–44 years who might have an unintended pregnancy = (no. women aged 20–44 years) × (65% sexually active, not infertile, not currently pregnant, not desiring pregnancy) × (65% not sterilized) × (33% not using effective reversible contraception).

<sup>†††</sup> <http://www.choiceproject.wustl.edu>.

<sup>§§§</sup> <http://www.astho.org/Maternal-and-Child-Health/Long-Acting-Reversible-Contraception/Iowa-Initiative-Title-X-Issue-Brief/>.

<sup>¶¶¶</sup> <https://www.colorado.gov/pacific/cdphe/reducing-unintended-pregnancy>.

Women typically do not choose LARC methods because of this lack of availability, as well as a general lack of knowledge about these methods (Ramon Sanchez, MD, MPH, Clinica Preven; personal communication, 2016).

Among the 715,000 women of reproductive age in Puerto Rico, an estimated total of 138,000, or nearly 1 in 5 women, including 55,000 aged 15–19 years and 83,000 aged 20–44 years, do not want to become pregnant, are not using one of the most effective or moderately effective contraceptive methods, and could therefore have an unintended pregnancy. Applying the distribution of methods observed in the CHOICE project, there is an estimated unmet need for IUDs for 68,000 women, hormonal contraceptive implants for 33,000 women, DMPA for 11,000 women, oral contraceptives for 14,000 women, vaginal rings for 9,000 women, and contraceptive patches for 3,000 women (Table). The estimated needs for a year are 68,000 IUDs, 33,000 hormonal contraceptive implants, 44,000 DMPA doses, 168,000 oral contraceptive pill packs, 108,000 vaginal rings, and 36,000 contraceptive patches.

### Discussion

Reducing the rate of unintended pregnancy is a public health priority because unintended pregnancies can be associated with delayed entry into prenatal care, decreased smoking cessation, and increased incidence of low birthweight (10), with attendant negative health consequences for mother and infant. Prevention of unintended pregnancies in the context of a Zika virus outbreak is especially important to reducing the likelihood of congenital infections. Removing barriers to contraception, such as cost, access, and lack of knowledge, can lead to increased use of the most effective contraceptive methods and reduced rates of unintended pregnancy, which would result in fewer adverse pregnancy and birth outcomes associated with Zika virus disease during pregnancy.

CDC and other partners have initiated multiple approaches to address some of these barriers. Current information on contraceptive use and unmet need is important, and efforts are underway to conduct reproductive health surveys in Puerto Rico to obtain this information. Approaches to increasing access to effective contraceptive methods at no or reduced cost are being explored. Education of providers is being conducted through outreach sessions designed to disseminate information about prevention of adverse outcomes associated with Zika virus infection during pregnancy. Training of providers on insertion of IUDs and contraceptive implants can be implemented using resources from professional organizations such as ACOG and the University of Puerto Rico. Ongoing education about effective use of contraception can be enhanced through health care providers, counselors in community health centers, home visiting nurses, and schools.

The findings in this report are subject to at least four limitations. First, no recent information was available regarding the proportion of women of reproductive age in Puerto Rico using specific contraceptive methods. Therefore, estimates of contraceptive need were derived from 2002 data, highlighting the urgent need for reproductive health surveys in Puerto Rico and other Zika-affected areas to better estimate unmet contraceptive need. Second, contraceptive preferences were extrapolated from the CHOICE project, and might not represent preferences in Puerto Rico or other populations, because of demographic and cultural differences. However, demonstration projects from other populations in the United States have similarly demonstrated high preference for LARC methods when common barriers, including cost, availability, and knowledge, were removed. Third, pregnancy intentions might change as a result of the Zika virus outbreak; therefore assumptions about pregnancy desires might not be accurate. Finally, most of the information on contraceptive access and barriers was obtained by nonsystematic personal communications with key leaders and stakeholders.

**TABLE. Estimated contraception needs required to supply all women who desire to avoid pregnancy,\* by contraceptive method — Puerto Rico, 2016**

Contraceptive method	Age group (yrs)				Total no. of women	Total no. of contraceptives needed for 1 yr supply
	15–19		20–44			
	Percent distribution <sup>†</sup>	Approximate no. of women	Percent distribution <sup>§</sup>	Approximate no. of women		
Intrauterine devices	37	20,000	58	48,000	68,000	68,000
Contraceptive implants	35	19,000	17	14,000	33,000	33,000
Depot medroxyprogesterone acetate	9	5,000	7	6,000	11,000	44,000
Oral contraceptives	12	7,000	9	7,000	14,000	168,000
Contraceptive vaginal ring	5	3,000	7	6,000	9,000	108,000
Contraceptive patch	2	1,000	2	2,000	3,000	36,000
<b>Total</b>	<b>100</b>	<b>55,000</b>	<b>100</b>	<b>83,000</b>	<b>138,000</b>	<b>457,000</b>

\* Includes women who are sexually active, fertile, and not sterilized nor using one of the most effective or moderately effective reversible contraceptive methods.

<sup>†</sup> Percent of contraceptive methods = distribution observed in CHOICE project for women aged 15–19 years (<http://www.nejm.org/doi/pdf/10.1056/NEJMoa1400506>).

<sup>§</sup> Percent of contraceptive methods = distribution observed in CHOICE project for women aged 20–44 years (<http://europepmc.org/articles/pmc4216614>).

## Summary

### What is already known about this topic?

Zika virus infection during pregnancy has been linked to adverse pregnancy and birth outcomes, including pregnancy loss, intrauterine growth restriction, and congenital brain abnormalities. As of March 2016, Puerto Rico had the highest number of cases of Zika virus disease in the United States and its territories. Women residing in areas with active Zika virus transmission who do not desire pregnancy need access to effective and affordable contraception.

### What is added by this report?

Approximately two thirds of pregnancies in Puerto Rico are unintended. An estimated 138,000 women of reproductive age (15–44 years) in Puerto Rico do not desire pregnancy and are not using an effective contraceptive method. Access to contraception is constrained by limited availability, especially of highly effective long-acting reversible contraceptives, high cost, incomplete insurance coverage, and lack of trained providers. To adequately prevent unintended pregnancies, there is an estimated need for IUDs for 68,000 women, contraceptive implants for 33,000 women, depot medroxyprogesterone acetate for 11,000 women, oral contraceptives for 14,000 women, vaginal rings for 9,000 women, and contraceptive patches for 3,000 women.

### What are the implications for public health practice?

Removing barriers to contraception, such as cost, limited access, and lack of knowledge, could lead to increased use of highly effective contraceptive methods and reduced rates of unintended pregnancy, resulting in fewer adverse pregnancy and birth outcomes in the context of a Zika virus disease outbreak. This assessment of the resources and challenges in Puerto Rico related to contraceptive access might be a useful model for other areas with active transmission of Zika virus.

A collaborative and coordinated response is required from federal and local partners as well as other stakeholders, such as academic and professional organizations, private insurance companies, schools, and community leaders, to ensure access to contraception for women who desire to avoid pregnancy during the Zika outbreak in Puerto Rico and other affected areas. Increasing reimbursement and reducing costs for contraceptive services would support access. Efforts to increase opportunities for health care provider training on LARC insertion are needed. Education opportunities should be increased through health care providers, health educators, community leaders, schools, and other outreach mechanisms. This assessment of resources and challenges related to contraceptive access performed for Puerto Rico might be a useful model for other areas with active transmission of Zika virus.

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