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## BACKGROUND

Spn remains a major world-wide cause of childhood morbidity and mortality. Spn causes a variety of clinical syndromes, including invasive infections such as bacteriemia and meningitis, as well as pneumonia and otitis media, with children age < 2 years being at greatest risk. The main reservoir of pneumococci is the nasopharynx. Nasopharyngeal carriage is related to the development of invasive disease and is a major factor in the horizontal transmission of pneumococcal disease, especially in children attending day care centers.

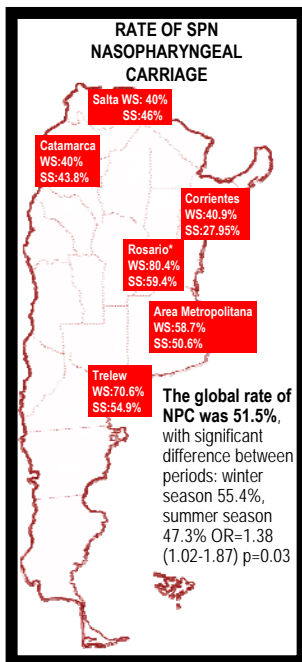
## AIMS

- 1) To assess the rate of Spn nasopharyngeal carriage in healthy, non vaccinated, <3 years old children, attending 7 daycare centers from 7 cities, during May-August 2007 (winter season) and November 2007-February 2008 (summer season)
- 2) To determine serotype distribution and antimicrobial susceptibility of Spn isolates.

## METHODS

Samples were obtained from 730 children. Two isolates from each positive sample were serotyped by Quellung (376 samples/728 Spn). If both isolates presented the same serotype, antimicrobial susceptibility of only one was tested. MIC was performed to 415 Spn by agar dilution (CLSI) and MLSb and M macrolide phenotypes (MLSb: (c) constitutive or (i) inducible, resistant to macrolides, lincosamides and streptogramins B; M resistant to macrolides, susceptible to lincosamides and streptogramins B) by disk diffusion was done only to erythromycin resistant isolates (82 Spn).

## RESULTS

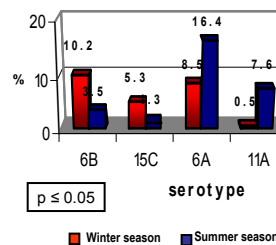


### POPULATION STUDIED

POPULATION (n = 730)	WINTER SEASON n=381*	SUMMER SEASON n=349
Age (months):	25	24
Sex: male	191	169
female	184	180
Breast feeding: Yes	338	303
No	37	46
Nutritional status: eutrophic	361	316
desnutrition	14	33
Socioeconomic status: high	194	151
average	119	114
low	62	84
Household with ≥ 7 people: Yes	60	59
No	315	290
Respiratory infection: Yes	231	159
No	144	190
Time of respiratory infection: last week	43	27
last months	119	68
last three months	69	64
Hospitalization: Yes	9	10
No	366	338

\*Epidemiological data from 6 patients were not received

### DIFFERENCE IN SEROTYPE DISTRIBUTION BETWEEN SEASONS

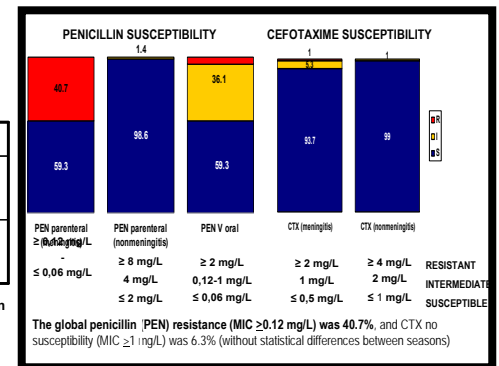
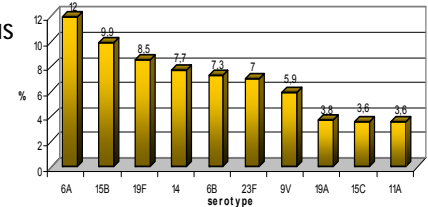


### RISK FACTORS

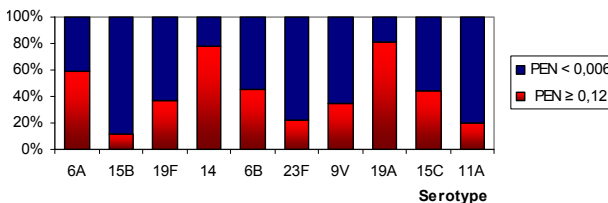
RISKS FACTORS	OR (95% CI)
Age ≥ 7 meses	3.03 (1.83-5.04) p ≤ 0.0001
Household with ≥ 7 people	2.35 (1.46-3.79) p = 0.0002

There were not significant differences between seasons

### DISTRIBUTION OF SEROTYPES



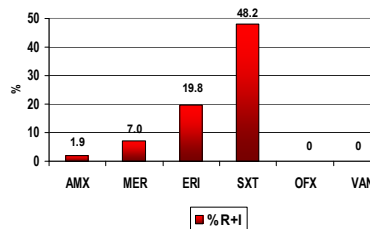
### PENICILLIN SUSCEPTIBILITY AMONG THE 10 MOST FREQUENT SEROTYPES



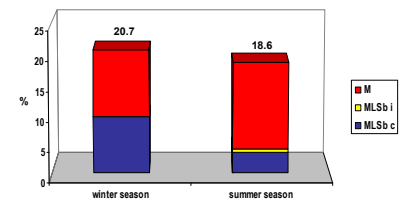
Among the 10 most frequent serotypes, 42.8% showed PEN MICs ≥ 0.12 mg/L:

- Serotypes 14, 19A: 77-81%
- Serotype 6A: 59%
- Serotypes 9V, 19F, 15C, 6B: 35-45%
- Serotypes 15B, 11A and 23F: 22%

### ANTIBIOTICS RESISTANCE PROFILE



### ERYTHROMYCIN RESISTANT PHENOTYPES



There were no statistical difference in erythromycin (ERY) resistance between seasons, but differences were observed in the phenotype distribution with dominance of M phenotype in summer season.

## CONCLUSIONS

- Spn NPC was 51.5%, with differences between seasons (winter season 55.4% > summer season 47.3%) increase with age and number of household.
- Significant differences between seasons were observed in serotypes 6B, 15C, 6A and 11<sup>a</sup>.
- Serotype 1 and 5, frequently found in invasive disease in Argentina, were not prevalent in nasopharyngeal carriage.
- The global PEN resistance (MIC ≥ 0.12 mg/L) was 40.7% without significant difference between seasons.
- PEN resistance was associated with 15.4% CTX MIC ≥ 1mg/L, 24.9% ERY resistance and 68.6% SXT resistance.
- ERY resistance was 19.8%, with dominance of M phenotype in summer season.
- Serotype 19A presented: 81% PEN MIC 0.12-2mg/L, 6.2% CTX MIC ≥ 1mg/L, 18.8% ERY resistance and 37.5% SXT resistance.
- Serotype 19A with PEN ≥ 0.12 mg/L was present in nasopharyngeal carriage despite pneumococcal conjugate vaccine is not include in the national vaccination schedule in Argentina.