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Background:

Neisseria meningitidis (Nm) is a gram-negative diplococcus that can cause different types of invasive infections such as meningitis, meningococemia, pneumonia, arthritis, among others.

Nm pharyngeal carriage is a necessary condition for invasive meningococcal disease. In 2017, Argentina introduced a tetravalent meningococcal conjugated vaccine (MenACYW) to the National Immunization Program for children. We present the first carriage study in children in the prevaccine era.

Aims:

- To assess the rate of Nm carriage in healthy children and adolescents attending a public hospital in Buenos Aires city
- To determine serogroup distribution and carriage risk factors by age.

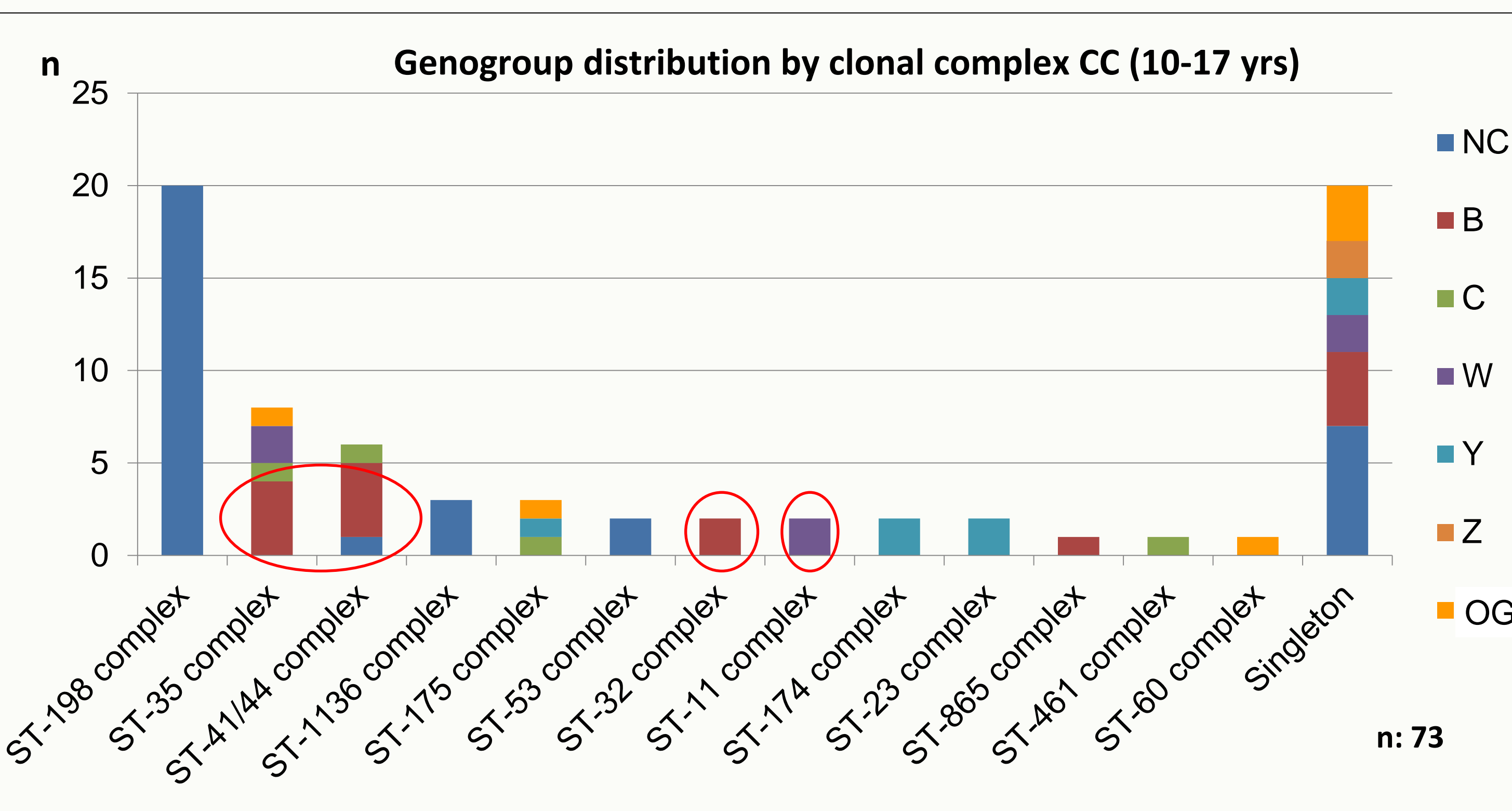
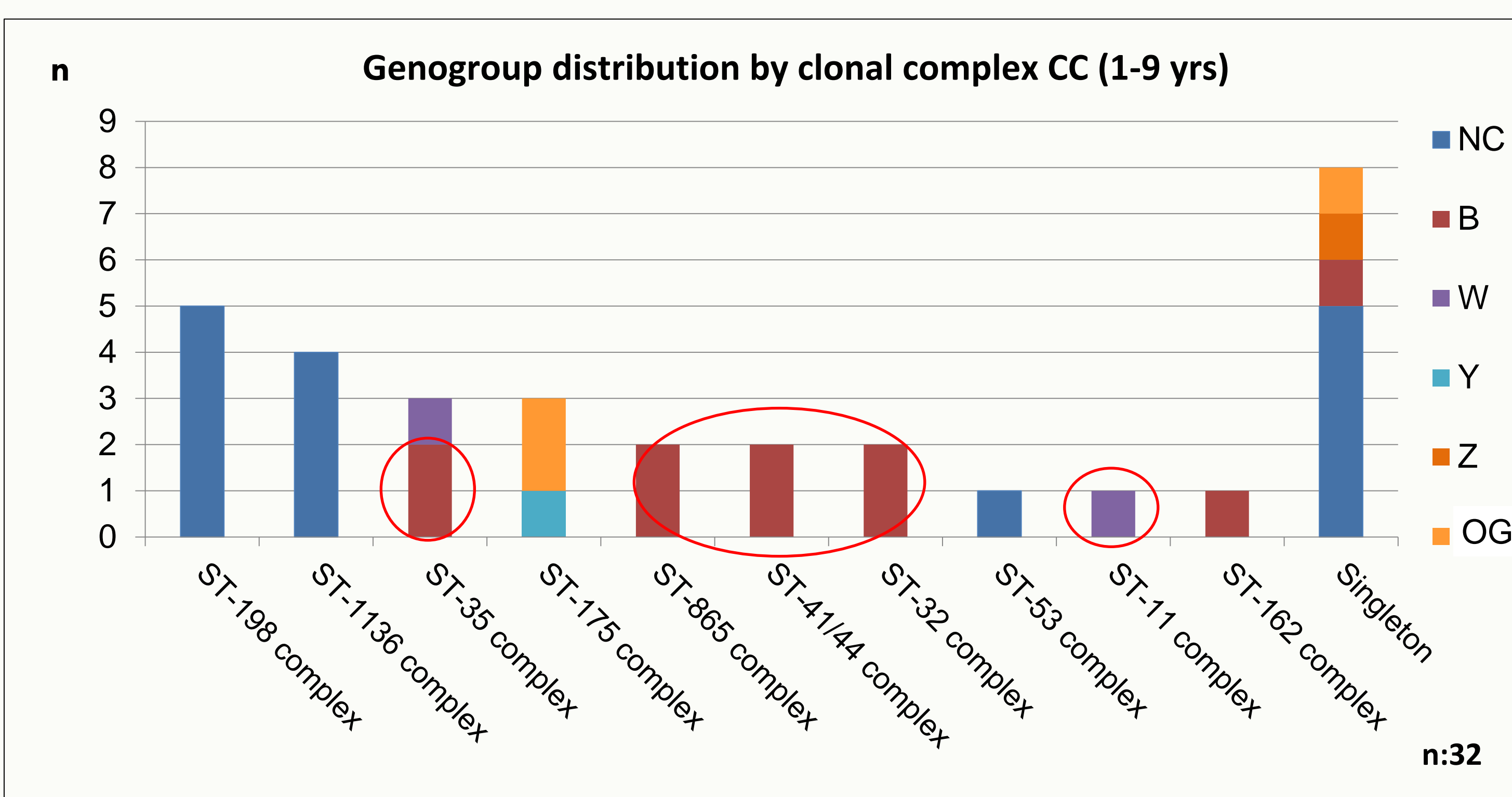
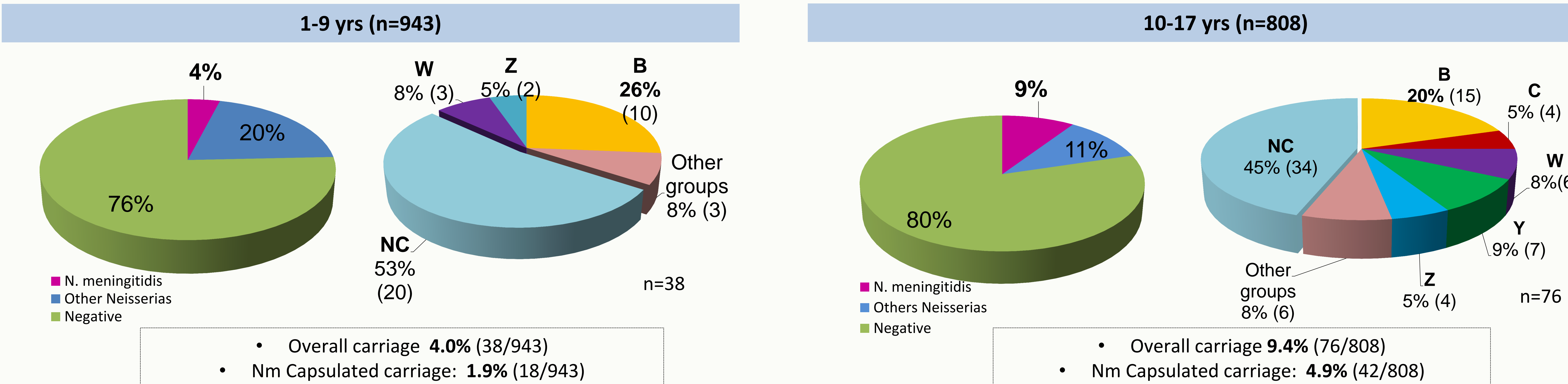
Methods:

Between March-December 2017, a single-center, cross-sectional study was performed among 1751 children 1-17 yo attending Ricardo Gutiérrez Children Hospital. Oro-pharyngeal swabs were plated on Tahyer Martin agar and meningococci identified by conventional microbiology methods. Serogroup was determined by PCR.

Population features	1-9 yrs (n=943)	10-17 yrs (n=808)
Sex (male)	51 %	49 %
Age (median; IQR)	64 months (41-93)	150 months (133-170)
Residence (Bs As metropolitan area)	62 %	55 %
Overcrowding	49 %	41 %
Maternal education (middle school unfinished)	50 %	54 %
Passive smoking	33 %	41 %

Results:

Neisseria meningitidis Carriage



Genogroup distribution

- The CC distribution was similar in both age groups.
- ST-198, ST-1136 and ST-53 CC were only found in NmNC.
- Genogroup B isolates belonged to ST-41/44, ST-35, ST-32 and ST-865.
- Genogroup W was associated to ST-11 and ST-35.

Conclusions:

- Overall carriage was higher in the 10-17 yrs population and it was similar to those studies from other Latin American countries.
- Attendance at social venues in children and attendance at night clubs and passive smoking in adolescents was associated with Nm carriage.
- We found a high diversity of Nm in pharyngeal carriage. **NmNC** was prevalent in both age groups and **genogroup B** was the most frequent among the encapsulated.
- Genogroup B** CCs are the same found in invasive meningococcal disease (IMD). **Genogroup W** carriage was low and hypervirulent CC ST-11 was detected. Although **genogroup Z** doesn't cause IMD in our country it was found in carriage.

Carriage risk factors by age. Multivariate analysis		
1-9 yrs risk factors	Adjusted OR (95% CI)	P-Value
Previous antibiotics treatment	0.6 (0.2-1.6)	0,3039
School attendance	2.1 (0.7-6.3)	0,1670
Social venues attendance	2.1 (1.1-4.1)	0,0441
Maternal education (less than middle school)	0.7 (0.3-1.3)	0,2439
Overcrowding	1.7 (0.9-3.2)	0,1277
Passive smoking	1.1 (0.5-2.2)	0,7990
10-17 yrs risk factors	Adjusted OR (95%CI)	P-Value
Previous antibiotics treatment	0.6 (0.3-1.5)	0,2534
School attendance	0.6 (0.2-1.8)	0,3897
Night club attendance	3.3 (1.3-8.9)	0,0138
Social venues attendance	1.3 (0.8-2.2)	0,1991
Maternal education (less than middle school)	0.9 (0.6-1.6)	0,8840
Overcrowding	1.2 (0.8-2.1)	0,3860
Passive smoking	0.55 (0.3-0.9)	0,025