1499. Excess Risk of Invasive Pneumococcal Disease (IPD) Persists in Adults with Comorbid Conditions in the Era of PCV13 Childhood and Adult Immunization

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**Session:** 166. Pneumococcal Immunization in Adults

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**Background.** Adults with comorbid illness are known to be at excess risk of IPD. We evaluated the burden of IPD in adults, with and without comorbidity, during the period before and after introduction of PCV13 in children and selected adults.

**Methods.** We employed a retrospective cohort design and data from a large US healthcare claims repository. The study population included all adults ≥18 years who had ≥1 day of health benefit at any time from 2007–2015, and who met minimum criteria for characterizing comorbidity profiles. Study subjects were stratified by age (18–49, 50–64, and ≥65 years) and risk profile (at-risk; high-risk; and healthy) based on ACIP–identified indications for pneumococcal vaccination. Episodes of IPD were identified in each year of the study period, and rate ratios comparing IPD incidence in persons with at-risk and high-risk conditions, respectively, vs. healthy persons, were computed.

**Results.** A substantial decline in IPD was observed in 2013–2015 compared with 2007–2010 in healthy, at-risk, and high-risk adults in all age groups. However, the proportional decline was lower in those with high-risk and at-risk conditions, resulting in an increased rate ratio for adults with comorbid conditions (Table).

| Table: IPD rates and rate ratios by age group and risk profile |
|--------------------------------------------------------------|
| **Annual Rate per 100K, by Time Period** | **Decline in Annual Rate from 2007–2010 to 2013–2015** | **Rate Ratio (95% CI) by Time Period** |
| **Age Group** | **<65** | **65–74** | **≥75** | **Healthy** | **At-Risk** | **High-Risk** | **Healthy** | **At-Risk** | **High-Risk** | **Healthy** | **At-Risk** | **High-Risk** |
| **Risk** | **2007–2010** | **2013–2015** | **2007–2010** | **2013–2015** | **2007–2010** | **2013–2015** | **2007–2010** | **2013–2015** | **2007–2010** | **2013–2015** | **2007–2010** | **2013–2015** |
| **Risk Profile** | **Yr** | | | | | | | | | | | | |
| **Healthy** | 18–49 | 1.6 | 0.9 | 41% | — | 18–49 | 5.3 | 2.6 | 31% | — | 18–49 | 7.0 | 5.3 | 25% |
| **At-Risk** | 18–49 | 4.5 | 3.1 | 31% | 2.8 (2.3, 3.4) (2.5, 4.4) | 18–49 | 9.9 | 8.2 | 17% | 2.6 (2.3, 3.1) (2.7, 3.7) | 18–49 | 21.4 | 18.0 | 16% | 3.1 (2.6, 3.4) (2.8, 4.2) |
| **High-Risk** | 18–49 | 16.2 | 14.2 | 12% | 10.1 (7.9, 14.2 (10.9, 18.6) | 18–49 | 57.6 | 23.5 | 15% | 7.3 (6.3, 8.4) (7.6, 10.6) | 18–49 | 36.7 | 36.4 | 1% | 5.2 (4.5, 6.1) (6.9, 7.8) |

**Conclusion.** IPD burden declined from the pre-PCV13 era. This decline was greatest in healthy adults (vs., those with at-risk or high-risk conditions); adults with comorbid conditions, especially those ≥65 years old, appear to have benefited least from the direct and indirect impacts of PCV13 immunization. Greater understanding as to which serotypes cause disease in adults with comorbid conditions and which host factors in individuals predispose to IPD is needed to develop additional prevention strategies for high-risk groups.

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1501. Disparities in Uptake of 13-valent Pneumococcal Conjugate Vaccine among Older Adults Following Routine Recommendation in the United States

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**Background.** In the fall of 2014, the Advisory Committee on Immunization Practices (ACIP) recommended 13-valent pneumococcal conjugate vaccine (PCV13) for all US adults age ≥65 years. Coverage rates are currently unknown. This study estimated overall PCV13 coverage rates in older adults and determined if disparities in uptake existed for some sociodemographic groups.

**Methods.** A monthly series (August 1, 2014 – February 28, 2017) of cross-sectional analyses of administrative diagnosis and prescription claims data collected by Experian was used to estimate overall and subpopulation-level uptake of PCV13 among US adults age ≥65. Uptake estimates were adjusted to PCV13 manufacturer sales data to account for missed patients. Univariate and multivariable analyses of PCV13 uptake were performed across sociodemographic factors (e.g., race/ethnicity, household income, neighborhood urbanicity, education status).

**Results.** Among adults age ≥65, 50% received PCV13 by the end of February 2017. Disparities in PCV13 uptake were apparent. Black adults (39%) and Hispanics (32%) (vs. whites), the poor (36% vs. 64% for lowest vs. highest income deciles), adults with low educational status (57% vs. 58% for those without high school education vs. college educated), and those living in rural (33%) or urban/inner city (41%) areas (vs. 52% in suburban areas) had significantly lower PCV13 uptake (all P < 0.01, Figure). These differences persisted in multivariable analyses.

**Conclusion.** PCV13 uptake among adults age ≥65 occurred rapidly after ACIP recommendation in late 2014. Yet, poor and minority communities, rural and urban/inner city areas, and communities with low educational attainment may need more time to adequately implement adult vaccine guidelines following ACIP recommendation. In 2018, current adult pneumococcal recommendations will be revisited by ACIP.