



# Pediatric Pneumococcal Carriage

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# Methods

- NP swabs collected from children 6-59 months of age during ED visits for any reason from
  - Pre-PCV13: January - August 2009
  - Post-PCVE: July 2010 - June 2017
- Pediatric flock swabs stored in STGG transport media at -80°C and processed in the Georgia EIP Lab
  - Serotype by Quellung and antimicrobial susceptibility testing by BMD—  
at CDC
- Survey and immunization records reviewed
- Comparison to invasive pneumococcal disease (IPD)

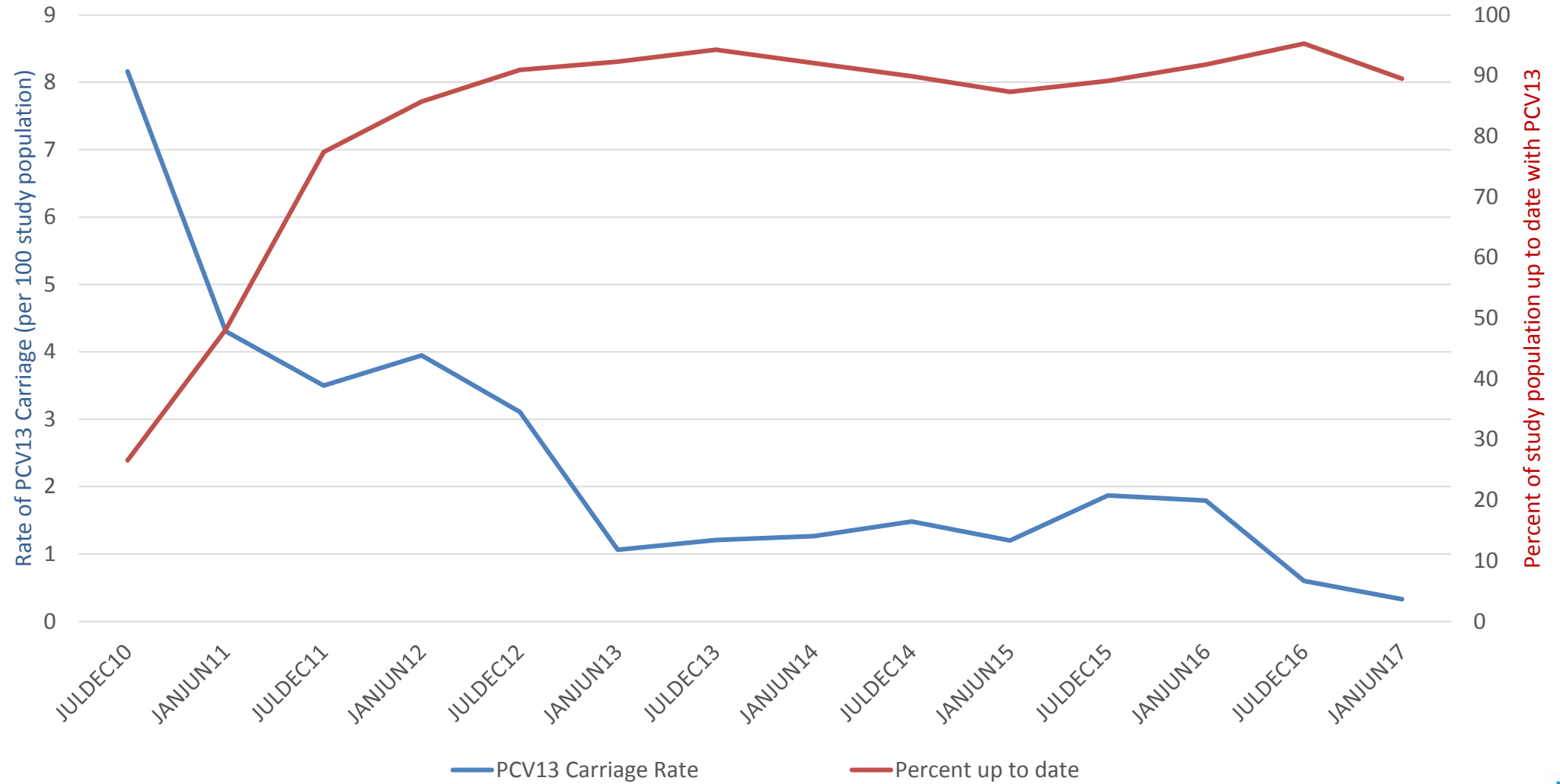
# Results

- Pre-PCV13
  - 451 children enrolled
  - 139/451 (31%) colonized with *S. pneumoniae*
  - 22% PCV13 serotypes (most 19A)
- Post-PCV13
  - 4,765 children enrolled
  - 1,447/4,765 (30.4%) colonized with *S. pneumoniae*
  - Serotype trends on following slides

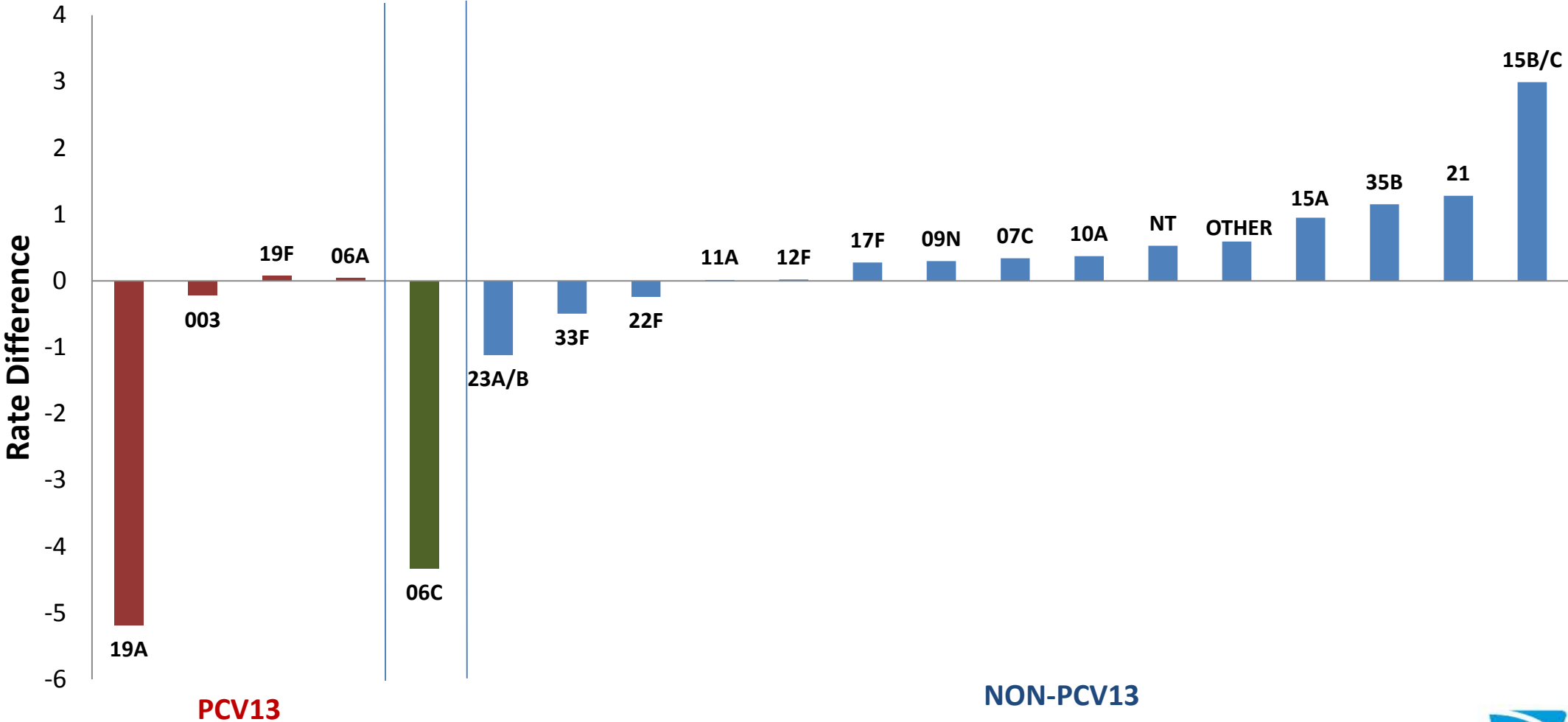
# Demographic and Risk Factors Associated with Pneumococcal Carriage in Post-PCV13

- Mean age for carriers is 25 months; non-carriers is 28 months
- Carriage higher among children with respiratory infection ( $p < 0.001$ ), otitis media ( $p = 0.03$ ), child in daycare ( $p < 0.001$ ), child with siblings in household ( $p = 0.03$ ), and black race ( $p = 0.04$ )
- Overall carriage similar whether up-to-date (30.1%) or not (29.4%)
- Up-to-date for PCV13 had lower PCV13 ST carriage rate (1.8 vs. 5.7 per 100 study population,  $p < 0.001$ ).
- By late 2012, most children (>90%) were up-to-date for PCV13 vaccine

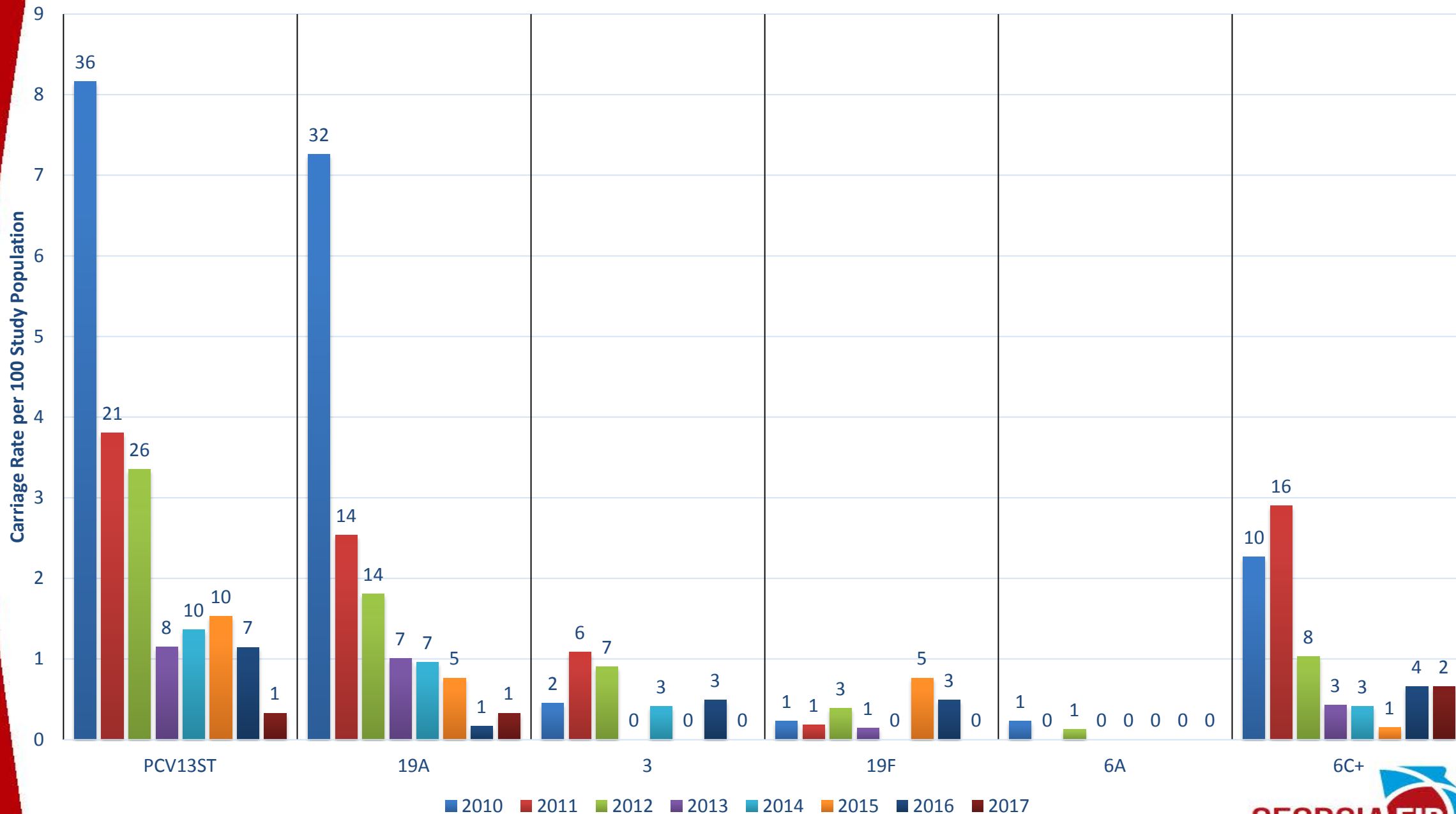
## Rate of PCV13 Carriage and percent up to date by age with PCV13 vaccination over 6 month study periods, July2010-June2017



# Differences in Rates of Pneumococcal Carriage Serotypes January-August 2009 vs. July 2010-June 2017



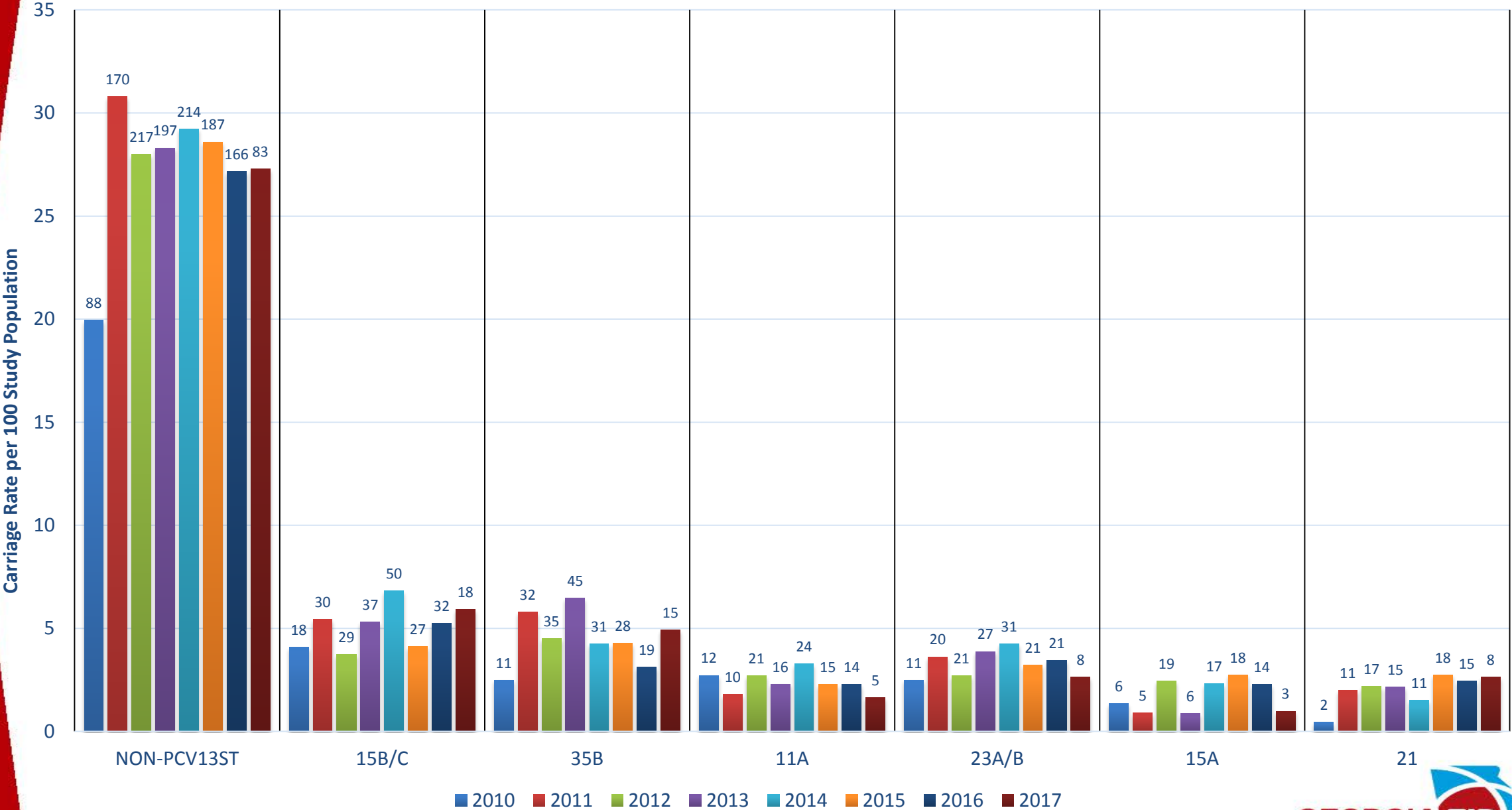
Serotype 6C and PCV13 Serotype Carriage After the Introduction of PCV13 by year



+ vaccine-related serotype



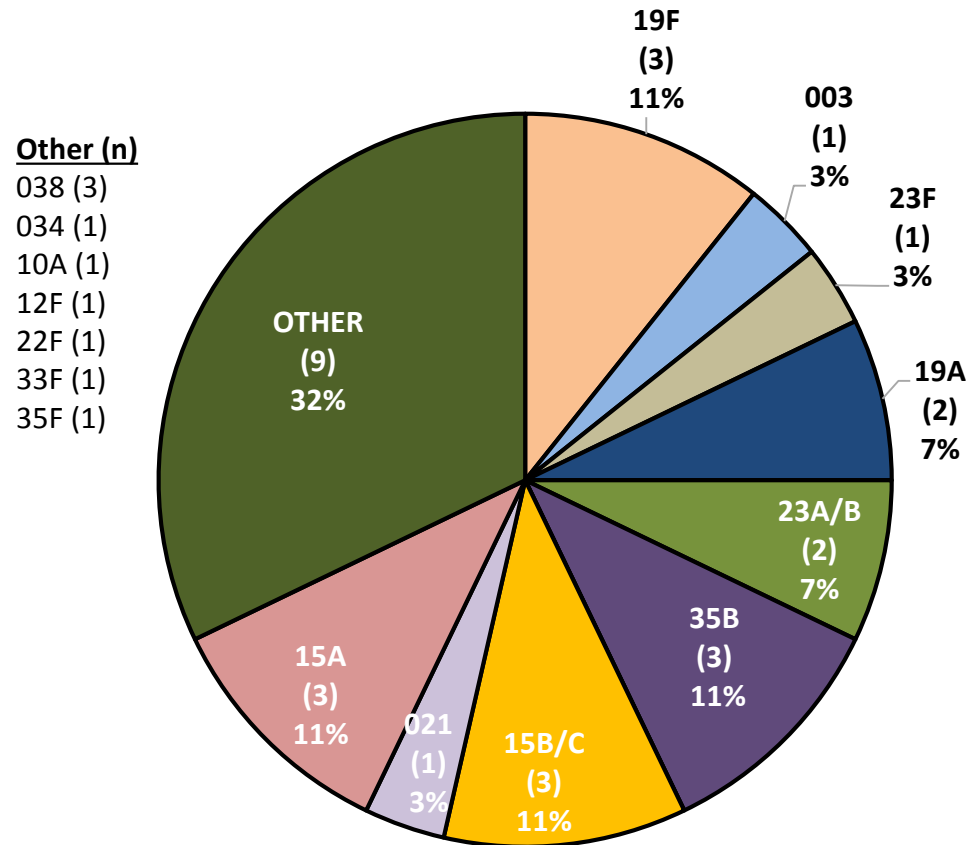
### Non-PCV13 Serotype Carriage After the Introduction of PCV13 by year





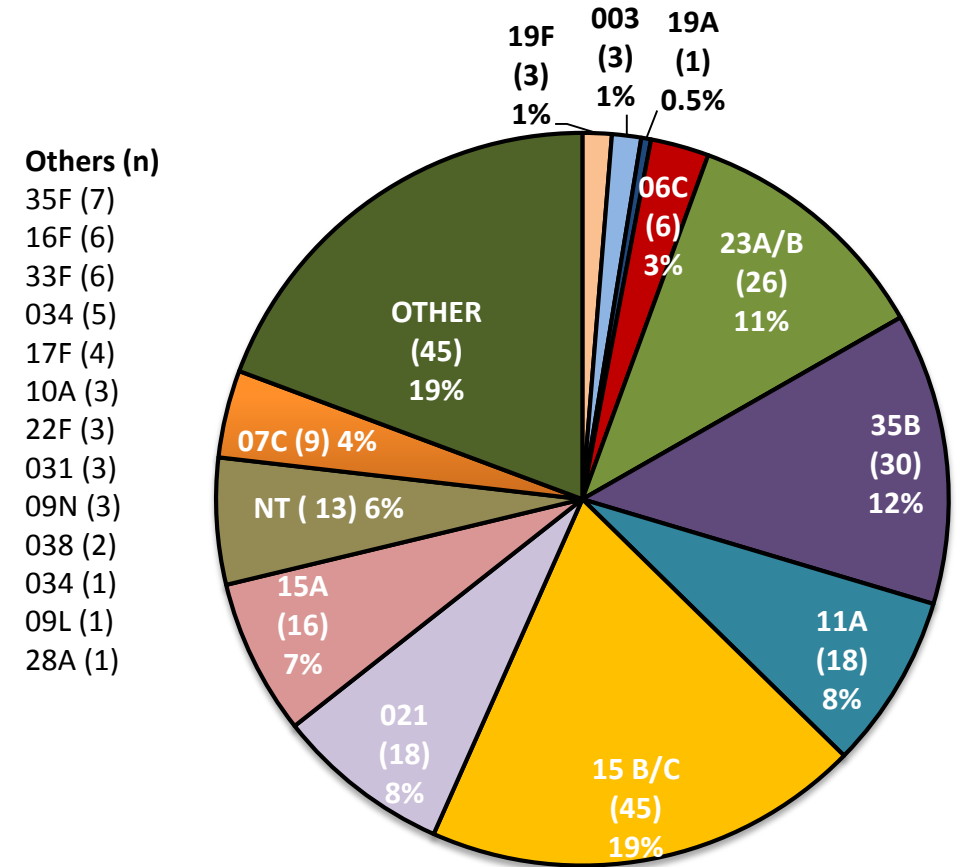
**Pediatric (6-59 mos) IPD Serotype Distribution  
January 2016-April 2017**

n=28



**Pediatric (6-59 mos) Carriage Serotype Distribution  
January 2016- April 2017**

n=233



# Pediatric (6-59 mos) Pneumococcal Carriage, Atlanta

## Conclusions

- Overall, pneumococcal NP carriage stable at ~30%
- Significant reductions in carriage of serotype 19A and to lesser extent 6C after introduction of PCV13
- Low level carriage of 19F, 003, 19A, and 6C carriage persists
- No single non-vaccine serotype has emerged as a dominant carriage serotype
- IPD generally mirrors NP carriage with some exceptions (11A, 7C, 6C, NT carriage with no IPD)

Thank you