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Physician and clinic staff attitudes and practices during implementation of the Zika Contraception Access Network

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Abstract

Objective: The Zika Contraception Access Network (Z-CAN) provided women in Puerto Rico access to contraceptive counseling and the full range of reversible contraceptive methods, on the same day and at no cost, during the Zika virus outbreak. Because trained physicians and clinic staff were crucial to the program, we aimed to assess the implementation of and satisfaction with Z-CAN from their perspectives.

Study design: Physicians and clinic staff in the Z-CAN program participated in an online survey on program implementation (e.g., on-site and same-day contraceptive provision), program satisfaction, and knowledge consistent with program training (e.g., contraceptive initiation and safety, client-centered contraceptive counseling, intrauterine device [IUD] and implant insertion and removal).

Results: Survey respondents included 63 physicians and 53 clinic staff members. A high proportion of physicians (>93%) reported providing IUDs, implants, pills, rings, condoms, and injections and most were very often or always able to provide same-day access to most methods. Over 90% of physicians were satisfied with the Z-CAN program, training, and ongoing support. Staff satisfaction with these program elements was similar but slightly lower. Knowledge about exams and tests needed for initiation and safety of methods varied but was generally

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consistent with guidelines on which physicians received training. Most physicians (>90%) reported confidence in skills on which they received training as part of the program.

Conclusions: From the perspectives of participating physicians and clinic staff, the program was generally implemented as intended and providers were largely satisfied with program strategies including training and on-going support.

Implications: Certain key components of the Z-CAN program, such as training, proctoring, and involvement of clinic staff were likely critical to Z-CAN's implementation and provider satisfaction. Results from this provider survey can inform implementation of similar efforts to increase access to contraception in both emergency and non-emergency settings.

Keywords

Contraception; Survey; Zika; Family planning

1. Introduction

During the Zika virus outbreak in the Americas in 2015–2017, prevention of unintended pregnancy was a key strategy to reduce adverse pregnancy and birth outcomes related to Zika virus infection [1,2]. Puerto Rico experienced a high prevalence of Zika virus infections [3,4]. Assessment of family planning needs in Puerto Rico before the Zika virus outbreak revealed that the rate of unintended pregnancy was high (65% compared with 45% nationally), but access to the full range of reversible contraceptive methods was limited by cost, minimal supply of certain methods, lack of knowledge and training among providers, and lack of awareness among women [5,6]. In particular, access to long-acting reversible contraception (LARC) (including intrauterine devices [IUDs] and implants) was limited by lack of availability, cost of the methods and insertion, and lack of provider training on insertion and removal; less than 1% of women were using these methods before the Zika virus outbreak [5]. Furthermore, Puerto Rican women with public insurance (approximately 56% of women of reproductive age are Medicaid recipients [7]) faced several logistical barriers to obtaining contraception, including the need for multiple visits, unnecessary medical tests (e.g., pregnancy test, Pap smear and pelvic exam, sexually transmitted disease [STD] test), and a limited number of Medicaid clinic access points [8].

In response to these barriers, the National Foundation for the Centers for Disease Control and Prevention, with technical assistance from the Centers for Disease Control and Prevention (CDC), rapidly implemented the Zika Contraception Access Network (Z-CAN) [1]. A comprehensive assessment of contraceptive access and needs in Puerto Rico began in February 2016, the Z-CAN program was established in March 2016, and the first patients were seen in May 2016. The Z-CAN program is described in more detail elsewhere, but, in brief, involved several strategies to increase access to contraception, including securing contraceptive methods to make the full range of reversible contraceptive methods available at no cost, on-site and on the same day as the client requested, and training physicians and clinic staff to provide these methods and client-centered contraception counseling [1,8]. Additional features included follow up of patients to assess method satisfaction and challenges and efforts to ensure access to LARC removal after the Z-CAN program ended

(e.g., bundled reimbursement for LARC insertion and removal and communication channels to ensure patients could locate a Z-CAN provider for removal).

The comprehensive provider training included instruction on client-centered contraceptive counseling [9], evidence-based guidelines regarding the use and safety of reversible contraceptive methods [10,11], and insertion and removal of IUDs and implants. Physicians and clinic staff also underwent proctoring in their clinics by a Z-CAN staff member and family planning specialist to observe activities such as contraceptive counseling, at least one IUD insertion, and clinic readiness to offer Z-CAN services, track contraceptive inventory, and collect data [1,8]. From May 2016 to September 2017, 153 physicians, working in 139 clinics across Puerto Rico, provided family planning services to over 29,000 women.

Evaluation of the Z-CAN program was critical to understand its strengths and weaknesses, and the potential for replication or adaptation in other jurisdictions during or outside of emergency responses. Using data from online surveys of physicians and clinic staff who participated in the Z-CAN program, we sought to assess the implementation of and satisfaction with the Z-CAN program from the physician and clinic staff perspectives.

2. Materials and methods

Data were collected via online surveys launched in May 2017, conducted in Spanish. All Z-CAN physicians and one Z-CAN clinic staff member from each clinic were eligible to participate if they had received contraceptive supplies at least 6 months prior to survey launch.

Survey participation was voluntary. Respondents provided consent to participate through the online system. Electronic invitations were sent every two weeks up to six times, with follow up phone calls to non-responders. No reimbursement was provided to physicians or clinic staff. This study was approved by Institutional Review Boards at the University of Puerto Rico and CDC.

Demographic information and clinic characteristics were obtained from the surveys and from linked program data collected as part of Z-CAN operations. Participants were asked questions about Z-CAN implementation, such as which contraceptive methods were provided on-site, how often they were able to provide methods on the same day as requested, whether patients had to pay out-of-pocket for contraceptive methods or services, and their satisfaction with components of the program. Participants were also asked knowledge questions related to the training they received as part of the Z-CAN program, e.g., whether specific contraceptive methods are safe for certain groups of women [11], whether it is safe to start specific contraceptive methods on the same day as a woman’s visit [10], which exams or tests are required before initiating specific contraceptive methods [10], and their confidence in certain skills. The questions on training were only examined among physicians due to high rates of missing data (over 30%) for clinic staff.

Of 153 physicians who participated in Z-CAN, 143 were deemed eligible and invited to participate in the physician survey because they had received contraceptive supplies at least 6 months prior to survey launch, and 63 (44.1%) responded to the survey. Of 139 clinics

that participated in Z-CAN, 124 were deemed eligible and invited to participate in the clinic staff survey because they had received contraceptive supplies at least 6 months prior to survey launch, and a clinic staff member responded for 53 (42.7%) of those clinics. Frequencies and percentages were calculated using the total number of survey respondents as the denominator. SAS version 9.4 was used for all analyses. Survey responses were confidential; unique Z-CAN identification numbers were used to send the surveys, track responses, and link to program data.

3. Results

3.1. Demographics

Among the 63 physician respondents, almost all (91%) were obstetrician/gynecologists; the remaining were family medicine (6%) or general practice physicians (3%) (Table 1). Among physician respondents, 71% had completed their clinical training 15 or more years prior. Among 53 clinic staff respondents, almost half (47%) were nurses; the remaining staff respondents were medical assistants or nurse's aides (21%), health educators (9%) or other (17%) (e.g., office assistant, secretary, or administrator). About 70% of staff respondents had completed their clinical training <15 years prior.

3.2. Z-CAN implementation

A high proportion of physicians reported providing contraceptive methods on-site as part of the Z-CAN program: 98% provided hormonal IUDs, copper IUDs, implants, pills, and rings; 95% provided condoms; 94% provided injections; and 68% provided patches (Table 2). Over 80% of physicians reported they were able to very often or always provide hormonal IUDs, pills, and condoms on the same day; 70% or more reported they were able to very often or always provide copper IUDs, implants, injections, and rings on the same day; and 48% reported they were able to very often or always provide patches on the same day. The proportions of clinic staff reporting contraceptive methods were provided on-site and same day were similar but slightly lower (Table 2). All physicians with responses (N = 62/63, 1 missing data) reported that no patients had to pay for a contraceptive method or service (e.g., contraceptive counseling, IUD or implant insertion or removal, data not shown).

3.3. Satisfaction with Z-CAN

Over 90% of physicians were satisfied or very satisfied with the overall Z-CAN program, training, and ongoing support (Table 3). A high proportion was also satisfied with the Z-CAN implementation guidance documents (87%) and promotion or community outreach (79%). Among clinic staff, 79% reported satisfaction with the overall Z-CAN program and 72–79% reported satisfaction with training, implementation guidance documents, promotion or community outreach, and ongoing support. However, only about half of physicians and clinic staff were satisfied or very satisfied with the process of reordering contraceptive methods. Generally, less than 5% of physicians were dissatisfied or very dissatisfied with most of these program components (data not shown).

3.4. Z-CAN physician training

A low proportion of physicians required cervical cytology, chlamydia, and gonorrhea screening before initiating contraception, consistent with the guidelines on which physicians were trained (Table 4) [10]. However, some physicians required exams and tests that are not deemed necessary for safe initiation of contraception [10]. For example, pregnancy tests were required by over one-third of physicians before initiating IUDs, implants, or injections. Over half required blood pressure measurement before initiating hormonal IUDs, implants, injections, or progestin-only pills. Breast exam was required by almost one-fifth of physicians before initiating most methods.

Most physicians considered hormonal and copper IUDs to be safe for use by adolescents (94% and 92% respectively), women with history of an STD (84% and 83%, respectively), and nulliparous women (89% and 92%, respectively), consistent with training they had received (Table 5) [11]. A lower proportion considered IUDs to be safe for women <48 h postpartum (64% for hormonal IUD and 68% for copper IUD), although they had received training that these methods are safe or generally safe. Safety attitudes regarding implants varied, with 91% considering them safe for adolescents, 75% considering them safe for women <3 weeks postpartum or women with hypertension, and 38% considering them safe for women with history of deep venous thrombosis or pulmonary embolism, despite receiving training that implants are safe or generally safe for these women. Over 75% of physicians considered IUDs, implants, injections, and CHCs safe to start on the same day as the visit if they were reasonably certain the woman was not pregnant, regardless of timing of menses, consistent with training they had received (data not shown).

The majority of physicians reported counseling Z-CAN patients very often or always on certain family planning issues, including assessing the patient's reproductive life plan (90%), discussing all contraceptive methods (94%), and discussing condom use to prevent STDs (95%). Most physicians reported moderate or high confidence in skills on which they had received training, including IUD insertion (94%), IUD removal (94%), implant insertion (90%), implant removal (89%), and providing client-centered contraceptive counseling (92%).

4. Discussion

Most respondents reported offering a full range of reversible contraceptive methods on-site, same day, and at no cost during the Z-CAN program. This survey also demonstrated high satisfaction among respondents with the Z-CAN program overall and with many program components, in particular the training, implementation guidance documents, and ongoing support. Knowledge about exams and tests needed for initiation of methods and safety of methods among different groups of women varied but was generally consistent with guidelines on which physicians received training. Most physicians reported confidence in skills on which they received training as part of the Z-CAN program.

The provision of a full range of contraceptive methods represented a dramatic shift in availability of a range of methods. Before Z-CAN, availability of LARC methods was limited in Puerto Rico, with less than 5% of Z-CAN clinics providing hormonal IUDs onsite

and <1% providing implants onsite (unpublished Z-CAN program data). Although access to contraception through Z-CAN was unique, certain lessons can be learned from examining the effect of increased availability. Among women receiving contraception through Z-CAN, almost 70% chose and received a LARC method [1]. Other studies and initiatives have found that increasing access and reducing barriers to all methods can lead to an increased uptake of LARC methods, which in turn can lead to reduced rates of adolescent pregnancies, abortions, and potentially unintended pregnancies overall [12–14].

Same-day provision of methods represented a significant change in normal clinic practices from multiple visits, based on anecdotal provider reports. Several features of the Z-CAN program, such as allowing physicians to stock contraceptive methods on-site for same-day provision and reviewing evidence-based contraceptive guidelines to reduce unnecessary medical tests and visits [9,11], were implemented to remove barriers to contraception access [1]. Among women receiving contraception through Z-CAN, 95% received a method on the same day requested [1]. Same-day initiation of contraception may increase receipt of a woman's desired contraceptive method, as multiple visits may present a barrier to initiation [15].

Training, on-site proctoring, and mentorship were critical components of Z-CAN implementation [1,8]. However, despite Z-CAN training, some physicians reported safety concerns about certain contraceptive methods for specific women (e.g., over 10% considered IUDs and implants unsafe for postpartum women) and reported requiring unnecessary exams and tests before initiating contraception for healthy women (e.g., 8–13% required Pap smear before initiating any method). This finding highlights the challenges in implementing clinical guidelines and changing clinical attitudes and practices. Additional efforts and tools may be needed to promote uptake of evidence-based guidelines [16]. Although family planning specialists were available after initial proctoring for consultation as needed, the Z-CAN mentoring process could have been strengthened with regular visits to enhance continued learning, strengthen procedural skills, and discuss strategies to change practice.

Lower satisfaction was reported with contraceptive method reordering. A chain of custody for contraceptive products to Z-CAN clinic sites was necessary to comply with federal and territorial regulations [8]. Tracking contraceptive methods along the chain of custody often delayed the time for the Z-CAN physician or clinic site to receive the methods. Patch availability was particularly affected by lower initial supply and delays in distribution. Increased communication with Z-CAN providers and timely updates on status of contraceptive method orders may have improved satisfaction with reordering.

This analysis has several limitations. First, response rates were lower than desired, which may limit generalizability to all Z-CAN providers. Severe hurricanes devastated Puerto Rico during active data collection (September 2017), which led to widespread power outages. Although a limited number of physicians reopened their clinics after the hurricanes, their focus was hurricane relief efforts and primary care services. These factors likely affected survey response rates. However, the distribution of physician specialties among survey respondents reflected all Z-CAN physicians [1]. Second, we were unable to accurately assess staff knowledge about contraceptive methods and counseling practices due to the

large proportion of missing data. Although clinic staff were trained on contraceptive counseling, it is possible that these activities were conducted more routinely by physicians, which may have led to low staff response rates for those questions. Third, although participants were informed that responses would be confidential, it is possible that respondents may have provided answers deemed to be socially desirable. In addition, respondents may have represented individuals who had more positive views and experiences with the Z-CAN program. This may have led to overestimates of desirable clinic practices and program satisfaction. Fourth, the survey only assessed one point in time, and we were unable to compare measures before Z-CAN or any potential changes after longer experience and increased comfort with change in practices. Finally, certain circumstances were unique to the Z-CAN program, such as provision of all reversible contraceptive methods at no charge to the patient, and may not be generalizable to other programs.

The Zika virus outbreak during 2015–2017 highlighted important gaps in contraception access in Puerto Rico during a time when prevention of unintended pregnancy was a key strategy in reducing adverse pregnancy and birth outcomes related to Zika virus infection. The Z-CAN program was a rapid response to address these gaps, as part of a large multipronged response to a public health emergency. The results from this survey of Z-CAN providers demonstrate success in the ability to provide a full range of reversible contraceptive methods at no cost on the same day the patient requested, as well as general satisfaction with the program from the providers' perspective. Certain key components, such as the educational efforts, including teaching, training, and proctoring, as well as the involvement of clinic staff in addition to physicians were likely critical to the success of Z-CAN. These results can be used to inform implementation of similar efforts to increase access to contraception in both emergency and nonemergency settings.

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Table 1

Characteristics of physicians and clinic staff who participated in the Z-CAN program and responded to the survey.

Characteristic	Physicians *N* = 63 *n* (%)	Staff *N* = 53 *n** (%)
Gender		
Female	27 (43.0)	–
Male	36 (57.0)	–
Specialty		
Family medicine	4 (6.4)	–
General practice	2 (3.2)	–
Obstetrics/gynecology	57 (90.5)	–
Role in clinic		
Nurse	–	25 (47.2)
Medical assistant or nurse's aide	–	11 (20.8)
Health educator	–	5 (9.4)
Other staff	–	9 (17.0)
Primary clinic type where Z-CAN services provided		
Academic	6 (9.5)	1 (1.9)
Community health center	5 (7.9)	16 (30.2)
Private practice	49 (77.8)	31 (58.5)
Public health clinic	3 (4.8)	3 (5.7)
Years since completed clinical training		
<5	5 (7.9)	27 (50.9)
5–14	13 (20.6)	11 (20.8)
15–24	17 (27.0)	6 (11.3)
≥25	28 (44.4)	2 (3.8)
No training	–	4 (7.6)
Proportion of female patients of reproductive age who receive family planning services		
1–24%	9 (14.3)	4 (7.6)
25–49%	14 (22.2)	9 (17.0)
50–74%	13 (20.6)	14 (26.4)
≥75%	27 (42.9)	23 (43.4)

Abbreviations: Z-CAN, Zika Contraception Access Network.

* Percentages calculated using the total number of respondents as the denominator; missing data ranged from $n = 2$ to $n = 4$.

Table 2

Reported provision of contraceptive methods during the Z-CAN program.

Contraceptive method	Provided on-site		Very often or always provided on same day as patient request	
	Physician ***N*** **= 63** ***n*** *** (%)**	**Staff** ***N*** **= 53** ***n*** **† (%)**	**Physician** ***N*** **= 63** ***n*** *** (%)**	**Staff** ***N*** **= 53** ***n*** **† (%)**
Hormonal IUD	62 (98.4)	48 (90.6)	55 (87.3)	40 (75.5)
Copper IUD	62 (98.4)	46 (86.8)	46 (73.0)	34 (64.2)
Implant	62 (98.4)	46 (86.8)	48 (76.2)	38 (71.7)
Injection	59 (93.7)	48 (90.6)	44 (69.8)	32 (60.4)
Pills	62 (98.4)	48 (90.6)	53 (84.1)	41 (77.4)
Ring	62 (98.4)	46 (86.8)	45 (71.4)	30 (56.6)
Patch	43 (68.3)	37 (67.8)	30 (47.6)	25 (47.2)
Condoms	60 (95.2)	45 (84.9)	55 (87.3)	41 (77.4)

Abbreviations: IUD, intrauterine device; Z-CAN, Zika Contraception Access Network.

*Percentages calculated using the total number of respondents as the denominator; missing data ranged from $n = 1$ to $n = 6$.

†Percentages calculated using the total number of respondents as the denominator; missing data ranged from $n = 4$ to $n = 9$.

Table 3

Physicians and staff who reported being satisfied or very satisfied with Z-CAN program components.

Z-CAN component	Physician *N* = 63 *n*[*] (%)	Staff *N* = 53 *n*[†] (%)
Training	58 (92.1)	40 (75.5)
Z-CAN implementation guidance documents	55 (87.3)	38 (71.7)
Promotion or community outreach	50 (79.4)	42 (79.3)
On-going support	57 (90.5)	41 (77.4)
Reordering contraceptive methods	34 (54.0)	30 (56.6)
Overall program	57 (90.5)	42 (79.3)

Abbreviations: Z-CAN, Zika Contraception Access Network.

[*] Percentages calculated using the total number of respondents as the denominator; *n* = 1 missing data.

[†] Percentages calculated using the total number of respondents as the denominator; missing data ranged from *n* = 4 to *n* = 6.

Table 4

Required exams and tests by Z-CAN providers or practices ($N = 63$) for healthy patients before initiating contraceptive methods.

Contraceptive method	Pregnancy test *n** (%)	Blood pressure *n** (%)	Breast exam *n** (%)	Bimanual exam and cervical inspection *n** (%)	Cervical cytology (Pap smear) *n** (%)	Chlamydia and gonorrhea screening *n** (%)
Hormonal IUD	24 (38.1)	37 (58.7)	11 (17.5)	41 (65.1)†	8 (12.7)	11 (17.5)
Copper IUD	25 (39.7)	24 (38.1)	7 (11.1)	42 (66.7)†	8 (12.7)	10 (15.9)
Implant	25 (39.7)	35 (55.6)	11 (17.5)	9 (14.3)	6 (9.5)	6 (9.5)
Injection	23 (36.5)	33 (52.5)	11 (17.5)	6 (9.5)	7 (11.1)	5 (7.9)
Progestin-only pills	14 (22.2)	31 (49.2)	10 (15.9)	8 (12.7)	5 (7.9)	4 (6.4)
Combined hormonal contraception	14 (22.2)	43 (68.3)†	11 (17.5)	9 (14.3)	5 (7.9)	5 (7.9)

Abbreviations: IUD, intrauterine device; Z-CAN, Zika Contraception Access Network.

*Percentages calculated using the total number of respondents as the denominator; missing data ranged from $n = 2$ to $n = 6$.

†Responses are consistent with training on contraceptive initiation received by Z-CAN physicians [10].

Table 5

Z-CAN physician ($N = 63$) attitudes toward safety of certain contraceptive methods for different groups of female patients.

Contraceptive method	Safe *n** (%)	Unsafe *n** (%)	Don't know *n** (%)
Hormonal IUD			
Adolescents	59 (93.6)†	0	1 (1.6)
Women <48 h postpartum	40 (63.5)†	9 (14.8)	11 (18.0)
Women with history of sexually transmitted disease	53 (84.1)†	5 (8.2)	2 (3.3)
Nulliparous	56 (88.9)†	2 (3.3)	2 (3.3)
Copper IUD			
Adolescents	58 (92.1)†	1 (1.6)	1 (1.6)
Women <48 h postpartum	43 (68.3)†	7 (11.5)	10 (16.4)
Women with history of sexually transmitted disease	52 (82.5)†	5 (8.2)	2 (3.3)
Nulliparous	58 (92.1)†	1 (1.6)	1 (1.6)
Implant			
Adolescents	57 (90.5)†	0	3 (4.9)
Women <3 weeks postpartum	47 (74.6)†	7 (11.5)	6 (9.8)
Women with hypertension	47 (74.6)†	7 (11.5)	4 (6.6)
Women with history of deep venous thrombosis or pulmonary embolism	24 (38.1)†	30 (49.2)	4 (6.6)
Combined hormonal contraception			
Adolescents	58 (92.1)†	2 (3.3)	0
Women <3 weeks postpartum	25 (39.7)	31 (50.8)†	3 (4.9)
Women with hypertension	21 (33.3)	35 (57.4)†	3 (4.9)
Women with history of deep venous thrombosis or pulmonary embolism	2 (3.2)	54 (88.5)†	2 (3.3)

Abbreviations: IUD, intrauterine device; Z-CAN, Zika Contraception Access Network.

*Percentages calculated using the total number of respondents as the denominator; missing data ranged from $n = 2$ to $n = 4$.

†Responses are consistent with training on contraceptive safety received by Z-CAN physicians [11].