

CHANGES IN SEROTYPE DISTRIBUTION OF INVASIVE PNEUMOCOCCAL DISEASE IN COLOMBIA AFTER MASS VACCINATION WITH PCV10



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INTRODUCTION

Invasive pneumococcal disease (IPD) is associated with high morbidity and mortality rates, especially in children under 5 years of age. In Colombia, PCV10 has been administered massively since 2012, and an increase in the prevalence of serotypes not included in PCV has been reported after the introduction of conjugate vaccines. The Neumocolombia Network monitors IPD in Colombian pediatric patients, and it is comprised of 17 hospital since 2012.

OBJECTIVE

To determine serotype changes in Colombia after the introduction of conjugate vaccines.

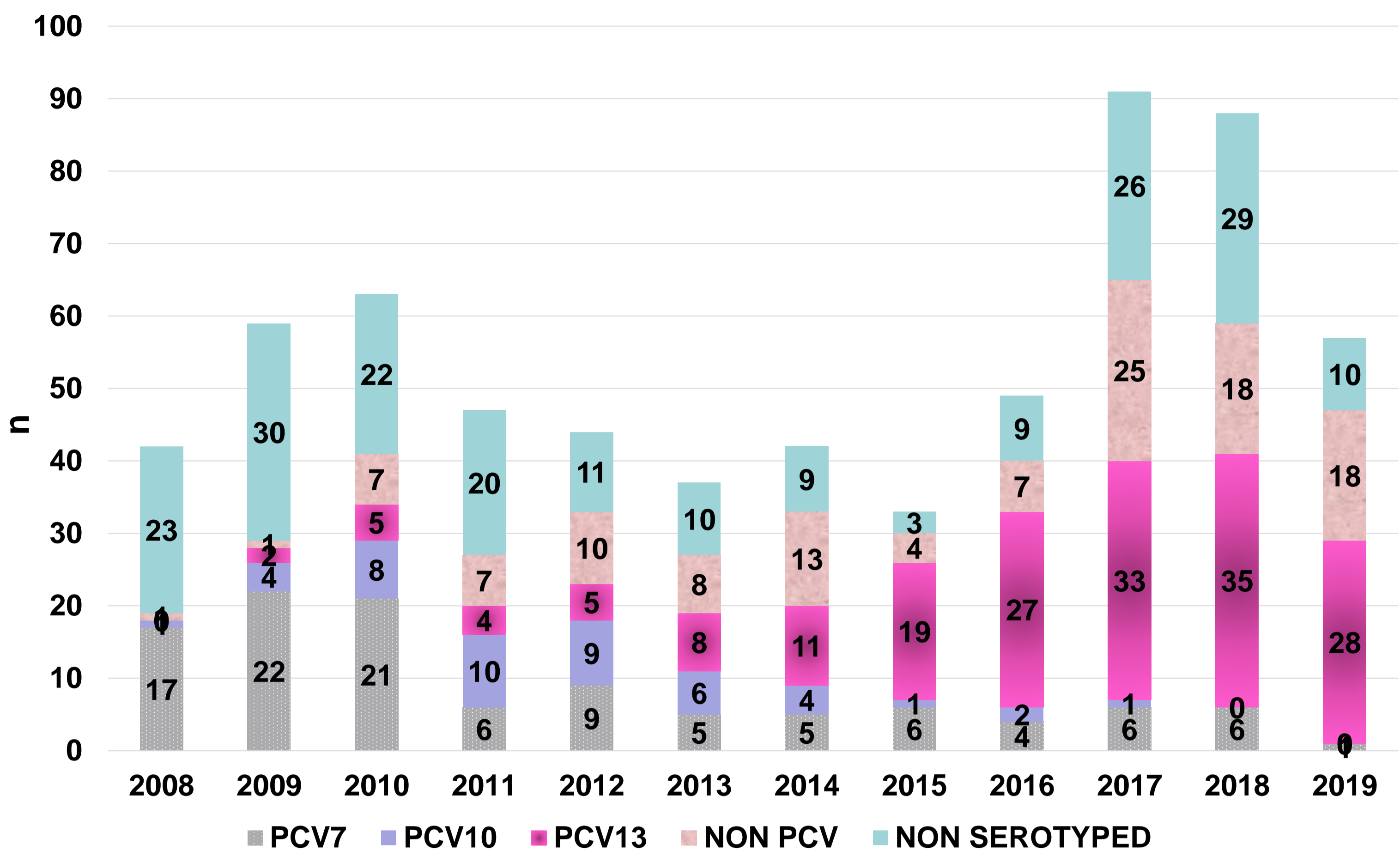
STUDY TYPE AND DESIGN

Ambispective case series study conducted in pediatric patients with IPD admitted to 10 hospitals of Bogotá (2008-2019), and 4 hospitals of Cali, 2 of Medellín, and 1 of Cartagena (2017-2019). Data on serotype(Spn) and resistance were obtained.

RESULTS

651 patients were included. Serotyping was achieved in 417 isolates (64%). The most frequent serotypes were: 19A in 102 cases (24,4%), serotype 14 in 64 cases (15.3%), serotype 1 in 42 cases (10.5%), and serotype 3 in 43 cases (10.3%). The prevalence of IPD caused by serotype 14 decreased from 35.3% (41/116) in the period 2008-2011 to 6.4% (6/93) in the period 2012-2014, and to 9.5% (18/190) in the period 2015-2019. The prevalence of serotype 1 decreased from 18.12% (21/116) in 2008-2011 and 19.3% (18/93) in 2012-2014 to 1.4%(3/202) in 2015-2019. Serotype 19A increased from 4.3% (5/116) in 2008-2011 to 10.7% (10/93) in 2012-2014 and 56% (112/202) in 2015-2019. Serotype 3 increased from 3.4% (4/116) in 2008-2011 to 11.8% (11/93) in 2012-2014 and 13,8% (28/202) in 2015-2019. These changes are shown by year in Figure 1. Figure 2 shows a decrease in the serotypes included in PCV10 and an increase in the three additional serotypes that are included in PCV13 and the serotypes not included in PCV.

Figure 2: Distribution of PCV and non-PCV serotypes in Colombia



CONCLUSIONS

The prevalence of serotypes 14 and 1, included in PCV10, decreased, while serotypes 19A and 3 increased. These findings are relevant for IPD epidemiology, and, according to the WHO, they should promote a change in the immunization schedule with a vaccine against these serotypes.

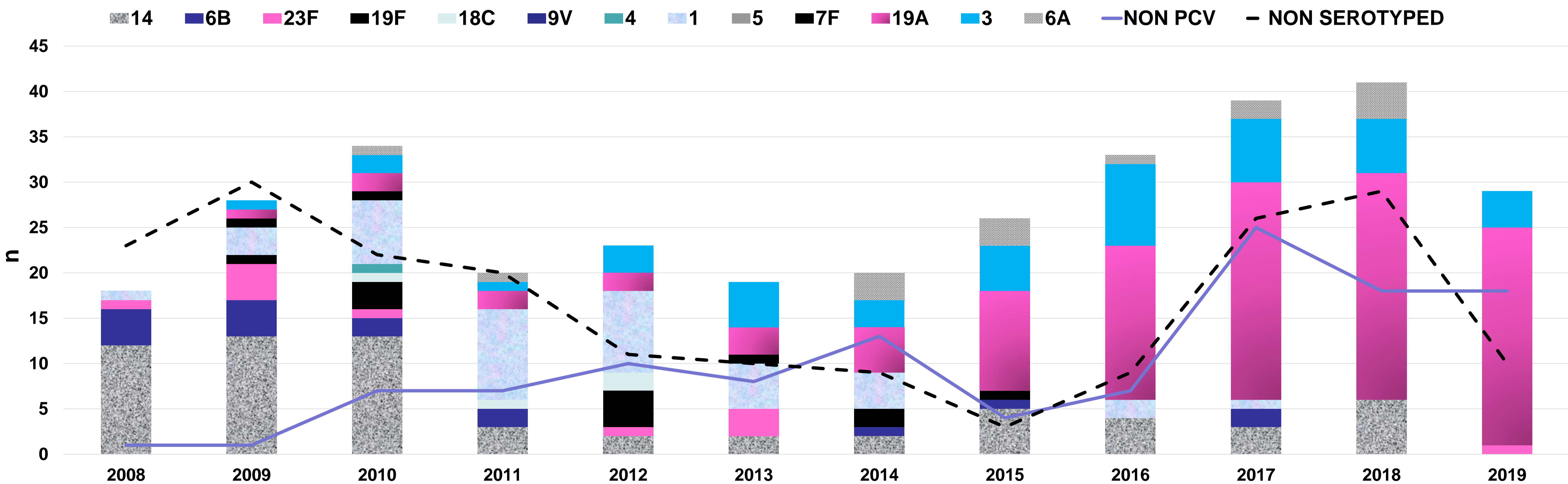
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Figure 1: Distribution per each serotype included in PCV, non-PCV and non-serotyped (Colombia)



Number of isolates per year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	42	59	63	47	44	37	42	33	49	90	88	57