

Improvement of IIS Capture Of Patient Race/Ethnicity During the COVID-19 Vaccination Campaign, New York City

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AIRA National Meeting

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Outline



Background

- CIR
- Problem
- Objective



Methods

- Interventions
- Data analysis



Results

- Missing Race/ethnicity trend over time



Conclusion

- Next steps

Citywide Immunization Registry (CIR) Background

- Implemented citywide in 1997
- As of April 2022, > 13.8 million patient records; > 147 million immunizations
- New York City (NYC) providers mandated to report immunizations for patients 0-18 years
 - Reporting for adults 19 years and older requires consent
- Population-based
 - Birth certificate data loaded weekly
- Methods of reporting
 - HL7 Web Service - 3,308 providers (72%)
 - 88% of all immunizations reported in 2021
 - Online Registry - 1,245 providers (27%)
 - Non-standard flat file - 66 providers (1%)

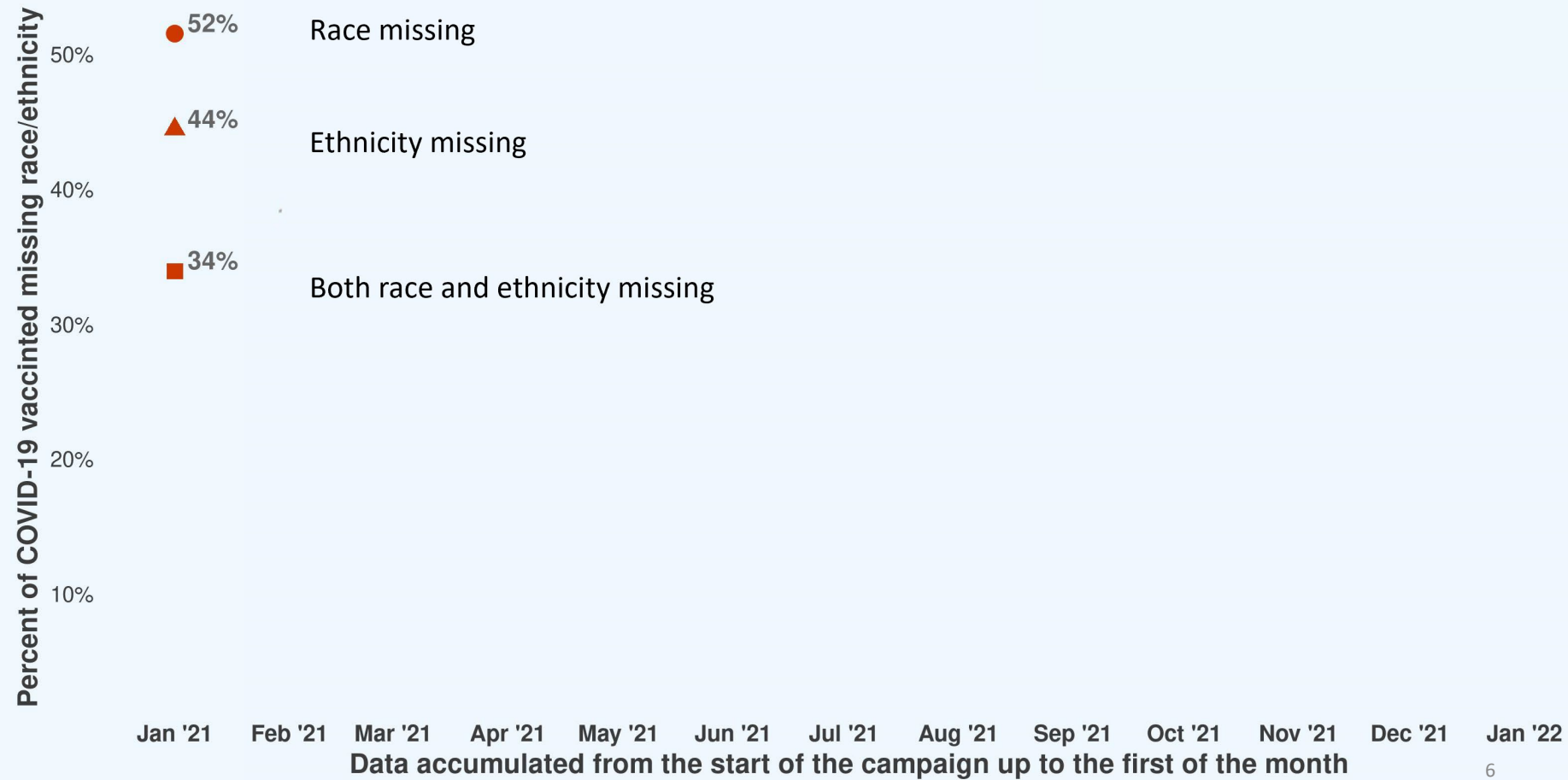
COVID-19 Vaccination Campaign in NYC

- Started December 14th, 2020
- Limited supply at the start of the vaccination campaign
 - Healthcare workers and long-term care residents were prioritized to be vaccinated first against COVID-19
 - Other essential workers and Adults 75+, 65-74 and 16-64 with high-risk medical conditions followed

Measuring our equity goal

- Extremely important for the NYC Health Department to ensure equitable distribution of and access to COVID-19 vaccines in all NYC communities
- To meet our equity goals, we needed to be able to measure progress; vaccination by race/ethnicity was one of our equity measures

Patient Race/Ethnicity Missing by month, Jan 2021-Jan 2022, NYC



Objective

- Increase the proportion of CIR COVID-19 vaccination records with patient race and ethnicity data to >80% by December 31, 2021
 - Improve provider reporting
 - Improve CIR reporting systems

Why is race/ethnicity not reported for all COVID-19 vaccinated?

- Birth Certificate Data
 - The CIR consistently has race/ethnicity from the vital record only for birth cohorts starting in 2010
- Employee record systems
 - Race/ethnicity not routinely collected at start of campaign
- The CDC HL7 Standard
 - Race/ethnicity not required
 - No option for prefer not to answer
- CIR HL7 WS Rules
 - The CIR update rules replaced existing race/ethnicity values in the CIR even when incoming vaccination data had 'unknown', 'prefer not to answer', and 'other' race/ethnicity

Interventions

1. Requested providers to resubmit data with race/ethnicity

- Official Commissioner Advisory compelling COVID-19 administering providers to report race/ethnicity–February 2021 and again in October 2021

2. Targeted outreach to providers with high race/ethnicity missingness and unknowns

- February 2021-present
- Outreach to NYC mass vax sites

3. HL7 Web Service updates

- Added new race/ethnicity values – February 2021
- Returned warning about missing race/ethnicity HL7 fields – March 2021
- Accepted more race/ethnicity codes under the same category of 'Prefer not to Answer' – April 2021
- Changed CIR update rules so that existing race/ethnicity values are not replaced with 'unknown', 'prefer not to answer', and 'other'- September 2021



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Dave A. Chokshi, MD, MSc
Commissioner



2021 Health Advisory #3

Collect and Report Race and Ethnicity Data to Help Ensure Equitable Access to COVID-19 Vaccines

- High-quality data on vaccine recipients' race and ethnicity are needed to monitor COVID-19 vaccine access and uptake in New York City.
- Providing accurate and complete data in the Citywide Immunization Registry will help enable equitable distribution of COVID-19 vaccines.

February 2, 2021

Dear Colleagues,

The New York City Department of Health and Mental Hygiene strongly encourages providers to collect and report COVID-19 vaccine recipients' race and ethnicity to the Citywide Immunization Registry (CIR). Currently, this information is unknown for 40% of vaccine recipients; complete and accurate race and ethnicity information is urgently needed to support equitable distribution of COVID-19 vaccines in NYC.

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Added New Race Values

Existing codes	Description
1002-5	American Indian or Alaska Native
2028-9	Asian
2076-8	Native Hawaiian or Other Pacific Islander
2054-5	Black or African-American
2106-3	White
2131-1	Other Race
<empty field>	Unknown/undetermined. CIR will store as missing and return non-fatal error
New codes	Description
UNK	Unknown / Undetermined
TOMR	Two or More Races
PNTA	Prefer Not to Answer

Added New Ethnicity Values

Existing Codes	Description
N	Not Hispanic or Latino
H	Hispanic or Latino
U	Unknown
2186-5	Not Hispanic or Latino
2135-2	Hispanic or Latino
New Codes	Description
PNTA	Prefer Not to Answer

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Added more Race and Ethnicity Values

New Race codes	Description
PHC1175	Refused to Answer
ASKU	Asked but No Answer
New Ethnicity Codes	Description
PHC1367	Refused to Answer

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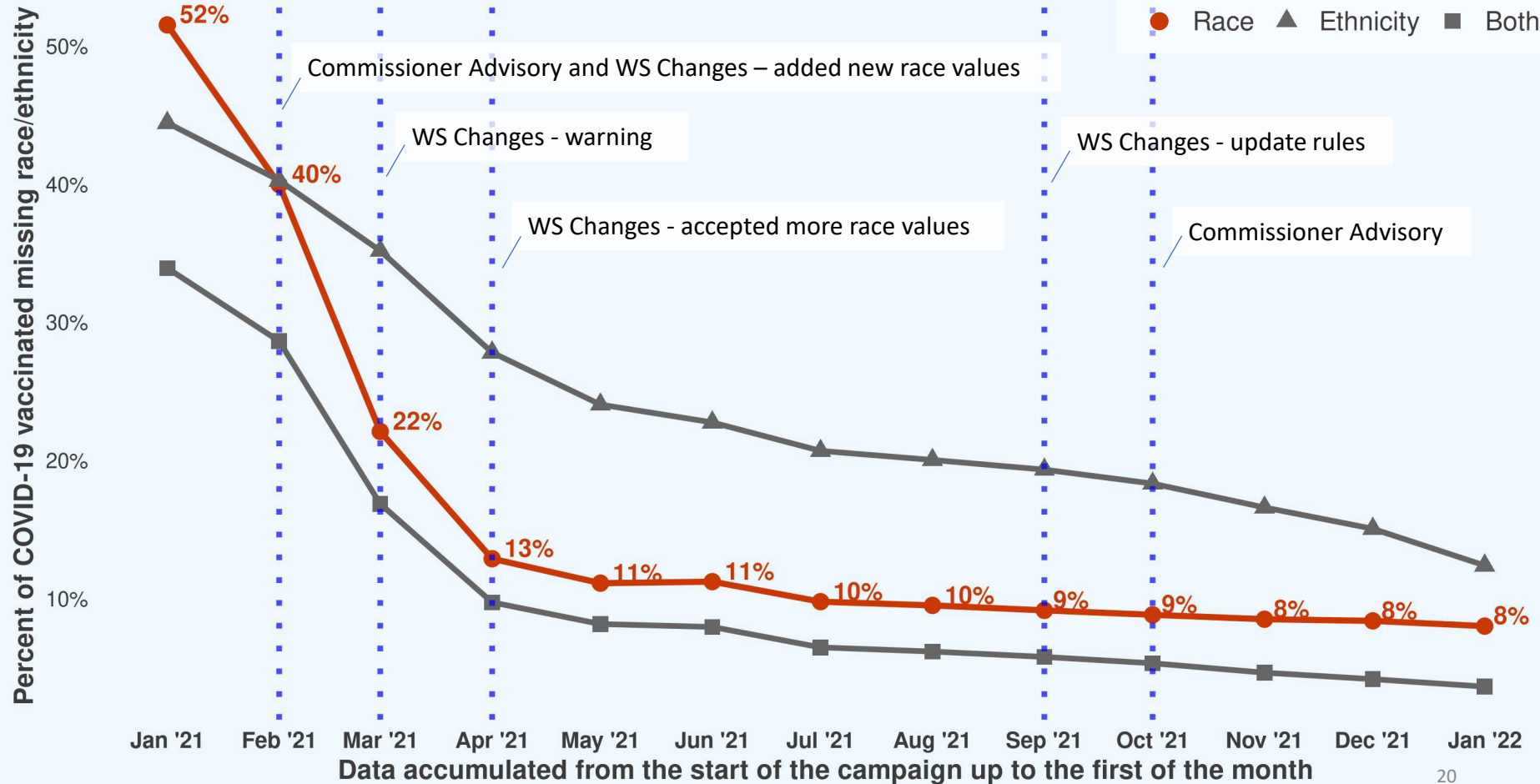
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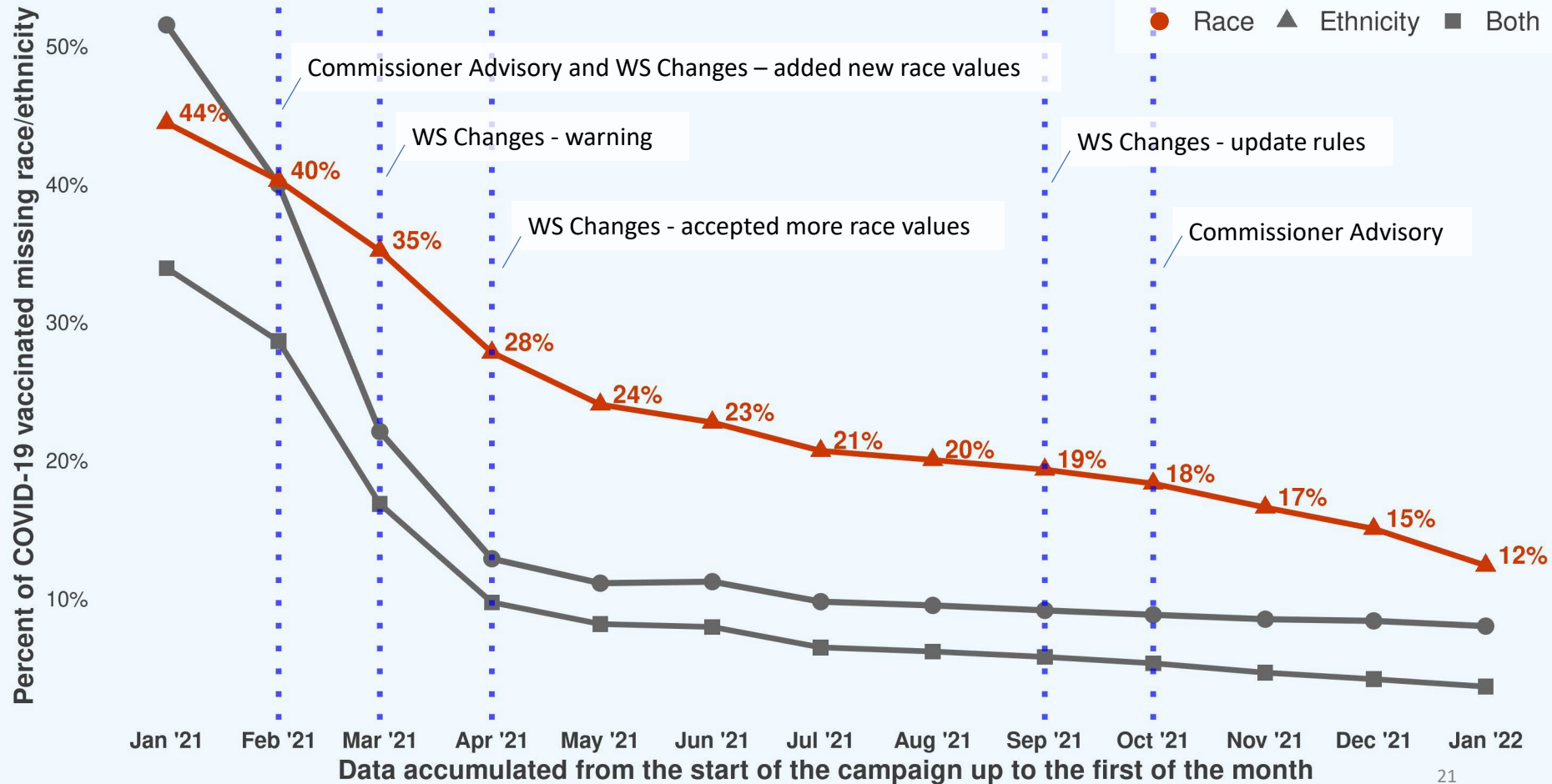
Data Analysis

- Race/ethnicity was examined for all individuals with a COVID-19 vaccination from Dec 14th, 2020, to Dec 31st, 2021, to track percent missing overall
 - 7,931,151 patients were vaccinated
 - 4,218 providers reported COVID-19 vaccines
- Race/ethnicity is a patient-level field, which may be populated prior to the COVID-19 immunization
 - Therefore, patient's race/ethnicity data may or may not have been provided by the COVID-19 immunizer
- Data was extracted at the beginning of each month Jan 1st, 2021, to Jan 1st, 2022, and is a cumulation of everything previously reported since December 14th, 2020, up to the extraction date
- This analysis was also used to produce a list of providers with 30% or more patients with missing race/ethnicity on a monthly basis

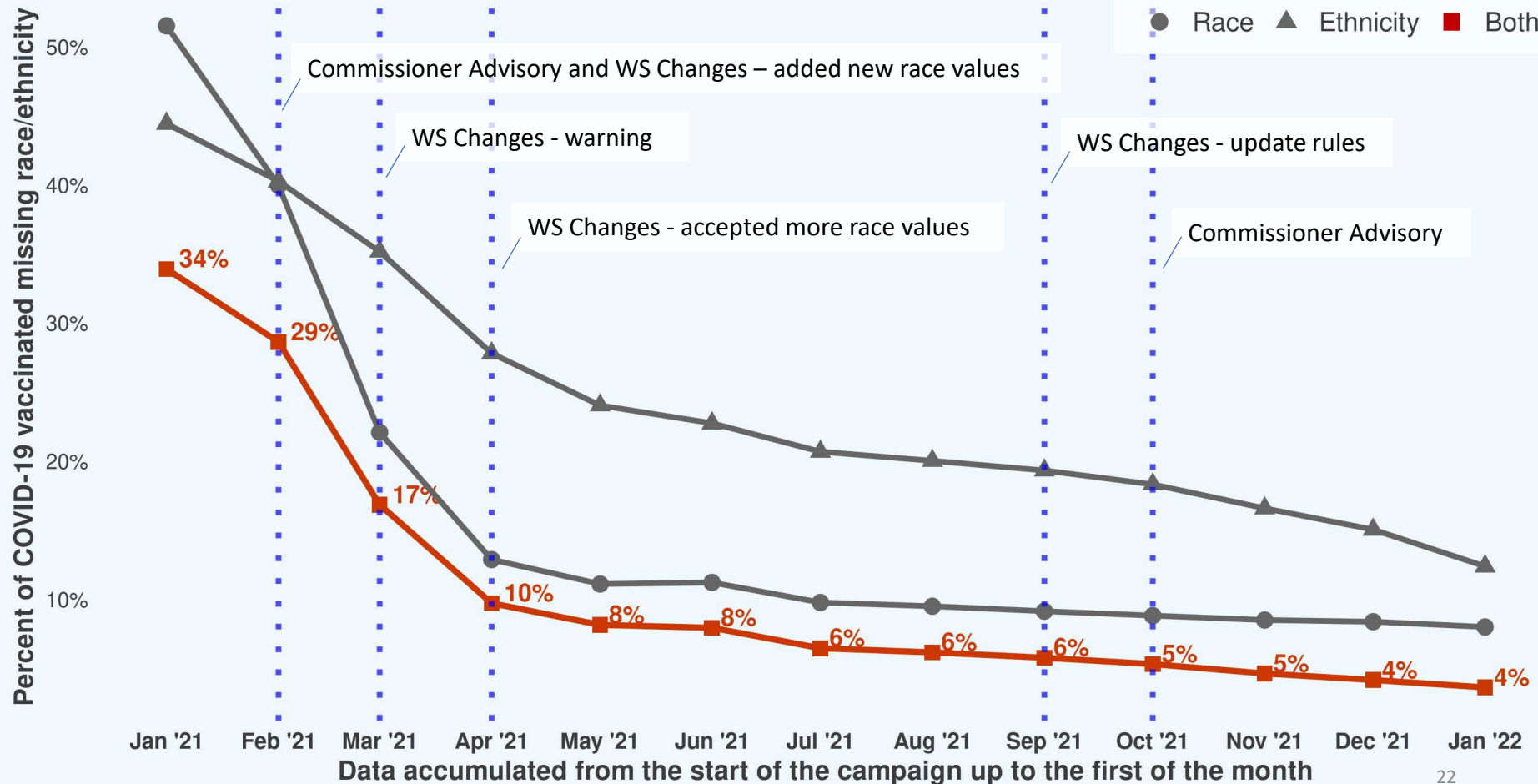
Patient Race Missing by month, Jan 2021-Jan 2022, NYC



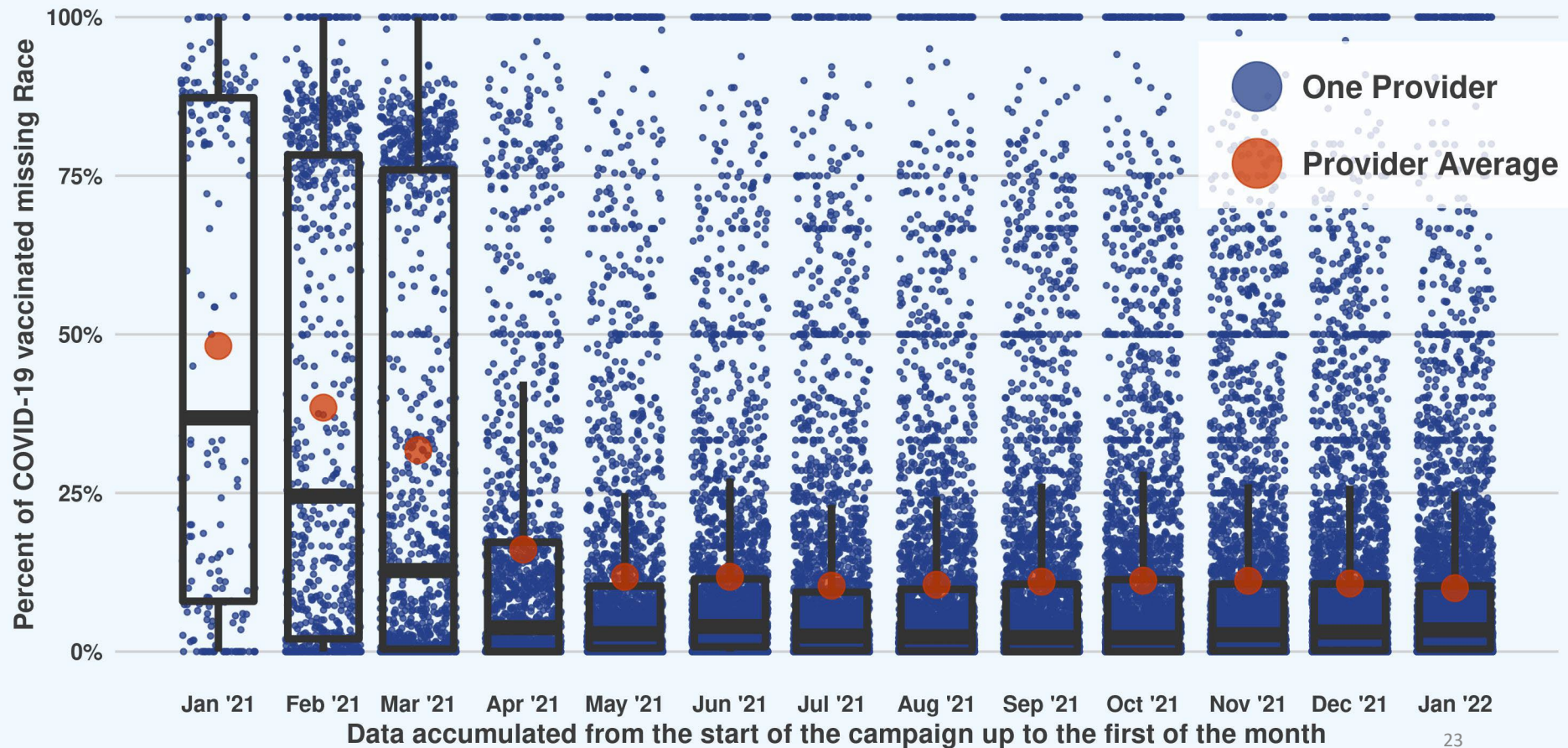
Patient Ethnicity Missing by month Jan 2021-Jan 2022, NYC



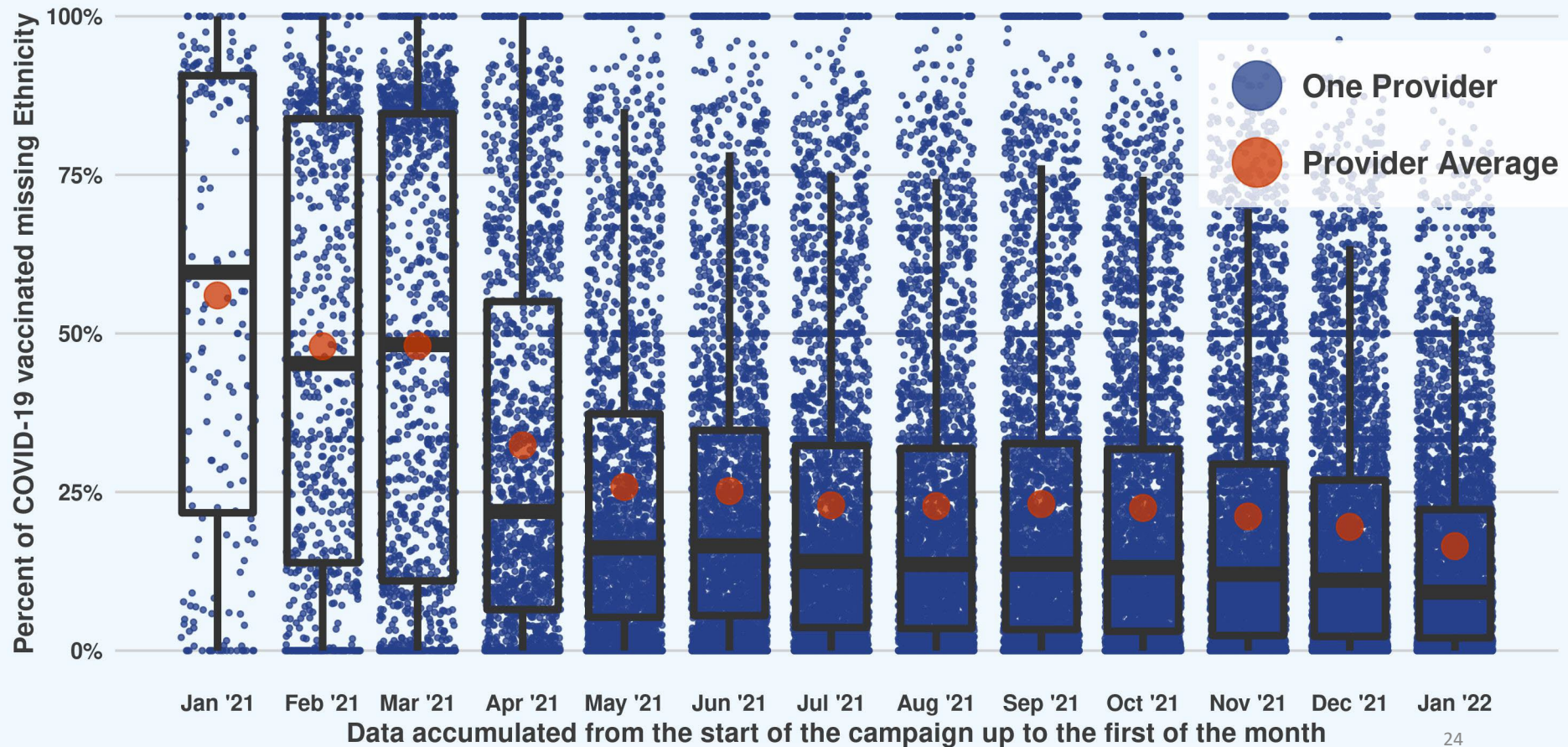
Both Patient Race and Ethnicity Missing by month, Jan 2021-Jan 2022, NYC



Patients Race Missingness by COVID-19 Provider by month, Jan 2021-Jan 2022, NYC



Patients Ethnicity Missingness by COVID-19 Provider by month, Jan 2021 - Jan 2022, NYC



Summary

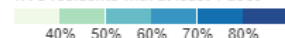
- Overall, capture of COVID-19 recipient's race/ethnicity increased rapidly after the first quarter of the COVID-19 campaign
- By April 2021, race missing decreased by 39 percentage points and ethnicity decreased by 16 percentage points
- Ethnicity “missingness” started at 8 percentage points below race “missingness” but remains higher than race “missingness” throughout much of 2021
- Our early efforts in February and March 2021 were successful in improving capture of race and ethnicity data
- Our race/ethnicity update change in September and Commissioner letter in October decreased the gap between race missing and ethnicity missing

Vaccinations by Borough

These data show the percent of NYC residents who received at least one dose of COVID-19 vaccine and the percent who are fully vaccinated, by borough of residence and demographic group. The percentages reflect the number of people vaccinated within that specific demographic group.

At Least 1 Dose Fully Vaccinated Additional Dose

NYC residents with at least 1 dose



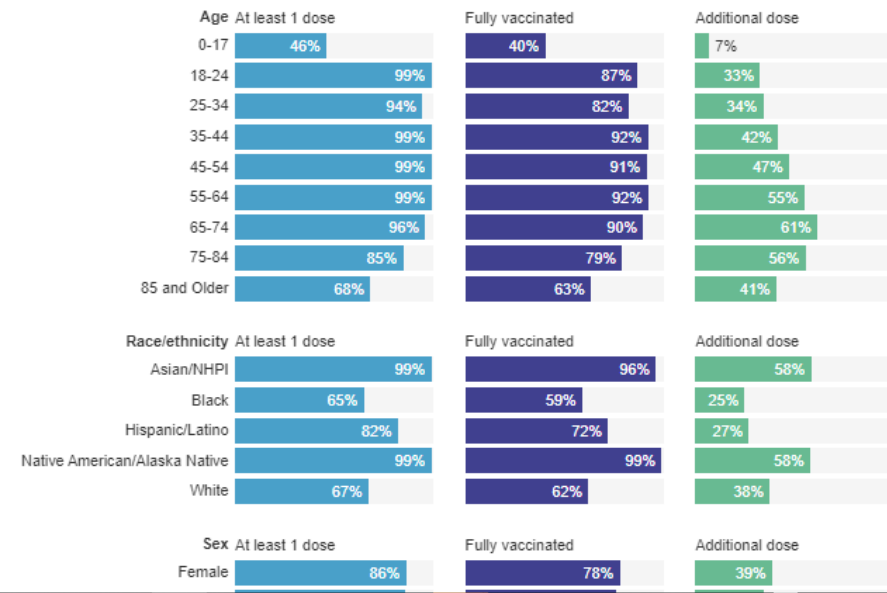
Age Group	Race/Ethnicity	Citywide	Bronx	Brooklyn	Manhattan	Queens	Staten Island
Boroughwide	Boroughwide	87%	82%	79%	96%	93%	80%
All ages	Asian/NHPI	99%	90%	99%	99%	99%	99%
All ages	Black	65%	65%	64%	70%	63%	69%
All ages	Hispanic/Latino	82%	73%	78%	91%	91%	73%
All ages	White	67%	68%	59%	80%	65%	65%
5 to 12	Asian/NHPI	99%	87%	99%	99%	99%	99%
5 to 12	Black	40%	44%	38%	50%	37%	41%
5 to 12	Hispanic/Latino	51%	46%	48%	57%	60%	39%
5 to 12	White	37%	41%	25%	84%	32%	21%
13 to 17	Asian/NHPI	99%	97%	99%	99%	99%	99%
13 to 17	Black	69%	71%	69%	74%	66%	78%
13 to 17	Hispanic/Latino	92%	83%	85%	99%	99%	78%
13 to 17	White	56%	76%	37%	99%	59%	51%
18 to 44	Asian/NHPI	99%	99%	99%	99%	99%	99%
18 to 44	Black	70%	68%	70%	74%	67%	76%
18 to 44	Hispanic/Latino	95%	82%	95%	99%	99%	82%

Vaccinations by Demographic Group

This table shows data on the percent of NYC residents vaccinated by age, race/ethnicity and sex. Additional dose refers to people fully vaccinated who have received another dose of a COVID-19 vaccine. This includes first booster doses and additional doses for people who are immunocompromised. Second booster doses are not included at this time.

All Ages Children Adults

Total NYC residents vaccinated



<https://www1.nyc.gov/site/doh/covid/covid-19-data-vaccines.page>

Conclusion

- We were successful in meeting our race/ethnicity capture objectives and tracking our progress for our equity goals
- IIS complete capture of race/ethnicity requires multiple strategies:
 - Ensure provider reporting includes race/ethnicity
 - Updated race/ethnicity field values
 - HL7 web services rules

Next Steps

- Compare race/ethnicity capture among individuals who received COVID-19 vaccine and those who did not
- Assess race/ethnicity capture for other vaccines
 - Adult flu vaccinations
 - Adolescent vaccinations
- Analyze quality of race/ethnicity data now that we have better capture
 - ‘Other’, ‘Prefer not to Answer’ race
- Standardize and require capture of race/ethnicity in all levels
 - Standardize race/ethnicity in all NYCDOHMH divisions
 - Data alignment Taskforce
 - Require these fields in HL7 national standard

Thank you!

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