penicillin G (PEN; from 30.3% in 2009 to 16.0% in 2015) and ceftriaxone (CRO; from 27.3% to 12.0%), as did PCV13 STs (from 34.5% to 16.0%% and from 27.5% to 8.6%, respectively). ST 19F showed stable S patterns over time and 19A remained the less S ST with high NS rates for PEN (49.0%–76.5%), CRO (24.5–64.8%), erythromycin (ERY; 76.9–90.8%), and clindamycin (CLI; 51.0–73.1%). These NS rates for 19A rose from 2009 to 2011–2012, decreasing in 2013–2016. NS rates for CLI and ERY against ST 3 increased to 19.6% and 23.9% in 2015, respectively. Non-vaccine STs showed stable NS rates for PEN, CRO, and CLI. However, an increasing trend for ERY NS (from 35.2% in 2009 to 45.0% in 2015) was noted, which was driven by increasing NS rates for 35B (from 42.3% in 2009 to 71.2% in 2015).

Conclusion. PCV13 ST exhibited decreasing trends for NS during the study period, except for ST 3, which showed stable S rates over time. Overall, implementation of PCV13 decreased considerably the NS rates in *S. pneumoniae* causing infections in the US adult population. Further surveillance will enhance understanding of future antimicrobial patterns in *S pneumoniae* in the context of adult pneumococcal vaccination programs.

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1497. Changing Epidemiology of Invasive Pneumococcal Disease due to Conjugate Vaccine Serotypes in Toronto, Canada After Introduction of a Routine Pediatric PCV13 Program

Allison Mcgeer, MD, MSc[1]; Karen Green, MSc, RN[2]; Agron Plevneshi, BSc[2]; Wallis Rudnick, MSc.[2]; Sylvia Pong-Porter, MLT[2]; Jeff Li, BSc[2]; Shalini Desai, MD[3] and Toronto Invasive Bacterial Diseases Network; [1]Infection Control, University of Toronto, Toronto, ON, Canada, [2]Mount Sinai Hospital, Toronto, ON, Canada, [3]Pediatrics, McMaster University, Hamilton, ON, Canada

Session: 165. Pneumococcal Immunization and Epidemiology-North America
Friday, October 6, 2017: 12:30 PM

Background. In Ontario a publicly funded PCV7 infant program (3 + 1 schedule), was introduced in 1/2005, PCV10 in 10/2009 and PCV13 in 11/2010 (2 + 1 schedule with catch-up to 35m). TIBDN performs population-based surveillance for invasive pneumococcal disease (IPD) in Toronto/Peel to evaluate program impact.

Methods. IPD cases are reported to a central office and one isolate/case is serotyped. Demographic/ clinical data are collected by chart review and patient/physician interview.

Results. From 1/1995–5/2017, 9727 IPD cases have been identified. Among 910 IPD cases since 2015, 109 (12%) were aged <15y, 376 (41%) 15–64y and 425 (41%) aged ≥65y; 57 (7%) were due to serotypes (STs) included in PCV7, 188 (24%) due to STs in PCV13 but not PCV7, 228 (30%) due to STs in PPV23 but not PCVs, and 295 (38%) due to non-vaccine STs (142 isolates not available/not yet typed). The incidence of IPD in 2016 was 4.78/100000 in children and 5.68/100000 in adults (44% and 32% reduction since 2008/9 respectively.

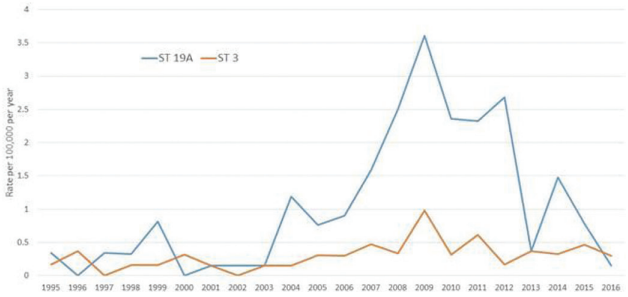
Since 1/1/2015, there has been no IPD due to PCV7 STs in children. In adults, 57 episodes include 19 of ST4, 13 ST19F, 8 ST14, 7 ST6B, 5 ST9V, 3ST18C and 2 ST23F. The median age of patients was 64.5y (range 28–98), 37 were male; 67% had an underlying illness. PCV7 ST cases were more likely to be associated with group housing than other cases (12/45, 21%, v 47/644, 7%, $P < .01$); 6/19 cases of ST4 were associated with a single homeless shelter, and 3/8 due to ST14 occurred in one nursing home.

Of 188 episodes due to PCV13/not PCV7 serotypes, 87 were due to ST3, 72 ST19A, 16 ST7F, 11 ST6A, and 1 each due to ST1 and ST5. 22 cases occurred in children (12 ST3, 9 ST19A, 1 ST7F): 1 child refused consent, and 1 had missing data; 4 were vaccine ineligible; 2 unvaccinated; 9 incompletely vaccinated; and 5 vaccine failures (2 ST3, 3 ST19A). The most recent case of pediatric IPD due to ST19A was in Aug/2016; both pediatric cases to date in 2017 are ST3. The incidence of IPD due to STs 19A and 3 over time in children and adults is shown in the Figures.

Conclusion. Since PCV13-program implementation, IPD due to PCV7 STs has decreased to zero among children and remains low in adults, although clusters in communal living situations may be emerging. IPD due to ST19A has declined dramatically. IPD incidence due to ST3 has not changed significantly since 1995.

Figure 1: Annual incidence of IPD due to serotypes 19A and 3 in adults, Toronto

Figure 2: Annual incidence of IPD due to serotypes 19A and 3 in children, Toronto



Disclosures. **All authors:** No reported disclosures.

1498. Impact of PCV13 on Serotype 3 Invasive Pneumococcal Disease and Nasopharyngeal Carriage in Massachusetts' Children

Rotem Lapidot, MD[1]; Kimberly M. Shea, PhD, MPH[2]; Brent A. Little, PhD[1]; Inci Yildirim, MD, MSc[3,4,5] and Stephen I. Pelton, MD[2]; [1]Pediatric Infectious Diseases, Boston Medical Center, Boston, Massachusetts, [2]Boston University Schools of Medicine and Public Health, Boston, Massachusetts, [3]Division of Infectious Diseases, Pediatrics, Emory University, Atlanta, Georgia, [4]Department of Epidemiology, Rolling school of public health, Emory University, Atlanta, Georgia, [5]Center for Childhood Infections and Vaccines, Atlanta, Georgia

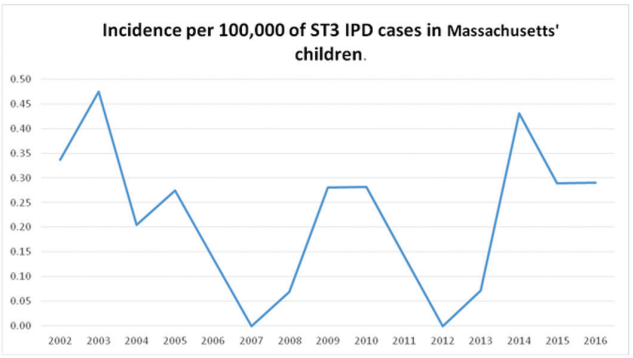
Session: 165. Pneumococcal Immunization and Epidemiology-North America
Friday, October 6, 2017: 12:30 PM

Background. Although a substantial decline in overall vaccine serotype invasive pneumococcal disease (IPD) incidence has been observed following immunization with PCV7 and subsequently PCV13, the reported effectiveness for individual vaccine serotypes has varied. Reported effectiveness of PCV13 for serotype 3 (ST3) disease has differed by study design and geography, with a wide range of estimates including zero. We assessed the impact of PCV13 on ST3 IPD cases and nasopharyngeal (NP) carriage in Massachusetts' children.

Methods. Cases of ST3 IPD in children <18 years were identified via enhanced passive surveillance in conjunction with the Massachusetts Department of Public Health from 2002 to 2016. NP Carriage of ST3 in children aged 3 months to <7 years was identified via an active surveillance network of pediatric practices in Massachusetts from 2007 to 2014. Annual incidence rates of ST3 IPD were calculated using US Census estimates as population denominators. Annual prevalence rates of carriage were calculated using the surveillance population. We compared age distribution, clinical syndromes, presence of comorbidities and vaccination status for IPD cases and age distribution of children with ST3 carriage before and after PCV13 implementation.

Results. Overall 47 cases of ST3 IPD were identified from 2002 to 2016; the incidence of ST3 IPD before and after PCV13 was 0.23 and 0.20 per 100,000 children respectively (incidence rate ratio [IRR] = 1.13, 95% CI 0.62–2.05). There were no differences in age distribution, clinical syndrome or presence of comorbidities among ST3 IPD cases before and after PCV13. The majority (9/13) of post PCV13 ST3 IPD cases occurred among children who were fully vaccinated. No association was seen between date of last PCV13 dose and time of IPD to suggest waning immunity. Prevalence of ST3 carriage among children aged 3 months to <7 years before and after PCV13 implementation was 0.19 and 0.64 respectively (Prevalence ratio [PR] = 0.3, 95% CI 0.11–0.83).

Conclusion. Six years after PCV13 implementation, no significant changes in ST3 IPD incidence, age distribution, clinical syndrome or presence of comorbidity among cases in children <18 years of age were observed. An increase in NP carriage in children <7 years of age was observed.



Disclosures. **K. M. Shea**, Pfizer, Inc: Consultant and Grant Investigator, Consulting fee and Grant recipient; **S. I. Pelton**, Pfizer: Board Member and Grant Investigator, Consulting fee, Research grant and Speaker honorarium; Merck vaccines: Board Member, Consulting fee and Speaker honorarium; GSK: Board Member, Consulting fee and Speaker honorarium; Sequiris: Board Member, Consulting fee and Speaker honorarium