INFLUENZA VACCINATION COVERAGE ESTIMATES FOR THE 2019–20 SEASON:
Summary of Online Report

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Data Sources and Methods

- **National Immunization Survey-Flu (NIS-Flu)**
  - On-going, national list-assisted random-digit-dial cellular telephone survey of households with children.
  - NIS-Child (19–35 months), NIS Teen (13–17 years), and NIS-Child Influenza Module (6–18 months and 3–12 years).
  - Parental report: Has child received flu vaccination since July 1, 2019? (month, year).
  - NIS-Flu interviews conducted October 2019–June 2020.
Data Sources and Methods (2)

- **Behavioral Risk Factor Surveillance System (BRFSS)**
  - On-going state-based telephone survey of randomly selected persons ≥18 years among the non-institutionalized, U.S. population on health conditions and risk behaviors.
  - Self report: Flu vaccination in the past 12 months (month, year).
Data Sources and Methods (3)

- **Analysis**
  - Kaplan-Meier survival analysis to determine cumulative monthly influenza vaccination coverage of one or more doses received from July 2019–May 2020.
  - Coverage estimates calculated for children (6 mos.–17 yrs.) from NIS-Flu and for adults (≥18 yrs.) from BRFSS.
  - Imputed month of vaccination if it was missing.
  - Weighted estimates calculated in SUDAAN to account for complex survey design.
  - T-tests (p<0.05) to determine differences between groups and between the 2019–20 and 2018–19 seasons.
Figure 1. Flu Vaccination Coverage by Age Group, Children 6 months—17 years, United States, 2010–2020

Data Source: National Immunization Survey-Flu (NIS-Flu)
Error bars represent 95% confidence intervals around the estimates.
Figure 2. Flu Vaccination Coverage by State, Children 6 months—17 years, United States, 2019–20 Season

Data Source: National Immunization Survey-Flu (NIS-Flu)
Error bars represent 95% confidence intervals around the estimates.
Figure 3. Flu Vaccination Coverage by Racial/Ethnic Group, Children 6 months—17 years, United States, 2010–2020

Data Source: National Immunization Survey-Flu (NIS-Flu)
Error bars represent 95% confidence intervals around the estimates.
Figure 4. Flu Vaccination Coverage by Age Group, Adults 18 years and older, United States, 2010–2020

Data Source: Behavioral Risk Factor Surveillance System (BRFSS)
Error bars represent 95% confidence intervals around the estimates.
Figure 5. Flu Vaccination Coverage by State, Adults 18 years and older, United States, 2019–20 Season*

Data Source: Behavioral Risk Factor Surveillance System (BRFSS)
Error bars represent 95% confidence intervals around the estimates.
* Includes flu vaccinations received July 2019 through May 2020, except for the District of Columbia, for which only vaccinations through November 2019 were included (see Methods).
Figure 6. Flu Vaccination Coverage by Racial/Ethnic Group, Adults 18 years and older, United States, 2010–2020

Percentage Vaccinated

Data Source: Behavioral Risk Factor Surveillance System (BRFSS)
Error bars represent 95% confidence intervals around the estimates.
## Flu Vaccination Coverage* by Age Group, Adults 18 years and older, United States, † Behavioral Risk Factor Surveillance System (BRFSS), 2019-20 Season

| Age Group                                | Unweighted Sample Size | Unvaccinated % ‡ ± 95% CI § | Difference from the 2018–19 Season ± 95% CI ||
|------------------------------------------|------------------------|------------------------------|---------------------------------|
| Adults (≥18 years)                       | 286,116                | 48.4 ± 0.6                   | 3.1 ± 0.7|||
| 18–64 years                              | 179,851                | 42.3 ± 0.8                   | 3.3 ± 1.0|||
| 18–64 years with high risk conditions§  | 46,291                 | 51.4 ± 1.8                   | 3.5 ± 2.2|||
| 18–64 years without high risk conditions | 131,502                | 39.9 ± 0.8                   | 3.5 ± 1.0|||
| 18–49 years                              | 100,057                | 38.4 ± 0.8                   | 3.5 ± 1.0|||
| 18–49 years with high risk conditions    | 17,731                 | 44.4 ± 2.2                   | 4.0 ± 2.7|||
| 18–49 years without high risk conditions | 81,027                 | 37.5 ± 1.0                   | 3.7 ± 1.3|||
| 50–64 years                              | 79,794                 | 50.6 ± 1.4                   | 3.3 ± 1.6|||
| ≥65 years                                | 106,265                | 69.8 ± 1.2                   | 1.7 ± 1.4|||

* Estimates of the percentage of people vaccinated are based on interviews conducted beginning September 2019 through June 2020 and reported vaccinations from July 2019 through May 2020.

† Excludes U.S territories.

‡ Percentage vaccinated. Percentages are weighted to the U.S. population. Month of vaccination was imputed for respondents with missing month of vaccination data.

§ Confidence interval (CI) half-widths.

|| Statistically significant difference between the 2019–20 season and the 2018–19 season by t-test (p<0.05).

¶ Selected high risk conditions includes people with asthma, diabetes, heart disease, chronic obstructive pulmonary disease, or cancers other than skin cancer.
Limitations

- All the vaccination coverage estimates in the report rely upon parental or self-report and are not validated with medical records.
  - Validity studies have shown that parental report (for children) may overestimate influenza vaccination coverage.
  - Published studies of validity of self-report of adult influenza vaccination have shown mixed results.
- Bias might remain after weighting adjustments.
  - NIS-Flu and BRFSS are telephone surveys excluding households with no telephone service.
- More details of the methods and limitations can be found in the report at: https://www.cdc.gov/flu/fluvoxview/coverage-1920estimates.htm
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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.