

misidentified as *C. haemulonii*, *C. famata*, *C. albicans*, or *C. tropicalis*, depending on the method used in the hospital. The identification of isolates by MALDI-TOF mass spectrometry has also been described in the literature as an adequate and fast method for identifying *C. auris* (7).

Because the Clinical and Laboratory Standards Institute does not currently provide breakpoints for *C. auris*, no categorical interpretation of results is available; thus, only the MICs obtained for antifungal drugs tested in our study were indicated (Table). Although misleading, elevated MICs of amphotericin B by VITEK card have been previously described (7); this study also found discrepancies with Etest strips, which could lead to the selection of inappropriate therapy if only 1 method is used.

The presence of *C. auris* in these patients has clinical and epidemiologic implications, considering the associated mortality rate confirmed in this report and the absence of sufficient technology in clinical laboratories both to confirm their identification and to carry out testing for antifungal susceptibility. The lack of suitable diagnostics complicates patient treatment and changes on the empiric treatment of invasive *Candida* spp. infections are needed.

Our data contributes to the knowledge of the epidemiology of this species at a regional level. Although we had already reported *Candida* spp. in Colombia (8), no information regarding these species on the Caribbean coast is available. Given the association of *Candida* spp. with outbreaks in hospitals, according to the Centers for Disease Control and Prevention, it is necessary to further strengthen measures for fungal infection control to prevent possible spread.

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## Zika Virus Knowledge among Pregnant Women Who Were in Areas with Active Transmission

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We surveyed women in New York, New York, USA, who were in areas with active Zika virus transmission while pregnant. Of 99 women who were US residents, 30 were

unaware of the government travel advisory to areas with active Zika virus transmission while pregnant, and 37 were unaware of their pregnancies during travel.

Zika virus is primarily transmitted by the bite of infected *Aedes* mosquitoes; the virus can also cross the placenta of infected pregnant women, potentially leading to congenital infection and serious birth defects (1–3). As of October 7, 2016, a total of 617 cases of Zika virus infection had been identified among New York City (NYC) residents, including 72 cases among pregnant women (4).

Despite government advisories in place since early 2016 recommending that pregnant women avoid travel to areas with active Zika virus transmission (4,5), the NYC Department of Health and Mental Hygiene (DOHMH) saw an increase in weekly Zika virus test requests through the summer for women who had been in such areas while pregnant. This increase alerted the DOHMH to the need for additional messaging. To guide this communication, we conducted telephone surveys to evaluate Zika virus knowledge and practices among women in NYC who had been in such areas while pregnant.

In brief, during June 1–July 15, 2016, the DOHMH Zika Testing Call Center facilitated testing for 1,086 women  $\geq 18$  years of age because they were pregnant while in an area with active Zika virus transmission (6) (online Technical Appendix, <https://wwwnc.cdc.gov/EID/article/23/1/16-1614-Techapp1.pdf>). At the time of receiving the Zika virus test request, DOHMH collected demographic data, contact information and other pertinent clinical history on the patients; these 1,086 women were potentially eligible for the survey if their telephone number had been provided. The women were called in random order until  $\approx 100$  provided consent and completed the survey. Descriptive statistics were calculated for responses to each survey question.

After 642 eligible women had been called, the target number of respondents had provided consent and completed the survey ( $n = 121$ ; 18.8%); 67 (55.4%) respondents were interviewed in Spanish. We found no statistically significant differences in demographic characteristics between respondents and nonrespondents (online Technical Appendix Table).

Of the 121 respondents, 99 (81.8%) were US residents (considered the United States their home). Approximately one third of the US residents ( $n = 30$ ; 30.6%) were unaware of the government advisory (recommending that pregnant women avoid travel to areas with active Zika virus transmission) at the time of travel (Table). Nearly half ( $n = 43$ ; 44.3%) did not know that there was active Zika virus transmission in areas where they traveled, and more than one third ( $n = 37$ ; 38.5%) did not know that they were pregnant during travel. Of the 30 US residents who were aware of the government advisory, were aware of active Zika virus transmission in areas where they traveled, and knew that they were pregnant during travel, 7 (23.3%) still traveled because their trips were too expensive to cancel. Of 6 US residents who did not know about the government advisory but did know of active Zika virus transmission in areas where they traveled and did know that they were pregnant during travel, 5 (83.3%) said they would not have traveled had they known about the government advisory. The most frequently reported reason for travel among US residents was to visit friends or relatives ( $n = 68$ ; 70.1%).

Among the women we surveyed, many were unaware of the government travel advisory, unaware of active Zika virus transmission in areas where they traveled, or unaware of their pregnancy during travel. However, our survey had limitations. The small sample size limited our ability to perform sophisticated analyses, and the potential for social desirability and recall bias are inherent to the study design. The survey questionnaire was not a validated instrument. Also, the women described here completed the survey after Zika virus testing; therefore, it is possible that they had a better understanding than the general public.

Most participants in our survey were interviewed in Spanish. This finding underscores the need for providing educational materials in multiple languages.

Although our findings cannot be generalized, they provide insight for increased and improved public health messaging. Public health authorities in the United States should continue to raise awareness among women of reproductive age about the risk for Zika virus infection from travel,

**Table.** Knowledge about Zika virus infection among US residents who were pregnant at time of travel to areas with active Zika virus transmission, New York, NY, USA, June 1–July 15, 2016\*

Characteristic	Total responses	Yes (%)*	No (%)*
Aware of government travel advisory at time of travel to areas with active Zika virus transmission	98	68 (69.4)	30 (30.6)
Aware that areas of travel had active Zika virus transmission	97	54 (55.7)	43 (44.3)
Aware of pregnancy status at time of travel to areas with active Zika virus transmission	96	59 (61.5)	37 (38.5)
Reason for travel			
Visiting friends or relatives	97	68 (70.1)	29 (29.9)
Tourism	97	52 (53.6)	45 (46.4)
Other	87	24 (27.6)	63 (72.4)
Business	97	5 (5.1)	92 (94.9)
Education	97	5 (5.1)	92 (94.9)
Service-related	97	4 (4.1)	93 (95.9)

\*Column percentages do not total 100% because categories are not mutually exclusive. Denominator includes only those respondents who answered the question.

enabling them to better make informed decisions. Women who are trying to become pregnant or who are pregnant should avoid travel to areas with active Zika virus transmission and, if they must travel, should talk to their healthcare provider first and take steps to minimize exposure to Zika virus. Furthermore, women who are trying to become pregnant should follow Centers for Disease Control and Prevention (Atlanta, GA, USA) guidelines on how long to wait to get pregnant after a potential Zika virus exposure (7). Women who want to avoid pregnancy and their male partners should use effective birth control correctly and consistently (8). Healthcare providers in the United States caring for pregnant women and women who are trying to become pregnant should routinely discuss travel history and travel plans with their patients.

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## Multidrug-Resistant Pathogens in Hospitalized Syrian Children

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Since 2013, wounded and ill children from Syria have received treatment in Israel. Screening cultures indicated that multidrug-resistant (MDR) pathogens colonized 89 (83%) of 107 children. For 58% of MDR infections, the pathogen was similar to that identified during screening. MDR screening of these children is valuable for purposes of isolation and treatment.

As the civil war in Syria enters its sixth year, the United Nations estimates that ≈250,000 persons have been killed, ≈10,000 of them children (1). Preliminary reports indicate a high rate of multidrug-resistant (MDR) pathogen carriage among refugees from Syria, mostly adults (2–5). Preliminary data for 29 wounded Syrian children indicate that 66% carried extended-spectrum β-lactamase-producing *Enterobacteriaceae* (ESBL) (2).

For ≈3 years, Syrian children who were ill or severely wounded from the civil war have been secretly transported across the border for treatment in Israel, mainly at Galilee Medical Center (GMC; Nahariya, Israel). We characterized carriage of and infections with MDR pathogens among these children.

We prospectively collected demographic and clinical microbiology data for all Syrian children 0–17 years of age who were admitted to GMC during March 2013–February 2016. At admission, contact isolation and screening cultures for MDR were conducted. MDR pathogens belonged to 1 of 5 groups: ESBL, carbapenem-resistant *Enterobacteriaceae* (CRE), methicillin-resistant *Staphylococcus aureus*, MDR *Acinetobacter baumannii* (MDR-AB), and vancomycin-resistant *Enterococcus*. Culture sites included nares, axilla, groin, rectum, and open wounds. Bacterial identification and susceptibility testing were performed according to Clinical and Laboratory Standards Institute guidelines (<http://clsi.org/standards/micro/>). For CRE screening, we used CHROMagar plates (hylabs, Rehovot, Israel).

# Zika Virus Knowledge among Pregnant Women Who Were In Areas with Active Transmission

## Technical Appendix

### Methods

During June 1–July 15, 2016, the NYC Department of Health and Mental Hygiene (DOHMH) Zika Testing Call Center facilitated testing for 1,086 women  $\geq 18$  years of age because they were pregnant while in an area with active Zika virus transmission (1). Women were eligible for the survey if they had a telephone number on record and their healthcare provider had an email address on record ( $n = 943$ ; 86.8%). Women’s healthcare providers were notified about the survey by email 7 days before conducting the survey; one provider declined her patient’s participation. The remaining 942 women’s names were randomly ordered, and the women were called until a target of  $\approx 100$  had provided consent and completed the survey. Because the survey was part of the ongoing DOHMH emergency public health response to Zika virus, the target of  $\approx 100$  women was chosen arbitrarily.

Only 1 call attempt was made per eligible woman. Surveys were conducted in English and Spanish (or by an interpreter for 1 Mandarin-speaking woman). All survey respondents were asked about their general knowledge of Zika virus; those who knew at the beginning of the survey that “Zika” is an illness were asked questions about preventive measures taken. Women who reported that they considered the United States their home (“US residents”) were asked additional questions related to their knowledge of the government travel advisory for pregnant women at the time of travel, details about their travel, and knowledge of their pregnancy status during travel.

Descriptive statistics were calculated for responses to each survey question; except where noted, denominators for frequencies reflect the number of responses for that question and do not include missing responses (missing responses occurred either because a respondent was not

asked a question based on the response to a previous question or because the respondent declined to answer the question). A 1-way analysis of variance was used to test for differences between means in age among respondents, women who did not consent, and all eligible women; a chi-square test was used to test for differences in race/ethnicity among the groups. This survey was part of the ongoing DOHMH emergency public health response to Zika virus and was determined by DOHMH and CDC to be a non-research activity.

## Results

Of 642 (68.2%) women called, 407 (63.4%) did not answer the phone, 114 (17.8%) refused consent to be interviewed, and 121 (18.8%) consented. Most respondents identified as Hispanic (n = 78; 68.4%) and 24 (21.1%) identified as non-Hispanic Black. There were no statistically significant differences in demographic characteristics between respondents and either women who did not consent to participate or all eligible women. (online Technical Appendix Table 1)

Among those who answered questions on knowledge of modes of Zika virus transmission, 112 (100.0%) knew that Zika virus is transmitted by mosquito bite, 106 (93.0%) through sexual contact, and 111 (98.2%) from mother-to-fetus; 100 (89.3%) knew that there is a link between Zika virus infection during pregnancy and birth defects. However, 70 (63.1%) respondents incorrectly believed that most persons with Zika virus infection have symptoms. Among the 67 respondents who knew at the beginning of the survey that “Zika” is an illness, >25% reported not practicing each of the preventive actions for Zika virus infection that we separately evaluated. (online Technical Appendix Table 2) More than one third (n = 32; 34.4%) of US residents reported visiting a healthcare provider for advice before traveling.

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Technical Appendix Table 1. Demographics of study population, New York, New York, USA, June 1–July 15, 2016

Characteristic	Women who did not			p value
	Respondents*	consent*	All eligible women*	
Total, No.	121	114	943	
Age, years	29.1	29.3	28.9	0.68
Race/Ethnicity, No. (%)				0.09
Hispanic	78 (64.5)	61 (53.5)	516 (54.7)	
Non-Hispanic Black	24 (19.8)	26 (22.8)	243 (25.8)	
Non-Hispanic White	4 (3.3)	10 (8.8)	61 (6.5)	
Non-Hispanic Asian	5 (4.1)	1 (0.9)	21 (2.2)	
Non-Hispanic American Indian/Alaskan Native	1 (0.8)	4 (3.5)	10 (1.1)	
Non-Hispanic Other	2 (1.7)	4 (3.5)	12 (1.3)	
Missing	7 (5.8)	8 (7.0)	80 (8.5)	

\*Denominator includes missing values

Technical Appendix Table 2. Actions taken to prevent Zika virus infection by women who were in areas with active Zika virus transmission while pregnant, New York, New York, USA, June 1–July 15, 2016\*

Preventive action	Total responses	Yes (%)†‡	No (%)†‡
Used insect repellent most of the time while outside	67	47 (70.1)	20 (29.9)
Wore long sleeves and pants most of the time while outside	67	36 (53.7)	31 (46.3)
Covered feet most of the time while outside	67	42 (62.7)	25 (37.3)
Treated clothing with insect repellent	67	23 (34.3)	44 (65.6)
Used window screens	67	42 (62.7)	25 (37.3)
Used air conditioning most of the time‡	66	39 (59.1)	27 (40.9)
Covered and removed containers of standing water	67	46 (68.7)	21 (31.3)
Used mosquito nets most of the time while sleeping	67	22 (32.8)	45 (67.2)

\*Survey respondents received this series of questions only if they knew at the beginning of the survey that “Zika” is an illness.

†Column percentages do not total 100% because categories are not mutually exclusive.

‡Denominator includes only those respondents who answered the question.

## Original Questionnaire

Date (MM/DD/YYYY) \_\_\_\_\_ Patient Access ID Number \_\_\_\_ \_  
 Name of Interviewer \_\_\_\_\_

### Zika Phone Survey Questions

***OPERATOR INSTRUCTIONS:*** Read each question and ALL of the corresponding answer choices out loud. After you have read the entire question and answer choices, THEN ask the participant what answer choice they would like to choose (try to not let the participant answer the question until they’ve heard all answer choices). Enter the participant’s answers in the database.

***\*\*\*NOTE:*** If a patient asks a ***CLINICAL QUESTION***, direct them to follow up with their ***PHYSICIAN*** and do ***NOT*** attempt to answer the question.

[Attempt to call the patient 1 time. If the patient does not answer the phone, leave the following message]:

**“Hello, this is a survey call. There is no need to call us back. Thank you and have a nice day.”**

[***OPERATOR SCRIPT – INVITATION TO PARTICIPATE***]:

**“Hello, this is \_\_\_\_\_ from the New York City Department of Health. May I please speak to \_\_\_\_\_ [patient’s name]? [Once you confirm you’re speaking to patient] We are conducting a survey to learn more about your knowledge and experience with Zika. You are receiving this call because your healthcare provider ordered Zika testing for you through the Health Department. Please keep in mind that we are *only* calling in regards to our survey, and we do *not* have any information about your test results. The survey should**



take about 10 to 15 minutes. You do not have to answer any question you do not want to answer.

If you choose to participate, there are no gifts or rewards, and there are no risks. Other pregnant women may benefit from your participation. .

Are you willing to participate in the survey over the phone?"

[*OPERATOR SCRIPT*]:

[**IF YES**]: Thank you for agreeing to participate.

Before we start the survey, it is important to understand that Zika is spreading in the Caribbean, Central America, and parts of South America. Zika is not currently spreading in New York City. [*Proceed to Question 1.*]

[**IF NO**]: Okay, no problem. If you have additional questions about Zika, you can visit the New York City Department of Health website for more information:

[www.nyc.gov/health/zika](http://www.nyc.gov/health/zika). Thank you for your time and have a nice day.

1. **What is Zika?** Choose one. [*If participant does not answer correctly, read the first sentence of the "WHAT IS ZIKA" script on the interviewer information sheet and skip to Question 5.*]
  - a. A mosquito
  - b. An illness
  - c. A country
  - d. Don't know
2. **When was the first time you ever heard of Zika?** Choose one.
  - a. Last year or before last year
  - b. A few months ago
  - c. A few weeks ago
  - d. A few days ago
3. **How did you first hear about Zika?** Choose one.
  - a. TV news
  - b. TV advertisement
  - c. Online search
  - d. Online advertisement
  - e. Radio
  - f. Family or friends
  - g. Healthcare provider
  - h. Pharmacy
  - i. Subway ads
  - j. Other \_\_\_\_\_
4. **Your doctor told us that you were in an area in which Zika was spreading while you were pregnant. For example, you may have been in Central America, South America, or the Caribbean while pregnant. Next, I will ask you a series of questions about your activities while you were in that area in which Zika was spreading. Please answer 'yes' or 'no'. Choose one for each question.**
  - a. While you were in that area, did you use insect repellent most of the time you were outside? Y N
  - b. While you were in that area, did you wear long sleeves and pants most of the time you were outside? Y N

- c. While you were in that area, did you cover your feet most of the time you were outside?  
Y N
- d. While you were in that area, did you treat most of your clothing with insect repellent? Y N
- e. While you were in that area, were there window screens in the place you stayed? Y N
- f. While you were in that area, did you use air conditioning most of the time in the place you stayed? Y N
- g. While you were in that area, did you or whomever you were staying with cover and remove containers of standing water? Y N
- h. While you were in that area, did you use mosquito nets most of the time you slept? Y N
5. **Do you consider the United States to be your home?** *Choose one. [If no, skip to Question 11.]*
- Yes
  - No
6. **Before you traveled to that area in which Zika is spreading, did you know that the government advises against going to an area where Zika is spreading while pregnant?** *Choose one.*
- Yes
  - No
7. **At that time you were in that area, did you know that Zika was spreading in that area?** *Choose one.*
- Yes
  - No
8. **At that time you were in that area, did you know that you were pregnant?** *Choose one.*
- Yes
  - No
9. **[IF YES to 6, 7, and 8]: Did you go because your trip was too expensive to cancel?** *Choose one.*
- Yes
  - No
10. **[IF NO to 6, YES to 7 and 8]: If you had known about the government warning, would you have still gone to an area where Zika is spreading?** *Choose one.*
- Yes
  - No
  - Don't know
11. **Next, I'm going to ask you a series of questions about why you traveled to the area where Zika is spreading.** *Choose one for each question.*
- Did you go for business? Y N
  - Did you go for education? Y N
  - Did you go for service? Y N
  - Did you go for tourism? Y N
  - Did you go to visit friends or relatives? Y N



- f. Other \_\_\_\_\_ Y N
12. Did you visit a healthcare provider in the United States before you went to this area where Zika is spreading to get advice on how to stay healthy while traveling? *Choose one.*
- a. Yes
  - b. No
13. Next, I will ask you a series of questions about how Zika is transmitted. Please answer 'yes' or 'no'. *Choose one for each question.*
- a. Can Zika be transmitted by coughing? Y N
  - b. Can Zika be transmitted by sneezing? Y N
  - c. Can Zika be transmitted by having sex with someone who has Zika? Y N
  - d. Can Zika be transmitted by the bite of an infected mosquito? Y N
  - e. Can Zika be transmitted by shaking hands with someone who has Zika? Y N
  - f. Can Zika be transmitted from an infected pregnant woman to her baby? Y N
14. Do most people with Zika have symptoms? *Choose one.*
- a. Yes
  - b. No
15. Do you think there is a link between Zika during pregnancy and birth defects? *Choose one.*
- a. Yes
  - b. No
16. Do you agree with the following statement: All pregnant women who while pregnant were in an area where Zika is spreading should be tested for Zika. *Choose one.*
- a. Strongly agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly disagree
17. At this time, do you feel like you have enough information about Zika? *Choose one.*
- a. Yes
  - b. No
- i. [IF NO]: What additional information would be helpful to you?
18. We're interested in raising more awareness about the risk of Zika in women who travel to Latin America or the Caribbean. Would you be willing to have someone from our communications office speak to you about Zika? If you agree, a Department of Health employee may call you to ask some questions and possibly arrange an interview. *Choose one.*
- a. Yes
  - b. No
19. How could the Department of Health improve how we spread information about Zika?
20. Is there anything else you would like to tell us about your experience with Zika testing in New York City or anything else related to Zika?

Thank you. If you have additional questions about Zika, you can visit the New York City Department of Health website for more information: [www.nyc.gov/health/zika](http://www.nyc.gov/health/zika). Thanks again for your time – we really appreciate your insight. Have a nice day.