



Disclosures. All authors: No reported disclosures.

1641. A Comparison of Human Papilloma Virus Infection Prevalence Trends Pre- and Post-HPV Vaccine Implementation

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Background. Human papilloma virus (HPV) is the most common sexually transmitted infection in the United States, with an annual incidence rate of approximately 14 million people. The HPV vaccine has been demonstrated to be highly effective in the prevention of HPV infection and HPV-associated diseases. This study aims to evaluate the impact of HPV vaccine on the prevalence of HPV infection in the United States and evaluate the trends of disease prevalence pre- and post-HPV vaccine implementation.

Methods. We conducted a secondary data analysis of the National Health and Education Survey (NHANES) for trends in HPV infection from 2003 to 2016. The analysis was grouped into a pre-HPV vaccine implementation (2003–2006) cohort including 4064 females, aged 18–59 years; and a post-HPV vaccine implementation (2007–2016) cohort which included 10718 females, aged 18–59 years. Further analysis of HPV infection prevalence, pre- and post-HPV vaccine implementation, stratified by sociodemographic characteristics were conducted.

Results. The prevalence of HPV infection prior to HPV vaccine implementation was 43.98% (95 CI 42.71%–46.58%) compared with 40.55% (95 CI 40.55%–40.56%) in the post-HPV vaccine implementation era. Among females with HPV infections in the post-HPV vaccine implementation cohort 82.6 (95% CI 80.41%–83.42%) were unvaccinated. In both cohorts, black females had a significantly higher prevalence of HPV with a prevalence rate of 18.56% (95% CI 18.23%–20.56%) in the pre-HPV vaccine implementation cohort, and 15.61% (95% CI 14.82 – 19.4%) in the post-HPV vaccine implementation cohort. Females with less than high school education had a higher prevalence of HPV in the pre and post- HPV vaccine implementation cohorts with prevalence rates of 25.77% (95% CI 23.44%–28.72%) and 24.96% (95% CI 23.41%–25.67%), respectively.

Conclusion. The results suggest that HPV infection prevalence has declined since the implementation of HPV vaccine to US national immunization program. Our findings highlight disparities in HPV infection prevalence by race and educational status, and these patterns are in keeping with HPV-associated disease such as warts and HPV-associated cancers.

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1642. Comparing Viral Respiratory Infections Between Children Who Do and Do Not Attend Child Care

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Background. Out-of-home child care (CC) is a risk factor for viral acute respiratory infection (ARI) in young children. Little is known, however, about differences in frequencies of viral infection between CC children and those cared for exclusively at home.

Methods. Using surveillance data from the HIVE household cohort in southeast Michigan from 2014–2018 (4 seasons), we analyzed 1022 illness cases from 354 children aged 0–6 years. Age groups were dichotomized as infants (aged <2 years) and toddlers/preschoolers (aged 2–6 years). Households were prospectively enrolled and nasal respiratory swabs were collected from children upon report of acute illness symptoms. We used real-time RT-PCR to test for 18 respiratory viruses.

Results. We detected at least one virus in 855 illness cases (83% of all illnesses reported). Age at first illness onset in all four seasons was significantly younger among CC children than homecare children ($P < 0.001$) across all 4 years (average difference = 1.25 years). CC children <2 years had slightly lower odds of viral detection during illness (OR = 0.89, 95% CI [0.49, 1.61]) but higher odds at ages 2–6y (1.07 [0.65, 1.76]); neither was statistically significant. Neither CC nor homecare children were significantly more or less at risk for any particular pathogen—except for rhinovirus in the <2-year group, where odds of rhinovirus infection were 58% lower (OR = 0.42) in CC children compared with homecare counterparts (95% CI, 0.21–0.83). Conversely, CC attendees under 3 more frequently had influenza, RSV, hMPV, parainfluenza, and coronavirus; however, none of these associations were significant. Odds of coinfection (> 1 virus detected) were higher among CC children, but not significant (OR = 1.4 [0.63, 2.96] and 1.2 [0.77, 1.88] in <2 year and 2–6 year age groups, respectively). Among all children <7 year, the mean number of pathogens detected was not different between CC and homecare individuals (1.20 vs. 1.23, $P = 0.16$).

Conclusion. As expected, results indicated that CC attendees aged 0–6y experienced illness episodes earlier in life compared with homecare children. Our analysis also indicated that, compared with children cared for at home, CC children were less at risk for rhinovirus infection when young but could potentially be at higher risk for viruses of greater clinical concern.

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1643. Infectious Sequelae of Injection Drug Use at a County Safety-Net Hospital Decline Following Establishment of a Syringe Service Program

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Background. Infectious sequelae of injection drug use (ISIDU) and overdose are frequent but preventable among people who inject drugs (PWID). Syringe service programs (SSP) are an evidence-based harm reduction strategy to reduce incidence of ISIDU among PWID. Additionally, SSPs are noted to produce significant cost-savings for healthcare systems. Under current state legislation, Miami houses the only SSP in Florida, the IDEA SSP. This study builds on previous work characterizing morbidity and cost of ISIDU. This study sought to evaluate differences in admission rates and associated ISIDU costs at Jackson Memorial Hospital (JMH) in Miami before and after implementation of the IDEA SSP.

Methods. Retrospective data collected from a chart review of patients hospitalized for ISIDU and overdose was used to evaluate morbidity and cost of ISIDU at JMH from December 1, 2015 to December 1, 2017, stratified by December 1, 2016—the opening of the IDEA SSP—as an index date. An algorithm utilizing ICD-10 codes for drug use and sequelae was used to identify PWID population. Specific infections investigated were: endocarditis, osteomyelitis, bacteremia- and/or -sepsis (BOS), and skin-and-soft-tissue-infections (SSTIs). Pearson's chi-square test for independence used to report P -values for associations between infections and total charges using a 2-tailed t -test.

Results. 726 admissions were identified during the study period, 328 PWID in the pre-index cohort vs. 398 in the post-index cohort. The median age of total sample was 45.24. 95.12% of the pre-index cohort were uninsured or had publicly-funded insurance vs. 96.48% post-index. Most ISIDU did not change significantly between pre-post cohorts, although bacteremia and sepsis declined significantly among opioid injectors ($P = 0.026$). Overdoses decreased significantly among PWID generally (57% decline pre-post; $P = 0.0006$), as well as for patients who inject opioids specifically (70% decline pre-post; $P = 0.0034$). Median cost declined by 20.5% among PWID, and 29.1% among opioid injectors in particular.

Conclusion. ISIDU continues to represent significant morbidity for PWID in Miami-Dade County and substantial cost to the health system. Severe infections, including bacteremia and sepsis, declined significantly among opioid injectors, the PWID subset most strongly associated with local SSP services. This change following the establishment of a local SSP suggests direct effects on the frequency of hospital admissions for ISIDU. Despite local increases in drug use, overall PWID frequency and ISIDU charges did not change significantly. OD and admission frequency amongst opioid users and cost-per-patient declined between groups, suggesting a potential decrease in ISIDU and attendant costs. While median charges per admission declined, they were statistically insignificant and may represent stagnation in ISIDU-associated costs following SSP establishment. Diminishment in opioid user admissions and OD suggest additional possible positive epidemiological effects of the SSP. Weaknesses