CDPH
Chicago Department of Public Health

RSV Coverage Among Chicago Infants: Insights From the 2023–24 Season

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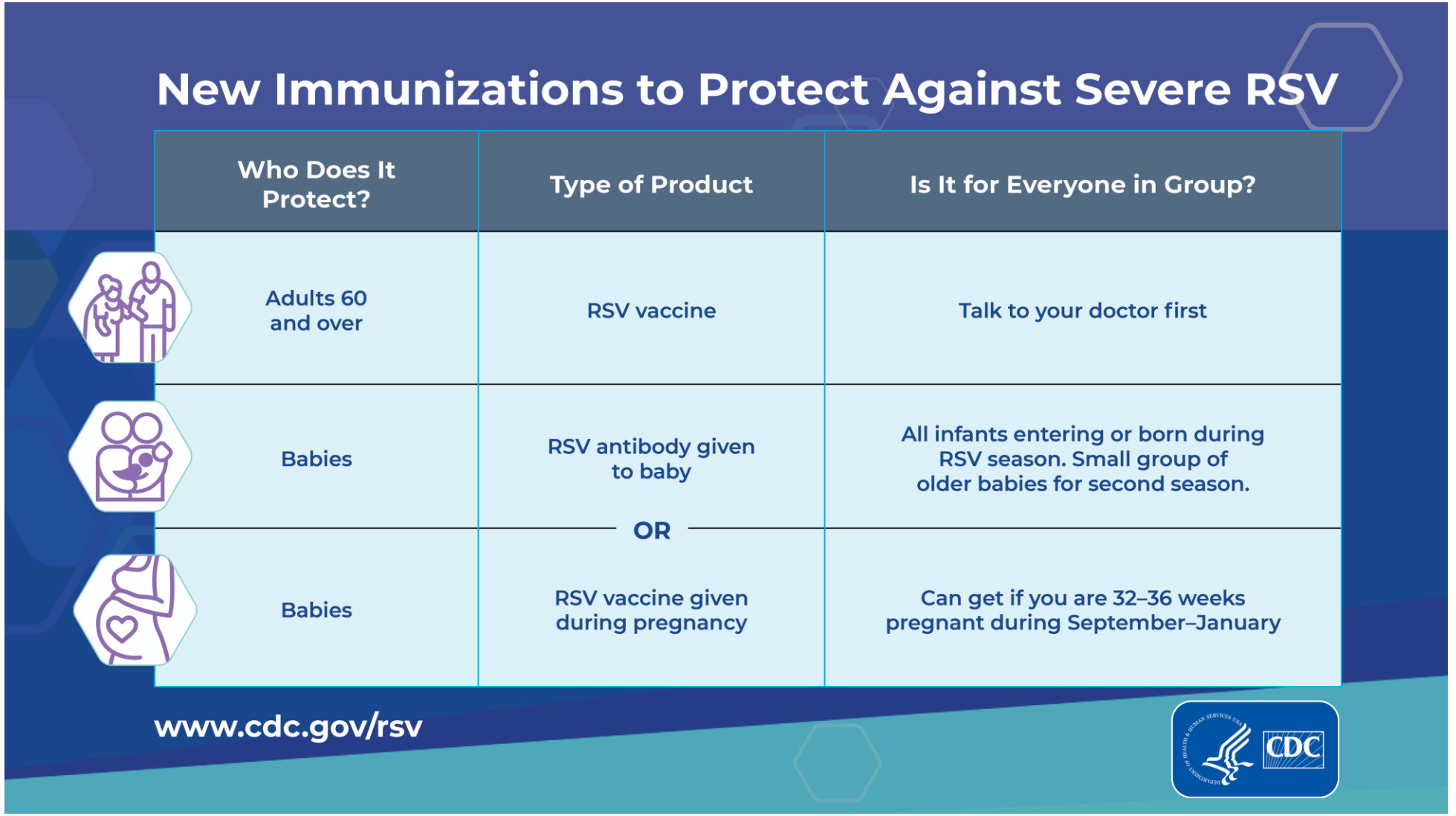
RSV Immunization Recommendations



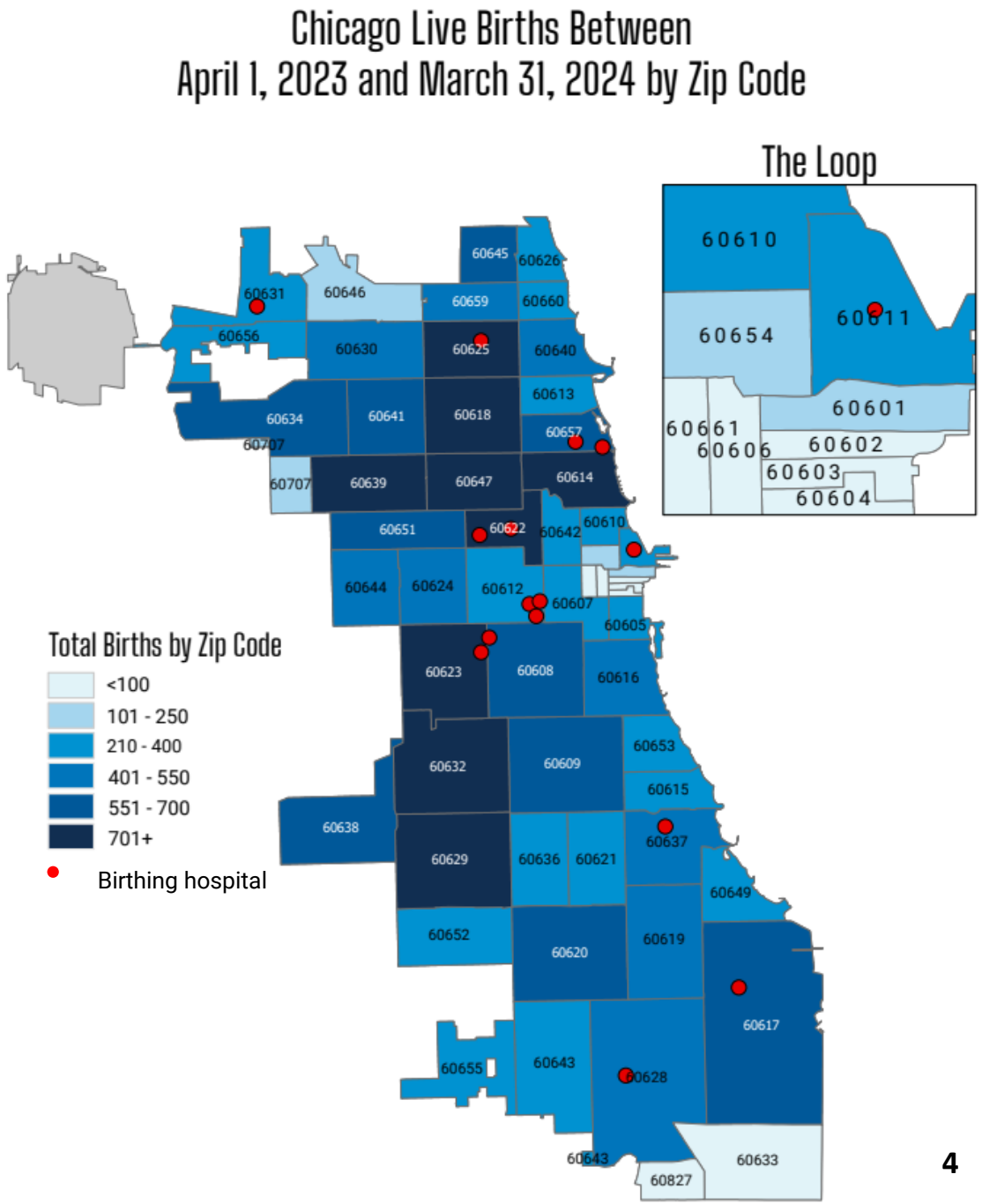
Source: https://www.cdc.gov/ncird/whats-new/rsv-update-and-vaccine-recommendations.html

CDPH's RSV Immunization Goals

- The Chicago Department of Public Health (CDPH) sought to estimate RSV immunization coverage among infants during 2023-24 season
- CDPH's goals were to:
  - Evaluate uptake of RSV immunization products during their first season of availability
  - Inform departmental efforts to equitably expand coverage in future seasons

Chicago has an annual birth cohort of approximately 26,500 and 15 birthing hospitals for its 2.7 million residents

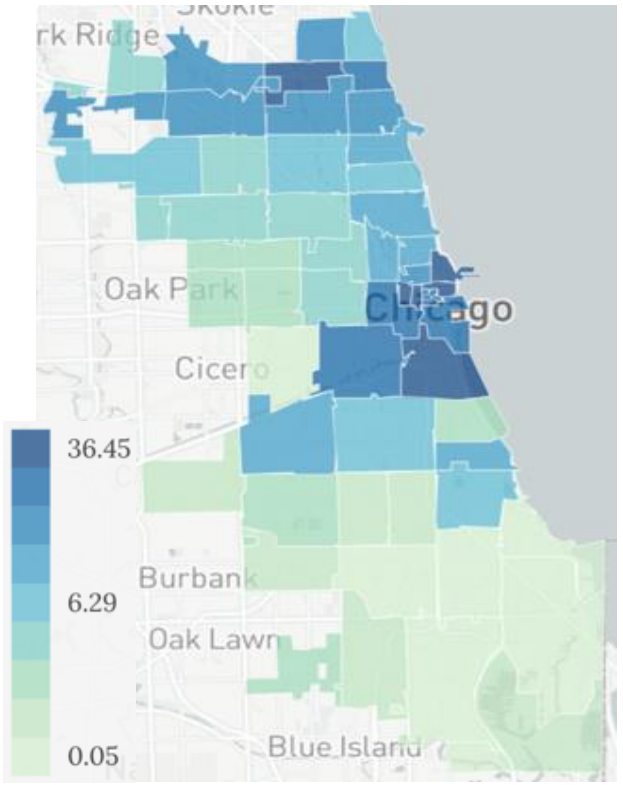
- 61% of Chicago children 18 years and younger are eligible for the Vaccines for Children (VFC) program



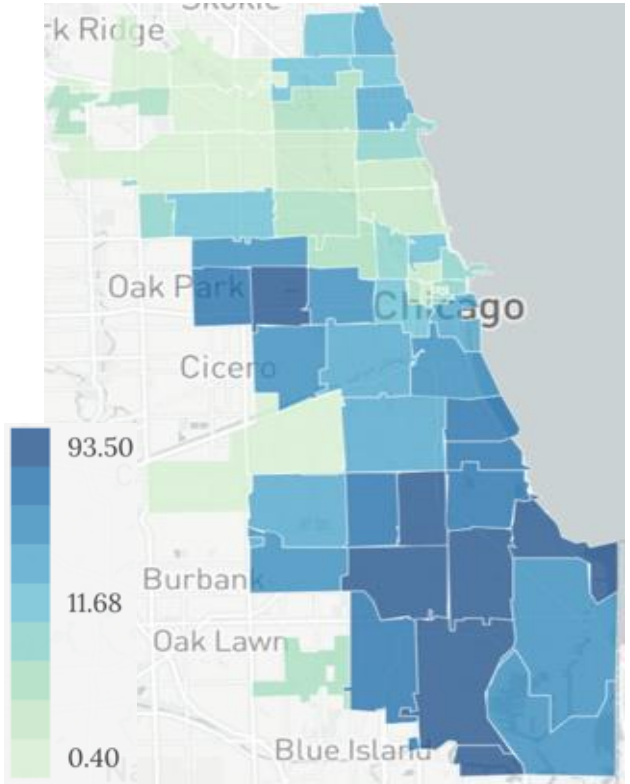
Data sources: I-CARE & Illinois Birth Data

Racial and ethnic makeup of Chicago zip codes varies

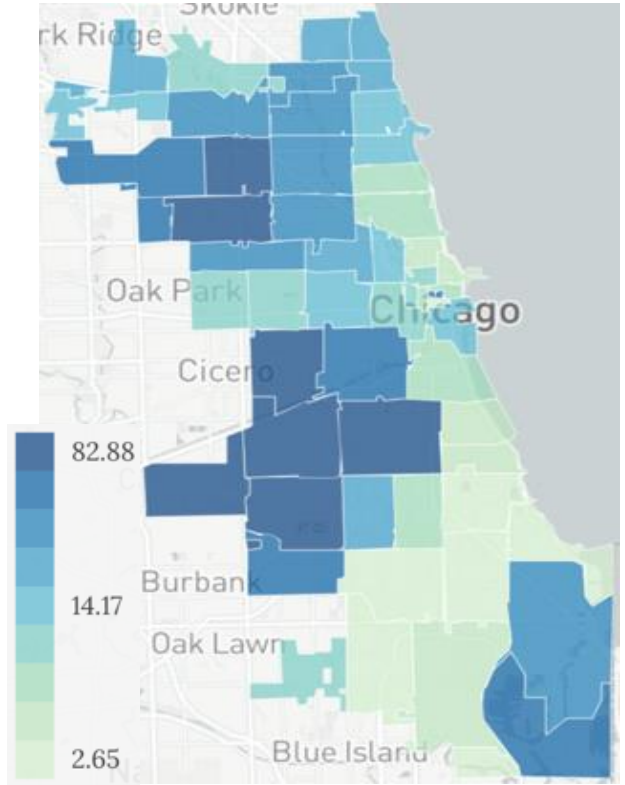
Asian, non-Hispanic
- 7% of population



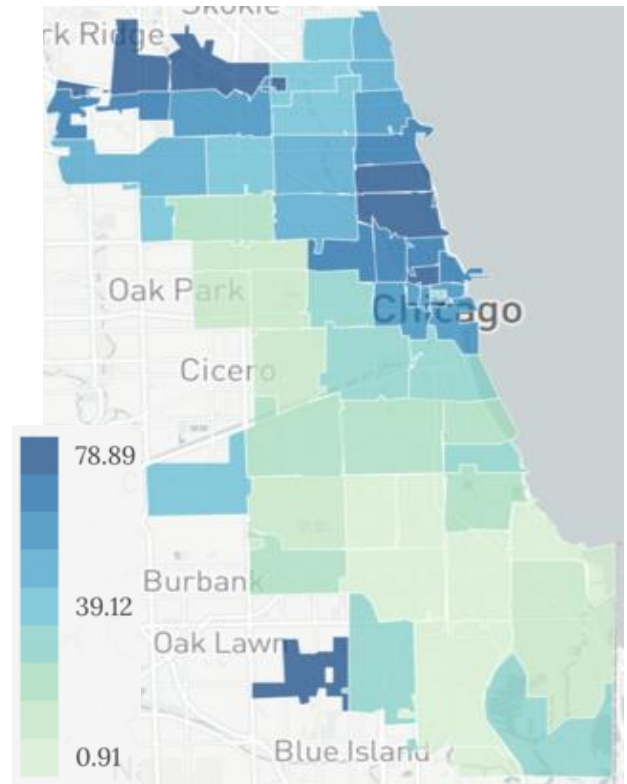
Black, non-Hispanic
- 28% of population



Hispanic
- 30% of population



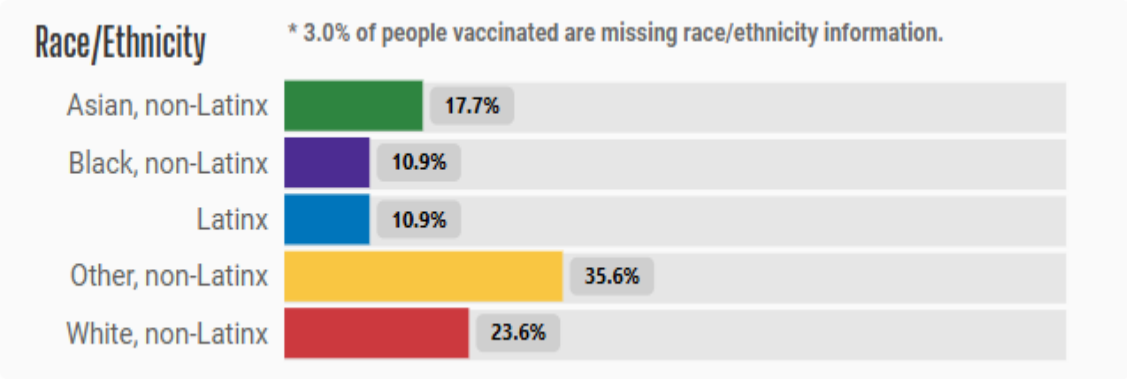
White, non-Hispanic
- 32% of population



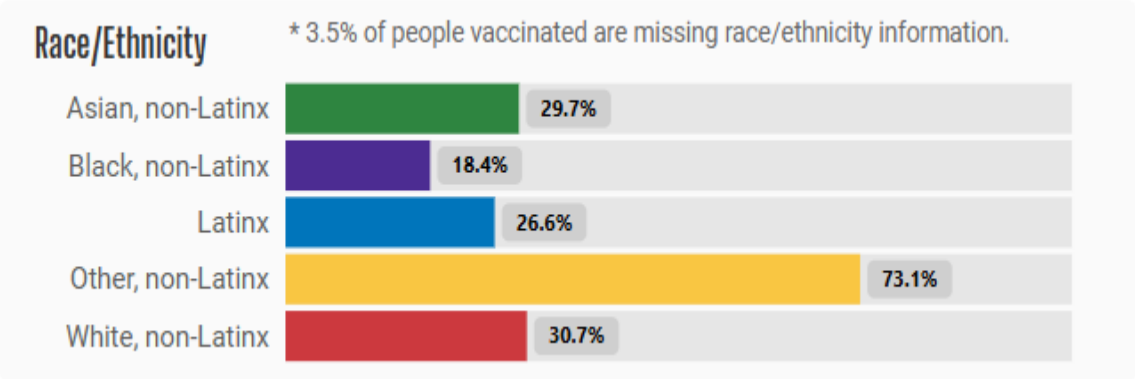
Data sources: Chicago Health Atlas, American Community Survey 2019-2023, U.S. Census Bureau

Racial and ethnic disparities in other seasonal respiratory immunizations

COVID-19 Vaccination Coverage, 2023-2024



Flu Vaccination Coverage, 2023-2024

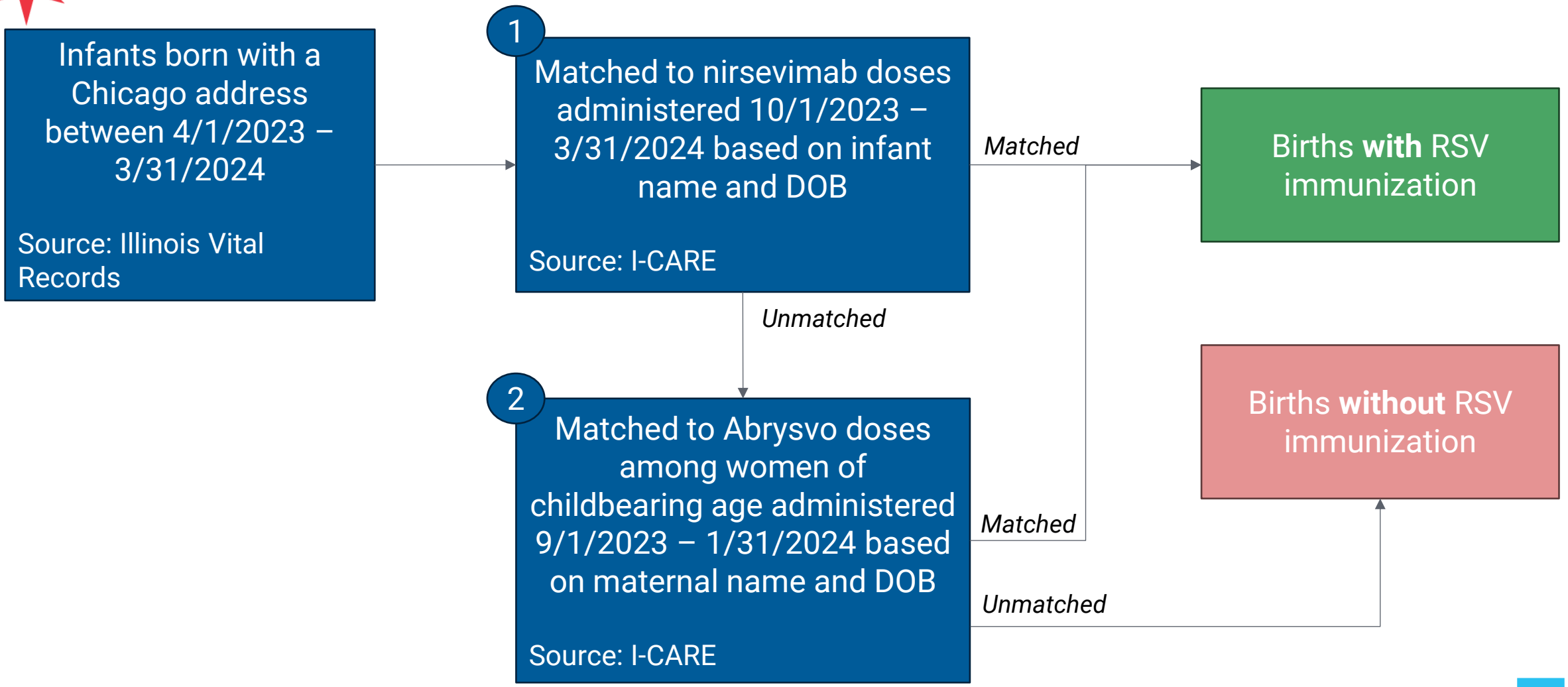


Source: Vaccinations reported in I-CARE among Chicago residents.

About the Data Sources

- Illinois' IIS is I-CARE, or the Illinois Comprehensive Automated Immunization Registry Exchange
  - Implemented statewide in 2007
  - Population-based with birth certificates loaded into I-CARE
  - Immunization reporting in Illinois is only mandatory for publicly funded immunizations and COVID-19
- Illinois Division of Vital Records
  - Includes additional data fields not available in our IIS

Methods: Matching



Methods: Calculating Coverage

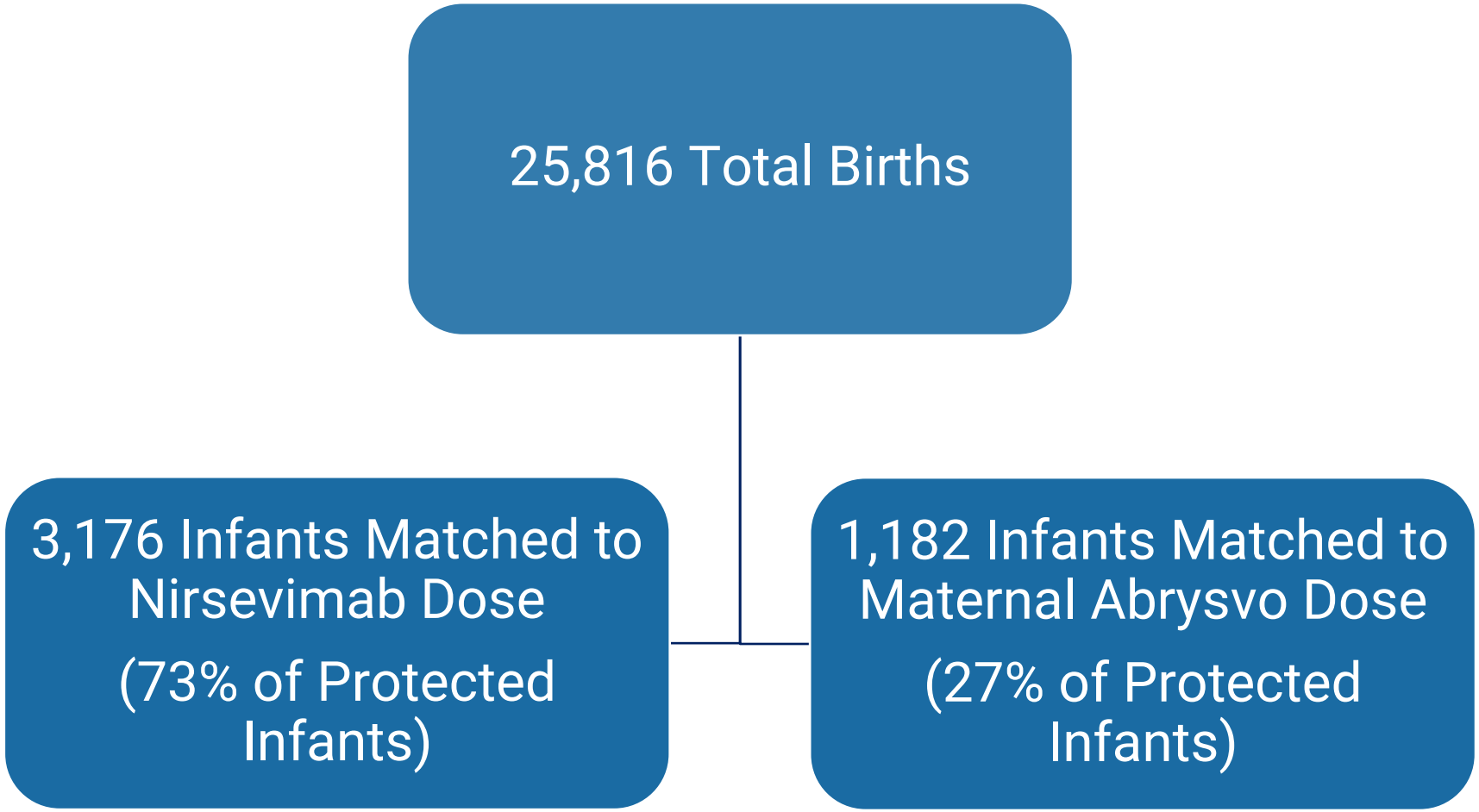
- Immunization coverage in this presentation is defined as either:
  - An infant receiving an RSV containing immunization
  - An infant's mother receiving an RSV containing immunization while pregnant
- Birth records were used as the denominator
- Matched immunizations from I-CARE were used as the numerator
- Coverage rates were calculated by zip code, maternal demographics, birthing hospital, and insurance type
- Among infants born during the RSV season who received nirsevimab, age at administration was also assessed

Chicago residents had 25,816 live births

25,816
Total Births

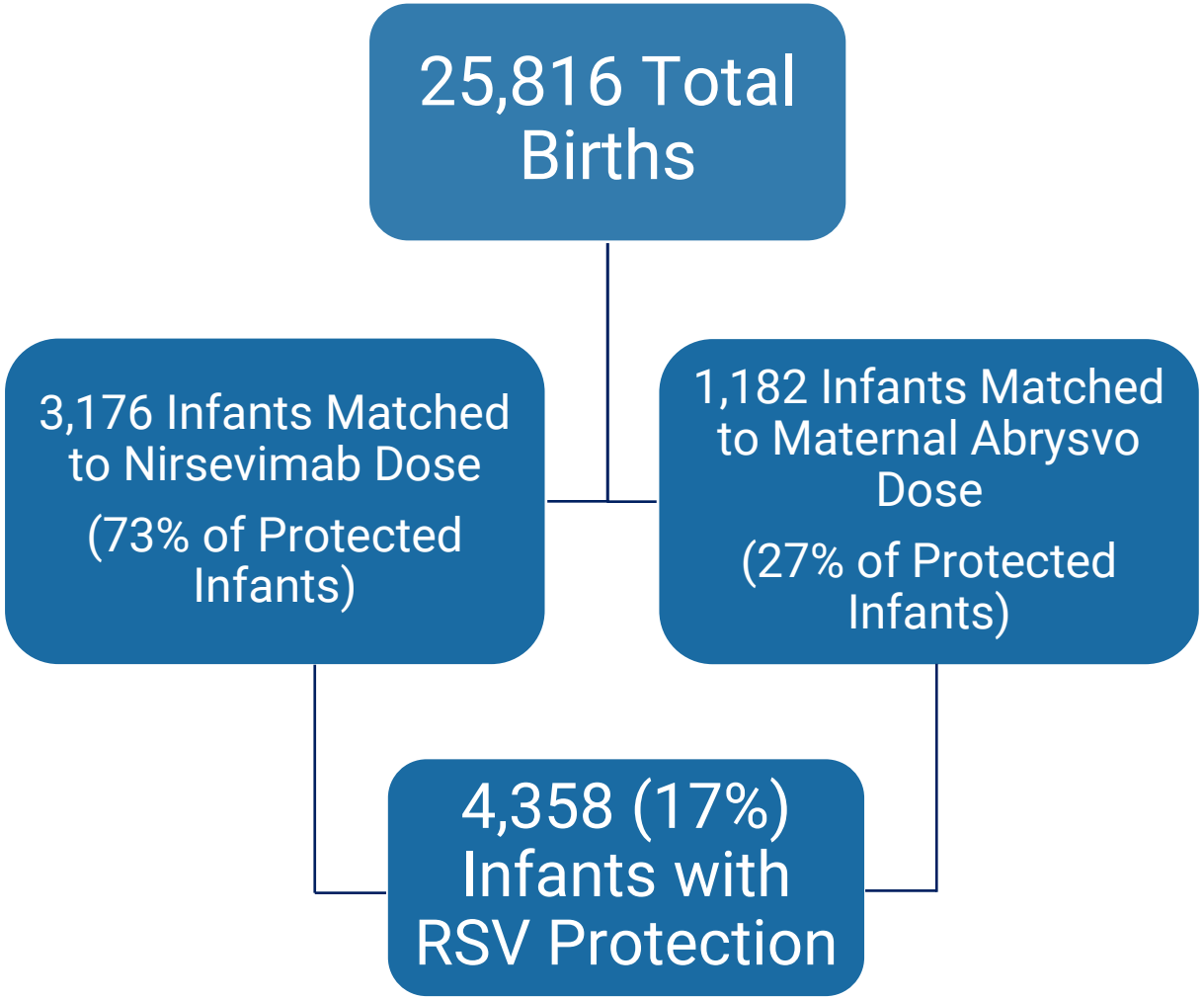
Data source: Illinois Birth Data

Of protected infants, 73% received nirsevimab



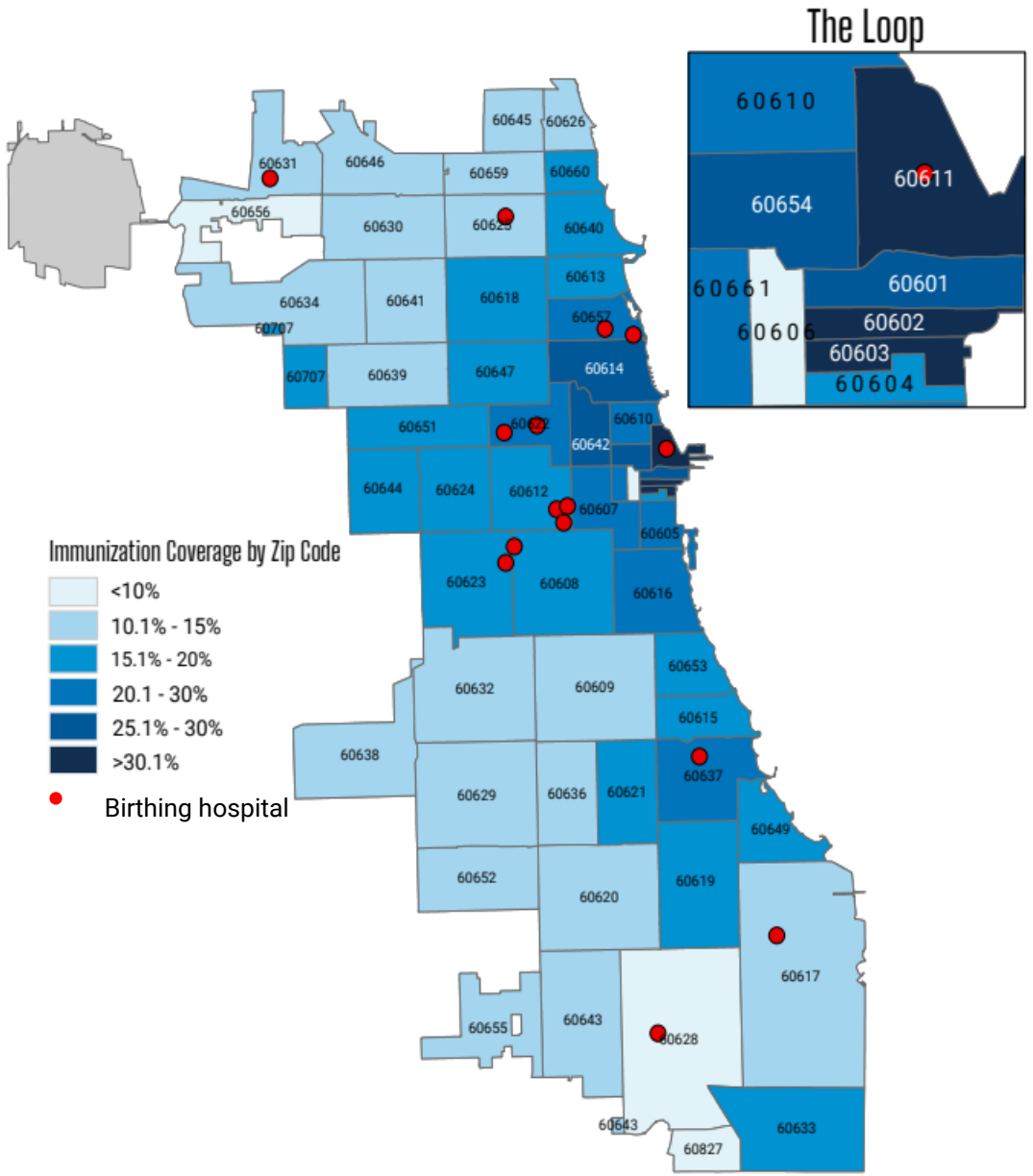
Data sources: I-CARE & Illinois Birth Data

17% of eligible Chicago infants received immunization-derived protection



Data sources: I-CARE & Illinois Birth Data

Coverage was higher in zip codes making up the east and central west areas of the city compared to the northwest and southwest areas of the city



Data sources: I-CARE & Illinois Birth Data

Coverage rates by race/ethnicity were similar, ranging from 15%-19%

Maternal Race/ Ethnicity	Immunization Administered N (%)	Total Infants
Asian, non-Hispanic	**390 (19%)**	2,020
Black, non-Hispanic	**949 (15%)**	6,200
Hispanic	**1,457 (16%)**	9,151
White, non-Hispanic	**1,484 (19%)**	8,016
Other, non-Hispanic*	**33 (18%)**	182
Unknown	**45 (18%)**	247

*Race/ethnicity groups with <50 births were categorized as Other

Data sources: I-CARE & Illinois Birth Data

Among infants born to Asian mothers, coverage was highest for those of Chinese and Japanese descent at 25%

Maternal Race/ Ethnicity	Immunization Administered N (%)	Total Infants
Asian, Chinese, non-Hispanic	119 (25%)	477
Asian, Filipino, non-Hispanic	38 (18%)	207
Asian, Indian, non-Hispanic	132 (19%)	683
Asian, Japanese, non-Hispanic	8 (25%)	32
Asian, Korean, non-Hispanic	23 (21%)	109
Asian, Vietnamese, non-Hispanic	13 (15%)	84
Asian, Other, non-Hispanic	57 (13%)	428

Data sources: I-CARE & Illinois Birth Data

Among infants born to Asian mothers, coverage was lowest for those of Vietnamese and Other Asian descent

Maternal Race/ Ethnicity	Immunization Administered N (%)	Total Infants
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Indian, non-Hispanic	132 (19%)	683
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Korean, non-Hispanic	23 (21%)	109
Vietnamese, non-Hispanic	13 (15%)	84
Other Asian, non-Hispanic	57 (13%)	428

Data sources: I-CARE & Illinois Birth Data

Coverage among infants born to Hispanic mothers was similar among groups, ranging from 13% for those of Cuban descent to 17% for Other Hispanic descent

Maternal Race/ Ethnicity	Immunization Administered N (%)	Total Infants
Cuban	**7 (13%)**	56
Mexican	**967 (16%)**	6,167
Puerto Rican	**95 (14%)**	677
Other Hispanic	**388 (17%)**	2,251

Data sources: I-CARE & Illinois Birth Data

Infants born to mothers born in Afghanistan had lower coverage than infants born to mothers born in the United States and other new arrival groups

Maternal Birth Country	Immunization Administered N (%)	Total Infants
Afghanistan	4 (8%)	49
Colombia	34 (17%)	200
Ecuador	70 (16%)	451
El Salvador	7 (13%)	53
Haiti	8 (18%)	45
Honduras	30 (17%)	176
Mexico	324 (15%)	2,186
Nicaragua	9 (10%)	104
Peru	4 (10%)	42
Ukraine	14 (8%)	174
Venezuela	121 (24%)	506
United States	3,117 (17%)	18,255

Data sources: I-CARE & Illinois Birth Data

Infants born to mothers born in Ukraine had lower coverage than infants born to mothers born in the United States and other new arrival groups

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Data sources: I-CARE & Illinois Birth Data

Variation in coverage among infants born to mothers born in countries in Latin America and the Caribbean

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Afghanistan	4 (8%)	49
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Ecuador	70 (16%)	451
El Salvador	7 (13%)	53
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Data sources: I-CARE & Illinois Birth Data

As maternal age increased, immunization coverage generally increased

Maternal Age Group	Immunization Administered N (%)	Total Infants
Under 18 Years	**34 (12%)**	283
18-22 Years	**390 (15%)**	2,686
23-27 Years	**700 (15%)**	4,708
28-32 Years	**1,290 (17%)**	7,552
33-37 Years	**1,396 (19%)**	7,484
38-42 Years	**498 (18%)**	2,767
43 Years and Older	**50 (15%)**	336

Data sources: I-CARE & Illinois Birth Data

Approximately half of infants had public insurance coverage, and there was a 5% gap in coverage between infants that had private vs public insurance

Insurance Type	Immunization Administered N (%)	Total Infants
Military	**5 (56%)**	9
Private	**2,504 (19%)**	13,035
Public	**1,844 (14%)**	12,748
Unknown	**5 (21%)**	24

Data sources: I-CARE & Illinois Birth Data

Birthing hospital coverage rates varied widely, from 0%-24%

Hospital	Immunization Administered N (%)	Total Infants	% of Births Paid with Public Insurance
Hospital A	188 (16%)	1,205	44%
Hospital B	50 (10%)	523	87%
Hospital C	49 (10%)	481	48%
Hospital D	87 (16%)	531	55%
Hospital E	17 (3%)	490	84%
Hospital F	22 (10%)	224	88%
Hospital G	145 (14%)	1,015	91%
Hospital H	1,854 (24%)	7,830	18%
Hospital I	0 (0%)	71	94%
Hospital J	364 (20%)	1,800	60%
Hospital K	106 (13%)	840	91%
Hospital L	142 (20%)	715	89%
Hospital M	232 (15%)	1,542	80%
Hospital N	347 (19%)	1,848	63%
Hospital O	216 (15%)	1,451	76%

Data sources: I-CARE & Illinois Birth Data

Chicago's largest birthing hospital had the highest coverage rate but served the smallest proportion of publicly insured births

Hospital	Immunization Administered N (%)	Total Infants	% of Births Paid with Public Insurance
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Data sources: I-CARE & Illinois Birth Data

Chicago's smallest birthing hospital had the lowest coverage and served the largest proportion of publicly insured births

Hospital	Immunization Administered N (%)	Total Infants	% of Births Paid with Public Insurance
Hospital A	188 (16%)	1,205	44%
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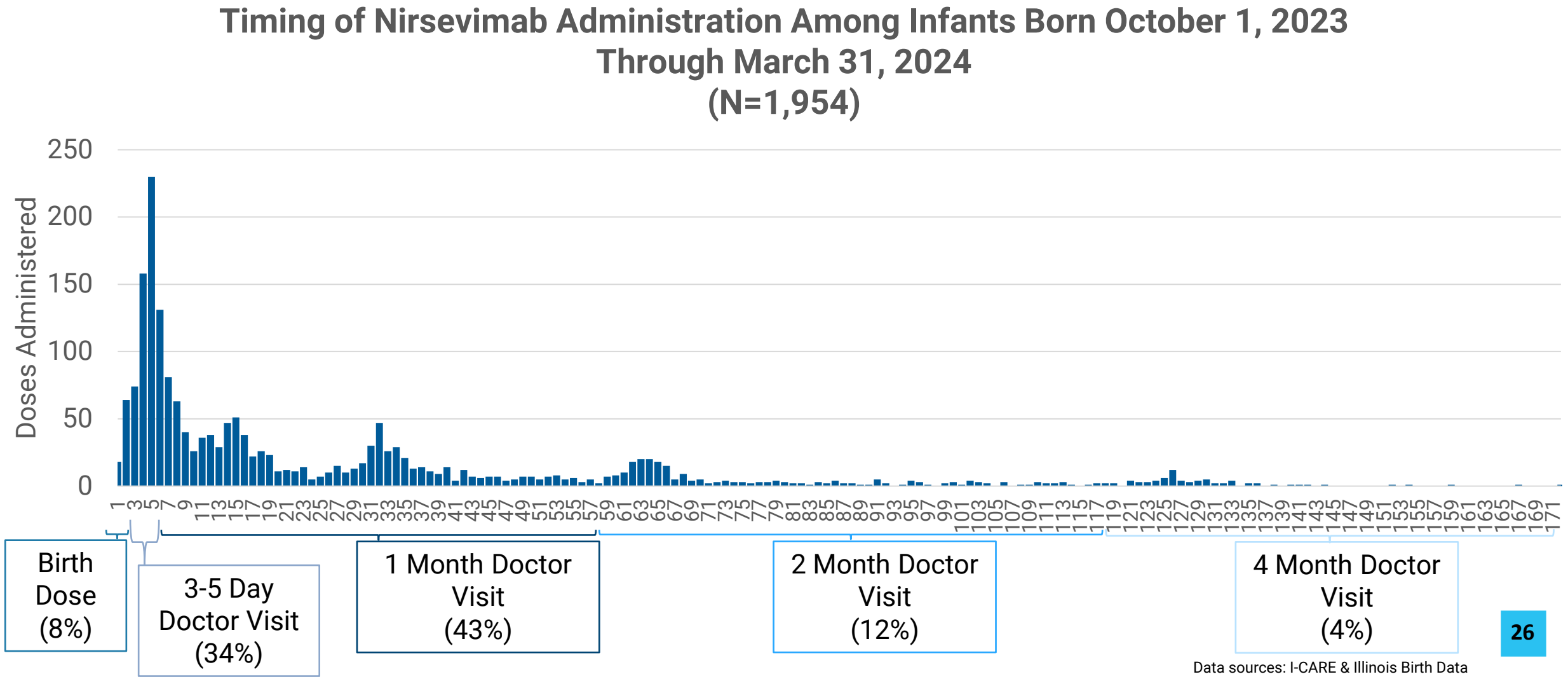
Hospital O	216 (15%)	1,451	76%

Data sources: I-CARE & Illinois Birth Data

The majority (59%) of immunized infants born during RSV season received nirsevimab more than 1 week after birth



Data sources: I-CARE & Illinois Birth Data

Throughout the 2024-25 RSV season, initiatives were taken to improve immunization coverage

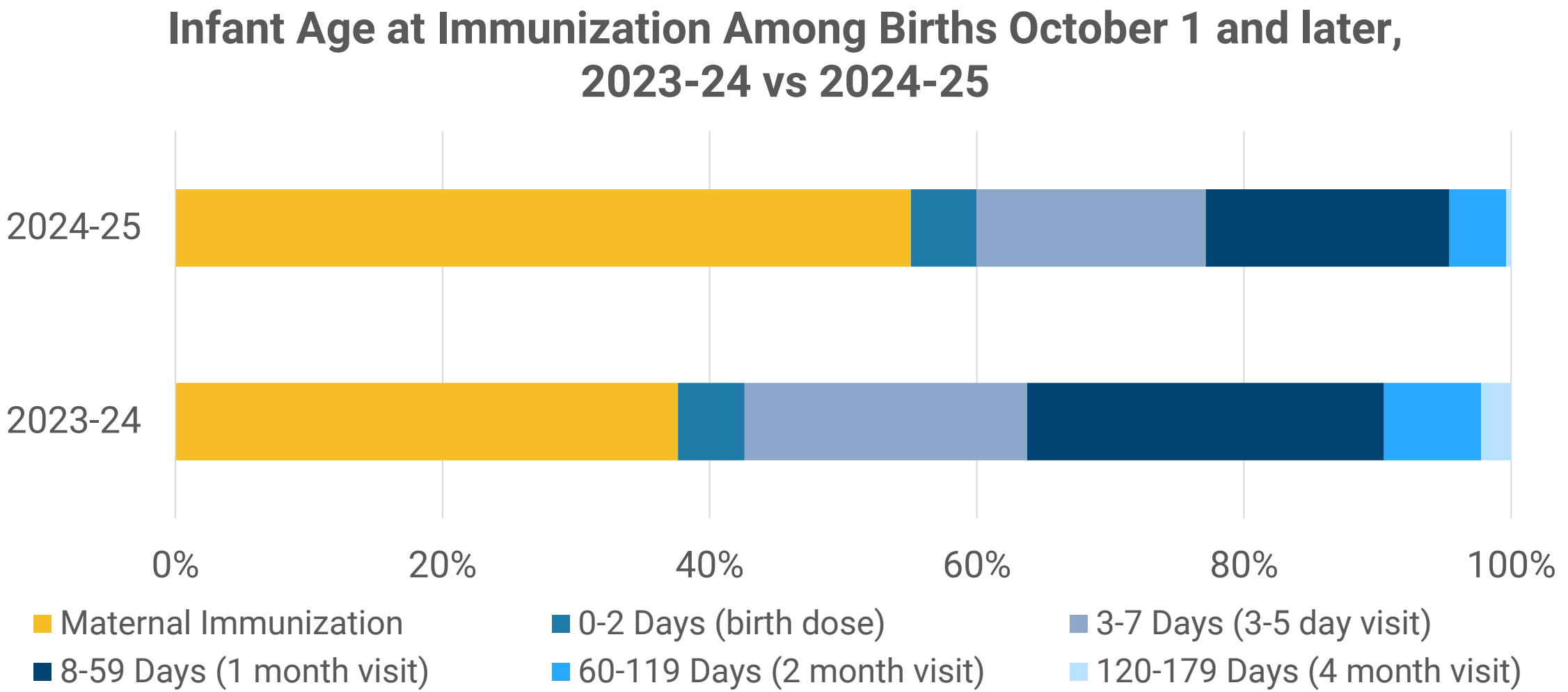
- Recruited 5 more hospitals for a total of 6 participating birthing hospitals in the 2024-25 season
  - Outreach to encourage enrollment for the 2025-26 season is already underway
- Encouraged early administration of nirsevimab within the first few days of birth at birthing hospitals through tailored outreach and broad messaging

A mid-season summary of 2024-25 RSV immunization data showed improvement from the 2023-24 season

Measure	2023-24 Season	2024-25 Mid-Season
Overall Coverage	17%	60%
Birthing Hospital Coverage	0%-24%	29-74%
Of Protected Infants % Protected within 7 Days of Birth	64%	77%

Data sources: I-CARE & Illinois Birth Data

The proportion of protection through early immunization has increased during the 2024-25 season, largely due to increased maternal immunization



Data sources: I-CARE & Illinois Birth Data

Despite overall improvements, disparities in coverage are emerging by race/ethnicity

Maternal Race/ Ethnicity	2023-24 Season	2024-25 Mid-Season
Asian, non-Hispanic	390 (19%)	1,077 (67%)
Black, non-Hispanic	949 (15%)	2,034 (47%)
Hispanic	1,457 (16%)	4,443 (60%)
White, non-Hispanic	1,484 (19%)	4,209 (68%)
Other, non-Hispanic*	33 (18%)	55 (50%)
Unknown	45 (18%)	88 (54%)

*Race/ethnicity groups with <50 births were categorized as Other

Data sources: I-CARE & Illinois Birth Data

Limitations of using vital records as denominator

- We are unable to account for children born in Chicago who have moved out of state
- We are unable to account for children who were born outside of Chicago who have moved to Chicago or are Chicago residents

Conclusions

- The use of birth records allowed us to estimate coverage by patient characteristics not captured in I-CARE
- These data are being used to inform targeted strategies to equitably increase coverage among Chicago infants
  - Recruiting more birthing hospitals to the VFC program
  - Increasing birth dose administration through education and communication

CDPH
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Thank you!

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For questions: stephanie.gretsch@cityofchicago.org