

TABLE 1. Comparison of three surveillance studies on ciprofloxacin-resistant *Streptococcus pneumoniae* isolates in Spain: data for 2002, 2006, and 2012.

Characteristic	No. of ciprofloxacin-resistant isolates/no. of isolates (%)			P value (2002 vs. 2012)	P value (2006 vs. 2012)
	2002	2006	2012		
Ciprofloxacin resistance					
Global	75/2882 (2.6)	98/4215 (2.3)	83/3621 (2.3)	0.419	0.940
Low-level (MICs of 4-8 µg/ml) ^a	14/75 (18.7)	30/98 (30.6)	15/83 (18.1)	1.000	0.059
High-level (MICs ≥16 µg/ml)	61/75 (81.3)	68/98 (69.3)	68/83 (81.9)	1.000	0.059
In persons <15 years of age	0/978 (0)	2/1446 (0.14)	2/695 (0.4)	0.172	0.600
In persons 15-64 years of age	22/1166 (1.9)	34/1455 (2.3)	19/1336 (1.4)	0.431	0.100
In persons >64 years of age	53/738 (7.2)	61/1314 (4.7)	62/1590 (3.9)	<0.001	0.355
PCV7 serotypes	49/75 (65.3)	35/98 (37.5)	14/83 (16.9)	<0.001	0.014
PCV13 serotypes	56/75 (74.7)	47/98 (48.0)	31/83 (37.3)	<0.001	0.176
Serotype 8	0/75 (0)	7/98 (7.1)	12/83 (14.5)	<0.001	0.145
Serotype 11A	1/75 (1.3)	4/98 (4.1)	6/83 (7.2)	0.120	0.516

Serotype 19A	1/75 (1.3)	8/98 (8.2)	9/83 (10.8)	0.019	0.613
Other antimicrobial drug resistance	No. of resistant isolates/ no. of ciprofloxacin-resistant isolates (%)				
Penicillin MIC ≥ 0.12 $\mu\text{g/ml}$	55/75 (73.3)	44/98 (44.9)	37/83 (44.5)	<0.001	1.000
Chloramphenicol MIC ≥ 8 $\mu\text{g/ml}$	33/75 (44.0)	11/98 (11.2)	4/83 (4.8)	<0.001	0.176
Multidrug resistance ^b	55/75 (73.3)	48/98 (49.0)	48/83 (57.8)	0.046	0.296

^a CipR, resistant to ciprofloxacin, defined as ≥ 4 $\mu\text{g/ml}$ by Chen *et al.* (22); low-level resistant (MICs 4-8 $\mu\text{g/ml}$), high-level resistant (MICs ≥ 16 $\mu\text{g/ml}$).

^b Multidrug resistance, resistance to CIP and to at least two other antimicrobial groups. Values in bold indicate statistically significant differences ($P < 0.05$) between time periods.