1382. Varicella Burden Disease in Argentina: 4 Years after National Vaccination Strategy

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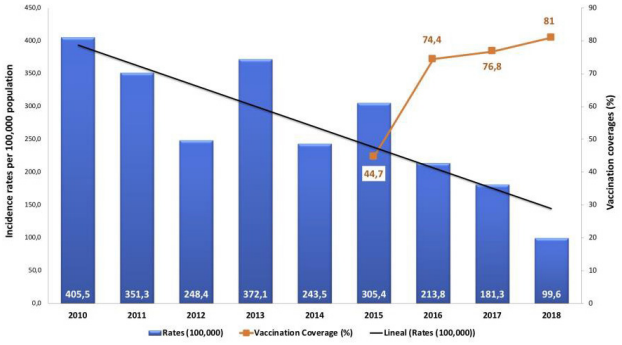
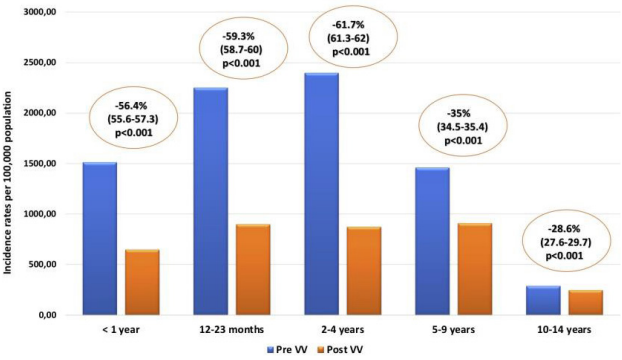
Background. In Argentina, around 150,000-180,000 total Varicella (VZV) cases per year (c/y) are registered; however, underreport exists and some 400,000 cases are estimated to occur annually. Varicella vaccine (VV) was included in the National Immunization Schedule (NIS) in 2015, with a 1-dose schedule administered at 15 months-of-age. We aimed to describe and to compare the epidemiological situation of VZV infections in Argentina in two periods: pre (2010-2014) and post (2016-2018) vaccine introduction in NIS.

Global Incidence rates and vaccine coverages



Incidence rates (age groups)



Methods: Before-and-after study comparing cases and incidence rates (100,000) of varicella reported to the National Health Surveillance System between pre-vaccination period (Pre-VV) and post-vaccination (Post-VV), excluding year of intervention (2015) since it was considered a transition year. Epi Info 7 was used for data analysis.

Results. Vaccination coverage (VC) for 2015 was 44.7%; 74.4% in 2016; 76.8% in 2017 and 81% in 2018 (Figure 1). 728,392 cases of VZV were notified (R=363.1) in Pre-VV period and 222,305 cases in Post-VV (R=180.7), with a global incidence rate reduction of 49% (95%CI= 40.9-56.2; p< 0.001). Both 12-24 months of age and 2-4 years old groups (Pre-VV R=2,253 and Post-VV R=900; Pre-VV R=2,399 and Post-VV R=875, respectively) showed the greatest reductions in incidence rates (-59.3% [95%CI 58.7-60] p< 0.001 and -61.7% [95%CI 61.3-62] p< 0.001). Age groups not affected by vaccination (< 1 year, 5-9 years and 10-14 years) presented minor but significant reductions (-56.4% [95%CI 55.6-57.3] p< 0.001; -35% [95%CI 34.5-35.4] p< 0.001; and -28.6% [95%IC 27.6-29.7] p< 0.001 respectively) (Figure 2).

Conclusion. A decreasing trend in VZV number of cases and incidence rates was observed, especially in children less than 5 years old, despite suboptimal VC. The reduction of VZV cases in non-vaccinated age groups could be related to a decline in the transmission risk. Improving VC will likely reflect a greater impact on the burden of disease.

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

1383. Characterizing Real-world Patterns of Early Childhood Vaccination

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Background. Vaccine hesitancy is increasingly common, but more information is needed on patterns of childhood vaccination. We characterized patterns of vaccine delay among commercially-insured children in the U.S.

Methods. Using the IBM MarketScan Commercial Database, we identified infants who received a timely first dose of diphtheria-tetanus-acellular pertussis (DTaP) vaccine from October 2009 to June 2017. We used CPT codes to collect vaccine administration history on antigen, formulation, dose, and date. We ascertained injectable and oral vaccine antigens (DTaP, polio, pneumococcal conjugate, rotavirus, Haemophilus influenza type b (Hib), measles, mumps, rubella, varicella). Timely receipt was defined as concomitant administration of the CDC-recommended number of antigens during the following time windows: 2, 4, 6, and 12-15 months of age (grace period: -7, +21 days). We generated heat maps to illustrate age distributions at receipt of specific antigens and doses. We created Sankey diagrams to illustrate the number of antigens received concomitantly during each time window and depict transitions to different states over time (e.g., no vaccine delay to vaccine delay). For each antigen and dose, we estimated the cumulative incidence of receipt.

Results. Among 1,066,216 eligible infants, the majority (84%) concomitantly received all 5 CDC-recommended antigens at 2 months of age while others only received 1 (1%), 2 (2%), 3 (4%) or 4 (9%) antigens. Many vaccinations were delayed – 30% and 39% of children did not receive all recommended antigens concomitantly at 4 and 6 months, respectively. The heat map shows wide variation in age at vaccination. For several antigens including Hib, measles, mumps, rotavirus, rubella, and varicella, the cumulative incidence increased steeply at ≥2 time points, suggesting vaccine delay for some infants (e.g., the first dose of Hib was administered to 85% of infants by 2 months of age, with subsequent small but distinct increases at 4, 6, 12, and 15 months of age).

Conclusion. Using real-world data to study early childhood vaccination patterns, we observed evidence of substantial deviation from the CDC-recommended schedule. These results expand current knowledge on the magnitude and timing of antigen- and dose-specific vaccine delay on a population level.

Disclosures. **Jason Newland, MD, MEd, FPIDS**, **Merck** (Grant/Research Support)**Pfizer** (Other Financial or Material Support, Industry funded clinical trial) **Leah McGrath, PhD**, **NoviSci, Inc.** (Employee)

1384. Conceptual Economic Model Methodology for Infant Pneumococcal Conjugate Vaccine Program and its Impact on Antimicrobial Resistance

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Background. Antimicrobial resistance (AMR) is a global threat to effective prevention and treatment of an ever-increasing range of infections. Pneumococcal conjugate vaccines (PCV) used in infant national immunization programs have been shown to decrease AMR pneumococci. Cost-effectiveness models evaluating the value for money of PCV programs have not considered the economic impact of reducing antimicrobial prescribing or prolonged infections due to treatment failures. Standardized frameworks are needed for models to address outcomes and impact on health resource utilization related to AMR.

Methods. We developed a conceptual modeling methodology suitable for a health economic evaluation of an infant PCV program. We considered impact of PCVs on pneumococcal disease (PD) specifically related to clinical management of AMR-PD, including AMR epidemiology, antibiotic prescribing patterns, and healthcare resource utilization. Model inputs were evaluated regarding optimal and available data sources considering the complex nature of AMR at the national, regional, and global level.

Results. The proposed framework considers impact of PCVs on antimicrobial prescribing due to invasive pneumococcal disease (IPD), community acquired pneumonia (CAP), and acute otitis media (AOM) across 3 pathways (Figure 1). The population and pathogen-level pathway describe epidemiology and vaccine impact. The care level pathway describes clinical disease management. The health outcomes pathway characterizes resistant or successfully treated PD costs and quality of life.