

# Recent Monthly Influenza Vaccination Uptake and the New School-aged Recommendation

2008 National Influenza Vaccine Summit  
Atlanta, GA

May 12-13, 2008

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*The findings and conclusions in these slides are those of the authors and do not necessarily represent those of the Centers for Disease Control and Prevention*



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# Disclaimer

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- **The findings and conclusions in this presentation have not been formally disseminated by the Centers for Disease Control and Prevention and should not be construed to represent any agency determination or policy.**



# Primary purpose of this presentation

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- 1. Provide data to enhance discussion of how best to prepare for adding 5-18 year olds to the annual influenza vaccination calendar**
- 2. Predict vaccine uptake by season, starting with 2007-08.**



# Assumptions

- **Based on:**
  - Preliminary estimated increase
    - 05/06 to 06/07 in NHIS self-reported uptake
    - doses distributed 2005, 2006, & 2007
  - Expected increase from 2-4 y/o and 5-18 y/o recommendations based on:
    - Limited early data for 2-4 age group
    - Past patterns: 6-23m, and HR and HHC among older children
  - Projected population increase of 1% per year



# Outcomes

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- 1.** Estimated/projected number of vaccinees per season 2003/04 through 2009/10
- 2.** Estimated/projected number of vaccinees of school-age (5-18 years) by season 2006/07 through 2009/10
- 3.** Estimated number of persons reporting vaccination for influenza by month, U.S. NHIS 2005-06 and 2006/07



# Routine collection of influenza vaccination data for school-aged children

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- National Health Interview Survey (NHIS) is primary national source and gold standard for parent-reported national data
- Behavioral Risk Factor Surveillance System (BRFSS) for selected states, parent reported
- National Immunization Survey–Teen (NIS–Teen) for 13-17 year olds – state and national; parent and provider-reported
- Immunization Information Systems (registries) – selected states

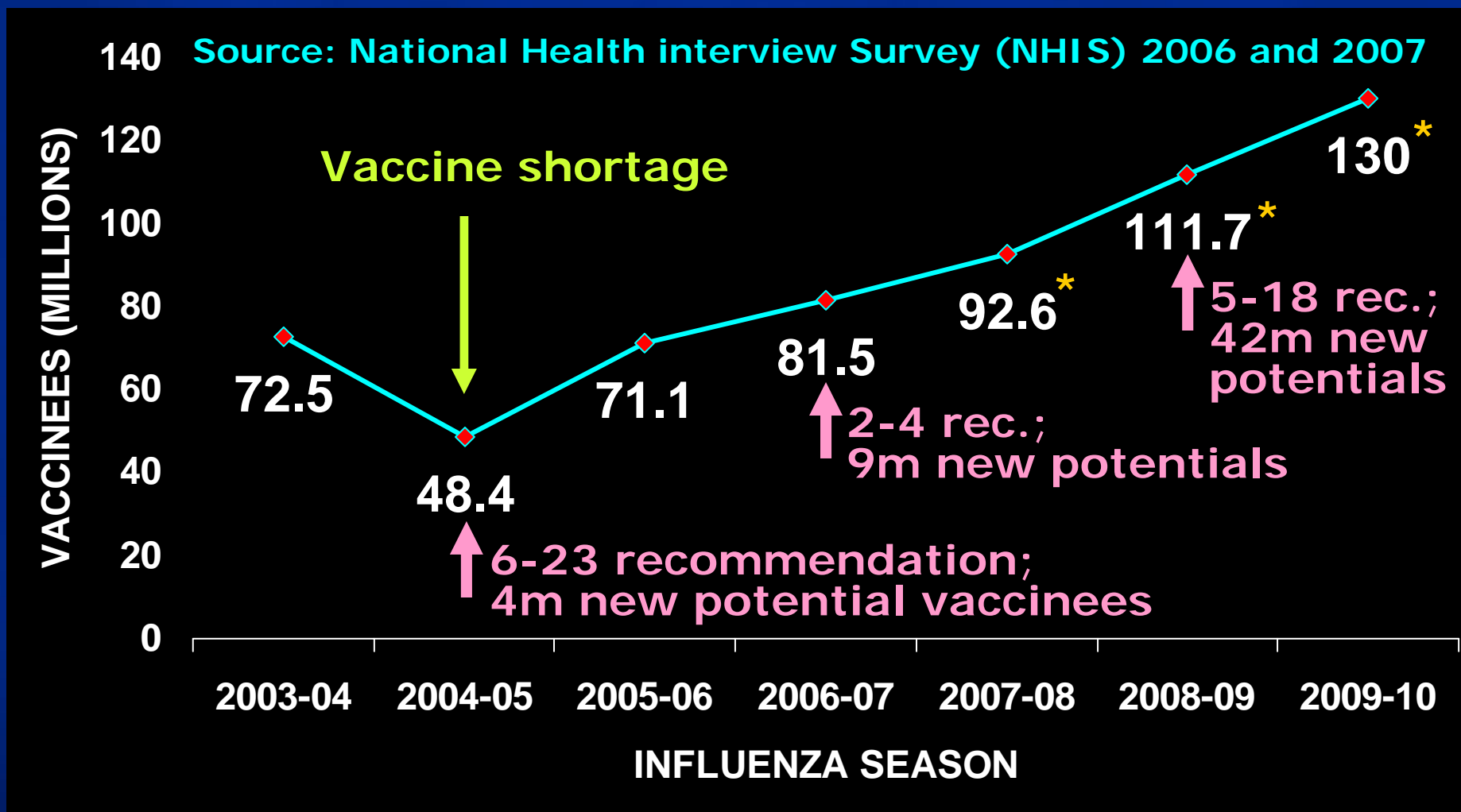


# Estimating seasonal coverage of influenza vaccination, NHIS

- Public use NHIS data set for a given season is available 14 mos later in June
  - Use March through August interviews
  - Records with 'YES' to influenza shot or spray, but without month and year—excluded from rate calculation
  - Estimate for immediate past season uptake can be determined from December interviews.
- Early release data sets are summarized and published online 6 months following each quarter and can provide selected early estimates
  - March interviews can be used as early as Sept for the immediate past season.



# Estimated/projected\* number of vaccinees per season 2003/04 through 2009/10





# Provisional 5-18y influenza vaccination recommendation, ACIP, 02/27/2008

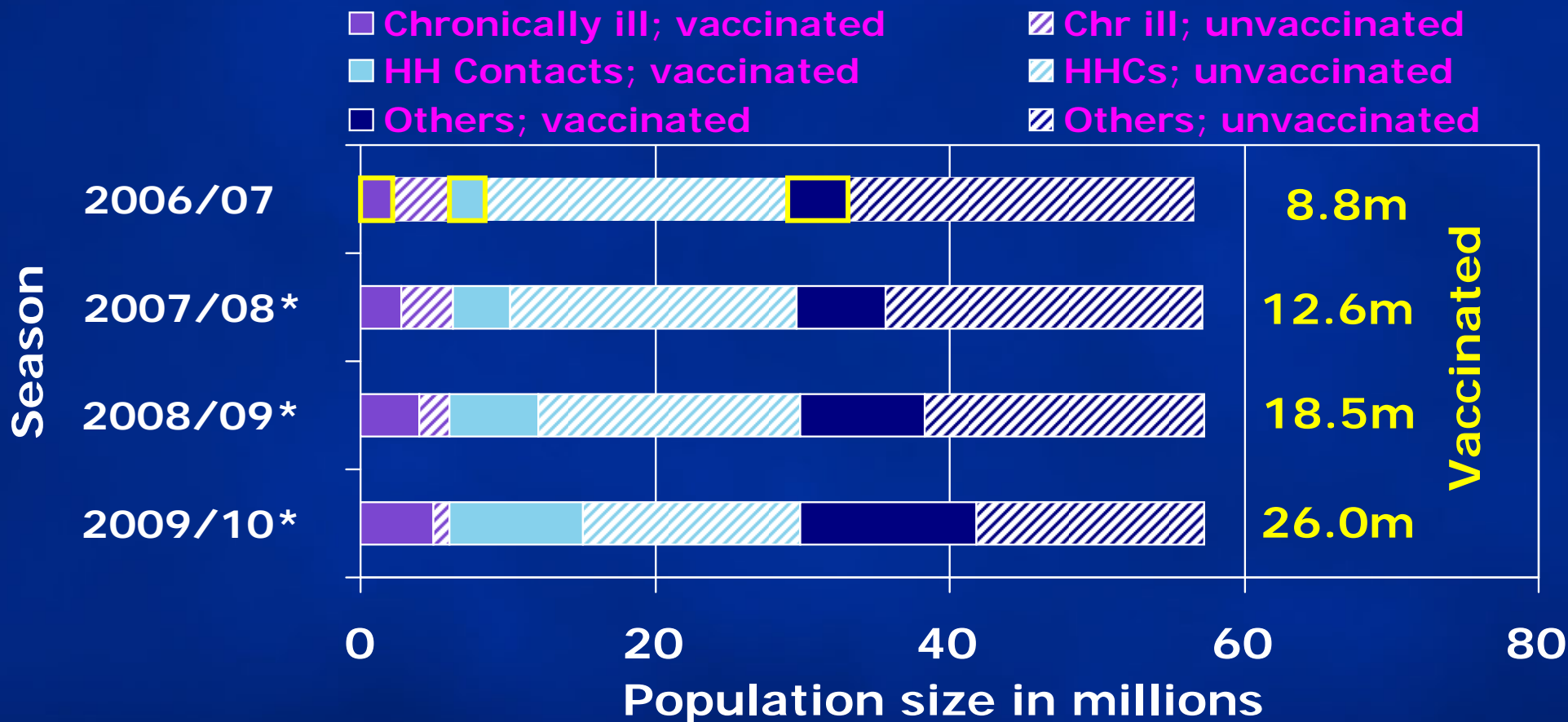
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- Annual vaccination for all children 6 months – 18 years is recommended
  - 5-18 should begin for 2008/09 season
    - Start no later than for 2009/10
    - VFC resolution effective July 1, 2008
- Tentative MMWR publication, June 2008



# INFLUENZA VACCINATION

## Estimated/projected number of vaccinees of school-age (5-18 years) by season 2006/07 through 2009/10 – *Draft Version*



HHC = Household Contacts \*Projected

Sources: NHIS 2007 & BRFSS 2007



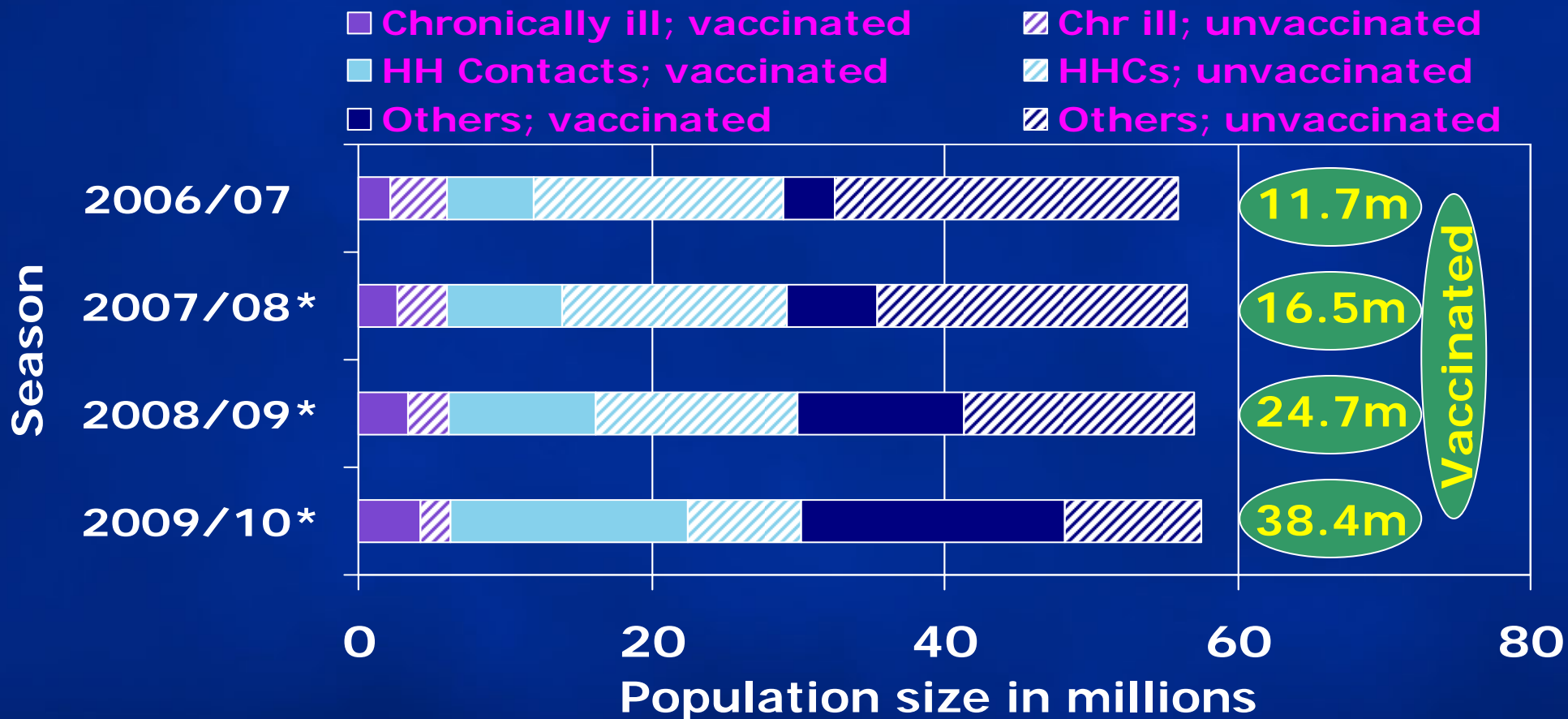
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# INFLUENZA VACCINATION

## Estimated/projected number of vaccinees of school-age (5-18 years) by season 2006/07 through 2009/10 *Final Version*



HHC = Household Contacts

\*Projected

Sources: NHIS 2007 & BRFSS 2007

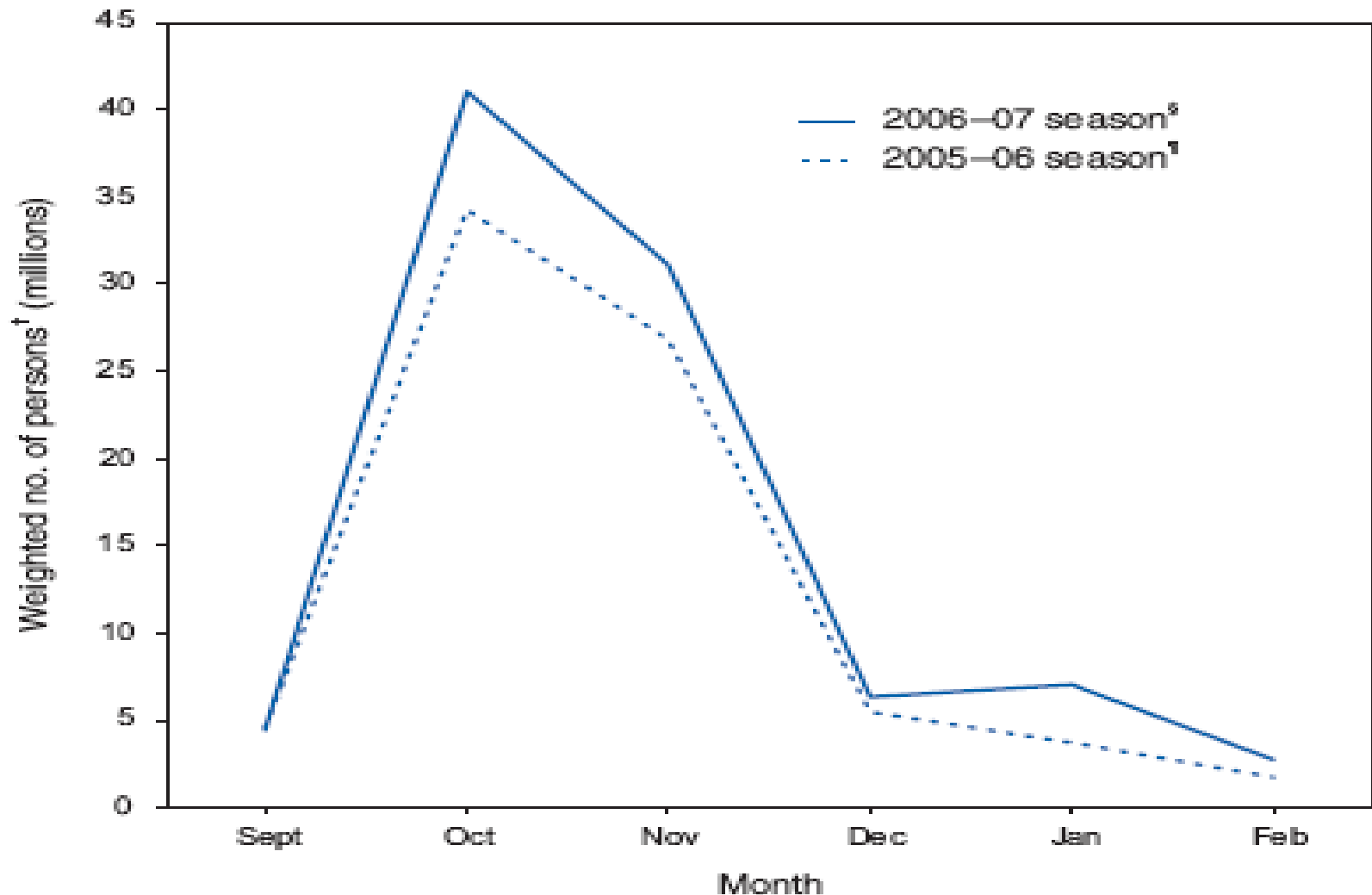


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**FIGURE.** Estimated number of persons reporting vaccination\* for influenza, by month — United States, National Health Interview Survey, 2005–06 and 2006–07 influenza seasons



MMWR 2007;56:1217



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## Footnotes for Figure:

\* Respondents were asked: "During the past 12 months, have you had a flu shot?" "During what month and year did you receive your most recent flu shot?" and "During the past 12 months, have you had a flu vaccine sprayed in your nose by a doctor or other health professional?" "During what month and year did you receive your most recent flu nasal spray?"

† Estimates are based on 1-month sampling weights.

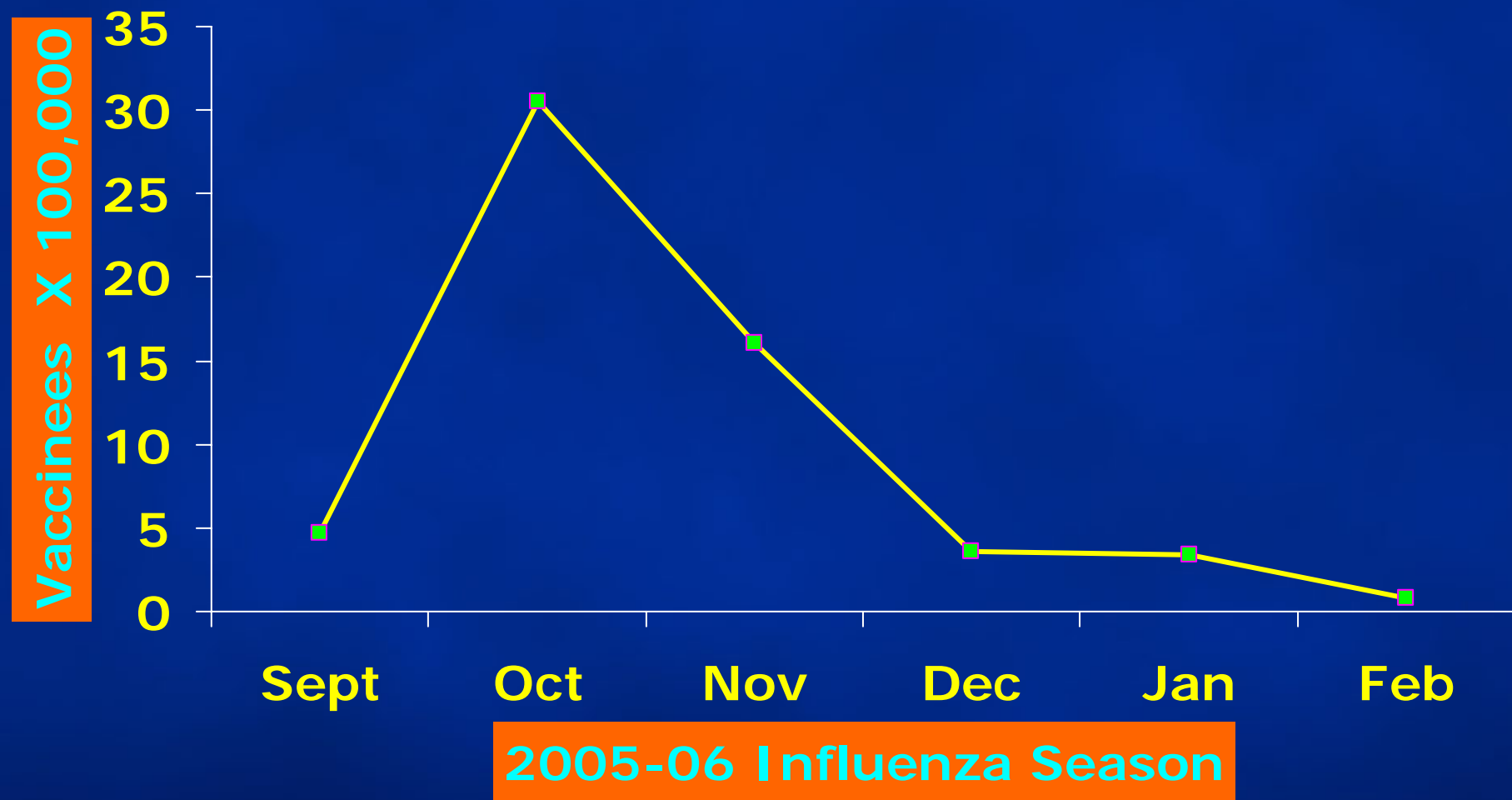
§ Persons aged >6 months for whom month of influenza vaccination was reported in interviews conducted in March 2007.

¶ Persons aged >6 months for whom month of influenza vaccination was reported in interviews conducted in March 2006.

SOURCE: 2006 National Health Interview Survey final data and 2007 National Health Interview Survey preliminary data. Estimates are based on household interviews of the civilian noninstitutionalized population. Additional information available at <http://www.cdc.gov/nchs/nhis.htm>.



# Estimated number of persons aged 5-17 years vaccinated for influenza by month – United States, 2005-06, NHIS 2006



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# SUMMARY

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- In 2008-09 the number of new vaccinees due to the 5-18 recommendation may be only about 8 million vaccinees
- Epidemiologic and monthly uptake data may inform discussion of most feasible times to vaccinate school-aged children



# Extra Slides



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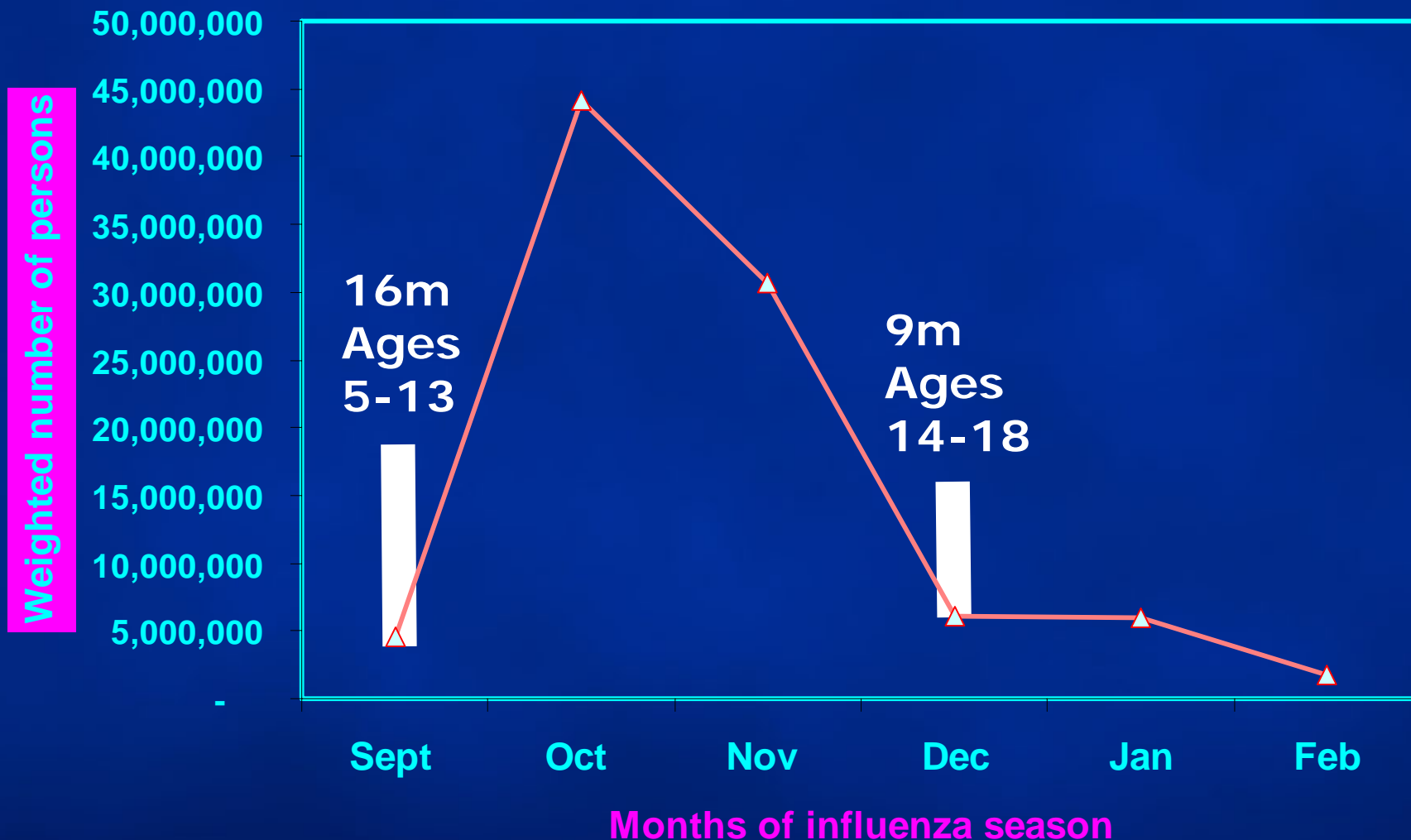
# Questions about timing for practical and epidemiological benefits

1. What do attendees think about the timing of influenza vaccination of school aged children (some or 'all')?
2. Would it be realistic to split the children into an early season group and a later group? When which?
3. Would second week in Sept be too early to start the first group? What group?



# Estimated number of persons vaccinated for influenza by month – United States

## Proposed timing of 5-18 y/o vaccinations



# Advantages of vaccinating 5-13 year olds in September and 14-18 year olds in December

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- **5-13 in Sept (includes first week Oct)**
  - Younger are at greater risk for more serious outcomes
  - Younger are better transmitters
  - More will be first timers and need 2 doses
- **14-18 in Dec (includes last week Nov)**
  - Need to be vaccinated before winter break
  - Can wait, as not at as great of risk and not transmitters as early as younger kids



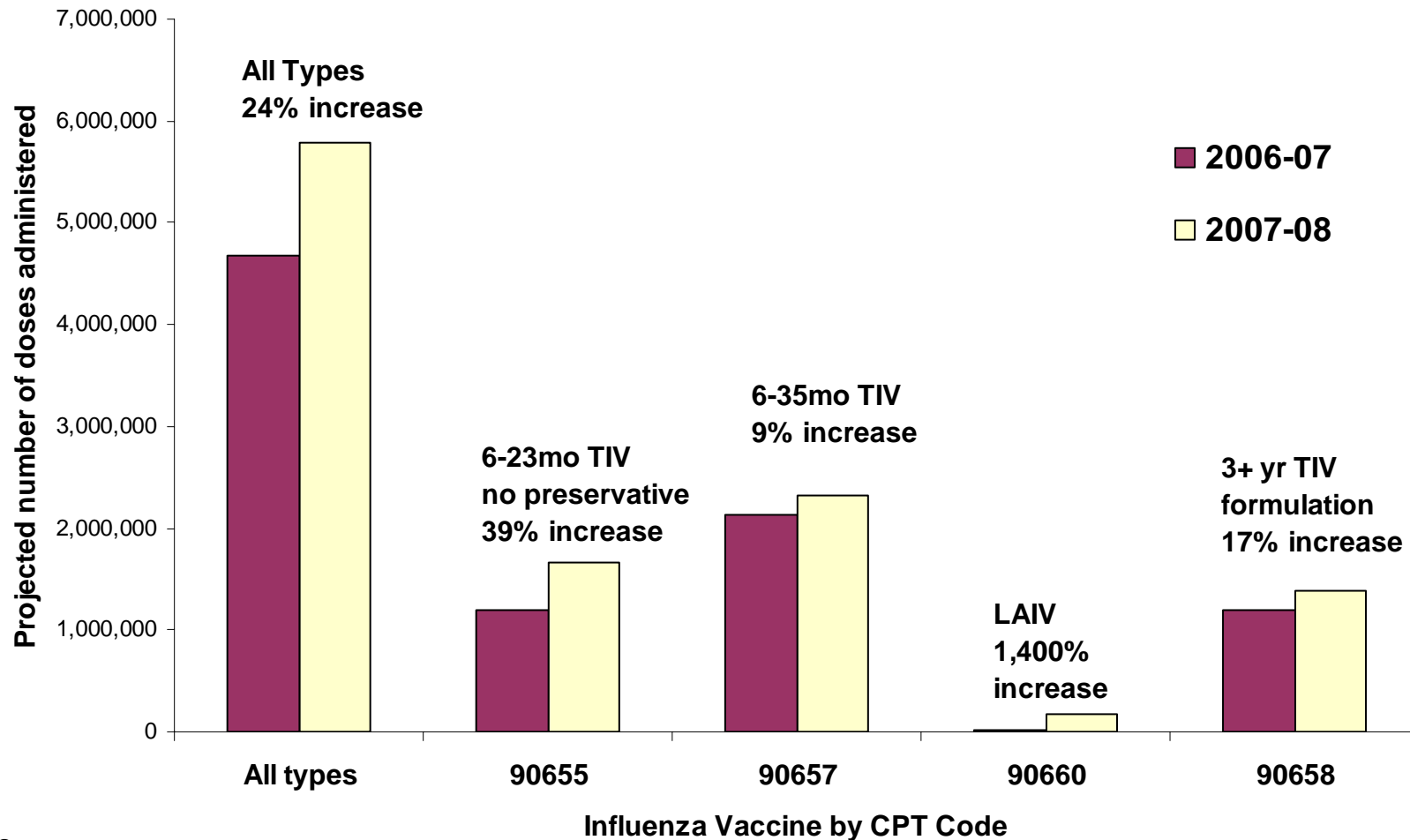
# Issues when vaccinating 5-13 year olds in September and 14-18 year olds in December

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- **Use of LAIV and CAIV in Sept**
  - Can be available in Sept
  - TIV will be needed for high risk
  - Demonstrated to work well in school based clinics
  - All four weeks available for largest group
- **Seasons when influenza hits early**
  - Move up the Dec vaccinations into Nov
  - Dec time before break is short, but have smaller group compared to elementary age
  - Household contacts of high risk – October



## Projected number of influenza vaccinees (0-4 years) by season

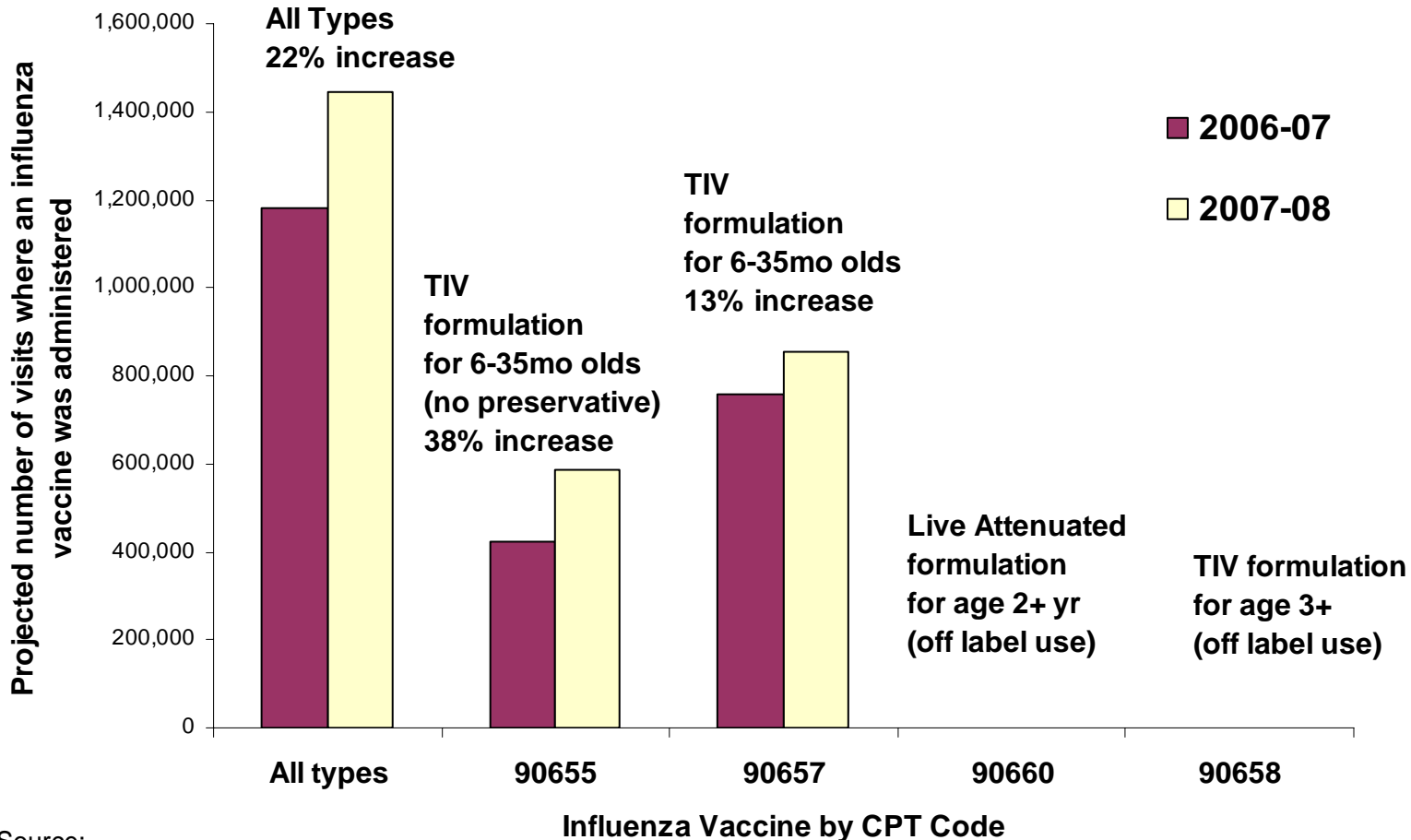


Source:

Surveillance Data, Inc. (SDI), May 2008. Ad Hoc Report on Pediatric Patients, September to March. Based on nationally projected data from physician office electronic medical claims submitted on CMS-1500 forms for third-party reimbursement.



# Projected number of Pediatrician visits for infants (6-23 months) where influenza vaccine was administered, by season

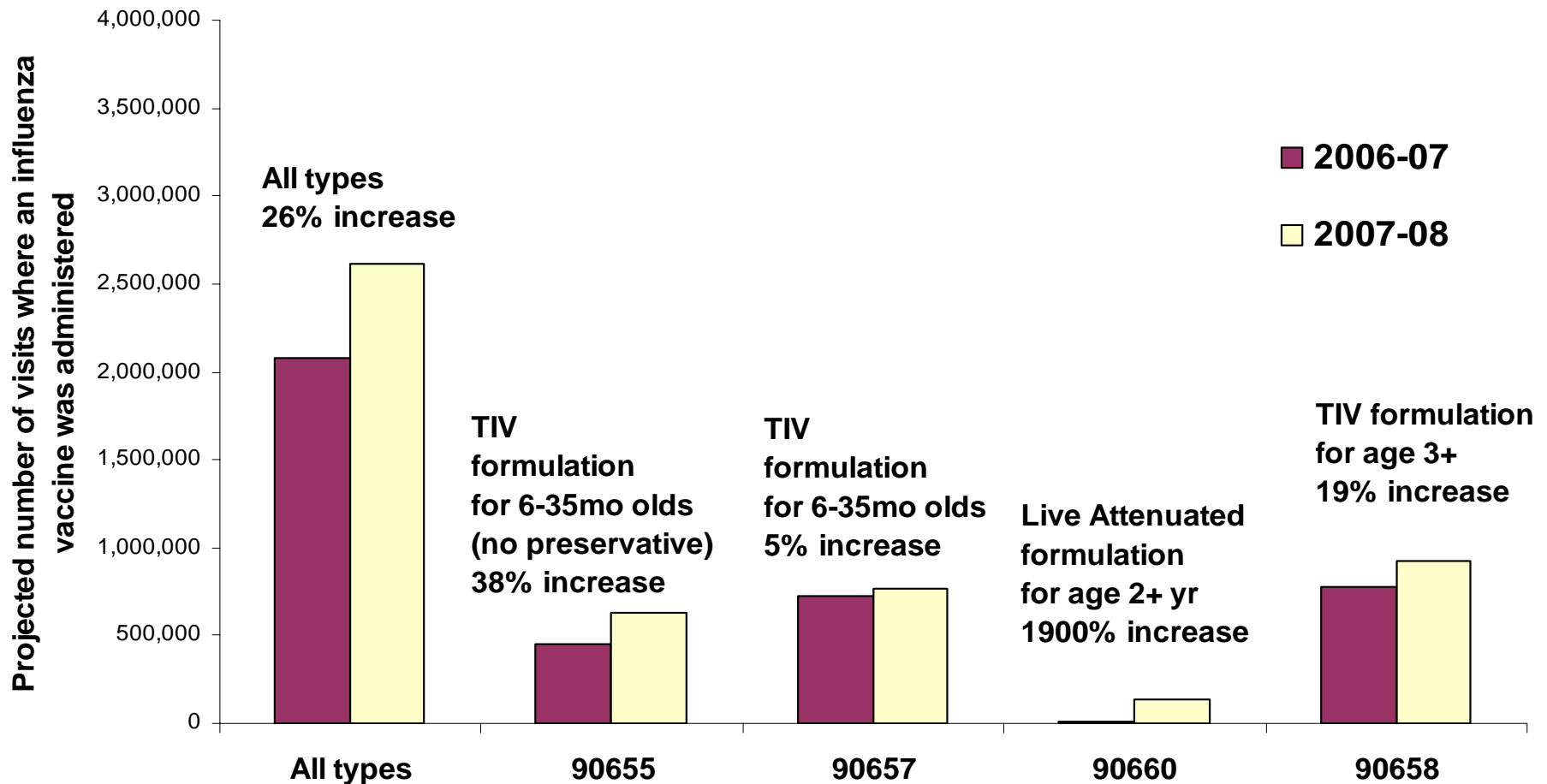


Source:

Surveillance Data, Inc. (SDI), May 2008. Ad Hoc Report on Pediatric Patients, September to March. Based on nationally projected data from physician office electronic medical claims submitted on CMS-1500 forms for third-party reimbursement.



## Projected number of Pediatrician visits for toddlers (2-4 years) where influenza vaccine was administered, by season



Source:

### Influenza Vaccine by CPT code

Surveillance Data, Inc. (SDI), May 2008. Ad Hoc Report on Pediatric Patients, September to March. Based on nationally projected data from physician office electronic medical claims submitted on CMS-1500 forms for third-party reimbursement.

