

# **Dengue Vaccine Knowledge and Attitudes in Puerto Rico**

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ACIP February 27, 2020

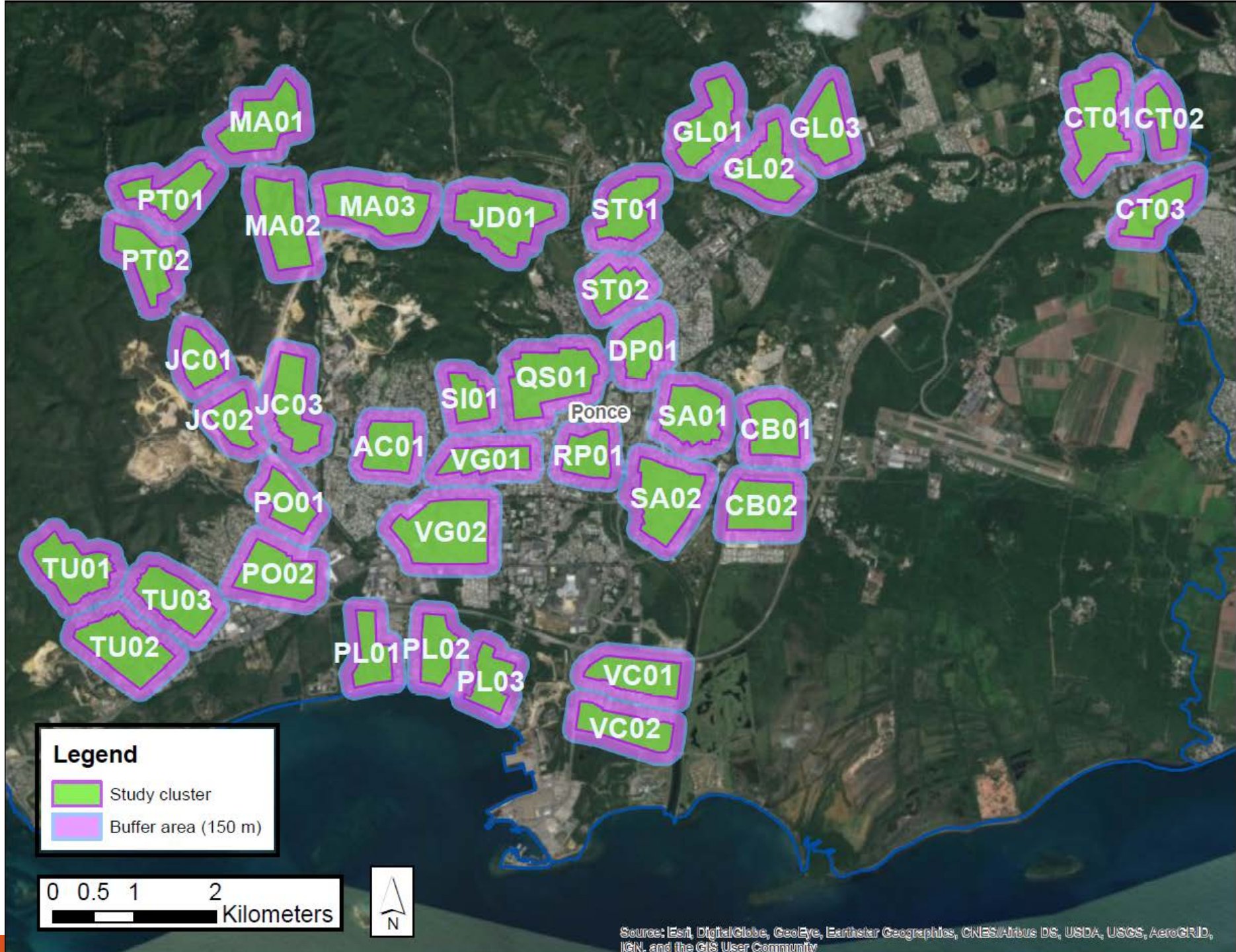
# Outline

- General Population
  - Opinions on a generic dengue vaccine
    - From household survey in Southern Puerto Rico
- Physicians
  - Online vaccine knowledge and attitudes survey in Puerto Rico
    - Sponsored by the Puerto Rico Academy of Pediatrics
- Parents of children ages 9-16 years
  - Focus groups
    - Behavioral Science Team, Dengue Branch, San Juan

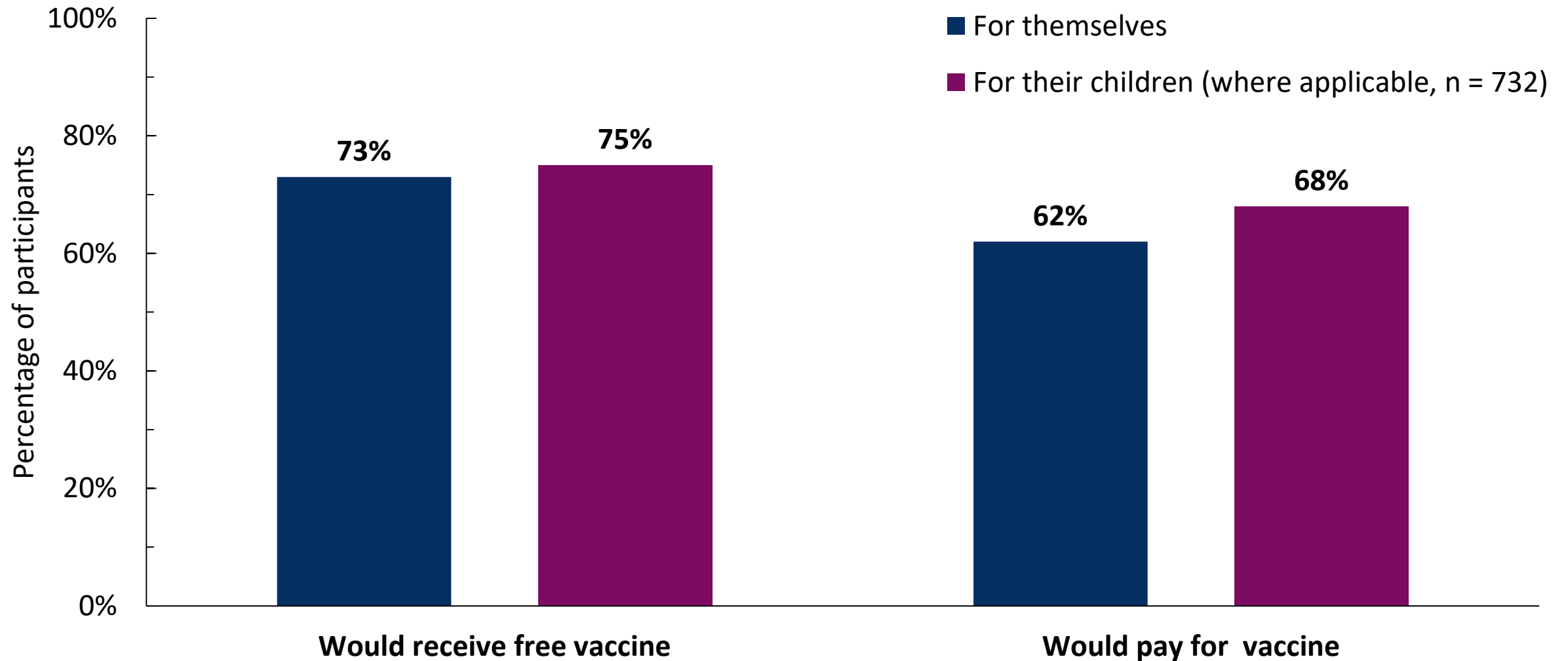


Communities Organized  
to Prevent Arboviruses

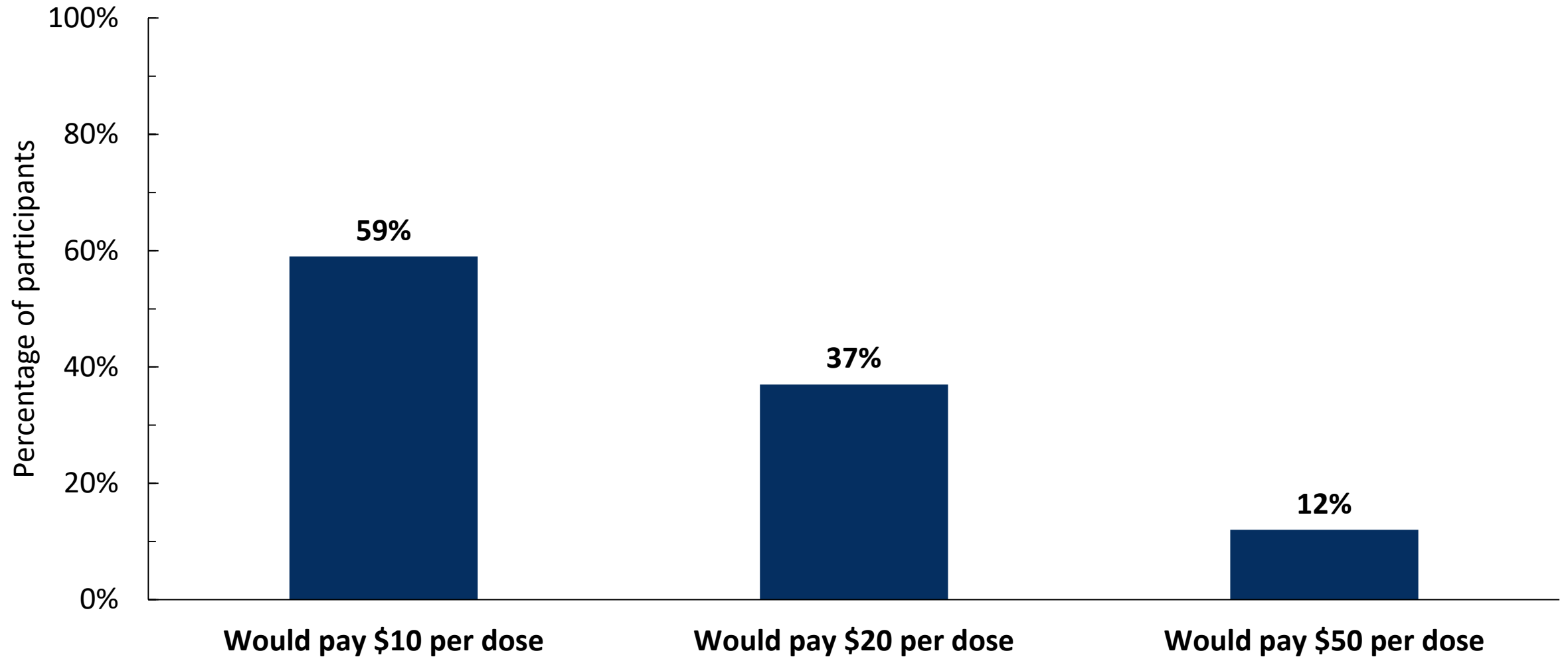
- Community-based **cohort study** implemented in 2018
- Participants recruited from selected households in **38 cluster areas**



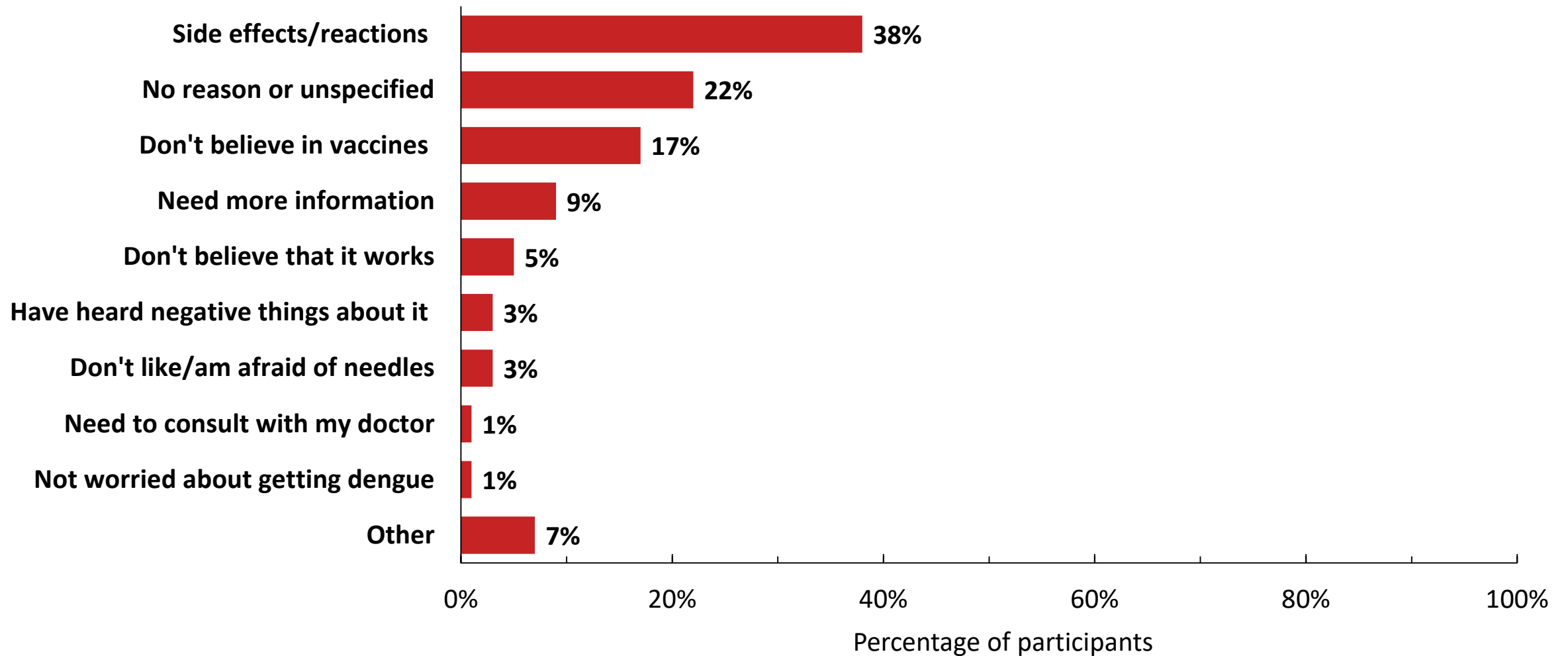
## Interest in dengue vaccine among adult participants in COPA (N = 1,139)



# Interest in dengue vaccine among adult participants in COPA (N = 1,139)

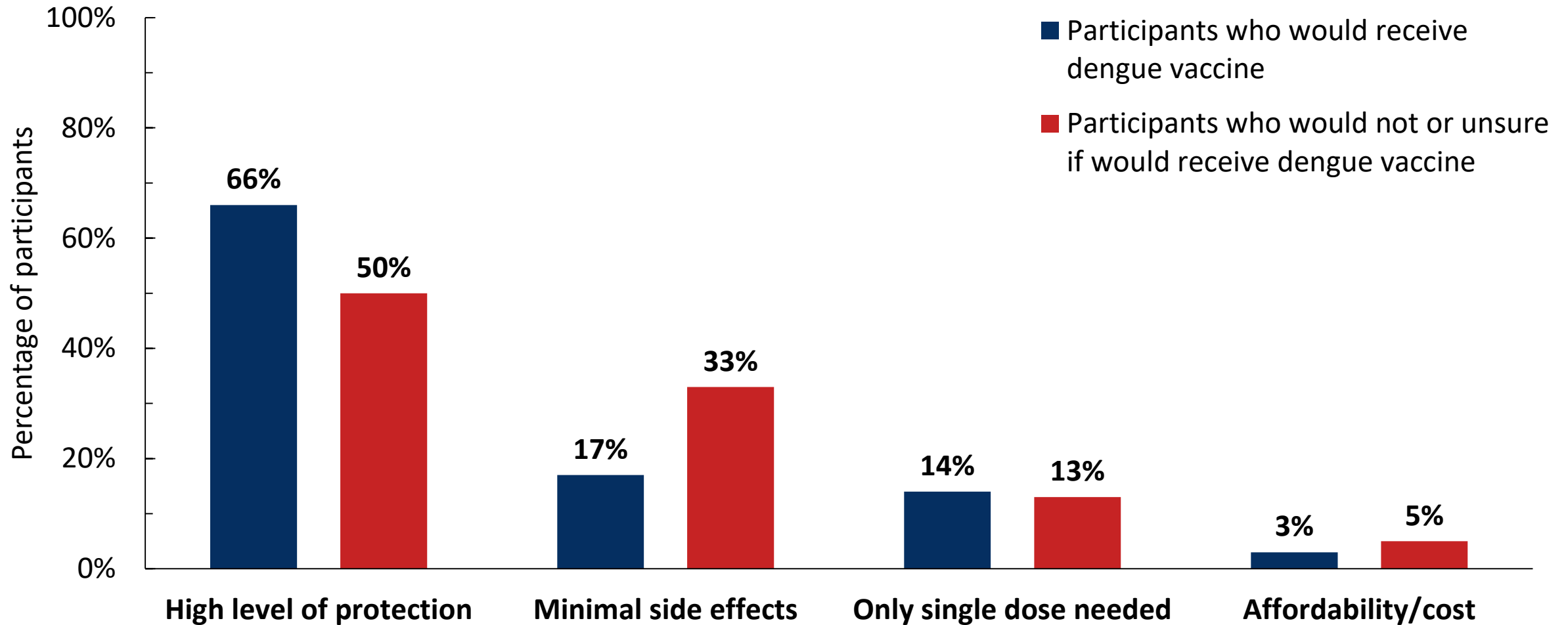


## Reasons would not or unsure if would vaccinate self and/or children among adult participants in COPA\* (N = 342)



\*Includes participants who would not receive dengue vaccine for themselves and/or for their children where applicable.

## Most important feature of a dengue vaccine among adult participants in COPA by reported willingness to receive dengue vaccine (N = 1,173)



# Dengue Vaccine Knowledge and Attitudes Survey- Puerto Rico Physicians

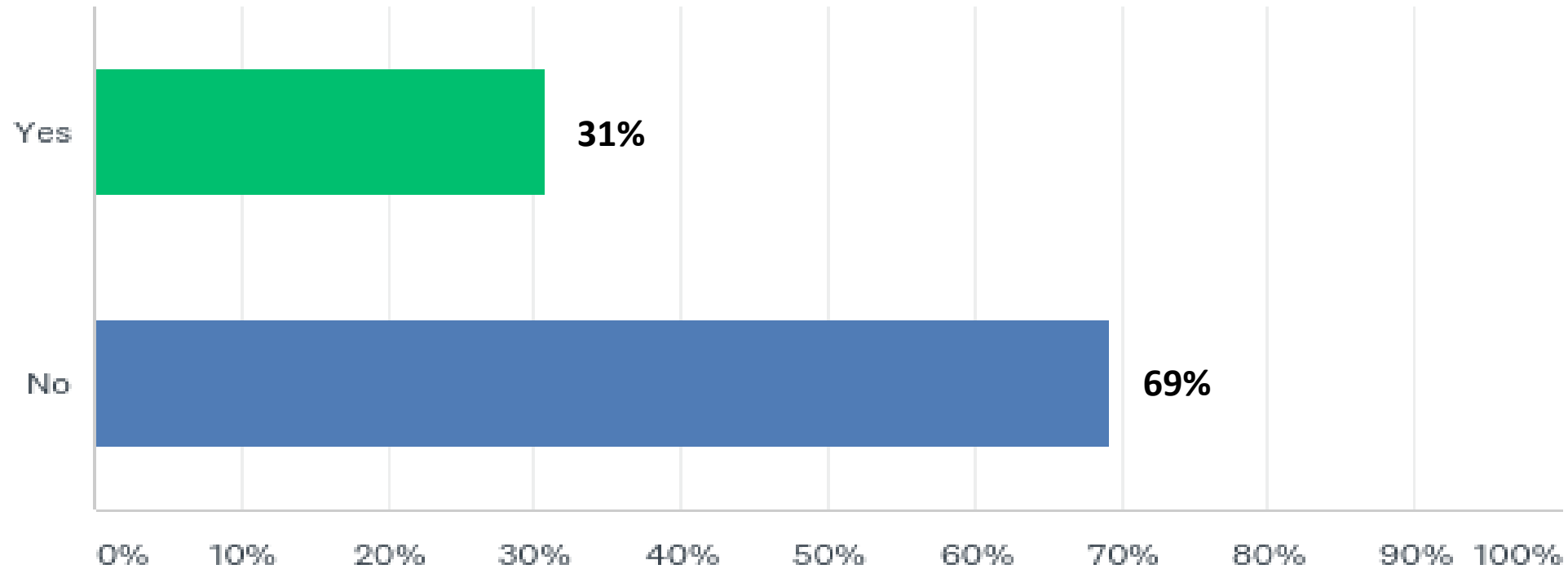


# Puerto Rico Physician Survey on (CYD-TDV) Dengvaxia Methods

- Sponsored by the Puerto Rico Academy of Pediatrics, the Puerto Rico College of Physicians, the Puerto Rico Science and Technology Trust and the University of Georgia
- Presentations by CDC Dengue Branch pediatrician to local pediatric associations during continuing education meetings in fall/winter 2019/20
- Additional surveys obtained from pediatricians in San Juan metropolitan area and from the University of Puerto Rico School of Medicine Department of Pediatrics provided with copy of CDC presentation, published literature on CYD-TDV and available laboratory tests for pre-vaccination screening
- Survey included informational paragraph on risks of hospitalization and severe illness in vaccinated seronegatives and implications for pre-vaccination test specificity
- N=115, 102 complete, 81% practicing pediatricians or pediatric sub-specialists

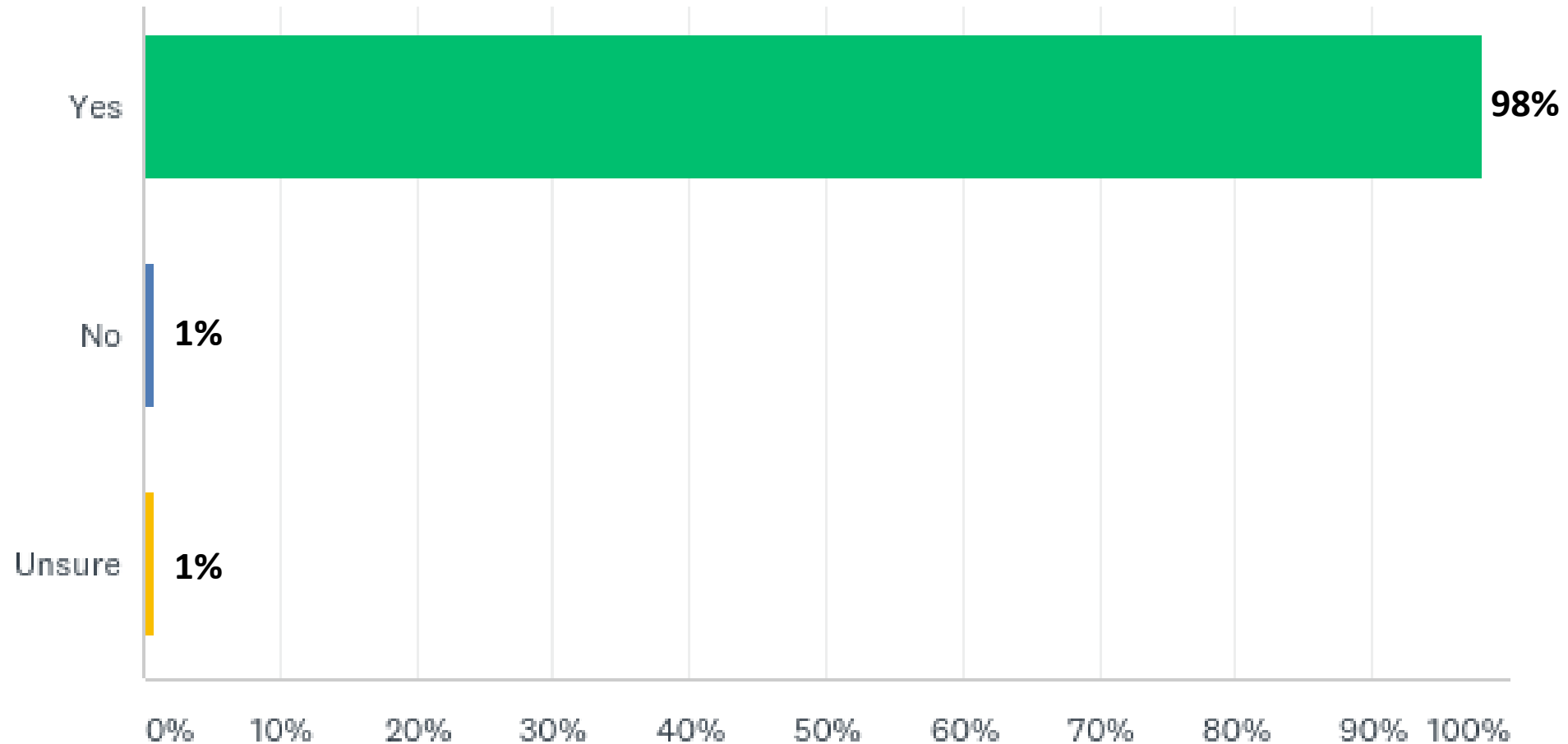
# Do you administer vaccines in your office?

- Answered: 110 Skipped: 5



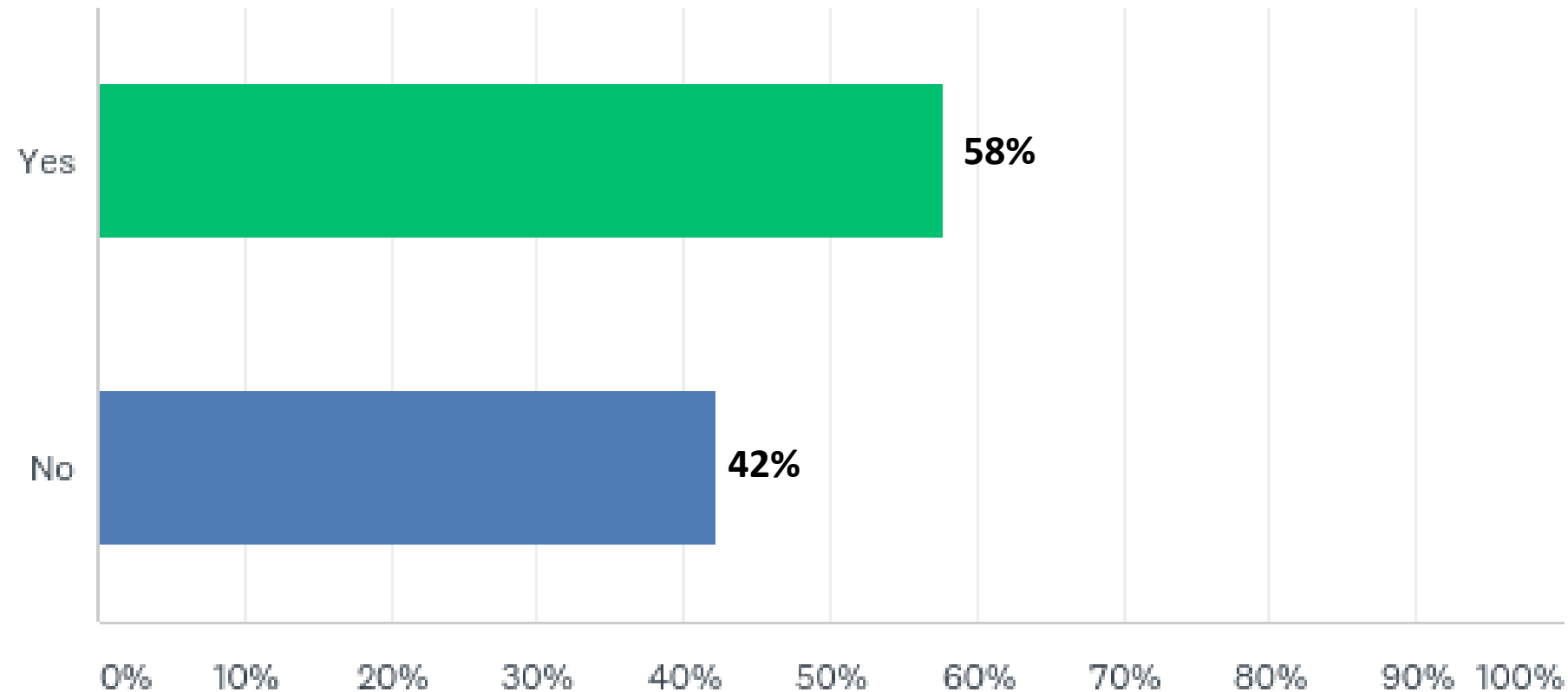
# Do you think dengue is a significant public health problem in Puerto Rico?

■ Answered: 110 Skipped: 5



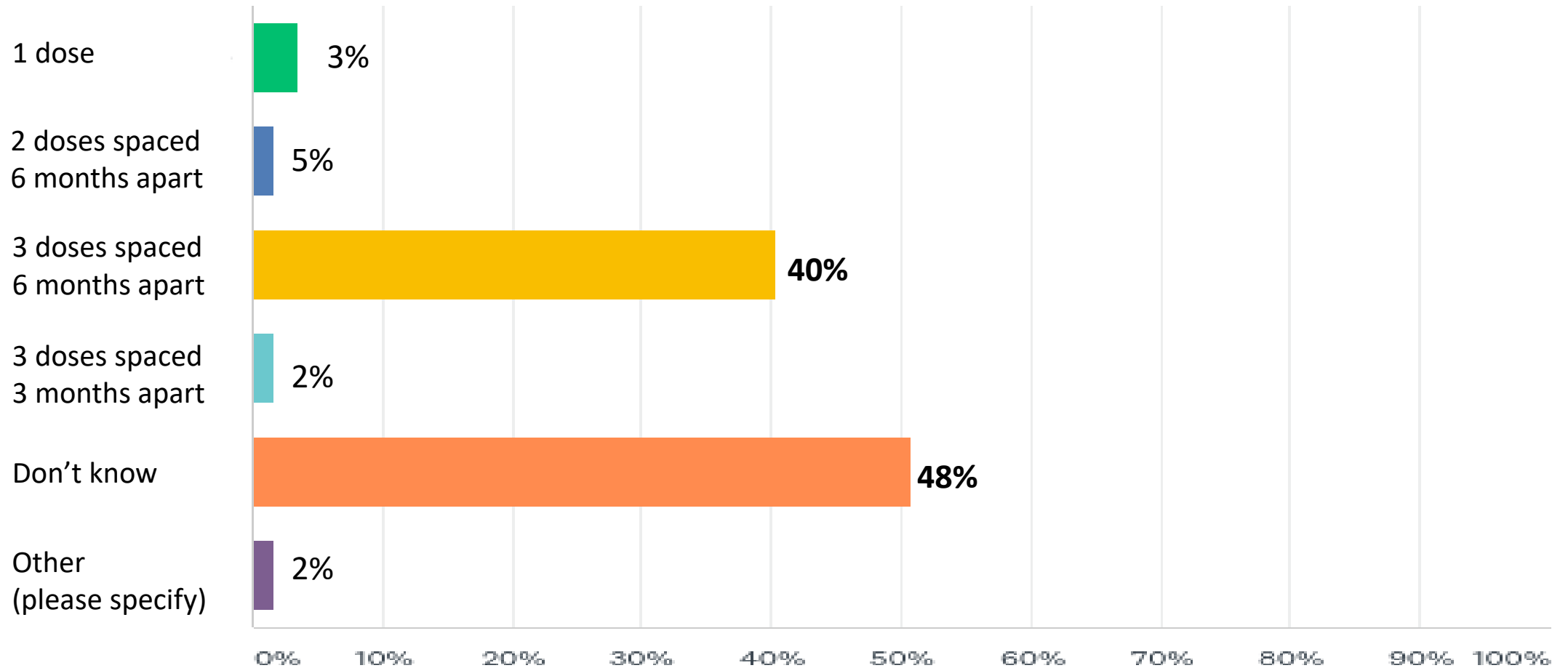
# Do you know there is an FDA approved vaccine for dengue known as Dengvaxia?

- Answered: 111 Skipped: 4



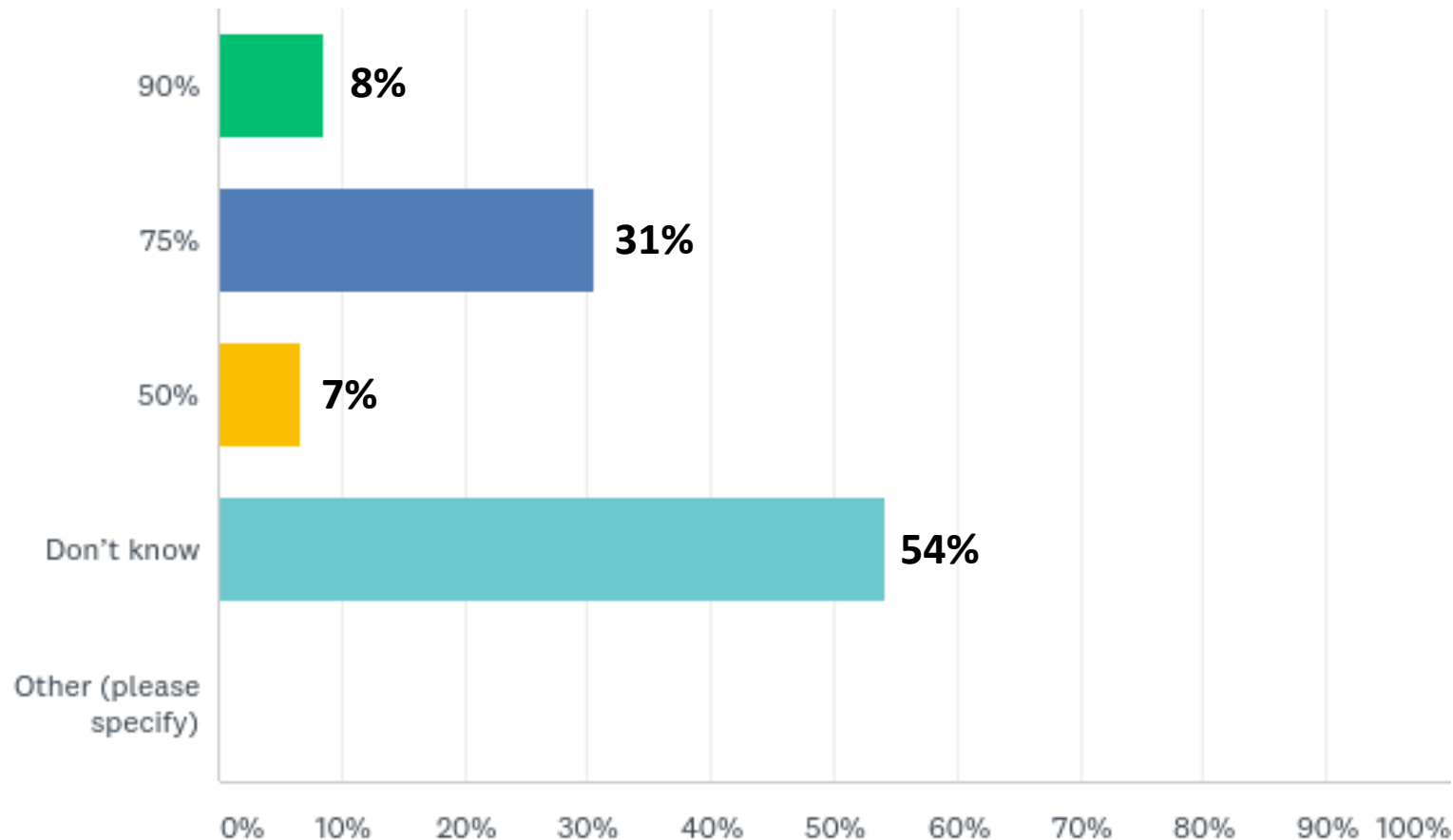
# If yes, what is the recommended schedule for Dengvaxia? Check one.

■ Answered: 62 Skipped: 53



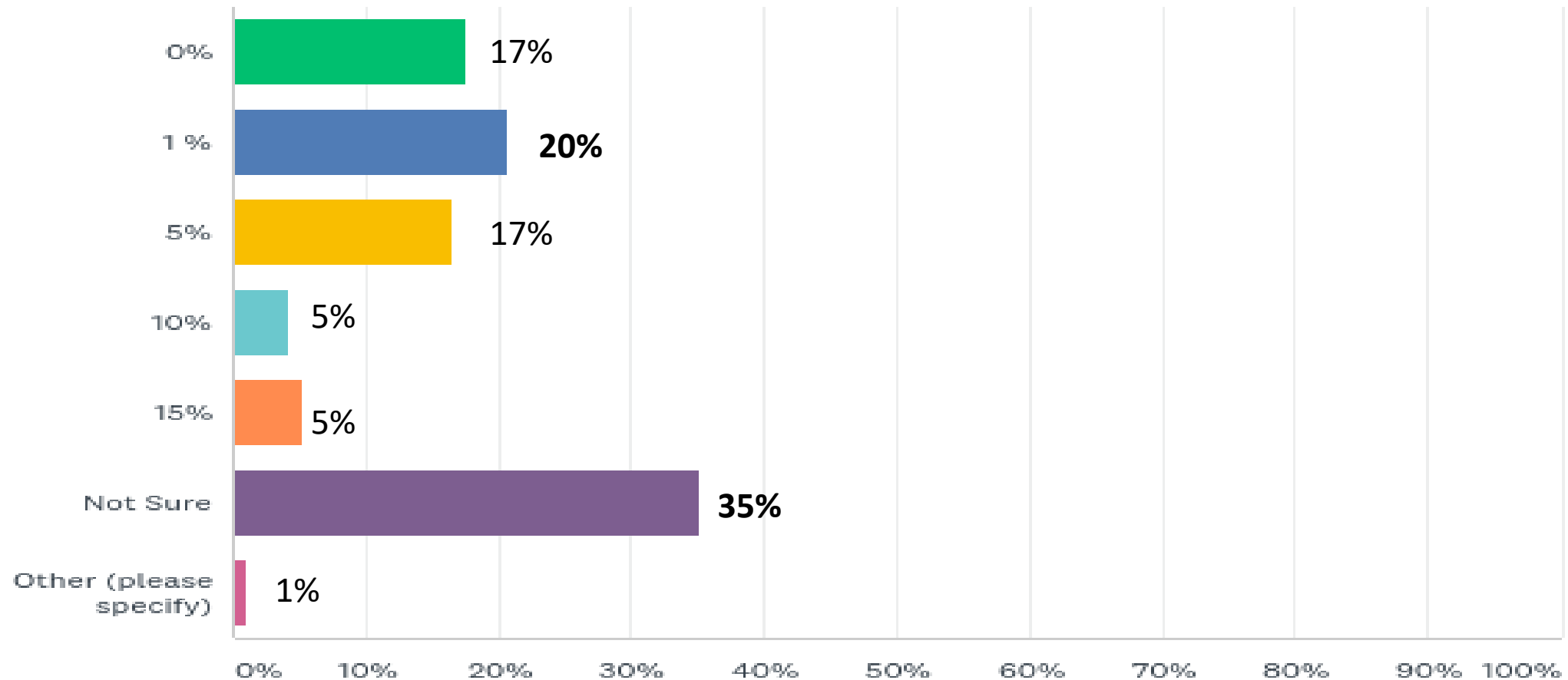
# If yes, what is the approximate efficacy of Dengvaxia against clinical dengue when given as indicated to 9-16 year old children who have laboratory evidence of a prior dengue infection?

- Answered: 59 Skipped: 56



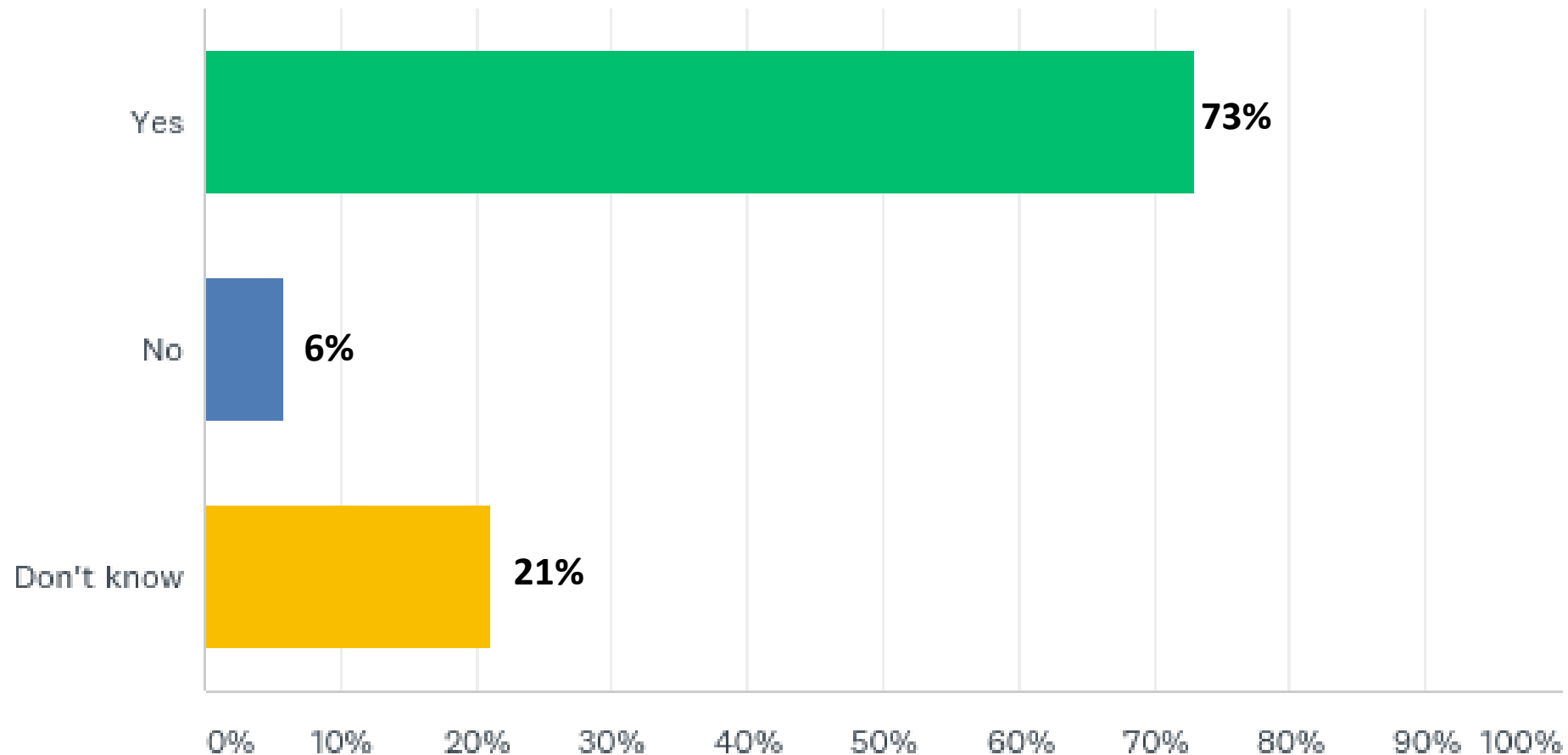
# What percent of false positive tests would you be willing to accept if you were to recommend Dengvaxia vaccine to your pediatric patients?

- Answered: 103 Skipped: 12



# Assuming a laboratory test with acceptable specificity were available, would you recommend Dengvaxia to your pediatric patients?

- Answered: 104 Skipped: 11





# If yes, why would you recommend Dengvaxia to your pediatric patients? Check all that apply.

- Answered: 73 Skipped: 42

ANSWER CHOICES	RESPONSES	
Dengue is an important public health problem in Puerto Rico and a reasonably effective vaccine is available for seropositive persons	95.89%	70
Laboratory testing sufficiently reduces the possibility of vaccinating falsely lab positive persons	39.73%	29
Other (please specify)	2.74%	2
Total Respondents: 73		

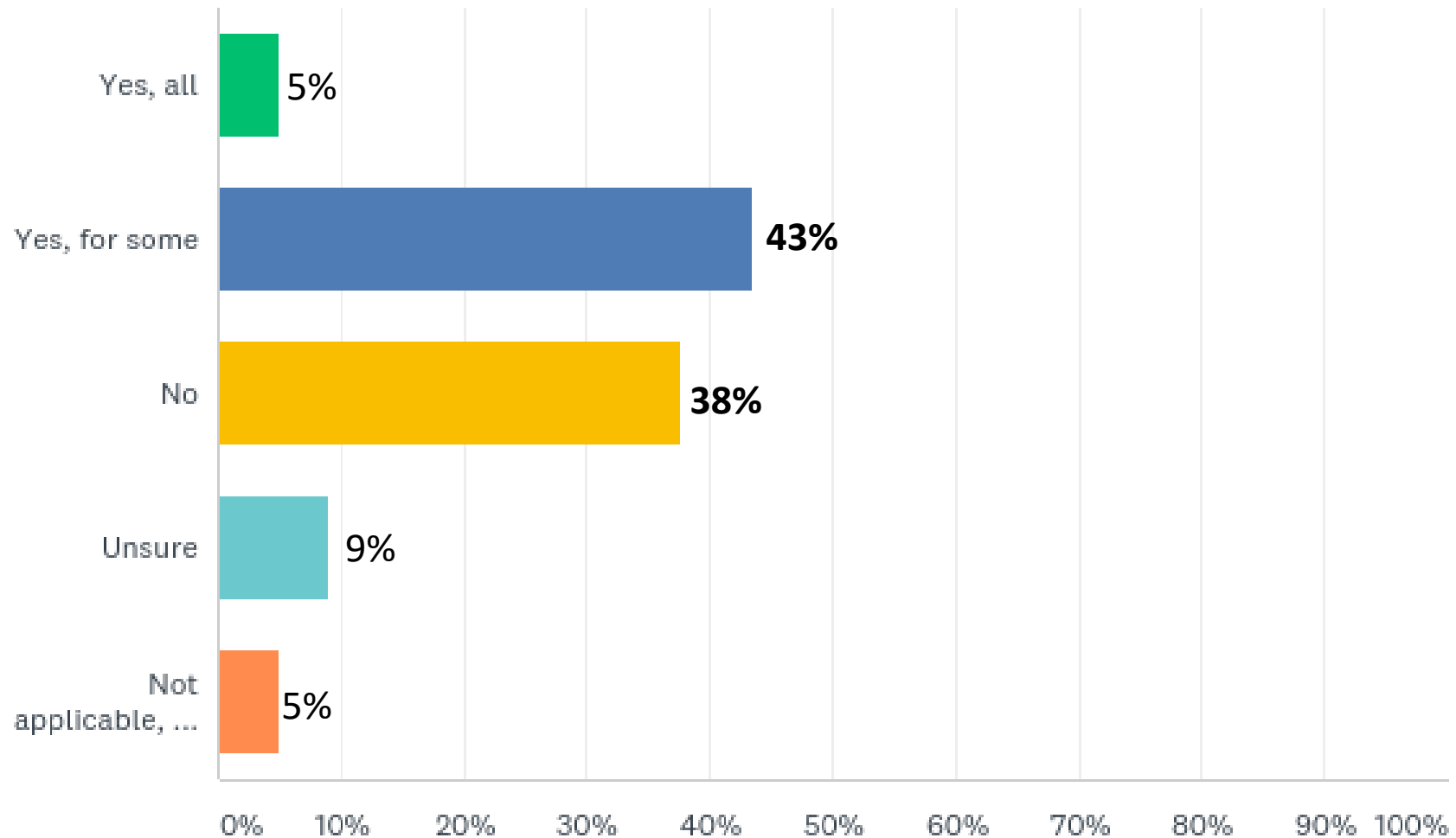
## If no or unsure, why? Check all that apply.

- Answered: 28 Skipped: 87

ANSWER CHOICES	RESPONSES	
Dengue is not an important enough health problem in the Puerto Rico to justify the cost of a vaccination program	3.57%	1
Concern about the risks of vaccinating persons with falsely positive dengue laboratory test results	71.43%	20
The vaccine is not sufficiently effective	7.14%	2
I would prefer to wait until a better vaccine is available for dengue	39.29%	11
I have heard negative things about the vaccine in the media	3.57%	1
I need to get more information	75.00%	21
Other (please specify)	0.00%	0
Total Respondents: 28		

# For the patients you have diagnosed with dengue, do you have documentation of positive dengue laboratory tests in the medical record?

■ Answered: 101 Skipped: 14



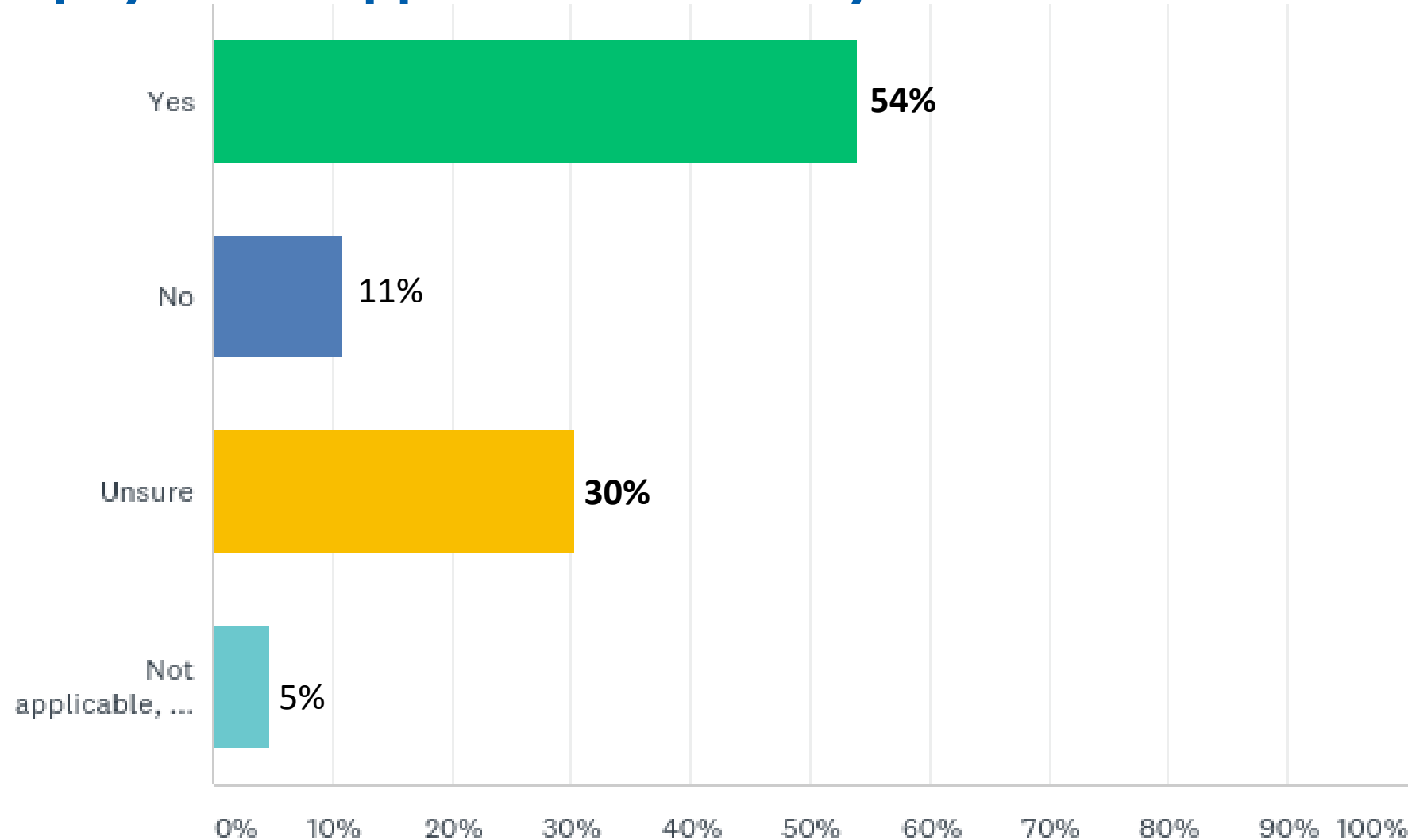
# If you support dengue vaccination with Dengvaxia, in your opinion, what are the necessary steps to enable a vaccination program for children in Puerto Rico? Check all that apply.

■ Answered: 101 Skipped: 14

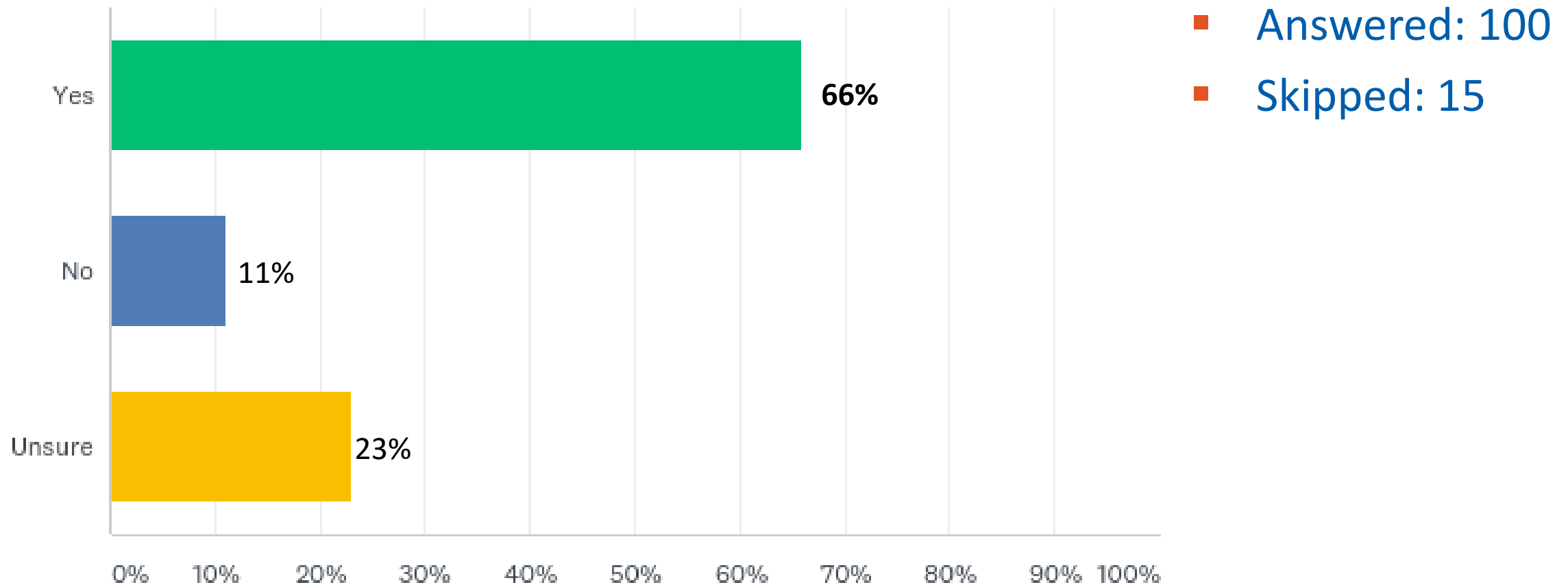
ANSWER CHOICES	RESPONSES	
Vaccines for Children (VFC) program and private insurance coverage for the vaccine	86.14%	87
Insurance coverage of the laboratory test for detection of past dengue infection	82.18%	83
Mandated dengue vaccination among schoolchildren by the Puerto Rico Secretary of Health	34.65%	35
An ACIP recommended or FDA approved laboratory test for pre-vaccination screening	71.29%	72
A carefully researched script with frequently asked questions and answers for explaining the risks and benefits of Dengvaxia to parents	62.38%	63
Not applicable, I do not support dengue vaccination with Dengvaxia	3.96%	4
Other (please specify)	1.98%	2
Total Respondents: 101		

**If insurance coverage for vaccine and lab test were not available, would you still recommend vaccination for your private patients whose parents could pay for an approved laboratory test and the vaccination.**

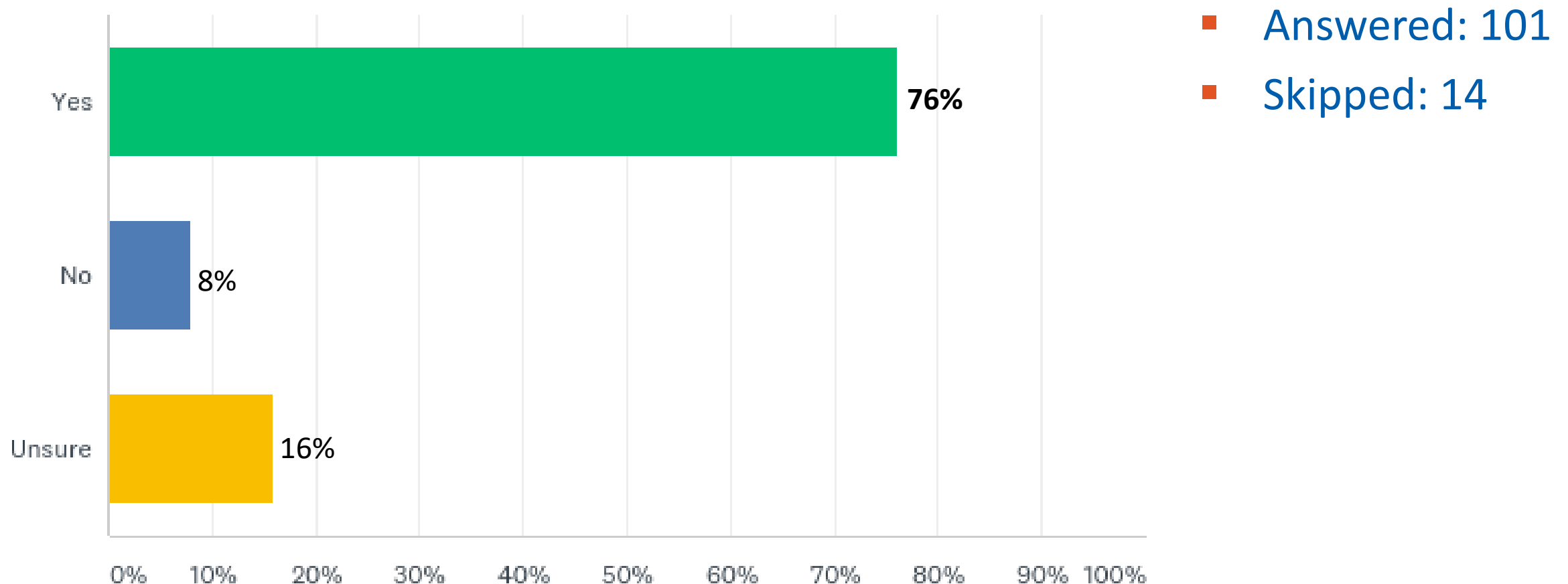
- Answered: 102
- Skipped: 13



**If a recommended rapid diagnostic test for past dengue infection were available, would you support changes in Puerto Rico laboratory regulations to allow such a test to be performed in the medical office, so that the first dengue vaccination would not require two or more patient visits.**



# Would you favor a pilot project with a phased in (e.g., slowly scaling up starting with discrete high risk populations) approach of dengue vaccination with Dengvaxia before implementing a large-scale program in school age children throughout Puerto Rico?





# Assessing acceptability of CYD-TDV vaccination of 9-16 year old children by Puerto Rico parents

Behavioral Science/Communications Team  
Dengue Branch, San Juan  
February, 2020

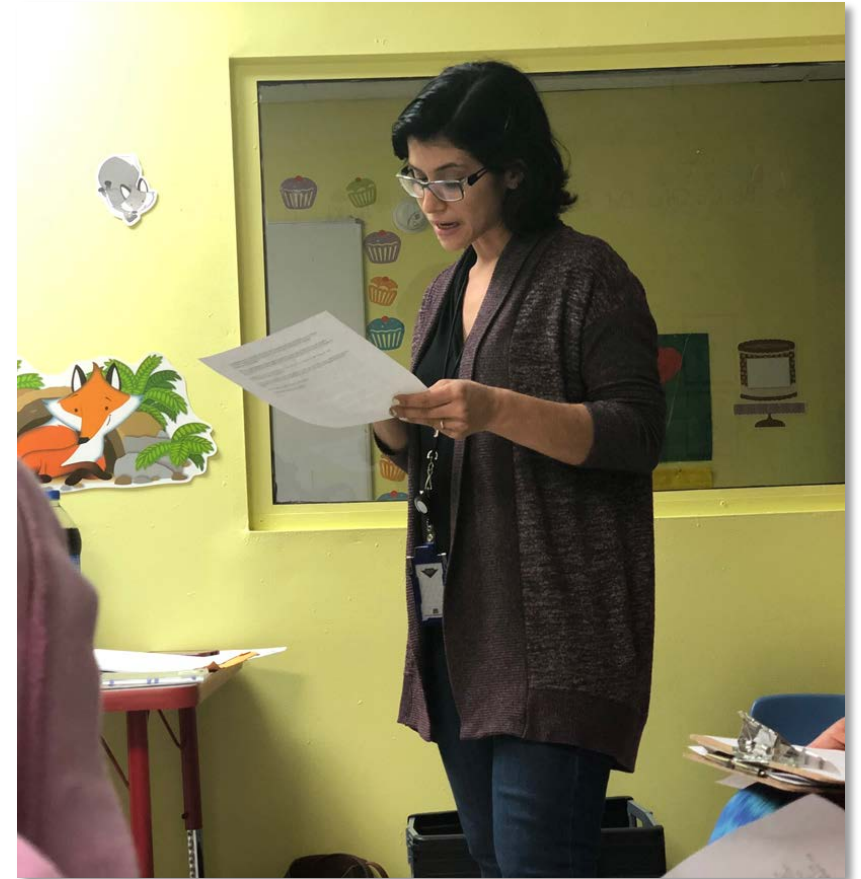


# Objectives

- Assess acceptability to participants of vaccinating their children with Dengvaxia.
- Determine barriers to and motivators for a dengue vaccination program.
- Identify knowledge, attitudes, and beliefs towards vaccines in general.

# Methods

- Focus Group Discussions (FGD)
  - High dengue incidence municipalities (San Juan, Carolina and Ponce)
  - Script with information about Dengvaxia
- Sample selection
  - Parents of children aged 9 – 16 years old
  - Convenience sampling
- Data Collection
  - Written notes
- Analysis
  - Category-based content analysis of FGD notes
  - Unit of analysis – participants' comments



Moderator reading Dengvaxia Script

# General Opinions about Dengue Vaccines

- Most participants had questions about having a dengue vaccine
- A few participants had mixed opinions about having a dengue vaccine
  - *“I would love it if there was a dengue vaccine; I would use it, but I would wait to see the effects it would have in other children.”*
  - *“I don’t find this vaccine necessary.”*
  - *“It (the vaccine) should be optional. ”*



# Opinions about Dengvaxia

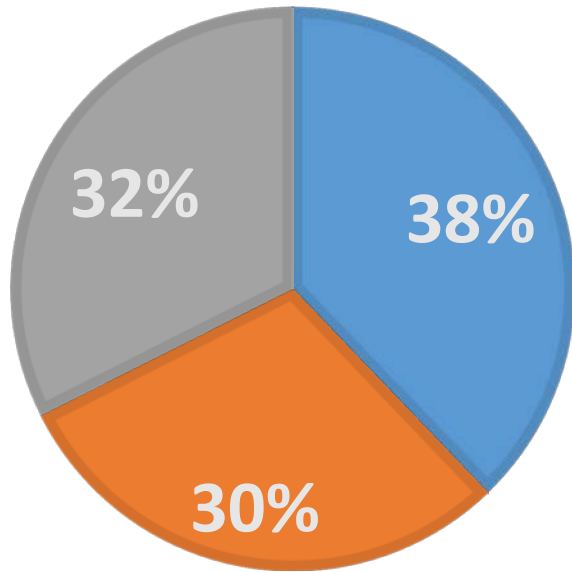
- Almost all participants did not know about Dengvaxia
- 3/38 participants had heard about Dengvaxia
  - One mention of vaccine related deaths



***“I’ve heard about the fact that people who got the vaccine, should have had dengue before and I’ve heard that there have been deaths because of complications.”***

## WILLINGNESS TO VACCINATE

■ Yes ■ No ■ Unsure



- Yes
  - *“If he had a previous dengue infection, yes.”*
  - *“...the blood test gives me peace of mind, and yes, I would consider it.”*
- No
  - *“No, because there is not enough research and data... There needs to be something longitudinal where we can see the effects.”*
  - *“I don’t think that it’s 100% effective and safe. ...they have experimented with us, like it happened in the past with the contraceptives...”*
- Unsure
  - *“I will continue to inform myself a little more, for a little while.”*

✗ Lack or Inconsistent information

\$ High cost/lack of insurance coverage

⌚ Time consuming lab test

💉 Side effects

🔬 Laboratory test results are not 100% reliable

🌐 Approval for use only in U.S. territories

👂 Sickness at the time of vaccination

📦 Low effectiveness of the vaccine

Barriers for  
vaccine  
program  
participation



# Motivators for vaccine program participation



Correct vaccine information



Information about DENV and statistics in PR



Prevention of future dengue infections



Support of PR Department of Health



Lab confirmation of previous dengue infection



An epidemic



Educational forums

# Acceptable Costs for Dengvaxia

- Most participants would pay a deductible for the vaccine.
- Range of acceptable costs for Dengvaxia
  - Preferably no cost
    - Covered by health insurance (*La Reforma*)
    - Government (VFC)
  - Insurance deductible range \$5 - 20
  - No insurance - between \$50 – 80



***“The price in the market”; “I would spare [no cost] for my child’s health.”***



# Information Needs about Dengvaxia

- ✓ Justification for age range (9-16)
- ✓ Studies in other countries
- ✓ Approval process
- ✓ Vaccine type / components
- ✓ Dosage / schedule
- ✓ Effectiveness
- ✓ Side effects
- ✓ Risk and benefits

- ✓ Interaction with medications and medical conditions
- ✓ Reactions of vaccine with subsequent dengue infection
- ✓ Countries using the vaccine
- ✓ Justification of use in US territories
- ✓ PR Department of Health's scheduled vaccines requirement
- ✓ Dengue lab tests

# Culturally Relevant Vaccine Information

- ✓ Safety & effectiveness
- ✓ Benefits & risks
- ✓ Results of clinical trials
- ✓ Other countries' use
- ✓ Confidentiality
- ✓ Written in plain language

*“Side effects, risks...clear and specific. For example, if it can cause fever, a headache; but also [include] if it has risks or side effects on the long run.”*

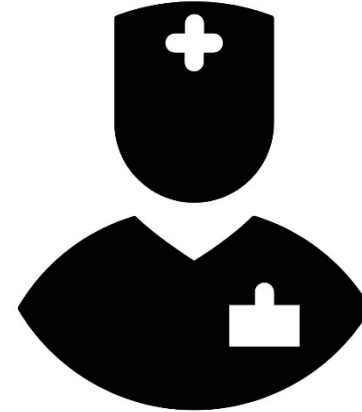
*“And in plain language.”*

*“In a clear and concise manner, not with a lot of words.”*

# Best Sources of Information

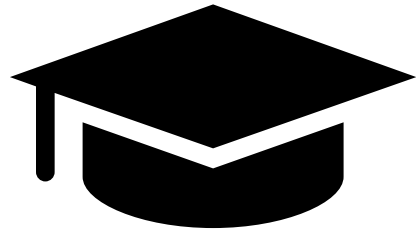


Doctors



Nurses

Best Sources  
Information



Academy



CENTERS FOR DISEASE  
CONTROL AND PREVENTION

# Conclusions

## General Population

- Participants demonstrated interest in the dengue vaccine among most adult participants for themselves and their children.
- Side effects and possible adverse reactions were the most important reason for those not wanting to receive the dengue vaccine.
- Among adult participants willing to receive the dengue vaccine, a high level of protection and minimal side effects were the most important features.

# Conclusions

## Physicians Knowledge and Attitudes Survey

- Most participants were pediatricians
  - Only 30% administer vaccines at their offices
- Almost all physicians recognize that dengue is a significant public health problem in PR, but 43% were not aware that there is a FDA approved dengue vaccine.
- Further physician education needed regarding CYD-TDV vaccine, its schedule and efficacy, and safety
- Most physicians would recommend the vaccine if a laboratory test with acceptable specificity were available to document prior dengue infection.
- Medical record documentation of past positive dengue laboratory diagnostic tests for patients is limited
- Most physicians view the necessary steps to establish a vaccination program in PR include Vaccines for Children (VFC) and private insurance coverage for the vaccine and the laboratory test

# Conclusions

## Parental Acceptability Focus Groups

- Most parents would agree to vaccinate if they have information on Dengvaxia.
- Most important barrier for parental consent to vaccinate with Dengvaxia is lack of detailed information.
- Most important motivators are having information about Dengvaxia effectiveness, side effects, rationale for use in Puerto Rico and current use in other countries; having the support of the UPR, PRDH and CDC; disease prevention impact.
- Influencers will be pediatricians and the family.

**Thank You!**