INTRODUCTION

- Crowding may be an important determining factor for pneumococcal disease risk through aerosol transmission of pneumococci.1
- Hence household crowding may be an important factor determining nasopharyngeal (NP) carriage prevalence of pneumococcus.
- We investigated this relationship in Nepali children using samples collected before and after PCV10 vaccine introduction.

METHODS

- 4755 healthy children under 2 years of age were enrolled from an urban setting in Kathmandu and a rural setting in Okhaldhunga.
- NP swabs were collected, cultured and serotyped using standard methods.
- Household size was recorded for each participant.
- Household size was categorized into 4 groups: 2-3, 4-5, 6-7 and more than 7 member households.
- Chi-square test was used to compare the proportions in between the groups.

RESULTS

- In Kathmandu, 1749 and 1492 healthy children were enrolled before (2014-2015) and after (2016-2017) PCV10 introduction, respectively. In Okhaldhunga, 600 and 914 children were enrolled before (February 2015) and after (February 2017) PCV10 introduction respectively.
- Before PCV10 introduction, pneumococcal NP carriage prevalence in urban households (including the swabbed child) with 2-3, 4-5, 5-6 and >7 members were 64% (330/516), 65% (498/769), 68% (196/289) and 62% (108/175) respectively (p value=0.564).
- Similarly, carriage prevalence in children from rural households with 2-3, 4-5, 6-7 and >7 members were 81% (92/113), 83% (247/296), 86% (113/132) and 81% (48/59) respectively (p value=0.811).
- After PCV10 introduction, pneumococcal carriage prevalence in children from urban households with 2-3, 4-5, 6-7 and >7 members were 66% (270/412), 62% (401/646), 60% (158/265) and 69% (117/169) respectively (p value=0.145).
- Rural carriage prevalence in children from households with 2-3, 4-5, 6-7 and >7, after PCV10 introduction, were 79% (148/188), 85% (348/412), 86% (176/205) and 88% (96/109) respectively (p value=0.120).

CONCLUSION

- No significant association between increase in household size and pneumococcal NP carriage prevalence before and after PCV10 vaccine introduction.
- No significant association between increase in household size and VT serotype prevalence before and after PCV10 vaccine introduction.

REFERENCES


This work is made possible with support from Gavi, the Vaccine Alliance