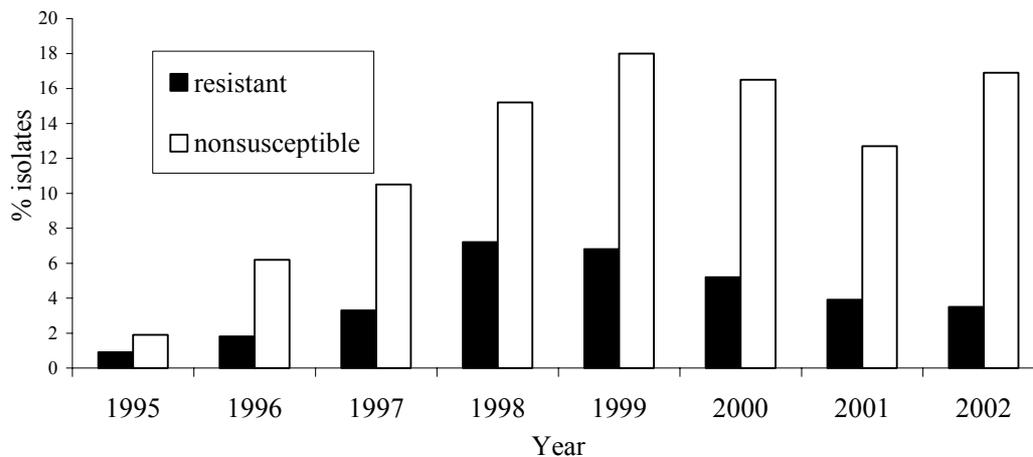


Antimicrobial susceptibility of invasive *Streptococcus pneumoniae*, 2002

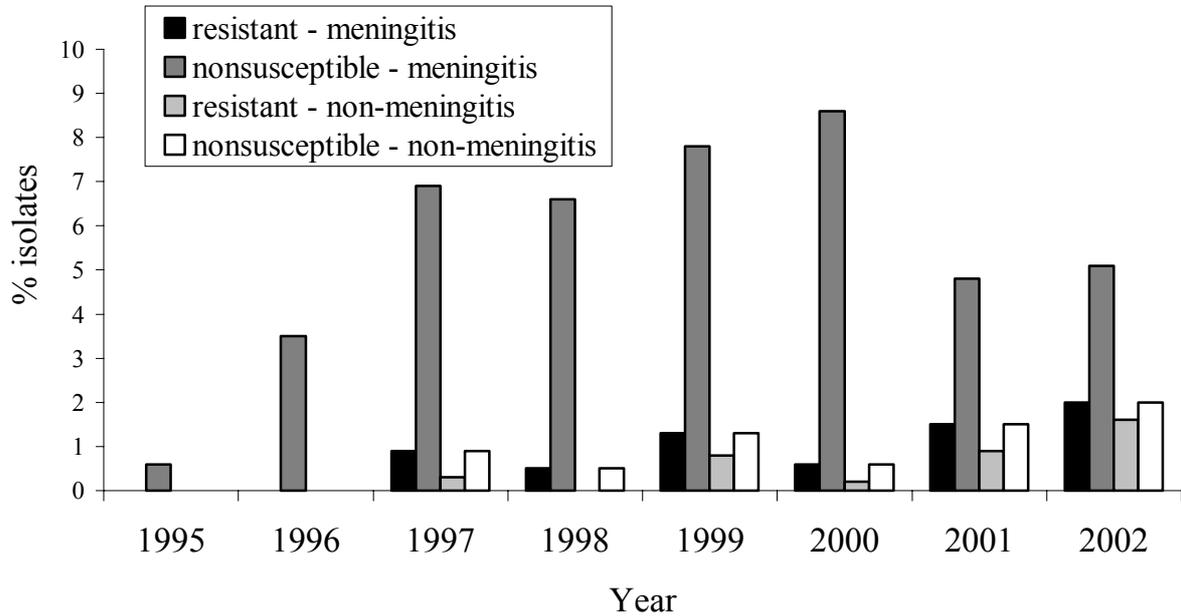
The antimicrobial susceptibility of all 490 viable invasive isolates of *S. pneumoniae* referred to ESR in 2002 was tested. 16.9% (83) were categorised as penicillin nonsusceptible (MIC ≥ 0.12 mg/L): 3.5% (17) as resistant (MIC ≥ 2 mg/L) and 13.5% (66) as intermediate (MIC 0.12-1 mg/L). The prevalence of penicillin resistance has decreased in each of the last four years since 1998 (Figure 1). While there was also a decline in penicillin nonsusceptibility between 1999 and 2001, the prevalence increased again in 2002.

Figure 1. Penicillin resistance and nonsusceptibility among pneumococci from invasive disease, 1995-2002



The NCCLS interpretive standards for pneumococcal susceptibility to cefotaxime/ceftriaxone were redefined in 2002, with different criteria depending on whether the isolate is from a meningitis or non-meningitis case. Applying the meningitis interpretive standards, 5.1% (25) of the 490 invasive isolates were categorised as cefotaxime nonsusceptible (MIC ≥ 1 mg/L): 2.0% (10) as resistant (MIC ≥ 2 mg/L) and 3.1% (15) as intermediate (MIC 1 mg/L). Applying the non-meningitis interpretive standards, 2.0% (10) were categorised as cefotaxime nonsusceptible (MIC ≥ 2 mg/L): 1.6% (8) as resistant (MIC ≥ 4 mg/L) and 0.4% (2) as intermediate (MIC 2 mg/L). Trends in cefotaxime resistance and nonsusceptibility since 1995 are shown in the Figure 2. In general, resistance has increased, although nonsusceptibility, based on the meningitis interpretive standards, has decreased since 2000.

Figure 2. Cefotaxime resistance and nonsusceptibility among pneumococci from invasive disease, 1995-2002



The rates of resistance to other antibiotics among the 490 invasive isolates tested in 2002 included 2.5% chloramphenicol resistance, 36.1% co-trimoxazole resistance, 9.0% erythromycin resistance, and 6.9% tetracycline resistance. All isolates were vancomycin susceptible.

The majority of the penicillin-nonsusceptible isolates belonged to the capsular types usually associated with penicillin resistance (see table below).

Distribution of capsular types among penicillin-nonsusceptible and cefotaxime-nonsusceptible invasive pneumococcal isolates, 2002

Capsular type	Number (% ¹) isolates			
	Penicillin		Cefotaxime	
	Nonsusceptible MIC \geq 0.12 mg/L	Resistant MIC \geq 2 mg/L	Nonsusceptible ² MIC \geq 1 mg/L	Resistant ² MIC \geq 2 mg/L
9V	33 (39.8)	2 (11.8)	4 (16.0)	1 (10.0)
19F	16 (19.3)	11 (64.7)	13 (52.0)	9 (90.0)
6B	11 (13.3)	0	3 (12.0)	
23F	11 (13.3)	3 (17.7)	3 (12.0)	
14	6 (7.2)	1 (5.9)	2 (8.0)	
19A	3 (3.6)			
Others	3 (3.6) ³			
Total	83 (100)	17 (100)	25 (100)	10 (100)

¹ Percentage of the nonsusceptible or resistant isolates.

² Based on meningitis interpretive standards.

³ One serotype 6A, one 9N and one 29.