

**Results.** An estimated 39.66% (95% CI; 38.07%, 41.25%) of Asian adults living in the US received HBV vaccination. Vaccination prevalence among male Asian adults was lower than their female counterparts 38.05% (95% CI; 35.66%, 40.44%) vs. 41.09% (95% CI; 38.96%, 43.21%). Among Asian adults, the adjusted odds ratio (AOR) of HBV vaccination for females were 1.20 (95% CI; 1.04, 1.39) times higher than males. The AORs of HBV vaccinations were significantly higher when compared with white 1.21 (95% CI; 1.03, 1.41), 1.29 (95% CI; 1.10, 1.51), respectively for Chinese and Filipino Adults. We observed significant gender disparities in HBV vaccination AOR for Asian-Indian and Chinese adults. In both groups, females had higher AOR of HBV vaccination when compared with males, Asian-Indian 1.42 (95% CI; 1.04, 1.94) and Chinese 1.39 (95% CI; 1.07, 1.80).

**Conclusion.** Among Asian-Indian and Chinese adult residents of the United States, the association between race and HBV vaccination status differs by gender, with males having lower vaccination rates than females. Healthcare resources should be directed to these target populations to improve these rates.

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#### 2476. Impact of the Vaccination Strategy on Varicella Burden Disease in Argentina

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**Session:** 253. Vaccines for Herpes Zoster Virus

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**Background.** Varicella (VZV) is one of the most frequent exanthematic diseases in childhood. In Argentina, around 150,000–180,000 total cases per year 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. The information provided by epidemiological surveillance is essential to evaluate the impact of public health decisions. Our objective was to describe and to compare the epidemiological situation of VZV infections in Argentina in two periods: pre (2010–2014) and post (2016–2017) vaccine introduction in NIS.

**Methods.** Descriptive study. We compared cases and incidence rates (R) of VZV per 100,000 population (global and disaggregated by age) reported to the National Health Surveillance System; in pre (Pre-VV) and post-vaccination (Post-VV) periods. Data analysis of 2015 was excluded since it was considered a transition year.

**Results.** Vaccination coverage for 2015 was 44.7%; 74.4% in 2016 and 75.5% in 2017. 728,392 cases of VZV were notified (R = 362,1) in Pre-VV period and 176,995 cases in Post-VV (R = 220.6), with a global incidence rate reduction of 39% (IC 95% = 38.9–39.6;  $P < 0.001$ ). Both 12–24 months of age and 2–4 years old groups (Pre-VV R 2,253 and Post-VV R 1,077; Pre-VV R 2,400 and Post-VV R 1,165, respectively) showed the greatest reductions in incidence rates (–52.2% [IC 95% 51.3–53]  $P < 0.001$  and –51.4% [IC 95% 51–52]  $P < 0.001$ ). Besides, age groups not affected by vaccination (<1 year, 5–9 years, and 10–14 years) presented minor but significant reductions (–49.1% [95% CI 44.5–53.4]  $P < 0.001$ ; –23% [IC95% 22.4–23.6]  $P < 0.001$ , and –17% [IC95% 16.4–19]  $P < 0.001$ , respectively).

**Conclusion.** Three years after the implementation of VZV vaccination strategy, a significant incidence rates reduction is recorded, especially in children <5 years old, despite suboptimal coverage. Improving vaccination coverage will likely reflect a greater impact on the burden of disease.

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#### 2477. Impact of Varicella Vaccination in the United States (US): A Dynamic Model-Based Analysis

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**Background.** Routine childhood immunization with varicella vaccine was first recommended in the United States in 1995 as a 1-dose regimen for children aged 12–18 months, with updated recommendations in 2006 for a 2-dose regimen (first dose at 12–15 months, second dose at 4–6 years). Our objective was to estimate the impact of the US varicella vaccination program.

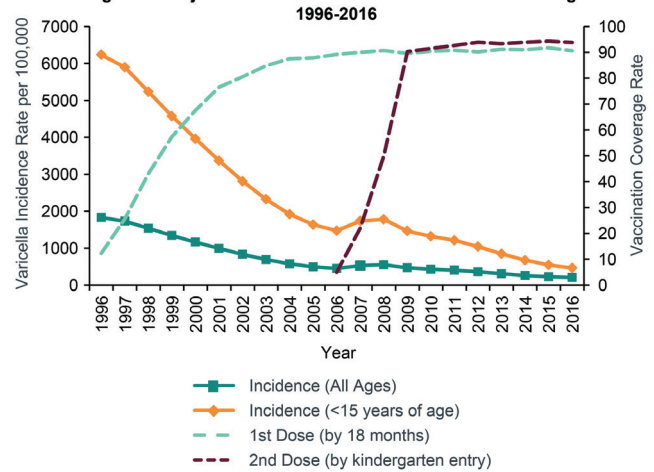
**Methods.** We developed a dynamic transmission model to predict the impact on varicella vaccination on health outcomes in the United States. Vaccine coverage rates were extracted from the US National Immunization Survey (NIS); first dose varicella vaccine coverage went from 12% in 1996 to 91% by 2016 for children 18 months old, and second dose coverage starting in 2006 at 5% increasing by 2016 to 94% for children 5 years old; we assumed that 50% of children with no history of vaccination or infection by age 13 would become vaccinated. Interactions between age groups were empirically characterized, and the model was calibrated using age-specific pre-vaccination

varicella incidence data. Vaccine effectiveness was represented via vaccine take and waning immunity estimated from a 10-year trial.

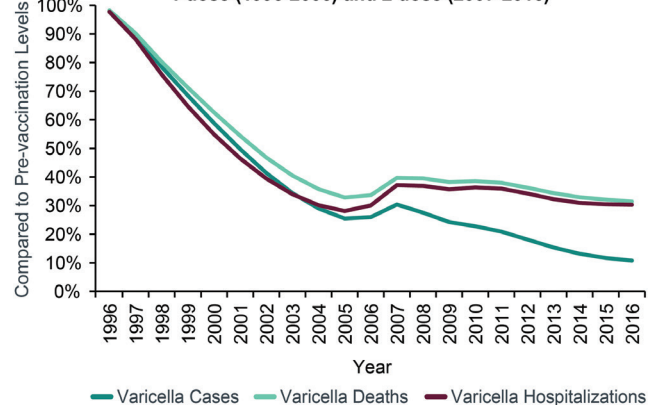
**Results.** The model projected reductions of varicella incidence in all ages (and ages <15 years) of 46% (46%) in 2001, 76% (76%) in 2006, 78% (81%) in 2011, and 89% (93%) in 2016 (Figure 1). The projected reductions in varicella cases and varicella-related hospitalizations and deaths for all ages were 74%, 70%, and 66% by 2006 (one-dose era), respectively, increasing to 89%, 70%, and 69% by 2016 (two dose era), respectively (Figure 2). We estimate that between 1996 and 2016, 71,885,382 cases of varicella were prevented in the United States, together with 178,248 varicella-related hospitalizations and 1,496 deaths.

**Conclusion.** Our estimates are slightly lower than previously reported US surveillance data which identified a 97.4% (92.9%–97.9%) reduction between 1993–1994 and 2013–2014 in IL, MI, TX, and WV (WER 2016). Likely, this difference is related to under ascertainment of milder cases. This model can be used to estimate the public health benefits of varicella vaccination. The use of a dynamic transmission model does, however, have limitations, including assumptions about age-specific risk and severity of breakthrough disease and the use of a static population.

**Figure 1: Projected Varicella Incidence and Vaccine Coverage 1996-2016**



**Figure 2: Estimated Reduction in United States Varicella Cases, Hospitalizations, and Deaths 1996-2016 Resulting from Universal Varicella Vaccination of Children 1 dose (1996-2006) and 2 dose (2007-2016)**



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#### 2478. Impact of 20 Years of Varicella Vaccination on the Epidemiology of Herpes Zoster in the United States: An Interrupted Time Series Analysis

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**Background.** The mechanism for reactivation of varicella zoster virus as herpes zoster (HZ) is not well understood. One hypothesis postulates that re-exposure to circulating wild-type varicella can boost individual immunity and prevent reactivation ("Exogenous Boosting," EB). The validity of this hypothesis has been debated