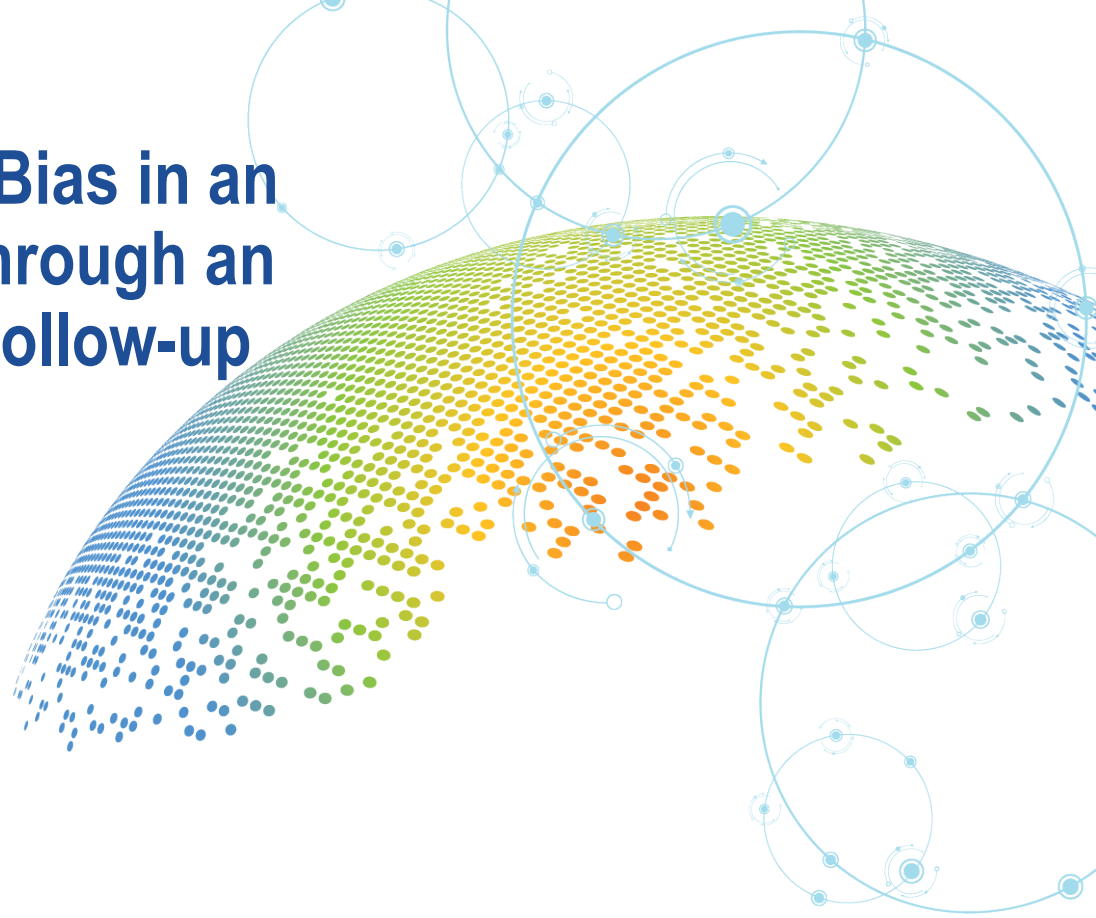


# Examining Nonresponse Bias in an Address-Based Sample through an In-Person Nonresponse Follow-up

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# Background

- Increasing costs for in-person data collection and decreasing response rates for telephone data collection have resulted in many studies transitioning to address-based sampling (ABS) with mail recruitment.
- As more studies transition to ABS with mail recruitment, it's important to understand nonresponse bias.
- We conducted an in-person nonresponse follow-up study with an ABS that was recruited to complete a statewide health survey funded by a state department of health.
  - Phase 1: Recruited households through a series of mailings to complete the survey via PAPI or web
  - Phase 2: Recruited a subset of nonresponding households with an in-person data collector to complete the survey via web

# Research Questions

What impact does the in-person nonresponse have on:



Respondent demographic characteristics

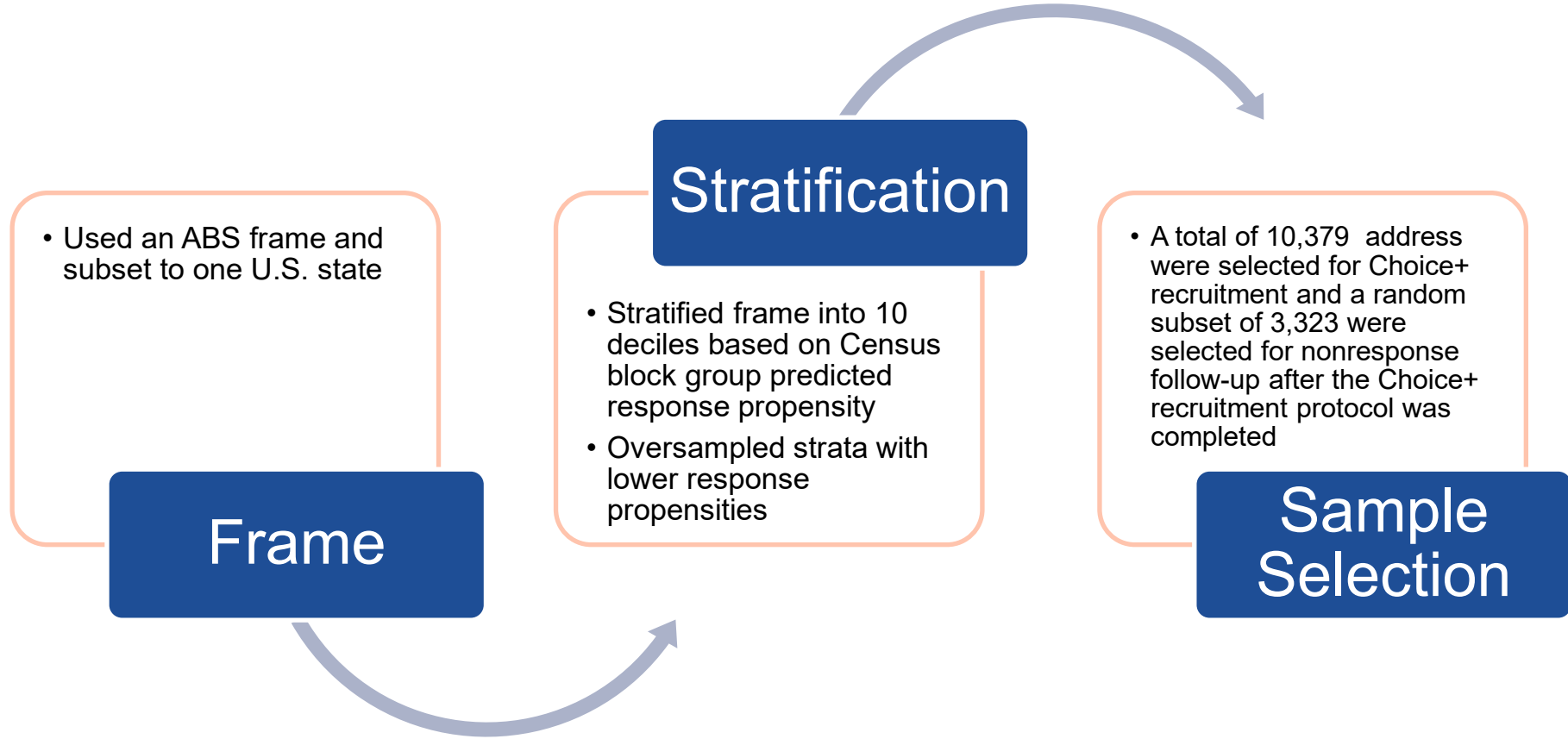


Study outcomes

The background of the slide is a solid dark blue. It is decorated with several white geometric elements: thin white lines forming arcs and circles, some of which are interconnected. There are also small white circles, some of which are solid and some are hollow. The overall aesthetic is clean, modern, and technical.






# Methods

# Sample Design



# Phase 1: Choice+ Methodology

- Used a Choice+ recruitment methodology with 5 mailings

Mailing 1 	Mailing 2 	Mailing 3 	Mailing 4 	Mailing 5 
<ul style="list-style-type: none"><li>• Prenotification postcard</li></ul>	<ul style="list-style-type: none"><li>• Packet 1</li><li>• \$5 cash pre-incentive</li><li>• Choice of PAPI or web survey</li></ul>	<ul style="list-style-type: none"><li>• Reminder postcard</li></ul>	<ul style="list-style-type: none"><li>• Packet 2</li><li>• Choice of PAPI or web survey</li></ul>	<ul style="list-style-type: none"><li>• Reminder postcard</li></ul>

- Households could complete the survey via PAPI or web and a higher incentive was provided for a completed web survey

# Phase 2: In-Person Nonresponse Follow-up Methodology

- An enhanced recruitment protocol was used for a subset of households with unknown eligibility after the Choice+ recruitment

- Trained interviewers attempted to make in-person contact with each household a minimum of seven times

Recruitment



- Screened households to determine eligibility
- Randomly selected household member to complete the survey

Screening



- Selected household member completed the web survey via a tablet provided by the interviewer

Survey  
Completion





# Results



# Response Rates

	Respondents	Nonrespondents	Unknown Eligibility	E	Response Rate*
Choice+	3,392	116	6,677	0.948	34.5%
In-Person	1,250	1,877	47	0.955	39.4%
In-Person Adjusted**	2,511.7	3,771.5	94.4		
<b>Total***</b>	<b>5,903.7</b>	<b>3,887.5</b>	<b>94.4</b>	<b>0.952</b>	<b>59.7%</b>

\*AAPOR 3 response rate formula

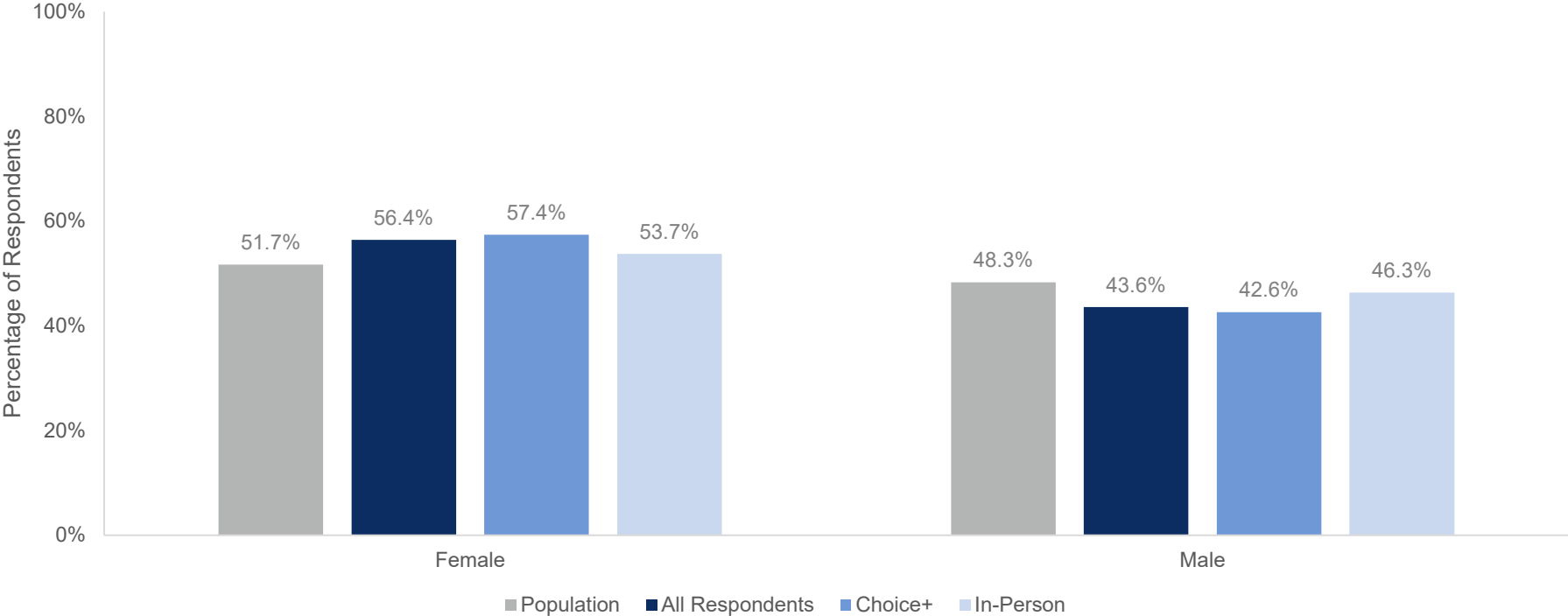
\*\*Accounts for selection of sample members for in-person follow-up. This row equals the “in-person” row when multiplied by the ratio of sample members eligible for in-person data collection and the sample members selected for in-person data collection (6,677/3,324).

\*\*\*Includes Choice+ and In-person adjusted

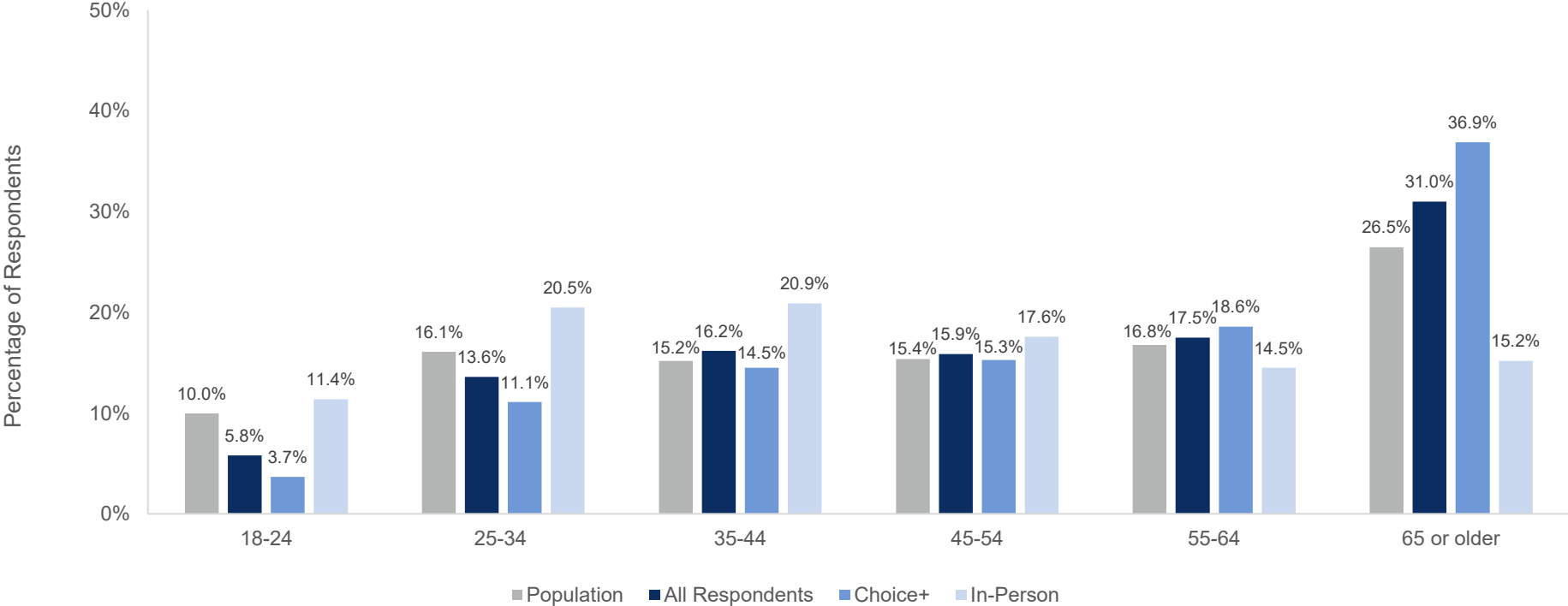
# Respondent Demographic Characteristics



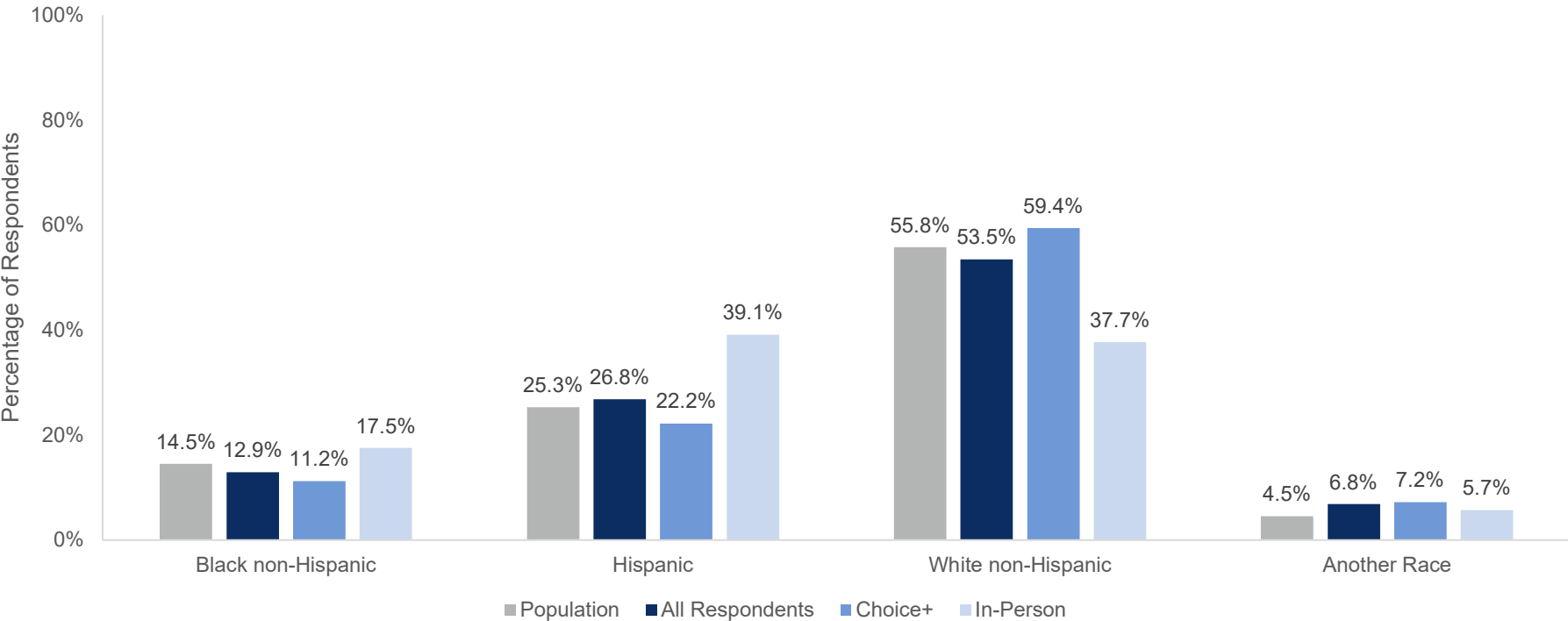
# Demographic Characteristics – Sex



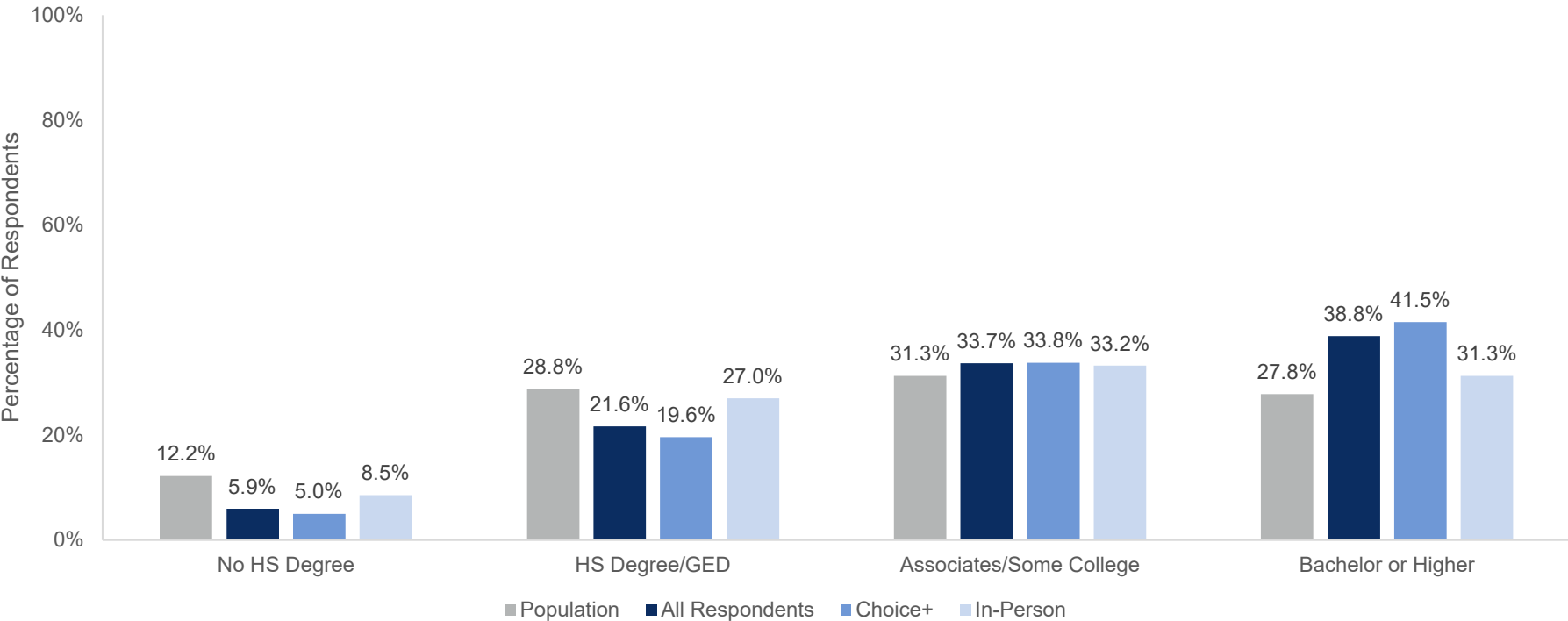
# Demographic Characteristics – Age



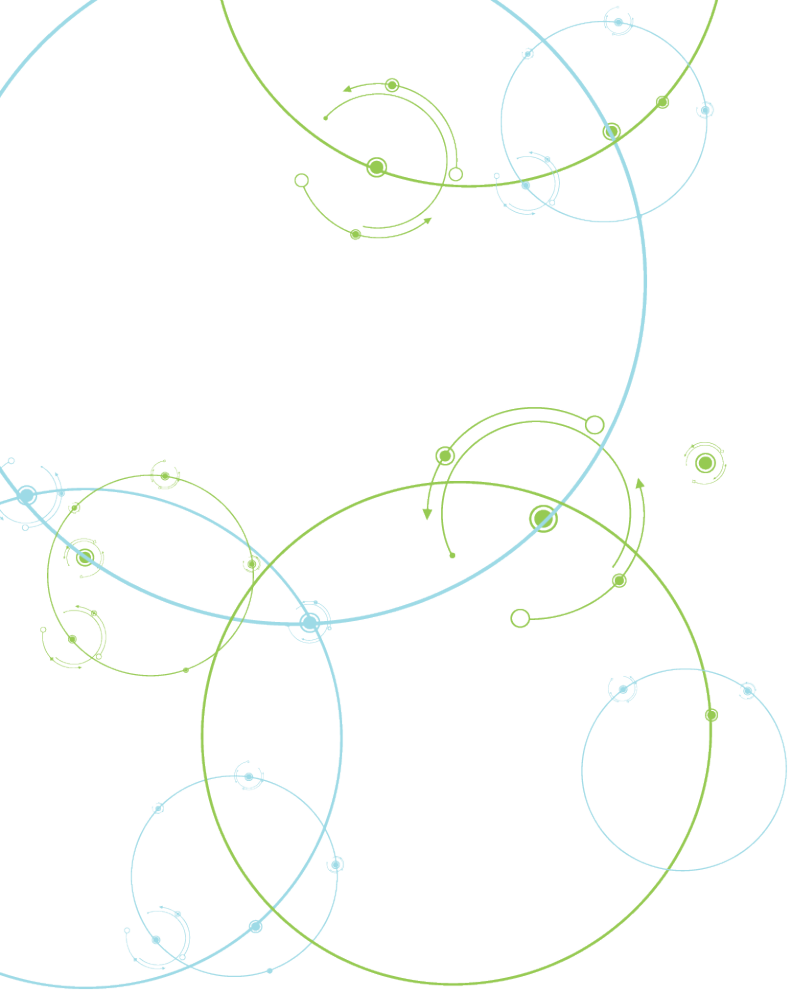
# Demographic Characteristics – Race/Ethnicity



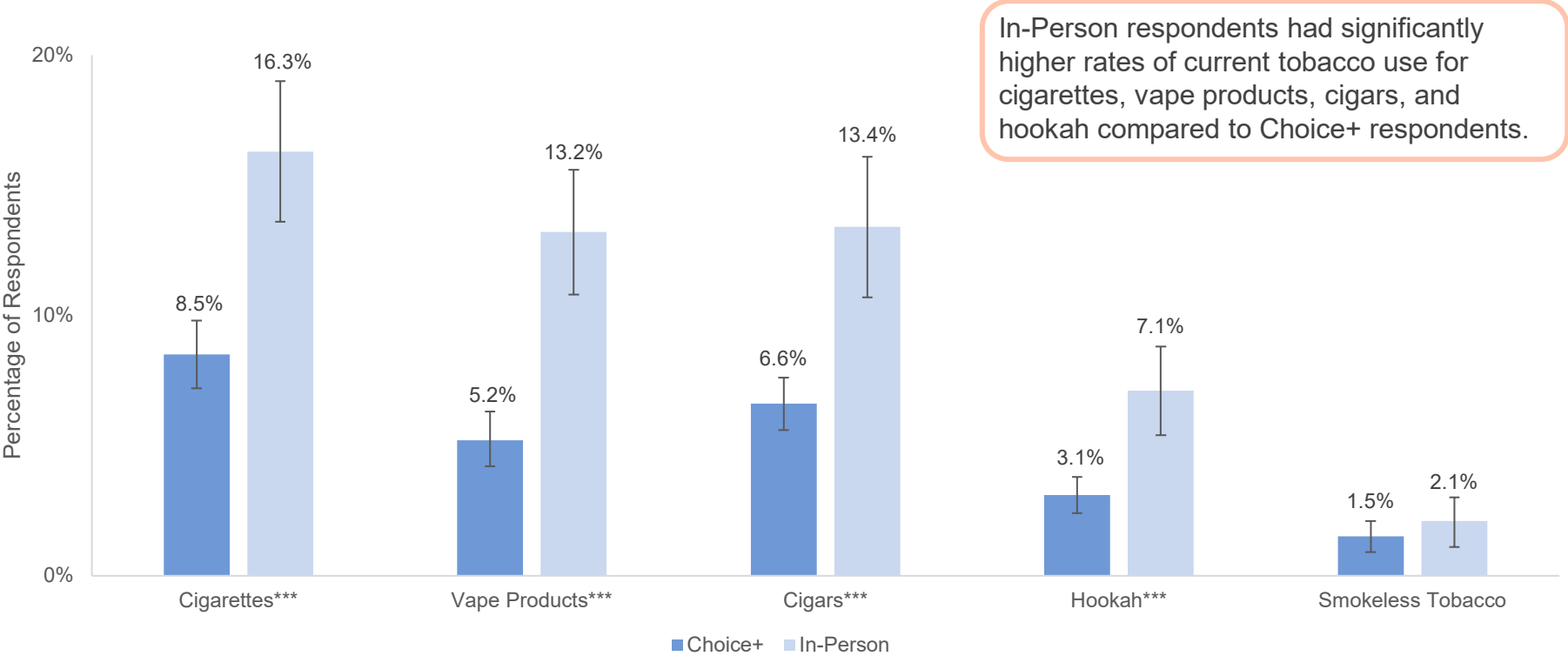
# Demographic Characteristics – Educational Attainment



# Study Outcomes



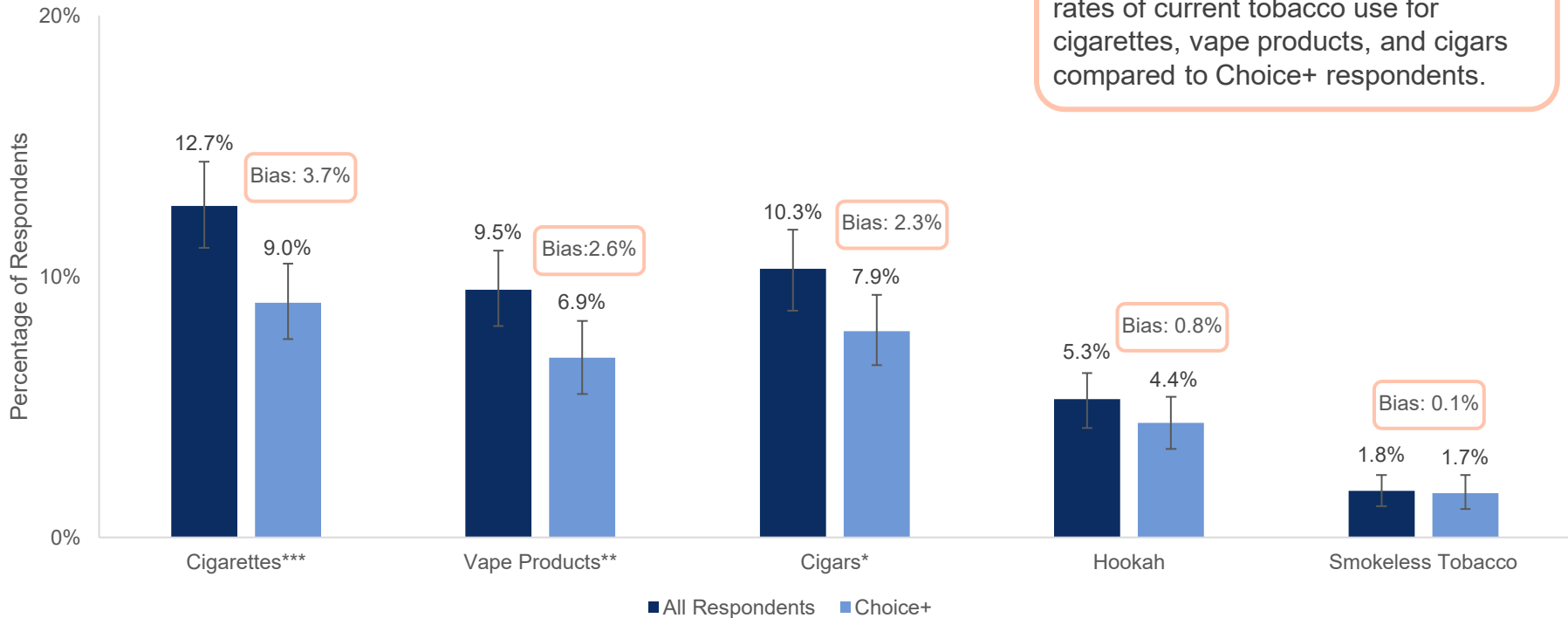
# Current Tobacco Use –Choice+ Compared to In-Person



\*p<0.001



# Current Tobacco Use – All Respondents Compared to Choice+ Respondents

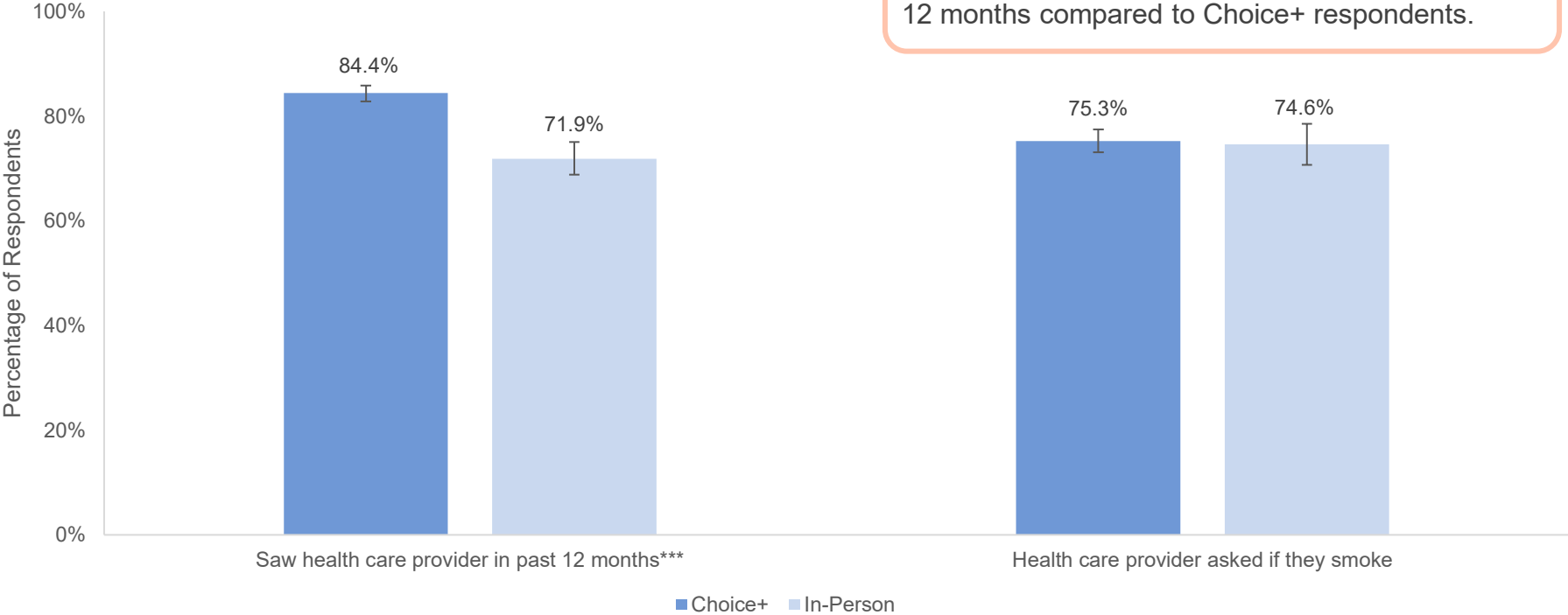


All respondents had significantly higher rates of current tobacco use for cigarettes, vape products, and cigars compared to Choice+ respondents.

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

# Health Care Provider Outcomes – Choice+ Compared to In-Person

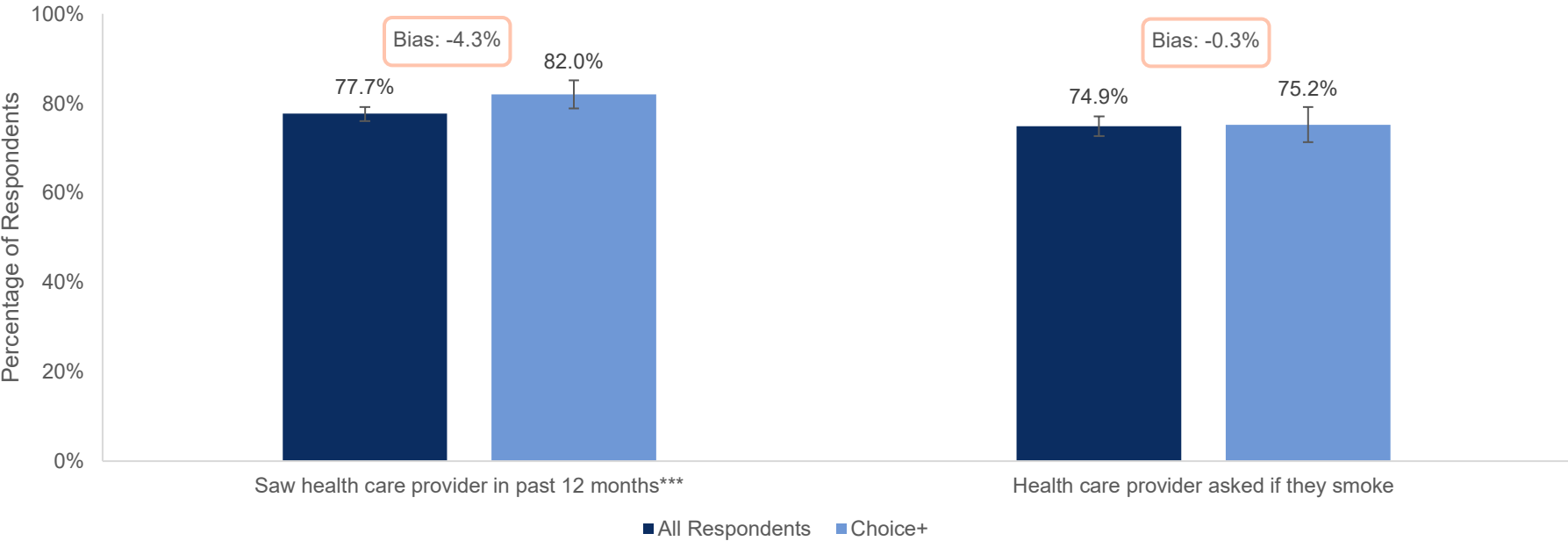
A significantly lower proportion of in-person respondents saw a health care provider in the past 12 months compared to Choice+ respondents.



\*p<0.001

# Health Care Provider Outcomes – All Respondents Compared to Choice+ Respondents

A significantly lower proportion of all respondents saw a health care provider in the past 12 months compared to Choice+ only respondents.



\*p<0.001



# Summary and Next Steps

# Summary, Implications, & Next Steps – Respondent Demographics

- Nonresponse follow-up increased response among populations less likely to respond to the standard Choice+ recruitment protocol, including:
  - young adults
  - adults with lower educational attainment
  - people of color

and resulted in a sample more closely aligned with population distributions than Choice+ only

- Demonstrates that additional recruitment effort beyond the standard Choice+ protocol is needed to gain cooperation of underrepresented and underserved populations.
- As a next step, we plan to explore cost effective methods to increase survey participation, especially among populations reached with the in-person follow-up.

# Summary, Implications, & Next Steps – Study Outcomes

- There is bias in our most important study outcomes, as demonstrated by significant differences observed when comparing all respondents to Choice+ only respondents.
- We hypothesize that the nonresponse bias observed in our study is systematic.
- Other surveys that use ABS with mail recruitment may also have systematic nonresponse bias.
- As next steps, we plan to:
  - Conduct additional analyses to further understand the bias observed in this study
  - Investigate additional calibration variables to account for differences
  - Explore using an adjustment factor from these study findings to apply to prior/future estimates



# Questions



delivering **the promise of science**  
for global good



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