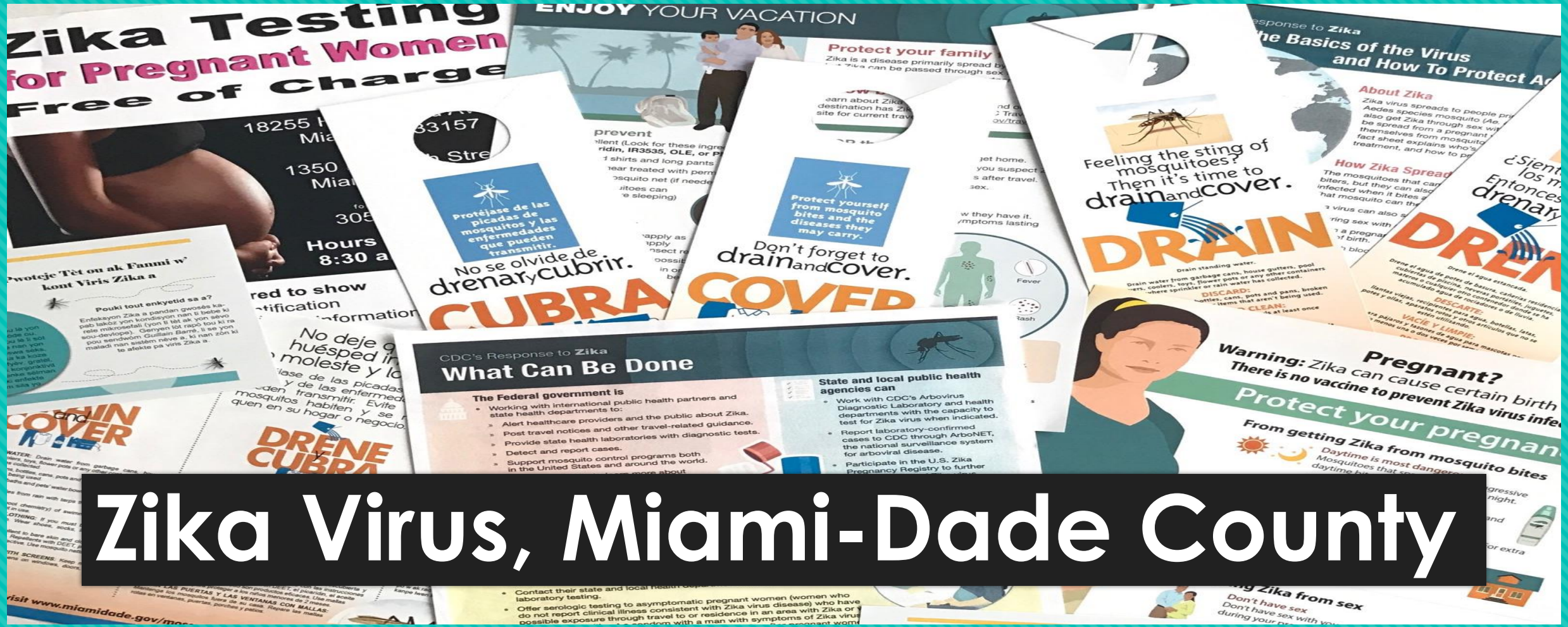


Zika Virus, Miami-Dade County

An Evaluation of the 2016 Zika Prevention Kit Distribution

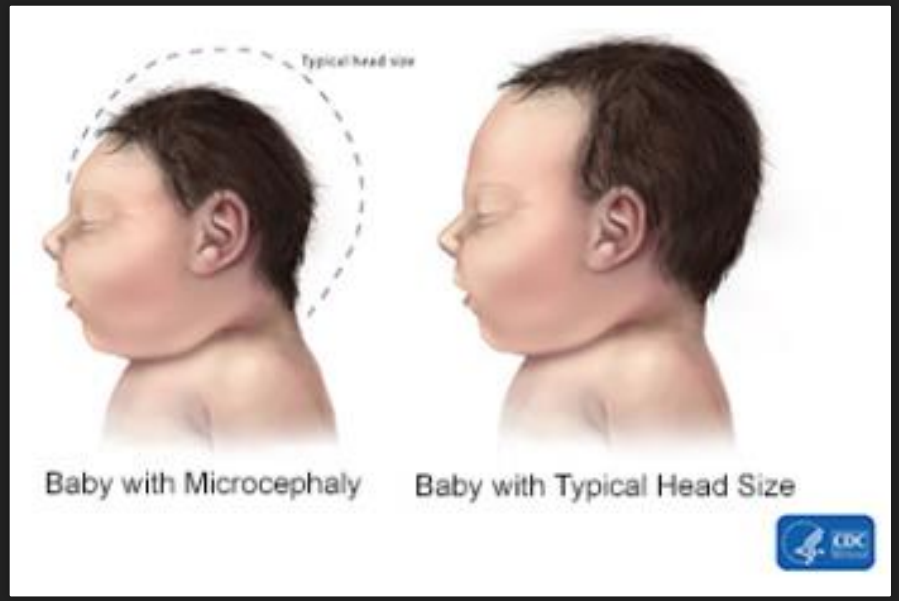
Emily Moore, MPH – Epidemiology, Disease Control & Immunization Services

Florida HEALTH
Miami-Dade County

Zika Virus: An Introduction

- A vector-borne flavivirus similar to dengue & chikungunya
- Transmitted primarily through the bite of an infected mosquito
- Can also be transmitted from mother to fetus, through blood contact, and through sexual contact
- Prior to 2015, Zika virus occurred sporadically in Africa, Asia, and the South Pacific, but was not present in the Western Hemisphere

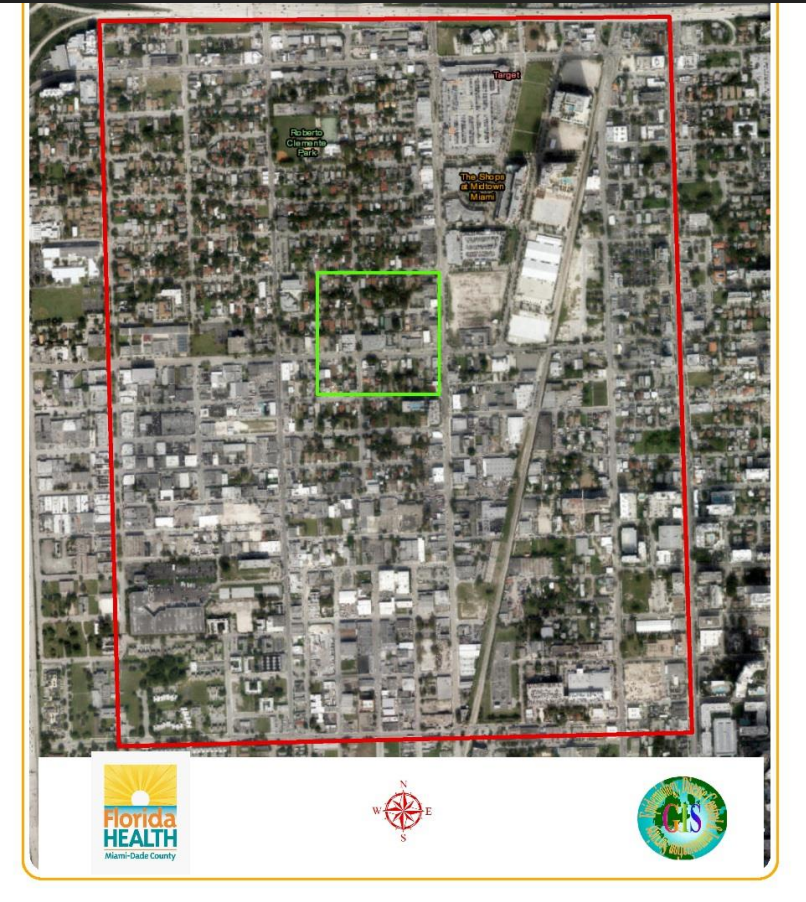
Consequences of Zika Virus



- Zika virus causes a mild illness in otherwise healthy adults (fever, rash, joint pain, and pink eye)
- Zika virus infection during pregnancy has been associated with congenital birth defects including microcephaly, hearing loss, vision loss, etc. (Zika congenital syndrome)

Miami-Dade: 2016 Zika Outbreak

- Miami-Dade County contains the appropriate Zika vector and also receives travelers from nations/territories where Zika was ongoing
- In July 2016, the first locally-acquired Zika case was reported in Miami-Dade County
- Miami-Dade County would go on to announce local transmission in 3 different areas within the county, prompting CDC to issue travel advisories
- Prevention efforts were focused on travelers, outdoor workers, and pregnant women and their sexual partners



Prevention Focus: Pregnant Women

- Because of the risk that Zika virus infection during pregnancy can pose, much of the prevention effort during the 2016 outbreak targeted pregnant women
- Florida Department of Health in Miami-Dade (DOH-Miami-Dade) partnered with primary care physicians, OBGYNs, midwives, and other health care providers to educate pregnant women about Zika prevention and to provide Zika prevention resources
- Zika virus prevention "kits," as recommended by CDC, were part of this prevention effort

Zika Prevention Kits for Pregnant Women

- DOH-Miami-Dade began offering Zika kits in July 2016.
- Between July and December 2016, DOH-Miami-Dade distributed 2,277 kits
- The majority of the kits were distributed through doctors' offices & OB clinics
- 461 Zika prevention kits were distributed to individual pregnant women by DOH-Miami-Dade
- Because the kits needed to be assembled, women had to call DOH-Miami-Dade to reserve their kit

- Insect repellent
- Permethrin spray
- Water treatment tablets
- Mosquito net
- Condoms
- Educational materials

The Zika Kit Evaluation Survey

- The purpose of this evaluation study was to determine the effectiveness and perceived utility of the Zika prevention kits for pregnant women in Miami-Dade County

- Understanding the effectiveness that these kits had in the adoption of Zika prevention behaviors and whether or not the recipients of the kits found the contents useful will help DOH-Miami-Dade and other counties to decide how to best allocate funding/resources for future arboviral outbreaks

Methods

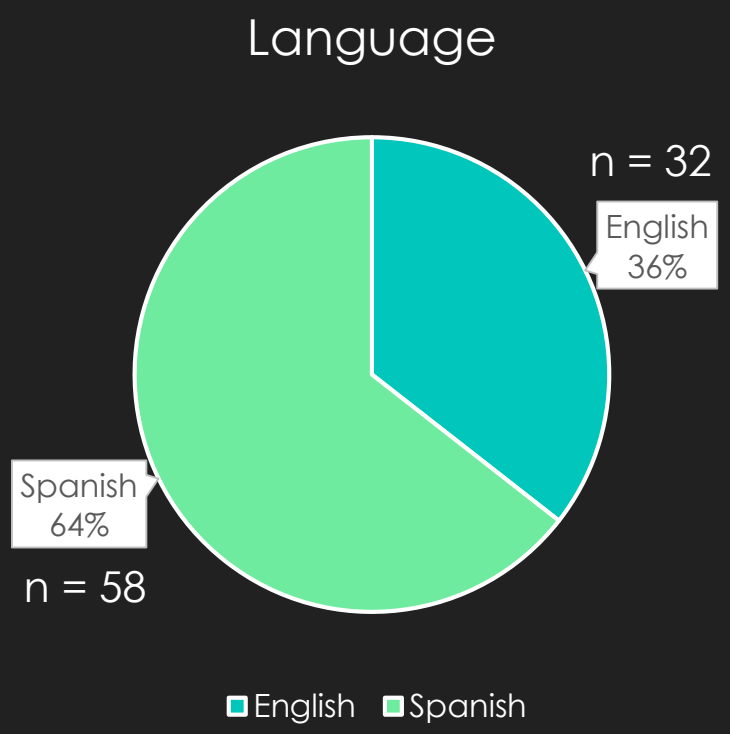
- This study consisted of calling the 461 women who received a kit and conducting a brief qualitative three-page questionnaire. Epidemiology, Disease Control & Immunizations Services (EDC-IS) staff completed the calls and obtained verbal consent over the phone.

The questionnaire assessed

- whether the participant was pregnant during the 2016 Zika outbreak in Miami-Dade County
- where they received their Zika kit
- which items they used to prevent the infection/transmission of Zika virus as opposed to items that were not used or not found to be useful
- whether or not the participant was tested for Zika virus during the summer of 2016 and if they tested positive
- brief knowledge assessment which tested whether or not the participants retained information regarding Zika transmission and prevention, which was included in the educational handouts in the kits

Data were analyzed using SAS 9.4.

Results



Pregnant?		%
Yes	86	96%
No	4	4%

Where did you receive your kit?	Frequency	%
DOH	43	48%
OBGYN clinic/office	9	10%
Hospital of PCP	31	34%
Family or friend picked it up	3	3%
No response/didn't remember	4	4%

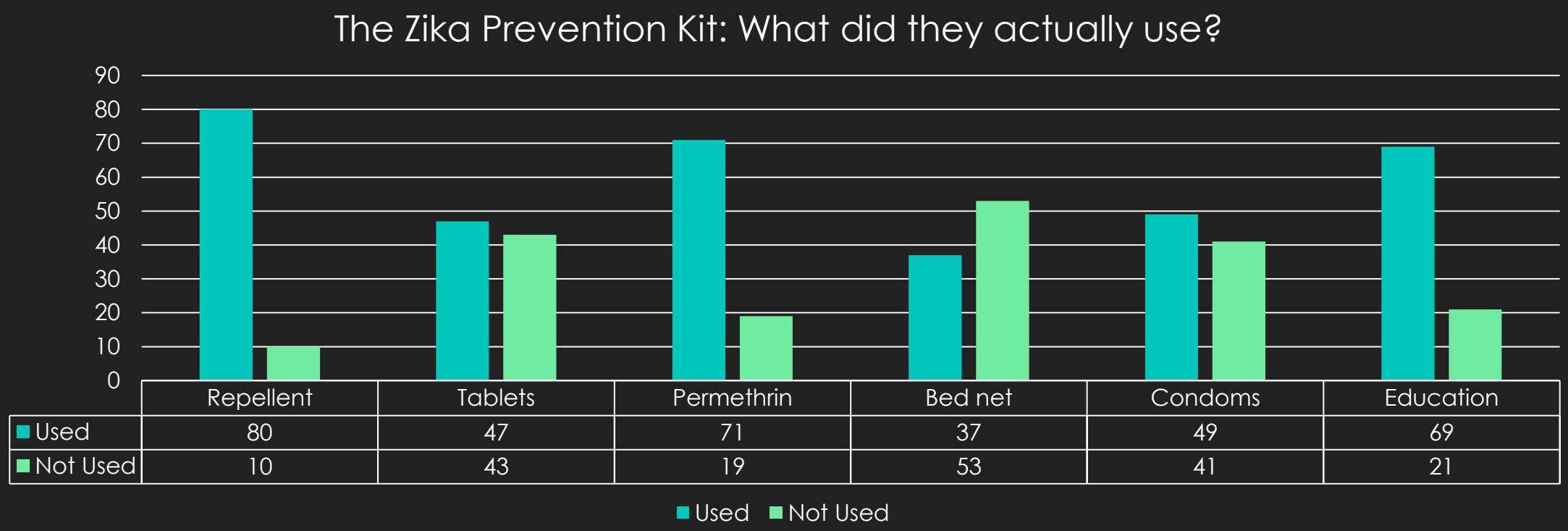
Results

Tested for Zika virus?	Frequency	Percent
Yes	82	91%
No	7	8%
I'm not sure	1	1%

Where were you tested?	Frequency	%
DOH	43	48%
Commercial Lab	5	6%
OBGYN	7	8%
PCP	21	23%
Urgent Care/ED	7	7%
Not applicable	7	7%

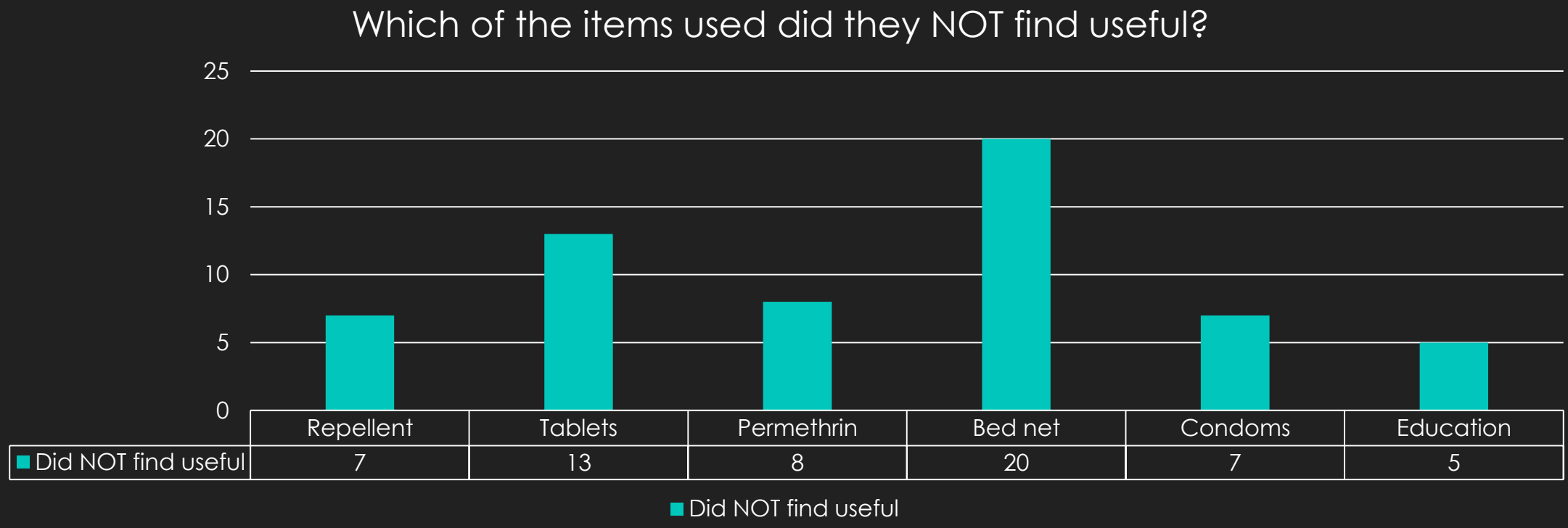
Did you test (+) for Zika?	Frequency	%
Yes	4	4%
No	78	87%
I'm not sure	1	1%
Not applicable	7	8%

Results

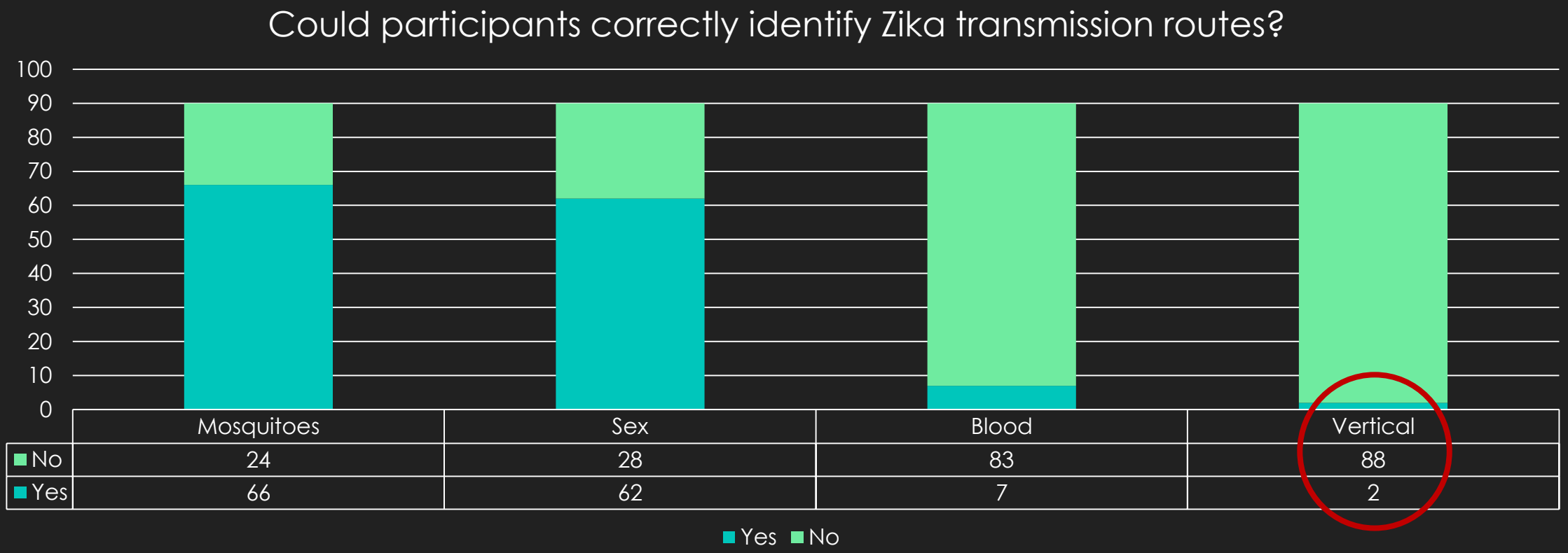


	Repellent	Tablets	Permethrin	Bed net	Condoms	Education
Used	80	47	71	37	49	69
Not Used	10	43	19	53	41	21

Results

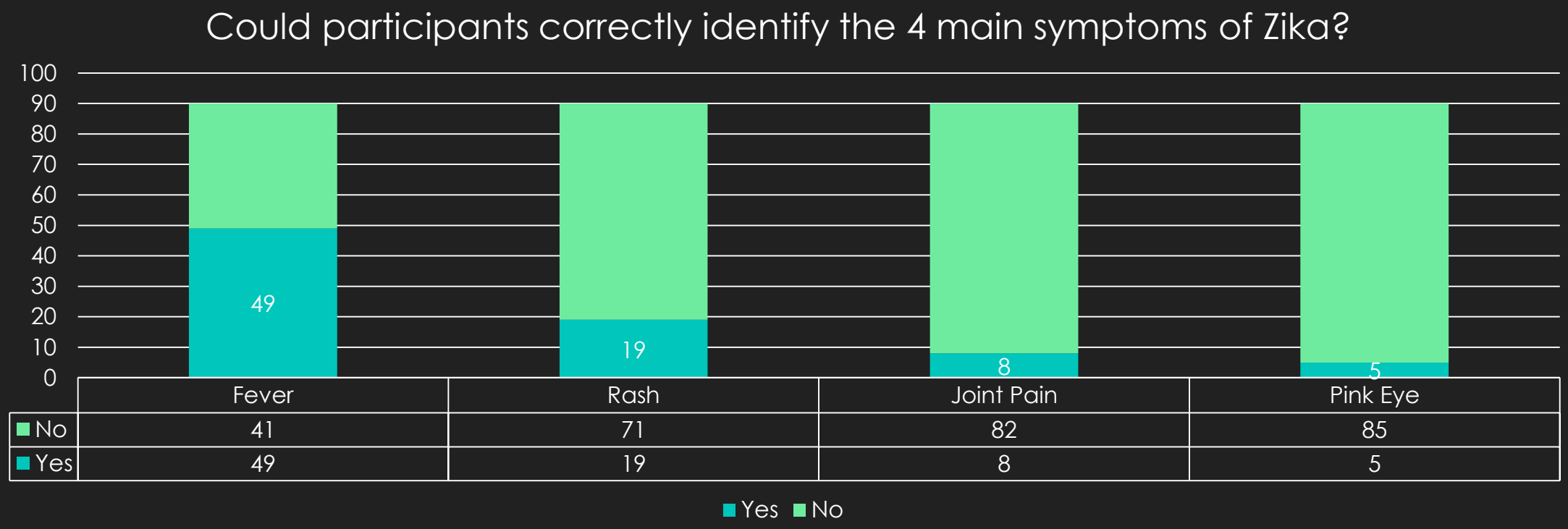

Which of the items used did they NOT find useful?
25
20
15
10
5
0
Repellent
Tablets
Permethrin
Bed net
Condoms
Education
Did NOT find useful
7
13
8
20
7
5
Did NOT find useful

Results



	Mosquitoes	Sex	Blood	Vertical
No	24	28	83	88
Yes	66	62	7	2

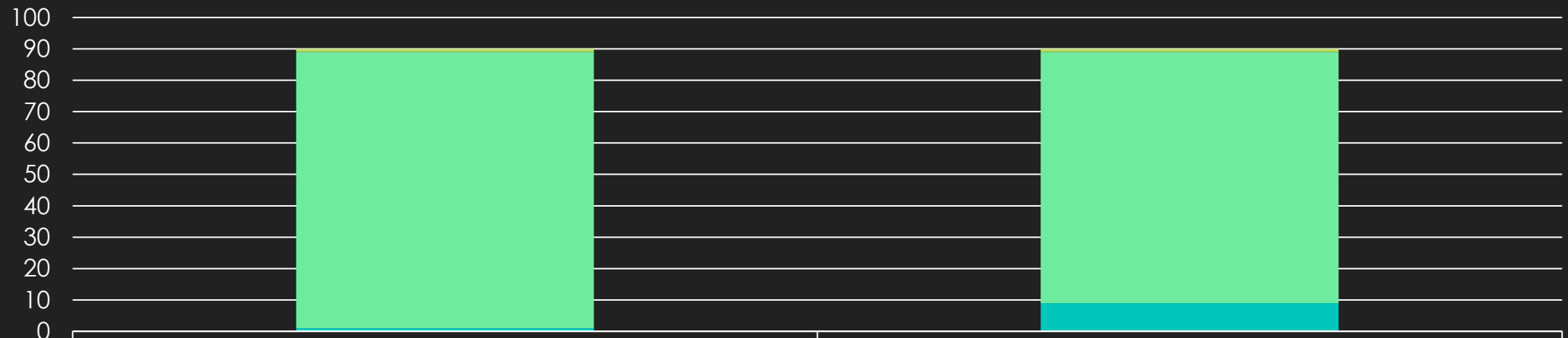
Results



	Fever	Rash	Joint Pain	Pink Eye
No	41	71	82	85
Yes	49	19	8	5

Results

How long should women and their partners wait after having had or having been exposed to Zika virus?

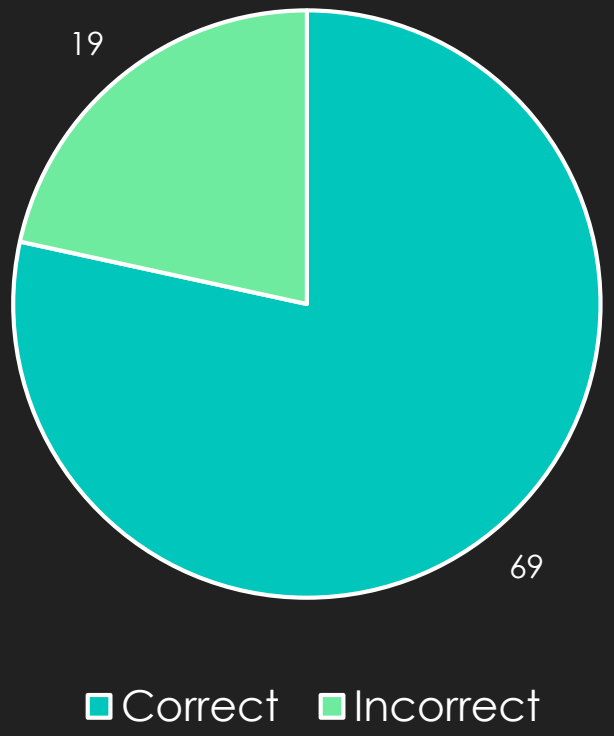


	For women	For men
Did not answer	1	1
Incorrect	88	80
Correct	1	9

Correct Incorrect Did not answer

Results

What is the best way to prevent Zika?



Were the women that reviewed the education materials more knowledgeable about Zika?

of Zika transmission routes recognized

Edu. Materials	0	1	2	3	4
No	5	4	11	1	0
Yes	11	14	39	4	1

# of Zika symptoms recognized

Edu. Materials	0	1	2	3+
No	12	1	1	1
Yes	24	26	14	5

- There was no difference* in knowledge between the women who said that they reviewed the education materials and those who said they did not.
- A higher number of women who did review the materials were able to name 2 of the main transmission routes of Zika: mosquitoes and sexual contact.

Used vs Not Useful: Qualitative Data

- Only 1 participant who used the insect repellent considered it to be "not useful" (no reason given)
- Only 1 participant who used the permethrin spray considered it to be "not useful" ("still got bitten!")
- Only 1 participant who used the water treatment tablets considered them to be "not useful," but these were some of the least utilized items along with the bed nets
- The most commonly listed reason for NOT using the water treatment tablets was "I live in an apartment"
- No one who reported using the condoms considered them to be "not useful"
- There were also 10 participants who reported that their kit did not include a mosquito net

Results:

- 4 participants who were tested for Zika virus reported that they tested positive; None of them were among our confirmed cases for 2016 (3 were suspect, ruled out)
- Better communication of Zika test results is needed, meaning better communication between CHD and clinicians, and clinicians and patients

Conclusions:

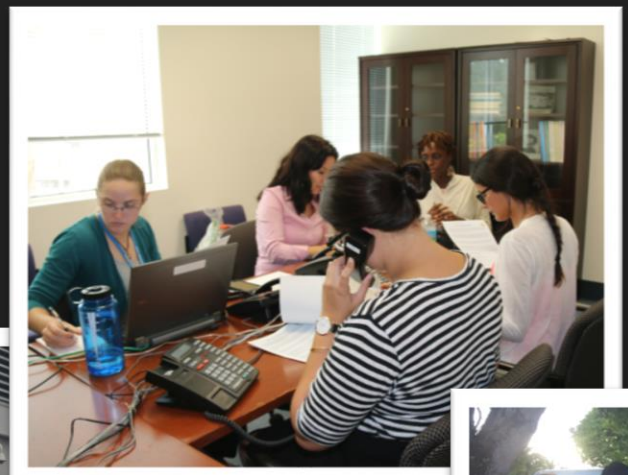
- A more wide-scale evaluation of distribution programs is needed in areas that have experienced a large Zika outbreak
- Repellent, permethrin, and condoms*: effective and often utilized by vulnerable populations
- Water treatment tablets and mosquito bed nets: under-utilized and therefore ineffective in areas such as Miami-Dade County
- Print materials such as pamphlets and flyers have may be ineffective methods of education in this and in other arboviral outbreaks

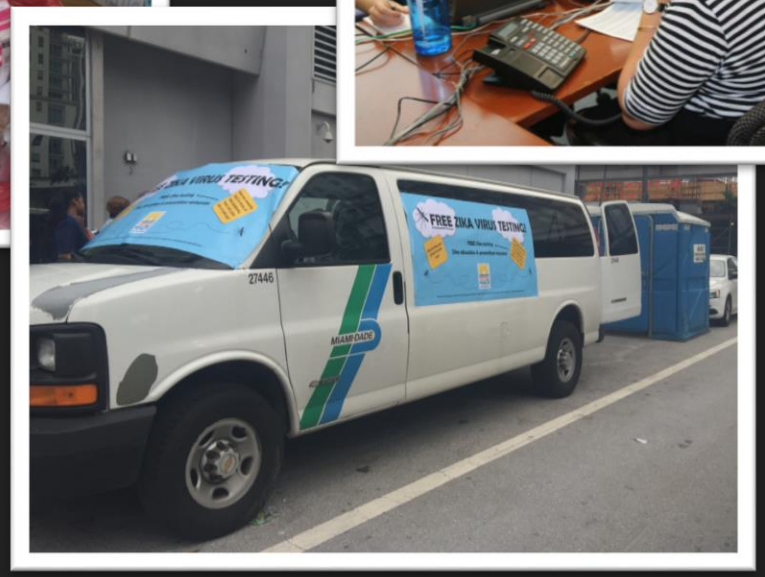
Recommendations:

- Programs should continue to distribute repellent, permethrin, and condoms throughout the duration of Zika virus outbreaks
- It might not be useful or cost-effective to distribute water treatment tablets and mosquito bed nets in areas like Miami-Dade County; these resources can be diverted elsewhere
- Educational efforts should focus on having a stronger media and social media presence; clinicians should emphasize prevention information verbally in visits with pregnant women
- A stronger emphasis should be placed on Zika transmission routes aside from mosquitoes, though the emphasis on mosquito bite prevention should not be lessened

Limitations:

- Sample size
- Recall bias
- Social desirability bias
- Short staffed
- Observational conclusions





Questions?

Emily Moore, MPH

emily.moore@flhealth.gov