

Assessing the impact of HPV vaccination programs Colombia

Raúl Murillo, MD, MPH
Centro Javeriano de Oncología
Bogotá-Colombia

HPV Board
Antwerp
June 2023

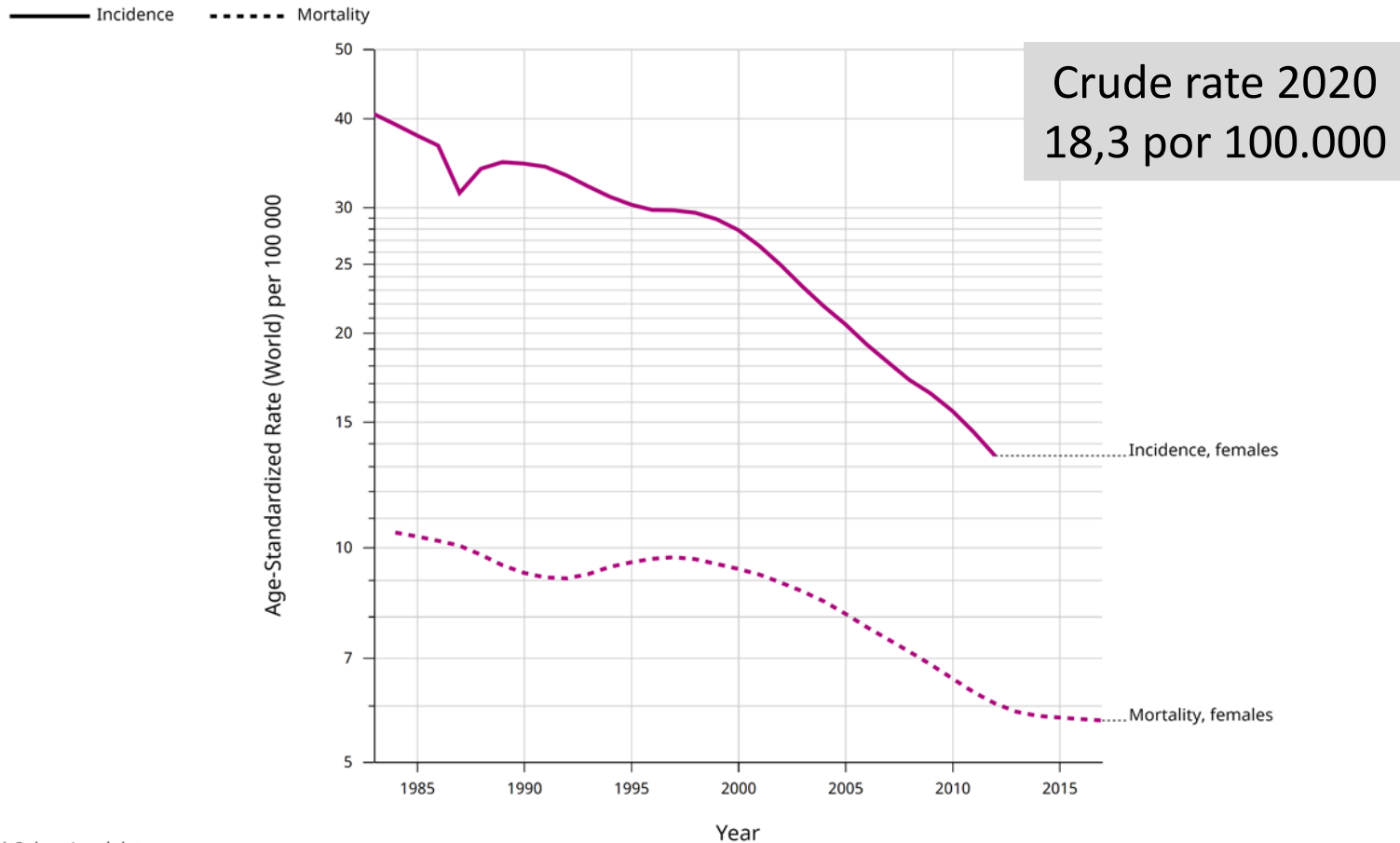


No conflicts of
interest to declare

Content

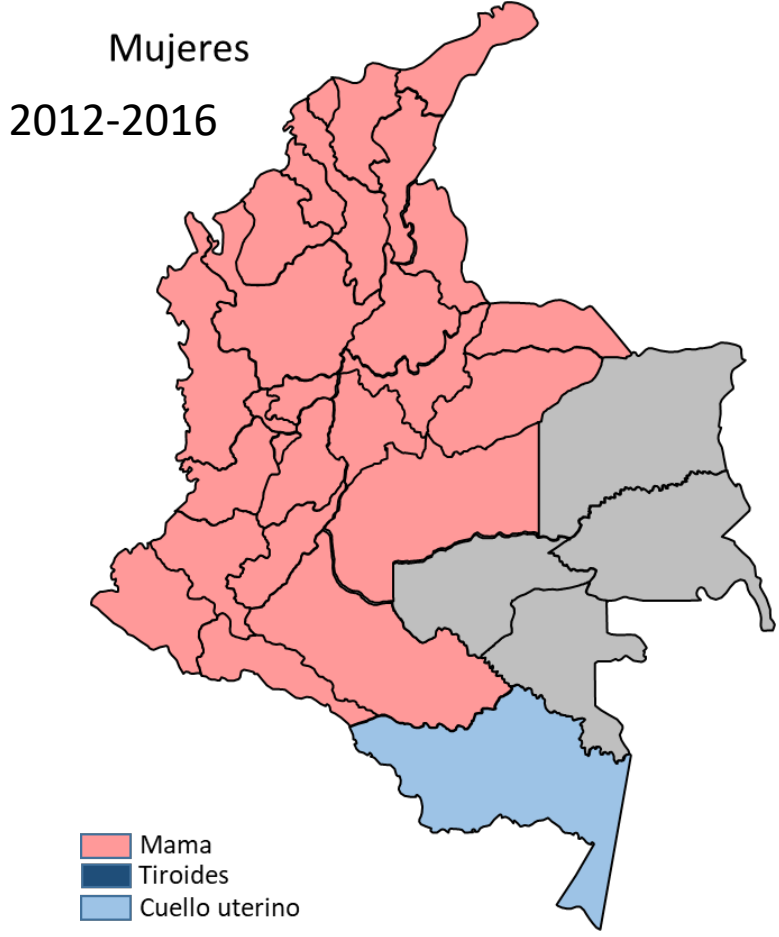
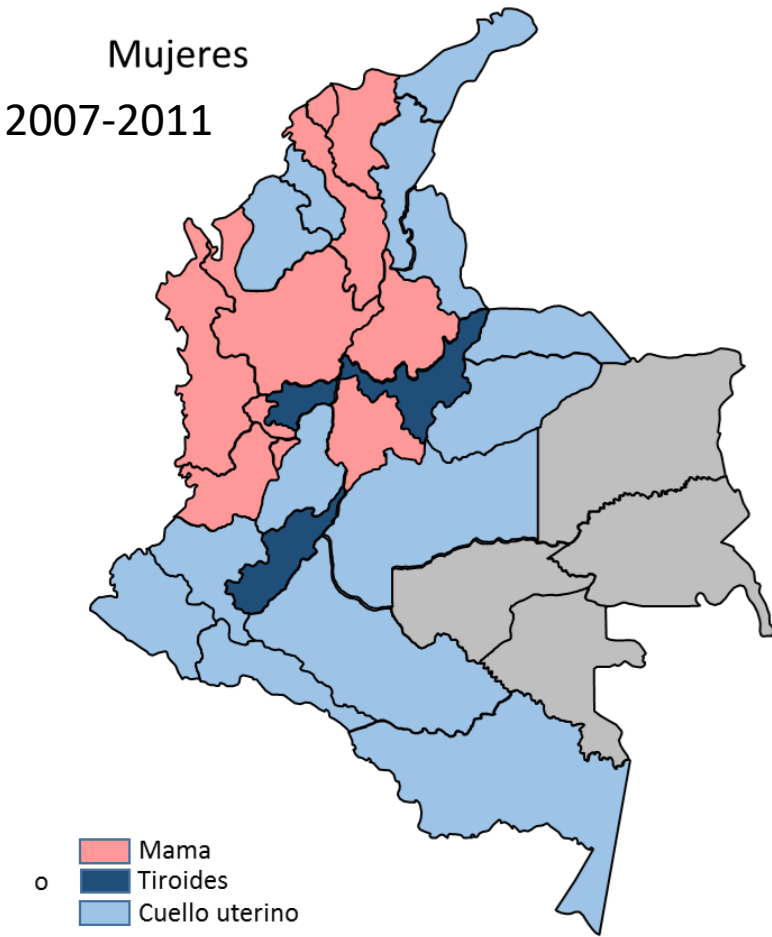
- Cervical cancer trends
- HPV vaccination program
- Impact assessment

Cervical cancer incidence and mortality trends in Colombia



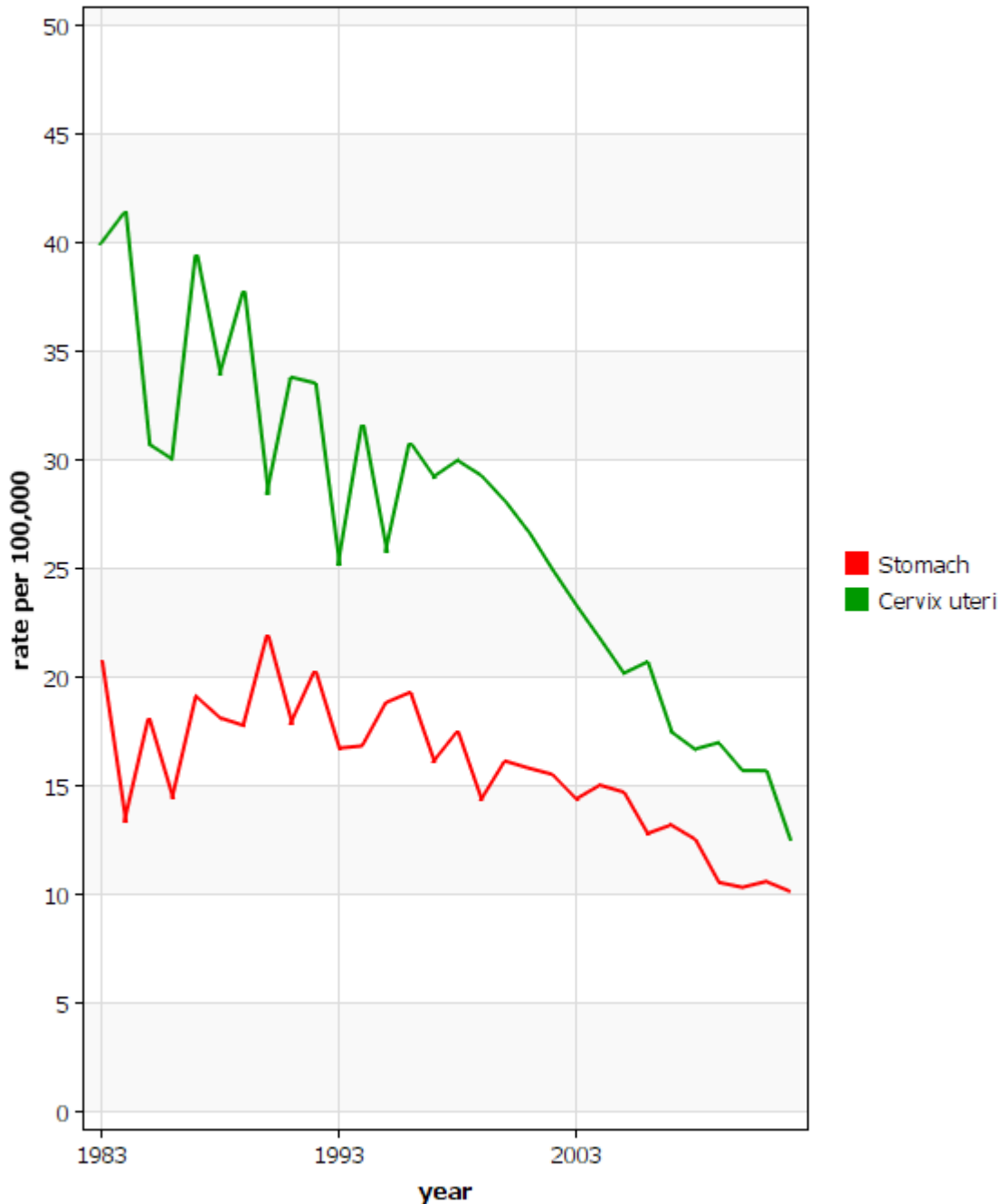
* Subnational data
Lines are smoothed by the LOESS regression algorithm (bandwidth: 0.25)
Rates are shown on a semi-log scale
Cancer Over time | IARC - All Rights Reserved 2023 - Data version: 1.0

Frist cause of cancer incidence by state – Colombia (Women)



Fuente: INC 2012-2016

Cervical and stomach cancer mortality trends in Colombia



WHO-IARC
Cancer Mortality Database

Content

- Cervical cancer trends
- HPV vaccination program
- Impact assessment

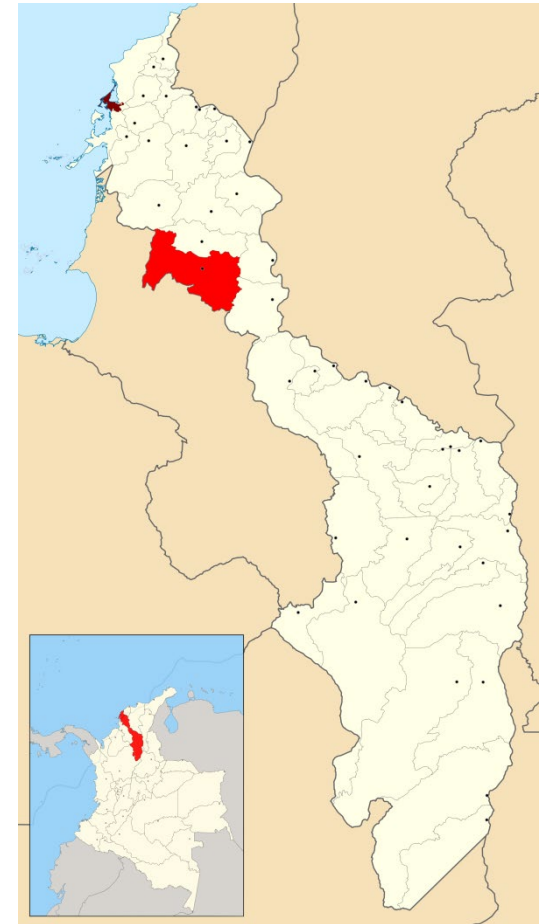
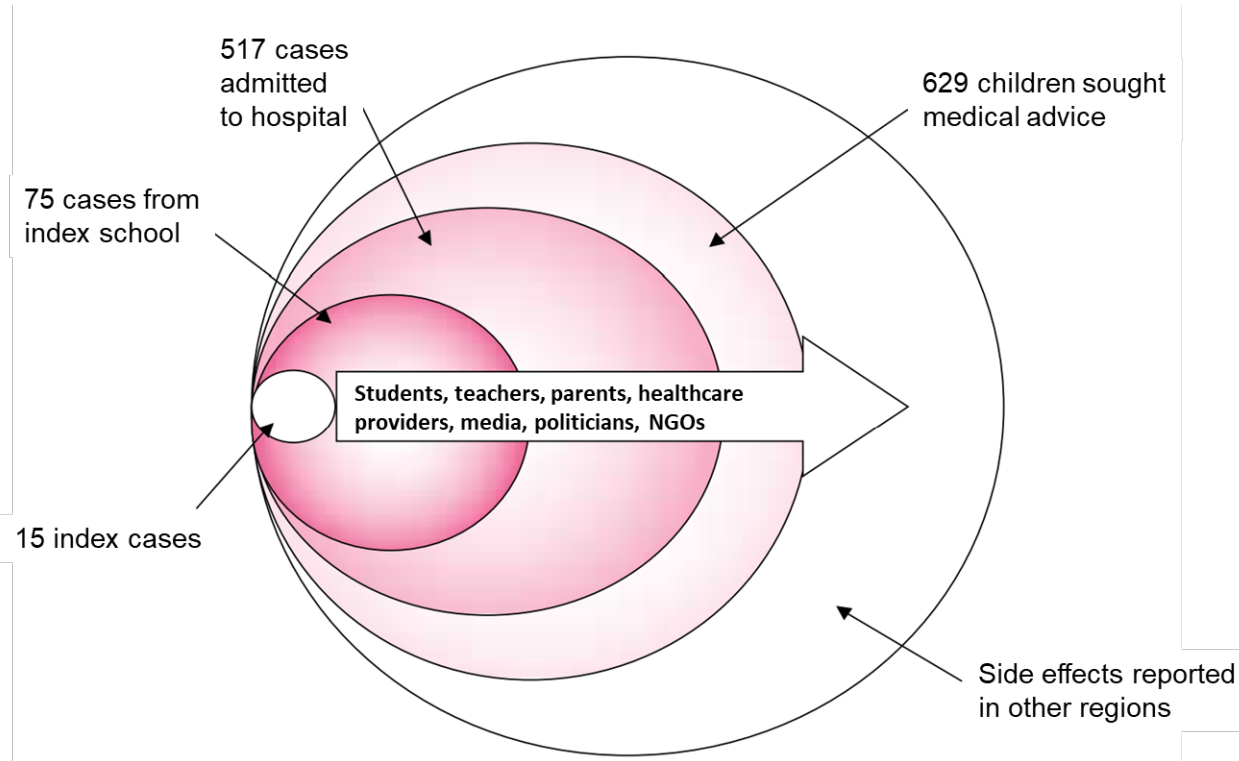
HPV vaccination in Colombia

Program characteristics	2012	2013
Vaccine	Quadrivalent	Quadrivalent
Schedule	0-2-6	0-6-60
Program	School-based*	School-based*
Basic cohort	4th school grade	4th school grade
Minimum age	9 years old	9 years old
Catch-up		5th-11th grades

*Permanent availability in health centres

El Carmen de Bolívar 2013

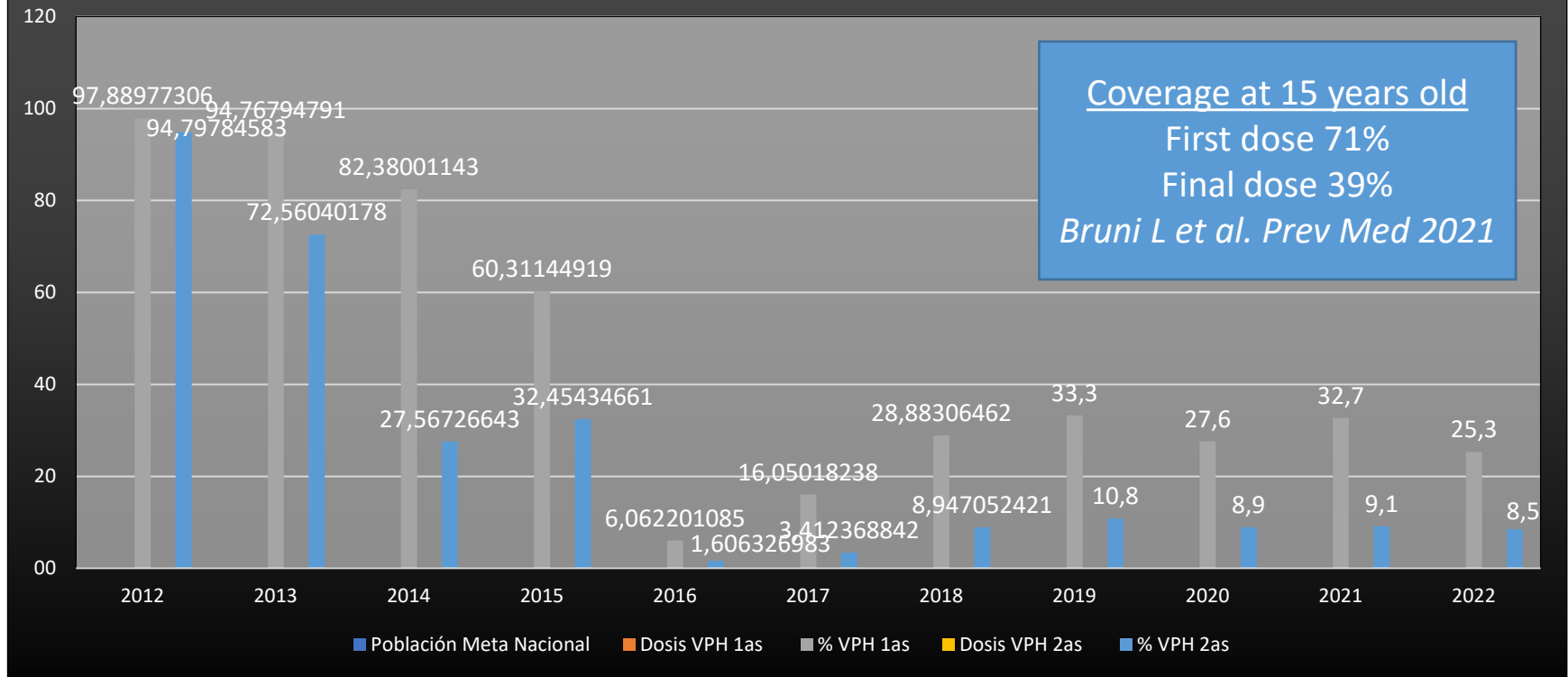
Massive anxiety outbreak



Adapted from Clements CJ. Drug Safety 2003
Source: Outbreak report – INS Colombia

HPV vaccine coverage in Colombia

COBERTURAS DE VACUNACIÓN VPH AÑOS 2012 - 2022



Content

- Cervical cancer trends
- HPV vaccination program
- Impact assessment

Impact and effectiveness: study designs and outcomes

- Impact (Ecological approach)
 - Before and after vaccination
 - Same population
 - Cross-sectional surveys
 - Vaccinated vs unvaccinated populations
- Effectiveness
 - Cohort studies: vaccinated vs unvaccinated
 - Population-based registries (NIP and cancer)
 - Administrative databases
 - Case-control studies: CIN2+ vs no-CIN2+

Preferred outcomes

- Cervical cancer
 - Incidence
 - Mortality
- CIN
 - Incidence
 - Prevalence
- Genital warts (4-V)
 - Prevalence
- HPV infection (16/18)
 - Prevalence

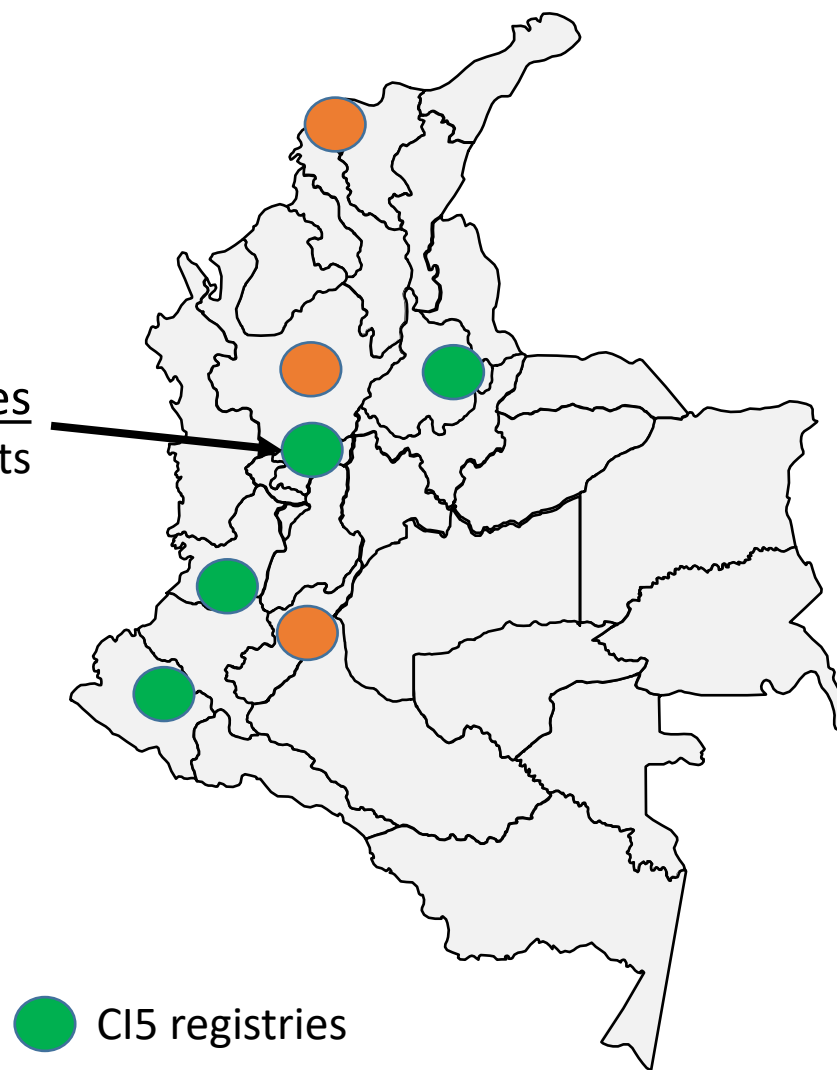
Detection and Genotyping of HPV DNA in a Group of Unvaccinated Young Women from Colombia: Baseline Measures Prior to Future Monitoring Program

Devi Puerto¹, Viviana Reyes², Cristina Lozano², Lina Buitrago³, Diego Garcia⁴, Raúl H. Murillo¹, Nubia Muñoz¹, Gustavo A. Hernandez¹, Laura Sanchez², Carolina Wiesner¹, and Alba L. Combita^{2,5}



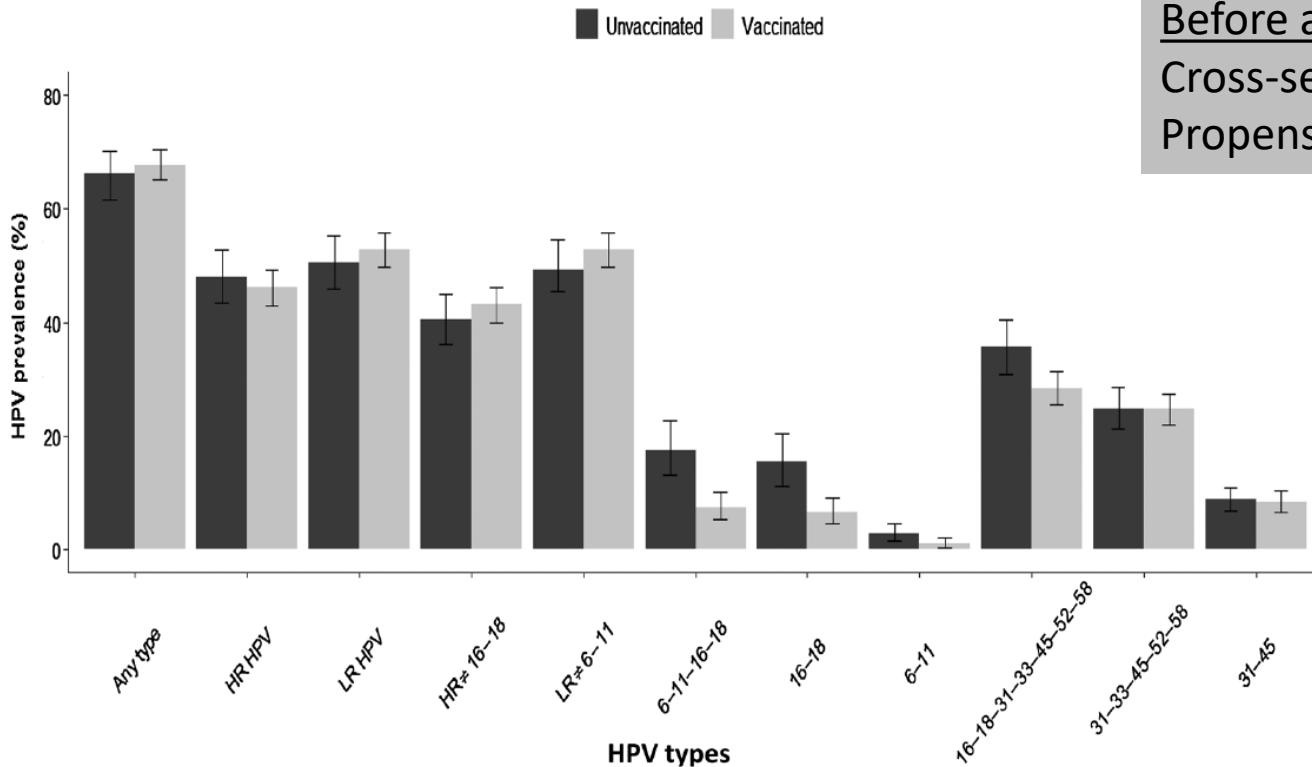
Sentinel cities in Colombia

Manizales
434,00 inhabitants



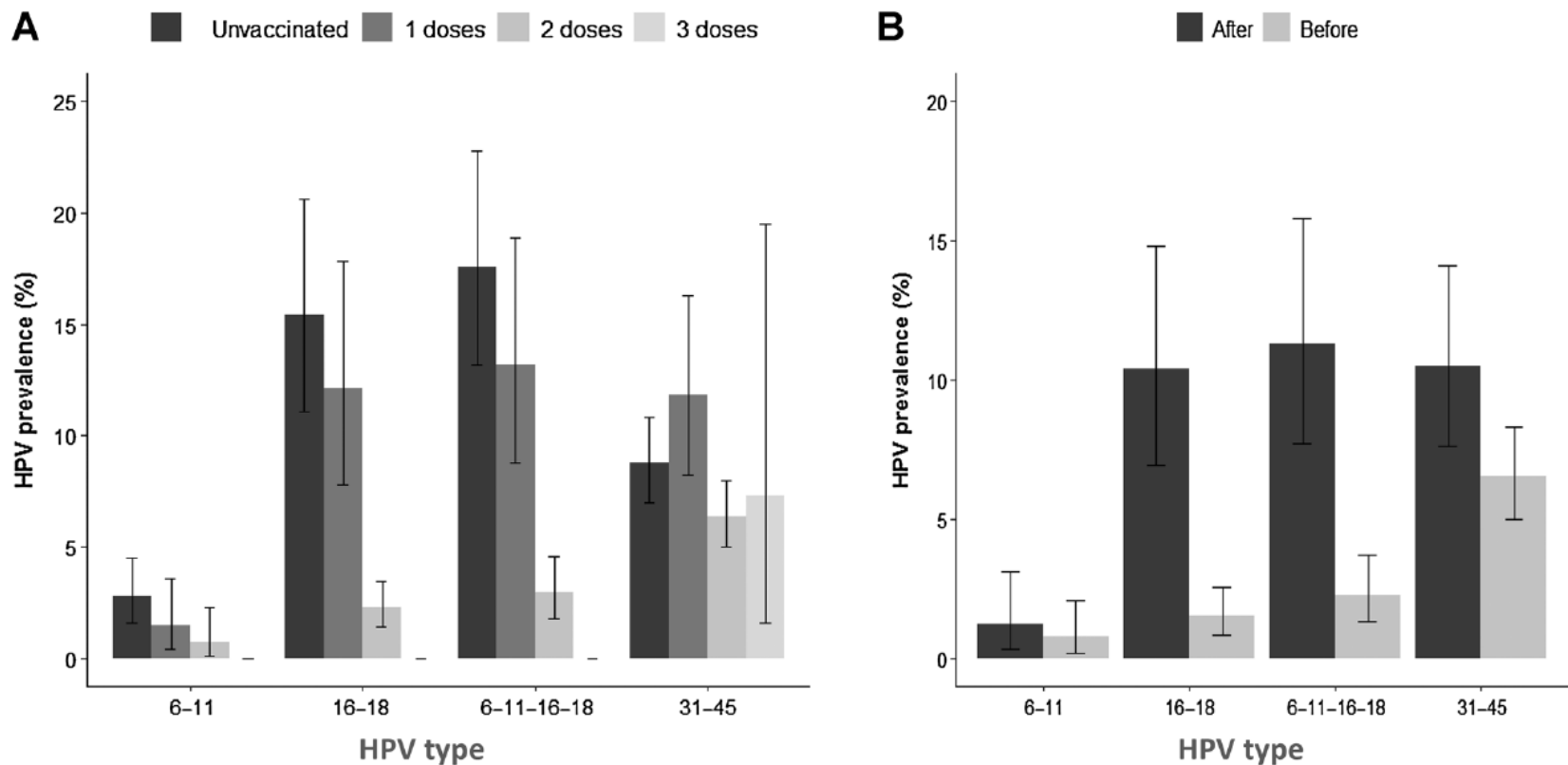
Reduction in Vaccine HPV Type Infections in a Young Women Group (18–25 Years) Five Years after HPV Vaccine Introduction in Colombia

Alba L. Combita^{1,2}, Viviana Reyes¹, Devi Puerto³, Raúl Murillo⁴, Ricardo Sánchez⁵, Marcela Nuñez⁶, Gustavo A. Hernandez-Suarez³, and Carolina Wiesner³



Before and after
Cross-sectional survey
Propensity score adjustment

Impact of HPV vaccination on HPV prevalence according to vaccine doses (A) and sexual onset (B)



Effectiveness of HPV vaccination on CIN2+ (Catch-up cohorts)

- Cohort study on administrative databases
 - Health system databases (national coverage)
 - De-identified records: common link
 - Inaccurate CIN diagnosis: label validation (record matching)
 - Health insurance companies databases
 - Nominal registry: limited access
- Case-control studies
 - Population controls: low CIN2+ prevalence, low vaccine coverage, different vaccine schedules
 - Definition of healthy condition: HPV self vs Pap-smear
 - Recall bias: Vaccine certificate, NIP registry

HPV 16/18 prevalence in Colombian women

	No. tested	HPV 16/18 Prevalence % (95% CI)
Normal cytology ^{1,2}	2,138	4.5 (3.7-5.5)
Low-grade lesions ^{3,4}	126	76.2 (68.0-82.8)
High-grade lesions ^{5,6}	309	54.4 (48.8-59.8)
Cervical cancer ^{7,8}	425	62.1 (57.4-66.6)

Gracias