

Appendix

3

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**Statistics of antimicrobial resistance
in well defined infections
or in specific epidemiological situations
(type 3 information)**

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Table 60 Distribution (%) of bacterial species isolated from bacteraemia (COL-BVH Network, 1996-2002).							
Year	1996	1997	1998	1999	2000	2001	2002
Number of isolates	668	715	699	834	1,463	1,495	1,429
Gram-negative bacteria	45.9	46.4	44.6	49.4	54.2	57.8	58.6
<i>Escherichia coli</i>	28.6	28.7	29.9	30.8	34.4	33.6	36.2
<i>Proteus mirabilis</i>	3.7	1.5	2.1	0.8	2.3	2.7	2.4
<i>Klebsiella pneumoniae</i>	3.3	3.2	3.6	3.6	2.9	4.2	3.1
<i>Klebsiella oxytoca</i>	0.9	1.5	1.1	1.6	1.4	1.1	1.5
<i>Enterobacter cloacae</i>	2.7	4.3	1.6	2.4	2.5	2.5	2.4
<i>Enterobacter aerogenes</i>	1.2	1.0	1.0	0.4	0.7	1.1	1.0
<i>Pseudomonas aeruginosa</i>	1.8	3.1	2.1	3.6	3.2	3.5	3.8
Gram-positive bacteria	54.1	53.6	55.4	50.6	45.8	42.2	41.4
<i>Staphylococcus aureus</i>	16.0	14.7	17.7	14.0	16.5	16.1	14.4
Coagulase-negative Staphylococci	25.6	26.3	19.7	21.9	8.3	9.1	8.1
<i>Streptococcus pneumoniae</i>	–	–	5.9	3.7	7.7	5.0	5.0
<i>Streptococcus pyogenes</i>	0.6	0.4	0.3	0.7	0.8	1.1	0.8
<i>Streptococcus agalactiae</i>	2.4	2.2	1.1	1.9	2.9	1.5	2.3
Non hemolytic streptococci	4.8	4.9	5.4	3.4	4.3	4.5	6.3
<i>Enterococcus faecalis</i>	2.1	3.1	3.0	1.8	3.3	2.9	2.3

– : not available
Study duration: 15 days in 1996-1999 ; 1 month in 2000-2002

Table 61 <i>Escherichia coli</i> : susceptibility to antibiotics (%) of strains isolated from bacteraemia (COL-BVH Network, 1996-2002).							
Year	1996	1997	1998	1999	2000	2001	2002
Number of isolates	191	205	209	257	504	502	517
Amoxicillin	60	52	51	52	53	52	52
Amoxicillin + clavulanate	67	60	63	61	63	62	63
Cefotaxime	97	98	100	99	98	100	98
Gentamicin	99	100	97	96	97	96	96
Nalidixic acid					90	88	89
Ciprofloxacin	98	95	95	93	96	94	94
ESBL	1.6	1.0	0.0	0.8	0.6	0.2	0.8

ESBL: extended spectrum betalactamase
Study duration: 15 days in 1996-1999; 1 month in 2000-2002

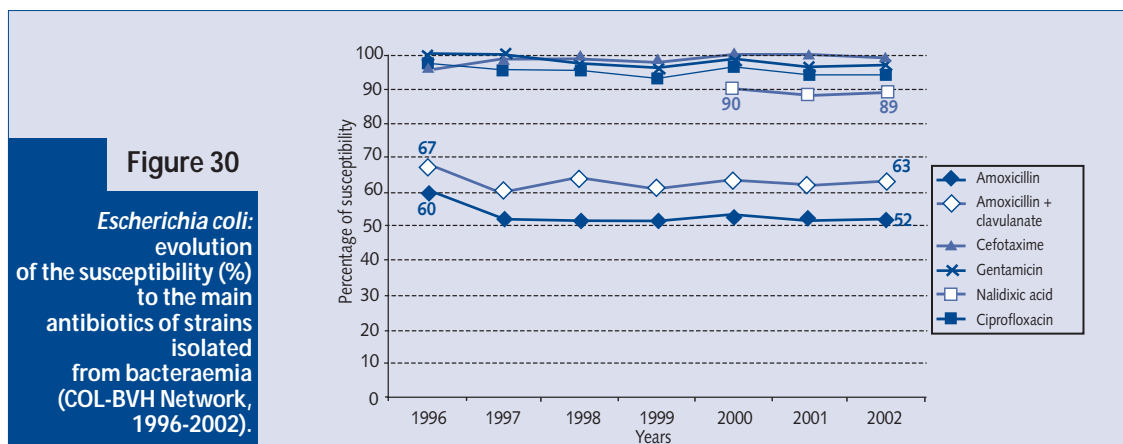


Table 62 Evolution of the susceptibility (%) to cefotaxime and ciprofloxacin of four enterobacterial species isolated from bacteraemia (COL-BVH Network, 1996-2002).

Antibiotic	Bacterial species	Years						
		1996	1997	1998	1999	2000	2001	2002
Cefotaxime	<i>Escherichia coli</i>	97	98	100	99	98	100	98
	<i>Proteus mirabilis</i>	92	100	100	100	100	98	100
	<i>Klebsiella pneumoniae</i>	86	96	100	93	98	97	97
	<i>Enterobacter cloacae</i>	83	71	82	85	83	68	79
Ciprofloxacin	<i>Escherichia coli</i>	98	95	95	93	96	94	94
	<i>Proteus mirabilis</i>	88	91	73	100	94	85	89
	<i>Klebsiella pneumoniae</i>	86	91	100	93	98	95	98
	<i>Enterobacter cloacae</i>	94	84	100	95	97	81	85

Figure 31

Evolution of the susceptibility (%) to cefotaxime of four enterobacterial species isolated from bacteraemia (COL-BVH Network, 1996-2002).

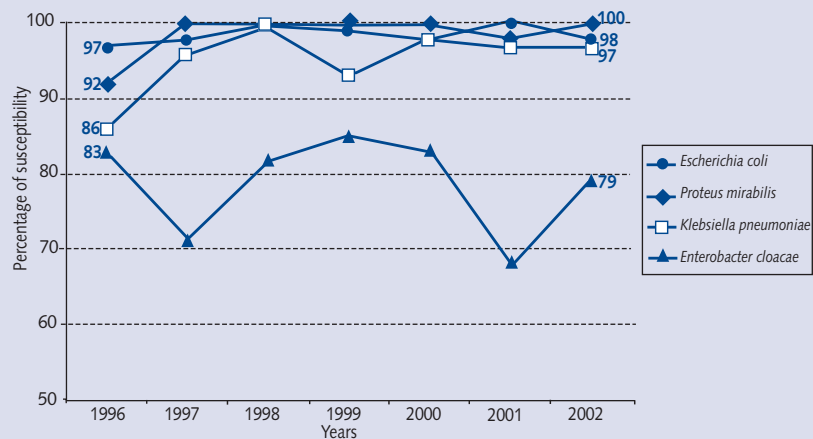
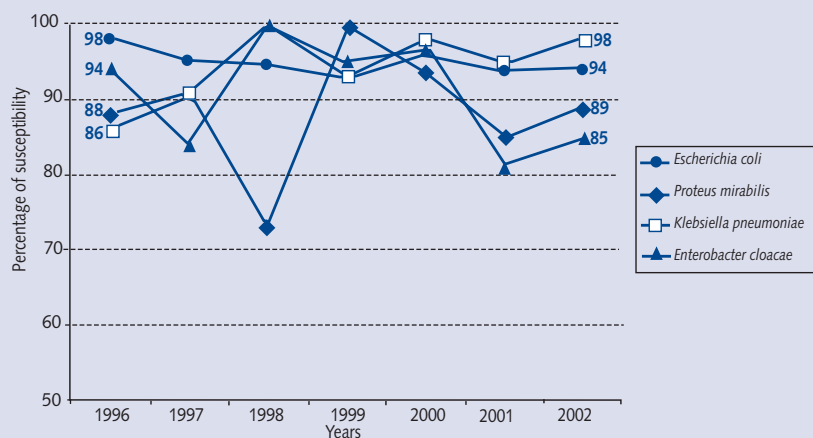


Figure 32

Evolution of the susceptibility (%) to ciprofloxacin of four enterobacterial species isolated from bacteraemia (COL-BVH Network, 1996-2002).



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Table 63 *Escherichia coli*: susceptibility to antibiotics (%) according to the susceptibility to amoxicillin, strains isolated from bacteraemia (COL-BVH Network, 1996-2002).

Susceptibility to amoxicillin		1996	1997	1998	1999	2000	2001	2002
Susceptible isolates	Number of isolates	114	106	106	133	266	263	269
	Amoxicillin	100	100	100	100	100	100	100
	Amoxicillin + clavulanate	100	100	100	100	100	100	100
	Cefotaxime	100	100	100	100	100	100	100
	Gentamicin	100	100	99	99	100	100	98
	Nalidixic acid	-	-	-	-	97	96	94
	Pefloxacin	-	-	-	-	99	98	96
	Ciprofloxacin	100	97	98	95	100	100	97
I or R isolates	Number of isolates	77	99	103	124	238	239	248
	Amoxicillin	0	0	0	0	0	0	0
	Amoxicillin + clavulanate	18	18	26	20	21	21	23
	Cefotaxime	92	95	100	98	97	99	96
	Gentamicin	97	100	95	93	94	92	94
	Nalidixic acid	-	-	-	-	81	79	82
	Pefloxacin	-	-	-	-	84	84	85
	Ciprofloxacin	96	93	91	90	92	87	91

I: intermediate; R: resistant; -: not available
Study duration: 15 days in 1996-1999; 1 month in 2000-2002

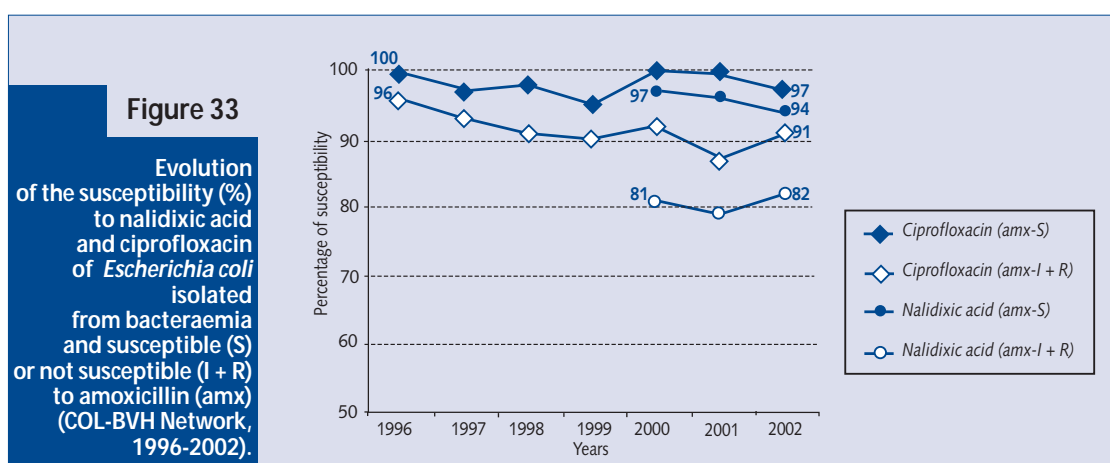


Table 64 Evolution of the susceptibility (%) to gentamicin of *Staphylococcus aureus* strains isolated from bacteraemia and susceptible (MSSA) or resistant (MRSA) to methicillin (COL-BVH Network and C-CLIN Est Network, 1996-2002).

Network	Methicillin susceptibility	Years						
		1996	1997	1998	1999	2000	2001	2002
COL-BVH	Yes (MSSA)	100	99	99	100	100	98	99
COL-BVH	No (MRSA)	53	81	91	83	86	92	88
C-CLIN Est	Yes (MSSA)			99.2		100		
C-CLIN Est	No (MRSA)			62.6		74.4		

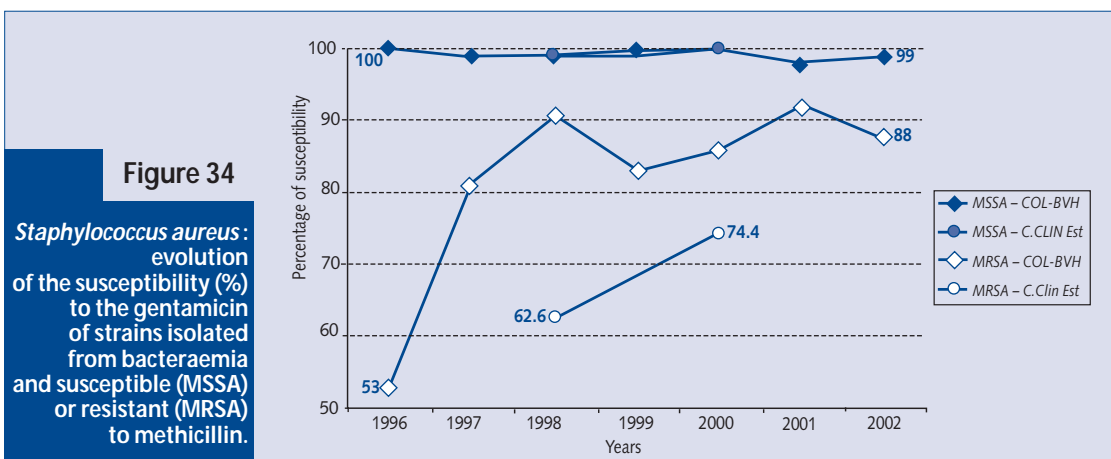


Table 65

Staphylococcus aureus: susceptibility to antibiotics (%), strains isolated from bacteraemia (AZAY-Résistance Network, 2002).

Antibiotic	MSSA (n = 968)			MRSA (n = 481)		
	S	I	R	S	I	R
Gentamicin	99.4	0.1	0.5	79.4	0.5	20.1
Erythromycin	81.3	0.1	18.6	31.8	0.4	67.8
Rifampicin	98.5	0.5	1.0	77.5	4.2	18.3
Fluoroquinolones	93.7	0.6	5.7	5.4	2.0	92.6
Vancomycin	100.0	0.0	0.0	99.4	0.6	0.0

MSSA: *Staphylococcus aureus* susceptible to methicillin; MRSA: *S. aureus* resistant to methicillin

Table 66

Enterococcus faecalis: susceptibility to antibiotics (%), strains isolated from bacteraemia (AZAY-Résistance Network, 2002).

Antibiotic	n	Number of isolates			Percentage of isolates		
		S	I	R	S	I	R
Ampicillin	214	202	5	7	94.4	2.3	3.3
Gentamicin 500	298	-	-	48*	-	-	16.1*
Erythromycin	299	70	52	177	23.4	17.4	59.2
Tetracycline	233	72	0	161	30.9	0.0	69.1
Cotrimoxazole	263	103	48	112	39.2	18.3	42.6
Teicoplanin	265	265	0	0	100.0	0.0	0.0
Vancomycin	286	284	1	1	99.3	0.3	0.3

* High level of resistance

Table 67

Escherichia coli: susceptibility to antibiotics (%), strains isolated from bacteraemia (AZAY-Résistance Network, 2002).

Antibiotic	n	Number of isolates			Percentage of isolates		
		S	I	R	S	I	R
Penicillin A*	1,913	832	79	1,002	43.5	4.1	52.4
3rd generation cephalosporins**	1,914	1,873	28	13	97.9	1.5	0.7
Gentamicin	1,914	1,818	7	89	95.0	0.4	4.6
Ciprofloxacin	1,914	1,728	16	170	90.3	0.8	8.9

* Ampicillin, amoxicillin; ** cefotaxime, ceftriaxone

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Table 68		<i>Staphylococcus aureus</i>: susceptibility to antibiotics (%), strains isolated from bacteraemia (REUSSIR Network, 2002).					
Antibiotic	Total number of isolates	Number of isolates			Percentage of isolates		
		S	I	R	S	I	R
Oxacillin	399	261	0	138	65.4	0.0	34.6
Tobramycin	399	279	0	120	69.9	0.0	30.1
Gentamicin	399	387	0	12	97.0	0.0	3.0
Erythromycin	399	251	0	148	62.9	0.0	37.1
Lincomycin	399	288	6	105	72.2	1.5	26.3
Rifampicin	399	388	2	9	97.2	0.5	2.3
Fusidic acid	399	381	6	12	95.5	1.5	3.0
Fosfomicin	399	385	0	14	96.5	0.0	3.5
Trimethoprim + sulfamethoxazole	399	392	3	4	98.2	0.8	1.0
Fluoroquinolones	398	243	10	145	61.1	2.5	36.4
Vancomycin	399	399	0	0	100.0	0.0	0.0
Penicillin G	391	46	0	345	11.8	0.0	88.2
Kanamycin	387	262	6	119	67.7	1.6	30.7
Teicoplanin	381	381	0	0	100.0	0.0	0.0

Table 69		<i>Escherichia coli</i>: susceptibility to antibiotics (%), strains isolated from bacteraemia (REUSSIR Network, 2002).					
Antibiotic	Total number of isolates	Number of isolates			Percentage of isolates		
		S	I	R	S	I	R
Penicillin A*	815	414	10	391	50.8	1.2	48.0
Ticarcillin	815	440	4	371	54.0	0.5	45.5
Amoxicillin + clavulanate	815	489	241	85	60.0	29.6	10.4
Cephalothin	815	478	240	97	58.7	29.4	11.9
Ceftazidime	815	806	7	2	98.9	0.9	0.2
Gentamicin	815	791	2	22	97.1	0.2	2.7
Amikacin	815	814	1	0	99.9	0.1	0.0
Trimethoprim + sulfamethoxazole	815	643	14	158	78.9	1.7	19.4
Fluoroquinolones	815	735	20	60	90.2	2.5	7.4
Piperacillin	810	439	216	155	54.2	26.7	19.1
Piperacillin + tazobactam	741	706	30	5	95.3	4.0	0.7
Cefotaxime	740	732	6	2	98.9	0.8	0.3
Imipenem	704	704	0	0	100.0	0.0	0.0
Tobramycin	779	763	1	15	97.9	0.1	1.9

* Amoxicillin or ampicillin

Table 70		<i>Pseudomonas aeruginosa</i>: susceptibility to antibiotics (%), strains isolated from bacteraemia (REUSSIR Network, 2002).					
Antibiotic	Total number of isolates	Number of isolates			Percentage of isolates		
		S	I	R	S	I	R
Ticarcillin	82	58	2	22	70.7	2.4	26.8
Piperacillin	82	71	1	10	86.6	1.2	12.2
Piperacillin + tazobactam	82	71	5	6	86.6	6.1	7.3
Ceftazidime	82	76	2	4	92.7	2.4	4.9
Aztreonam	82	55	19	8	67.1	23.2	9.8
Imipenem	82	71	4	7	86.6	4.9	8.5
Tobramycin	82	68	1	13	82.9	1.2	15.9
Amikacin	82	72	8	2	87.8	9.8	2.4
Ciprofloxacin	82	66	1	15	80.5	1.2	18.3
Cefepime	63	50	10	3	79.4	15.9	4.8
Gentamicin	76	49	8	19	64.5	10.5	25.0
Netilmicin	70	48	5	17	68.6	7.1	24.3
Fosfomicin	61	27	1	33	44.3	1.6	54.1
Colistin	68	68	0	0	100.0	0.0	0.0

Table 71 *Staphylococcus aureus*: susceptibility to antibiotics (%), strains isolated from bacteraemia (REUSSIR Network, 2000-2002).

Antibiotic	2000		2001		2002	
	n	S (%)	n	S (%)	n	S (%)
Oxacillin	417	67.6	421	66.1	399	65.3
Tobramycin	417	69.9	421	69.1	399	69.9
Gentamicin	417	94.7	421	96.2	399	97.0
Erythromycin	417	69.0	421	68.4	399	62.9
Rifampicin	417	94.7	421	95.5	399	97.2
Fusidic acid	417	92.8	421	94.3	399	95.5
Fosfomycin	417	96.6	421	95.7	399	96.5
Trimethoprim + sulfamethoxazole	417	99.5	421	98.3	399	98.3
Fluoroquinolones	417	66.7	421	63.2	387	61.0
Vancomycin	417	100.0	421	99.3	399	100.0
Penicillin G	414	8.9	416	8.7	391	11.8
Kanamycin	417	69.3	418	68.4	387	67.7
Lincomycin	369	75.3	381	75.3	399	72.2
Teicoplanin	382	98.4	408	99.3	381	100.0

Table 72 *Escherichia coli*: susceptibility to antibiotics (%), strains isolated from bacteraemia (REUSSIR Network, 2000-2002).

Antibiotic	2000		2001		2002	
	n	S (%)	n	S (%)	n	S (%)
Amoxicillin or ampicillin	850	52.0	877	53.3	815	50.8
Ticarcillin	850	55.4	877	57.5	815	54.0
Amoxicillin + clavulanate	850	61.2	877	60.0	815	60.0
Cephalothin	850	61.0	877	59.6	815	58.7
Ceftazidime	850	99.1	877	99.1	815	98.9
Gentamicin	850	97.8	877	97.0	815	97.1
Amikacin	850	99.5	877	99.3	815	99.9
Trimethoprim + sulfamethoxazole	850	76.3	877	79.9	815	78.9
Fluoroquinolones	850	95.9	877	91.3	815	90.2
Piperacillin	847	55.6	871	57.7	810	54.2
Piperacillin + tazobactam	790	97.0	804	96.3	741	95.3
Cefotaxime	793	99.6	821	99.4	740	98.9
Imipenem	765	100.0	781	100.0	704	100.0
Tobramycin	818	98.3	855	97.3	779	98.0

Table 73 *Pseudomonas aeruginosa*: susceptibility to antibiotics (%), strains isolated from bacteraemia (REUSSIR Network, 2000-2002).

Antibiotic	2000		2001		2002	
	n	S (%)	n	S (%)	n	S (%)
Ticarcillin	75	64.4	70	68.1	82	70.7
Piperacillin	75	71.2	70	84.1	82	86.4
Piperacillin + tazobactam	75	75.0	70	88.2	82	86.6
Ceftazidime	75	84.0	70	95.8	82	92.6
Aztreonam	75	69.3	70	64.8	82	67.1
Imipenem	75	90.5	70	87.3	82	86.6
Tobramycin	75	61.6	70	74.6	82	82.9
Amikacin	75	85.3	70	81.7	82	87.8
Ciprofloxacin	75	65.3	70	67.6	82	80.3
Cefepime	61	67.2	57	78.9	63	79.4
Gentamicin	68	44.1	65	52.3	76	64.5
Netilmicin	57	49.1	52	59.6	70	68.6
Fosfomycin	57	38.6	57	36.8	61	44.3
Colistin	61	100.0	58	100.0	68	100.0

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Table 74	Distribution of species (%) isolated from hospital- or community-acquired bacteraemia (Ile-de-France Network, 2001 and 2002).			
	Community		Nosocomial	
	2001 (n=913)	2002 (n=1,018)	2001 (n=769)	2002 (n=825)
Gram-positive bacteria				
Total	27.8	37.0	42.8	42.7
<i>Staphylococcus aureus</i>	10.0	7.6	22.4	21.5
Coagulase negative staphylococci	0.8	0.7	8.2	9.2
<i>Streptococcus pneumoniae</i>	8.0	13.0	2.6	1.9
<i>Streptococcus A. C. G</i>	1.9	2.6	0.7	0.7
<i>Streptococcus B</i>	1.6	2.4	0.8	1.7
<i>Enterococcus faecalis</i>	1.6	1.6	3.4	4.2
<i>Enterococcus faecium</i>	0.4	0.6	0.3	0.6
Other enterococci	0.8	0.7	0.1	0.5
<i>Corynebacterium</i>	0.1	0.0	0.4	0.0
Other streptococci	2.6	7.5	3.9	2.4
<i>Listeria</i>	0	0.2	0.0	0.0
Other	0.0	0.1	0.0	0.0
Gram-negative bacilli				
Total	65.2	58.0	43.3	47.4
<i>Escherichia coli</i>	52.8	43.0	19.8	21.3
<i>Pseudomonas aeruginosa</i>	1.1	0.6	6.5	5.0
<i>Klebsiella pneumoniae</i>	2.7	3.3	3.9	3.3
<i>Enterobacter cloacae</i>	1.3	0.7	4.2	4.1
<i>Proteus mirabilis</i>	1.6	2.7	2.3	2.8
<i>Serratia</i> spp.	0.3	0.2	0.9	2.1
<i>Klebsiella oxytoca</i>	0.2	1.2	1.0	1.7
<i>Enterobacter aerogenes</i>	0.1	0.3	0.8	1.8
<i>Citrobacter koseri</i>	0.5	0.4	0.9	0.6
<i>Citrobacter freundii</i>	0.4	0.2	0.5	0.2
Major Salmonella	0.9	0.5	0.0	0.0
Minor Salmonella	1.6	1.4	0.0	0.0
Other enterobacteria	0.5	0.8	0.9	1.9
Other <i>Pseudomonas</i>	0.2	0.1	0.3	0.8
<i>Acinetobacter</i> spp.	0.2	0.2	1.3	0.7
<i>Haemophilus</i> spp.	0.8	0.6	0.0	0.1
<i>Campylobacter</i> spp.	0.0	0.2	0.0	0.0
Others	0.0	1.6	0.0	1.0
Anaerobes				
Total	3.4	3.9	7.2	6.3
<i>Bacteroides</i> spp.	3.0	2.1	5.5	4.4
<i>Clostridium</i> spp.	0.1	0.9	0.8	1.0
<i>Fusobacterium</i> spp.	0.3	0.9	0.9	0.5
Others	0.0	0.0	0.0	0.4
Fungi				
Total	0.5	0.0	4.2	3.5
<i>Candida albicans</i>	0.3	0.0	2.5	2.4
<i>Candida glabrata</i>	0.1	0.0	0.8	0.5
Others	0.1	0.0	0.9	0.6
Others	3.1	1.1	2.5	0.1
Total	100.0	100.0	100.0	100.0

Table 75 *Staphylococcus aureus*: susceptibility to antibiotics (%), strains isolated from hospital- or community-acquired bacteraemia (Ile-de-France Network, 2001 and 2002).

Antibiotic	Total		Community		Nosocomial	
	2001 (n=269)	2002 (n=248)	2001 (n=126)	2002 (n=84)	2001 (n=142)	2002 (n=159)
Penicillin G	7.4	11.7	9.5	–	4.9	–
Oxacillin	63.2	65.7	69.8	81.0	57.0	57.2
Gentamicin	95.5	94.4	96.8	98.8	94.4	91.8
Tobramycin	65.8	68.5	72.2	84.5	59.9	58.5
Erythromycin	69.5	69.0	73.8	77.4	65.5	64.2
Pristinamycin	96.7	98.0	96.0	98.8	97.2	97.5
Rifampicin	95.2	94.4	96.0	97.6	94.4	93.1
Fusidic acid	92.9	94.8	98.4	96.4	88.0	94.3
Fluoroquinolones	63.2	61.3	68.3	75.0	58.5	53.5
Vancomycin	100.0	100.0	100.0	100.0	100.0	100.0

–: not available

Table 76 *Staphylococcus aureus*: susceptibility to antibiotics (%), strains susceptible (MSSA) or resistant (MRSA) to methicillin and isolated from hospital- or community-acquired bacteraemia (Ile-de-France Network, 2001 and 2002).

Antibiotic	MSSA				MRSA			
	Community		Nosocomial		Community		Nosocomial	
	2001 (n=70)	2002 (n=68)	2001 (n=99)	2002 (n=91)	2001 (n=21)	2002 (n=16)	2001 (n=78)	2002 (n=68)
Gentamicin	100.0	100.0	100.0	98.9	85.7	93.8	88.5	82.4
Tobramycin	100.0	97.1	99.0	92.3	9.5	31.3	7.7	13.2
Erythromycin	87.1	80.9	81.8	83.5	47.6	62.5	43.6	38.2
Pristinamycin	98.6	100.0	99.0	100.0	85.7	93.8	94.9	94.1
Rifampicin	97.1	98.5	99.0	98.9	90.5	87.5	89.7	85.3
Fusidic acid	98.6	97.1	92.9	95.6	95.2	93.8	87.2	92.6
Fluoroquinolones	95.7	88.2	96.0	93.4	4.8	18.8	5.1	0.0
Vancomycin	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.5

Table 77 Coagulase-negative staphylococci: susceptibility to antibiotics (%), isolates from bacteraemia (Ile-de-France Network, 2001 and 2002).

Antibiotic	2001 (n=77)	2002 (n=84)
Oxacillin	37.7	33.3
Gentamicin	61.0	61.9
Tobramycin	45.5	50.0
Erythromycin	63.6	52.4
Pristinamycin	96.1	97.6
Rifampicin	77.9	81.0
Fusidic acid	51.9	61.9
Fluoroquinolones	44.2	45.2
Vancomycin	98.7	100.0

Table 78 *Streptococcus pneumoniae*: susceptibility to penicillin G (%), isolates from bacteraemia (Ile-de-France Network, 2001 and 2002).

Year	Total number of isolates	Percentage of isolates		
		S	I	R
2001	129	49.6	34.1	16.3
2002	141	55.3	34.8	9.9

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Antibiotic	Total		Community		Nosocomial	
	2001 (n=631)	2002 (n=610)	2001 (n=481)	2002 (n=438)	2001 (n=153)	2002 (n=167)
Amoxicillin	51.3	42.1	52.7	43.6	48.1	37.1
Amoxicillin + clavulanate	59.7	51.8	61.9	50.9	53.8	46.7
Ticarcillin	56.1	47.5	57.7	48.4	51.9	46.1
Cephalothin	64.0	56.4	65.3	57.5	60.9	52.1
Cefotaxime*	98.6	98.9	99.0	99.1	97.4	98.2
Gentamicin	95.2	98.0	96.2	98.9	92.3	95.8
Amikacin	97.5	98.9	97.1	98.9	98.7	98.8
Nalidixic acid	88.7	86.9	90.4	89.3	84.0	80.2
Ciprofloxacin	93.5	92.6	95.2	93.8	88.5	89.2

* 0.3% of isolates in 2001 and 0.5% in 2002 are I or R to cefotaxime by production of extended-spectrum betalactamase

Antibiotic	Susceptible to amoxicillin				Resistant to amoxicillin			
	Community		Nosocomial		Community		Nosocomial	
	2001 (n=249)	2002 (n=191)	2001 (n=75)	2002 (n=59)	2001 (n=226)	2002 (n=247)	2001 (n=81)	2002 (n=101)
Amoxicillin + clavulanate	100.0	100.0	100.0	100.0	19.9	17.0	12.3	13.9
Ticarcillin	100.0	100.0	100.0	100.0	10.6	23.1	7.4	17.8
Cephalothin	98.0	99.5	100.0	100.0	29.2	25.5	24.7	21.8
Cefotaxime	100.0	100.0	100.0	100.0	97.8	98.8	95.1	97.0
Gentamicin	98.0	100.0	100.0	98.3	94.2	98.0	86.4	95.0
Amikacin	98.0	100.0	100.0	100.0	96.5	98.0	97.5	99.0
Nalidixic acid	96.0	97.9	95.0	89.8	84.5	83.8	74.1	74.3
Ciprofloxacin	100.0	98.4	96.0	96.6	90.3	90.3	81.5	84.2

Antibiotic	Susceptible to nalidixic acid		Resistant to nalidixic acid			
	Community	Nosocomial	Community		Nosocomial	
	2002 (n=390)	2002 (n=134)	2001 (n=46)	2002 (n=44)	2001 (n=25)	2002 (n=32)
Amoxicillin	-	-	23.9	9.1	16.0	21.9
Amoxicillin + clavulanate	56.9	50.7	39.1	13.6	28.0	25.0
Ticarcillin	52.3	47.0	-	11.4	-	28.1
Cephalothin	63.1	54.5	-	25.0	-	40.6
Cefotaxime	99.7	99.3	91.3	95.5	92.0	96.9
Gentamicin	99.7	100.0	87.0	90.9	60.0	84.4
Amikacin	99.7	99.3	97.8	88.6	100.0	84.4
Ciprofloxacin	100.0	100.0	50.0	45.5	28.0	43.8

Table 82 *Escherichia coli*: susceptibility to antibiotics (%), strains isolated from hospital- or community-acquired bacteraemia from urinary or non-urinary origin (Ile-de-France Network, 2001 and 2002).

Antibiotic	Urinary				Non-urinary			
	Community		Nosocomial		Community		Nosocomial	
	2001 (n=326)	2002 (n=310)	2001 (n=76)	2002 (n=77)	2001 (n=153)	2002 (n=93)	2001 (n=80)	2002 (n=52)
Amoxicillin	51.1	38.4	48.7	31.2	56.2	54.8	47.5	36.5
Amoxicillin + clavulanate	61.5	50.0	55.3	40.3	63.4	58.1	53.8	44.2
Ticarcillin	54.5	42.9	50.0	33.8	64.7	62.4	53.8	42.3
Cephalothin	65.2	55.2	63.2	48.1	65.4	61.3	58.8	50.0
Cefotaxime	99.4	100.0	96.1	100.0	100.0	96.8	100.0	98.1
Gentamicin	97.5	99.7	96.1	92.2	98.0	98.9	92.5	98.1
Amikacin	98.8	100.0	100.0	97.4	98.7	96.8	100.0	98.1
Nalidixic acid	91.1	91.6	82.9	77.9	88.9	87.1	85.0	76.9
Ciprofloxacin	95.4	95.2	88.2	85.7	94.8	92.5	88.8	90.4

Table 83 *Escherichia coli*: susceptibility to antibiotics (%) by age of the patients; strains isolated from bacteraemia (Ile-de-France Network, 2002).

Antibiotic	Age (years)					
	0 to 15 (n=20)	16 to 30 (n=46)	31 to 45 (n=62)	46 to 60 (n=110)	61 to 75 (n=144)	> 75 (n=230)
Amoxicillin	55.0	45.7	32.3	44.5	38.9	44.3
Amoxicillin + clavulanate	60.0	52.4	43.5	50.0	49.3	50.9
Nalidixic acid	95.0	88.6	91.9	90.9	84.1	86.5
Ciprofloxacin	100.0	95.5	95.2	93.6	89.9	92.2

Table 84 *Escherichia coli*: susceptibility to antibiotics (%) by type of ward; strains isolated from bacteraemia (Ile-de-France Network, 2002).

Antibiotic	Type of ward							
	Pediatrics (n=19)	Obstetrics (n=28)	Adult ICUs (n=79)	Surgery (n=113)	Medicine* (n=263)	Emergency room (n=67)	Rehabilitation- long-term care (n=12)	Oncology- hematology (n=18)
Amoxicillin	47.4	28.6	32.9	46.9	45.2	37.9	25.0	22.2
Amoxicillin + clavulanate	57.9	35.7	40.5	55.8	54.4	52.2	41.7	27.8
Ticarcillin	47.4	35.7	45.6	48.7	50.2	40.3	25.0	44.4
Cephalothin	68.4	53.6	45.6	61.1	59.7	59.7	50.0	22.2
Cefotaxime	100.0	100.0	98.7	98.2	99.2	100.0	100.0	94.4
Gentamicin	100.0	96.4	96.2	99.1	98.1	100.0	100.0	94.4
Amikacin	100.0	100.0	96.2	97.3	100.0	98.5	100.0	100.0
Nalidixic acid	94.7	92.9	83.5	85.0	88.6	94.0	75.0	72.2
Ciprofloxacin	100.0	96.4	89.9	92.0	94.3	95.5	75.0	77.8

* Oncology-hematology excluded

Table 85 Distribution of species isolated from hospital- or community-acquired bacteraemia (C-CLIN Est Network, 1997-2002).

	1997		1998		1999		2000		2001		2002	
	n	%	n	%	n	%	n	%	n	%	n	%
Community-acquired bacteraemia												
Gram-positive cocci	300	38.1	276	38.3	253	39.3	306	40.0	296	38.8	377	42.2
<i>Staphylococcus aureus</i>	74	9.4	92	13.0	75	11.6	77	10.1	81	10.6	105	11.7
Coagulase negative staphylococci	23	2.9	24	3.4	25	3.9	30	3.9	38	5.0	50	5.5
<i>Streptococcus pneumoniae</i>	74	9.4	61	8.6	66	10.2	67	8.8	69	9.1	72	8.1
<i>Streptococcus A</i>	4	0.5	5	0.7	5	0.8	3	0.4	13	1.7	10	1.1
<i>Streptococcus B</i>	24	3.0	20	2.8	20	3.1	33	4.3	19	2.5	20	2.2
Enterococci	33	4.2	26	3.7	22	3.4	32	4.3	13	1.7	29	3.2
Others	68	8.7	48	6.7	40	6.3	64	8.4	63	8.3	91	10.2
Gram-negative bacilli	446	56.7	393	55.4	356	55.3	421	55.0	426	55.9	461	51.6
<i>Escherichia coli</i>	347	44.1	289	40.8	252	39.1	314	41.0	308	40.4	329	36.8
<i>Pseudomonas aeruginosa</i>	5	0.6	13	1.3	9	1.4	8	1.0	8	1.0	12	1.3
Other enterobacteria	81	10.3	77	10.9	78	12.1	80	10.4	93	12.2	103	11.5
Other <i>Pseudomonas</i>	1	0.1	3	0.4	1	0.2	1	0.1	1	0.1	0	0.0
<i>Acinetobacter</i> spp	1	0.1	0	0.0	1	0.2	2	0.3	3	0.4	4	0.4
<i>Haemophilus</i> spp	6	0.8	2	0.3	7	1.1	3	0.4	6	0.8	4	0.4
Others	5	0.6	9	1.3	8	1.2	13	1.7	7	0.9	9	1.0
Anaerobes	25	3.2	24	3.4	19	3.0	29	3.8	32	4.2	36	4.0
Fungi	6	0.8	5	0.7	7	1.1	4	0.5	2	0.3	5	0.6
Others	10	1.3	11	1.6	9	1.4	5	0.7	6	0.8	15	1.7
Total	787	100.0	709	100.0	644	100.0	765	100.0	762	100.0	894	100.0
Nosocomial bacteraemia												
Gram-positive cocci	315	48.8	300	51.4	267.0	53.3	382	56.4	343	51.0	466	54.6
<i>Staphylococcus aureus</i>	126	19.4	135	23.1	143.0	28.5	163	24.1	136	20.2	180	21.1
Coagulase negative staphylococci	118	18.2	97	16.6	74.0	14.8	155	22.9	139	20.7	163	19.2
<i>Streptococcus pneumoniae</i>	12	1.8	6	1.0	7.0	1.4	9	1.3	14	2.1	16	1.9
<i>Streptococcus A</i>	1	0.2	1	0.2	1.0	0.2	4	0.6	1	0.1	1	0.1
<i>Streptococcus B</i>	3	0.5	11	1.9	6.0	1.2	5	0.7	2	0.3	10	1.2
Enterococci	25	3.9	33	5.7	12.0	2.4	22	3.2	27	4.0	51	6.0
Others	30	4.6	17	2.9	24.0	4.8	24	3.5	24	3.5	45	5.0
Gram-negative bacilli	281	43.3	244	41.8	196.0	39.1	246	36.3	292	43.4	317	37.2
<i>Escherichia coli</i>	131	20.2	122	20.9	96.0	19.2	111	16.4	131	19.5	129	15.1
<i>Pseudomonas aeruginosa</i>	28	4.3	20	3.4	22.0	4.4	34	5.0	35	5.2	51	6.0
Other enterobacteria	109	16.8	88	15.1	63.0	12.6	87	12.8	93	13.8	114	13.3
Other <i>Pseudomonas</i>	0	0.0	0	0.0	1.0	0.2	3	0.4	5	0.7	5	0.6
<i>Acinetobacter</i> spp	7	1.1	6	1.0	7.0	1.4	1	0.1	11	1.6	13	1.5
<i>Haemophilus</i> spp	1	0.2	0	0.0	2.0	0.4	3	0.4	1	0.1	0	0.0
Others	5	0.8	8	1.4	5.0	1.0	7	1.0	16	2.4	5	0.6
Anaerobes	26	4.0	16	2.7	12.0	2.4	21	3.1	18	2.7	31	3.6
Fungi	23	3.5	17	2.9	23.0	4.6	20	3.0	13	1.9	28	3.3
Others	4	0.6	7	1.2	3.0	0.6	8	1.2	6	0.9	12	1.4
Total	649	100.0	584	100.0	501	100.0	677	100.0	672	100.0	854	100.0

Table 86 Antibiotic susceptibility (%) of the five main species isolated from bacteraemia (C-CLIN Est Network, 1997-2002)

		1997	1998	1999	2000	2001	2002
Methicillin resistance (%) in <i>Staphylococcus aureus</i> (MRSA)							
		(n=200)	(n=227)	(n=218)	(n=240)	(n=217)	(n=296)
	Total	29.6	28.7	23.7	25.5	31.9	31.5
	nosocomial	38.7	35.3	28.4	32.3	36.8	39.9
Susceptibility (%) of <i>Escherichia coli</i>							
Community	Antibiotic	(n=347)	(n=289)	(n=252)	(n=314)	(n=308)	(n=329)
	Amoxicillin	–	–	–	–	–	58.4
	Cefotaxime	98.5	100.0	97.6	99.7	99.0	99.0
	Amikacin	99.4	98.9	100.0	99.0	99.3	–
	Gentamicin	98.5	98.6	98.0	97.8	98.7	–
	Ciprofloxacin	97.8	95.2	96.2	97.3	97.0	–
Nosocomial		(n=131)	(n=122)	(n=96)	(n=111)	(n=131)	(n=121)
	Amoxicillin	–	–	–	–	–	45.5
	Cefotaxime	97.6	98.3	98.9	100.0	99.2	97.5
	Amikacin	100.0	99.1	100.0	100.0	100.0	–
	Gentamicin	67.7	95.8	98.9	95.4	98.4	–
	Ciprofloxacin	95.8	97.3	97.8	93.0	93.4	–
Susceptibility (%) of <i>Pseudomonas aeruginosa</i>							
Nosocomial	Antibiotic	(n=33)	(n=33)	(n=31)	(n=42)	(n=43)	(n=49)
	Ticarcillin	62.5	75.0	77.4	59.5	61.9	63.3
	Ceftazidime	81.8	78.1	89.7	90.5	87.8	82.6
	Imipenem	90.9	96.9	87.1	88.1	75.6	–
	Amikacin	90.9	87.5	96.8	82.9	85.7	–
	Gentamicin	67.9	70.4	60.7	46.0	56.8	–
	Ciprofloxacin	84.9	71.9	90.0	69.1	78.6	–
Susceptibility (%) of <i>Enterococcus</i> spp. (<i>E. faecium</i> + <i>E. faecalis</i>)							
Nosocomial	Antibiotic						(n=38)
	Ampicillin						86.8
Community	Vancomycin						100.0
	Ampicillin						96.0
	Vancomycin						100.0
Susceptibility (%) of <i>Streptococcus pneumoniae</i>							
Community	Antibiotic						(n=72)
	Penicillin						50.0

Table 87 *Staphylococcus aureus*: resistance to methicillin (MRSA), strains isolated from bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

	1998		2000		2002	
	<i>S. aureus</i> (n)	MRSA (%)	<i>S. aureus</i> (n)	MRSA (%)	<i>S. aureus</i> (n)	MRSA (%)
Total	717	34.4	658	37.5	733	33.4
Nosocomial only	522	42.0	465	46.5	488	40.8
Duration of the study: 3 months/year						

APPENDIX 3

Table 88		Distribution of species isolated from bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).					
		1998		2000		2002	
		n	%	n	%	n	%
Community							
Gram-positive bacteria	Total	799	41.1	806	37.3	883	41.5
	<i>Staphylococcus aureus</i>	201	10.4	207	9.6	245	11.5
	Coagulase-negative staphylococci	71	3.7	80	3.7	74	3.5
	<i>Streptococcus pneumoniae</i>	231	11.9	210	9.7	191	9
	<i>Streptococcus A</i>	46	2.4	62	2.9	62	2.9
	<i>Streptococcus B</i>	53	2.7	68	3.1	58	2.8
	<i>Enterococcus</i> spp.	75	3.9	64	3.0	58	2.8
	Other streptococci	118	6.1	114	5.3	170	8
	<i>Listeria</i> spp.	3	–	0	–	5	–
	Corynebacteria	1	–	1	–	3	–
	Others	0	–	0	–	3	–
	Gram-negative bacilli	Total	1,053	51.6	1,189	53.1	1,148
<i>Escherichia coli</i>		729	37.7	869	40.2	792	37.3
<i>Pseudomonas aeruginosa</i>		22	1.1	44	2.0	51	2.4
<i>Klebsiella pneumoniae</i>		63	3.3	52	2.4	64	3.0
<i>Enterobacter cloacae</i>		20	1.0	22	1.0	27	1.1
<i>Proteus mirabilis</i>		43	2.2	42	1.9	54	2.5
<i>Klebsiella oxytoca</i>		23	1.2	24	1.1	23	–
<i>Citrobacter koseri</i>		5	–	1	–	7	–
<i>Citrobacter freundii</i>		6	–	9	–	2	–
Minor salmonella		38	2.0	42	1.9	16	0.7
Major salmonella		7	–	7	–	5	–
Other enterobacteria		41	2.1	33	1.6	21	1.1
Other <i>Pseudomonas</i>		12	–	3	–	10	–
<i>Acinetobacter</i> spp.		8	–	4	–	6	–
<i>Campylobacter</i> spp.		13	–	0	–	10	–
<i>Haemophilus</i> spp.		18	1.0	15	–	3	–
<i>Pasteurella</i> spp.		2	–	0	–	3	–
<i>Brucella</i> spp.		1	–	0	–	1	–
Others		2	–	22	1.0	–	–
Anaerobes		Total	65	2.1	91	3.1	81
	<i>Bacteroides</i> spp.	41	2.1	68	3.1	44	2.0
	<i>Clostridium</i> spp.	11	–	17	–	11	0.5
	Others	13	–	6	–	26	1.2
Other bacteria	Total	7	–	68	3.1	12	0.5
	<i>Neisseria meningitidis</i>	6	–	–	–	11	–
	<i>Branhamella</i> spp.	1	–	–	–	1	–
Fungi	Total	8	–	8	–	13	0.6
	<i>Candida albicans</i>	1	–	3	–	6	0.3
	<i>Candida glabrata</i>	1	–	3	–	2	–
	Others	6	–	2	–	5	–
Total		1,932	100.0	2,162	100.0	2,125	100.0

(end of table 88, see next page)

Table 88 (continued)

		1998		2000		2002	
		n	%	n	%	n	%
Nosocomial							
Gram-positive bacteria	Total	1,197	49.0	1,019	47.7	1,155	47.7
	<i>Staphylococcus aureus</i>	544	22.3	485	22.7	486	20.1
	Coagulase-negative staphylococci	334	13.7	280	13.1	369	15.2
	<i>Streptococcus pneumoniae</i>	42	1.7	31	1.5	35	1.4
	<i>Streptococcus A</i>	8	—	14	—	19	0.8
	<i>Streptococcus B</i>	30	1.2	24	1.1	15	0.6
	<i>Enterococcus faecalis</i>	102	4.2	89	4.2	83	3.4
	<i>Enterococcus faecium</i>	12	—	14	—	25	1.0
	Other enterococci	16	—	11	—	17	0.7
	Other streptococci	93	3.8	67	3.1	91	3.8
	<i>Listeria</i> spp.	3	—	0	—	2	—
	Corynebacteria	7	—	4	—	7	—
	Others	6	—	0	—	6	—
	Gram-negative bacilli	Total	1,085	44.4	974	45.7	1,111
<i>Escherichia coli</i>		434	17.8	434	20.4	431	17.8
<i>Pseudomonas aeruginosa</i>		153	6.2	120	5.6	180	7.4
<i>Klebsiella pneumoniae</i>		93	3.8	69	3.2	88	3.6
<i>Enterobacter cloacae</i>		76	3.1	90	4.2	79	3.3
<i>Proteus mirabilis</i>		46	1.9	50	2.3	48	2.0
<i>Serratia</i> spp.		45	1.8	40	1.9	42	1.7
<i>Klebsiella oxytoca</i>		43	1.8	39	1.8	29	1.2
<i>Enterobacter aerogenes</i>		40	1.6	35	1.6	33	1.4
<i>Citrobacter koseri</i>		10	—	9	—	13	—
<i>Citrobacter freundii</i>		9	—	9	—	11	—
Minor salmonella		5	—	3	—	7	—
Other enterobacteria		54	2.2	23	1.0	33	1.4
Other <i>Pseudomonas</i>		11	—	2	—	10	—
<i>Acinetobacter baumannii</i>		23	—	15	—	31	1.3
<i>Acinetobacter</i> spp.		10	—	4	—	14	—
<i>Stenotrophomonas maltophilia</i>		14	—	10	—	18	—
<i>Campylobacter</i> spp.		3	—	0	—	1	—
<i>Haemophilus</i> spp.		8	—	4	—	1	—
Others		8	—	18	—	28	—
Anaerobes		Total	94	3.8	72	3.4	85
	<i>Bacteroides</i> spp.	65	2.7	61	2.9	59	2.4
	<i>Clostridium</i> spp.	10	—	5	—	11	—
	<i>Fusobacterium</i> spp.	6	—	6	—	6	—
	Others	13	—	0	—	9	—
Fungi	Total	68	2.8	33	1.5	70	2.9
	<i>Candida albicans</i>	24	1.0	19	—	32	1.3
	<i>Candida glabrata</i>	9	—	3	—	6	—
	Others	35	1.3	11	—	32	1.3
Others	0	—	34	1.6	0	—	
Total	2,444	100.0	2,132	100.0	2,421	100.0	

Study duration: 3 months/year

APPENDIX 3

Table 89		<i>Staphylococcus aureus</i> susceptible to methicillin (MSSA): susceptibility to antibiotics of strains isolated from hospital- or community-acquired bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).			
		1998	2000	2002	
Community	Number	170	161	203	
	Gentamicin	98.8	100.0	99.5	
	Tobramycin	97.6	99.4	97.5	
	Erythromycin	84.1	85.7	–	
	Pristinamycin	99.4	99.4	–	
	Rifampicin	98.8	99.4	98.5	
	Fusidic acid	97.1	97.5	97.5	
	Pefloxacin	91.7	93.8	93.1	
	Vancomycin	100.0	100.0	99.0	
Nosocomial	Number	303	249	289	
	Gentamicin	99.3	100.0	99.6	
	Tobramycin	98.7	97.6	97.6	
	Erythromycin	86.5	85.5	–	
	Pristinamycin	99.0	98.8	–	
	Rifampicin	98.7	98.8	97.8	
	Fusidic acid	96.4	96.8	96.9	
	Pefloxacin	93.4	95.6	93.1	
	Vancomycin	100.0	100.0	99.3	

Study duration: 3 months/year, – : not available

Table 90		Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA): susceptibility to antibiotics of strains isolated from nosocomial bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).			
		1998	2000	2002	
	Number	219	216	199	
	Gentamicin	62.6	74.4	88.9	
	Tobramycin	7.8	10.0	18.9	
	Erythromycin	31.1	36.7	–	
	Pristinamycin	93.2	90.7	–	
	Rifampicin	72.1	80.7	86.4	
	Fusidic acid	90.4	86.3	87.4	
	Pefloxacin	5.9	5.6	10.3	
	Vancomycin	100.0	99.1	99.5	

Study duration: 3 months/year; – : not available

Table 91		Coagulase-negative staphylococci: susceptibility to antibiotics (%), of strains isolated from nosocomial bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).			
		1998	2000	2002	
	Number	321	359	343	
	Oxacillin	36.4	29.1	28.6	
	Gentamicin	52.3			
	Tobramycin	39.6			
	Pefloxacin	47.4			
	Vancomycin	100.0			

Study duration: 3 months/year

Table 92		<i>Enterococcus</i> spp.: susceptibility to antibiotics of strains isolated from hospital- or community-acquired bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).			
		1998	2002		
<i>E. faecium</i>	Number		19	35	
	Gentamicin*		89.5	–	
	Vancomycin		100.0	94.3	
<i>E. faecalis</i> community	Number		52	80	
	Gentamicin*		82.7	–	
	Vancomycin		100.0	98.8	
<i>E. faecalis</i> nosocomial	Number		102	40	
	Gentamicin*		78.4	–	
	Vancomycin		100.0	90.0	

* Low level of resistance (wild type); – : not available
Study duration: 3 months/year

Table 93 *Enterobacteria*: susceptibility to antibiotics of strains isolated from hospital- or community-acquired bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
Community	Number	766	1,050	1,019
	Cefotaxime	98.2	98.0	98.0
	Gentamicin	97.9	97.3	97.5
	Amikacin	99.3	99.7	98.7
	Nalidixic acid	92.2	89.4	90.0
	Ciprofloxacin	96.7	94.1	94.1
Nosocomial	Number	663	727	835
	Cefotaxime	88.5	92.8	88.0
	Gentamicin	92.2	95.0	93.2
	Amikacin	93.7	94.9	94.8
	Nalidixic acid	80.4	81.2	80.1
	Ciprofloxacin	87.2	87.4	84.3

Study duration: 3 months/year

Table 94 *Escherichia coli*: susceptibility to antibiotics (%), strains isolated from hospital- or community-acquired bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
Community	Number	575	844	782
	Amoxicillin	55.7	–	49.5
	Amoxicillin + clavulanate	66.8	–	58.2
	Ticarcillin	58.4	–	–
	Cephalothin	63.7	–	–
	Cefotaxime	98.8	98.9	99.0
	Gentamicin	99.1	98.2	98.2
	Amikacin	99.7	100.0	99.6
	Nalidixic acid	93.6	89.9	91.1
	Ciprofloxacin	97.6	95.1	94.6
Nosocomial	Number	342	412	435
	Amoxicillin	48.5	–	46.6
	Amoxicillin + clavulanate	58.2	–	55.0
	Ticarcillin	52.6	–	–
	Cephalothin	55.0	–	–
	Cefotaxime	98.0	99.0	97.2
	Gentamicin	95.3	94.6	95.8
	Amikacin	98.2	99.1	97.9
	Nalidixic acid	86.5	88.0	84.2
	Ciprofloxacin	92.4	93.5	90.6

– : not available

Table 95 *Proteus mirabilis*: susceptibility to antibiotics (%) of strains isolated from hospital- or community-acquired bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
Community	Number	38	36	55
	Cefotaxime	100.0	97.2	100.0
	Gentamicin	89.5	87.9	94.6
	Amikacin	94.7	97.0	100.0
	Nalidixic acid	76.3	80.0	83.4
	Ciprofloxacin	86.8	81.3	91.1
Nosocomial	Number	37	39	50
	Cefotaxime	97.3	97.4	98.0
	Gentamicin	86.3	97.1	92.0
	Amikacin	100.0	100.0	95.6
	Nalidixic acid	78.4	61.3	69.5
	Ciprofloxacin	86.5	74.2	75.5

Table 96 *Salmonella* spp.: susceptibility to antibiotics (%), strains isolated from bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
	Number	41	48	19
	Cefotaxime	100.0	100.0	100.0
	Gentamicin	100.0	91.0	100.0
	Amikacin	100.0	100.0	100.0
	Nalidixic acid	98.0	90.0	100.0
	Ciprofloxacin	100.0	100.0	100.0

Table 97 *Klebsiella pneumoniae*: susceptibility to antibiotics (%), strains isolated from hospital- or community-acquired bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
Community	Number	45	47	64
	Cefotaxime	100.0	100.0	96.9
	Gentamicin	100.0	100.0	98.4
	Amikacin	100.0	100.0	93.8
	Nalidixic acid	93.3	86.5	83.1
	Ciprofloxacin	97.8	92.1	93.8
Nosocomial	Number	76	63	91
	Cefotaxime	84.2	93.7	92.3
	Gentamicin	85.5	93.0	93.4
	Amikacin	90.8	91.2	92.2
	Nalidixic acid	77.6	79.6	80.7
	Ciprofloxacin	86.8	98.2	91.1

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Table 98 *Enterobacter* spp. and *Serratia* spp.: susceptibility to antibiotics (%), strains isolated from bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
<i>Enterobacter cloacae</i>	Number	58	72	87
	Cefotaxime	74.1	80.6	70.1
	Gentamicin	89.7	91.0	84.7
	Amikacin	96.6	97.1	94.1
	Nalidixic acid	81.0	81.0	71.6
	Ciprofloxacin	93.1	87.7	81.2
<i>Enterobacter aerogenes</i>	Number	39	31	35
	Cefotaxime	28.2	48.4	37.1
	Gentamicin	97.4	96.8	91.4
	Amikacin	59.0	74.2	58.8
	Nalidixic acid	30.8	43.5	46.4
	Ciprofloxacin	35.9	38.7	48.4
<i>Serratia</i> spp.	Number	37	37	46
	Cefotaxime	91.9	70.3	80.4
	Gentamicin	94.6	84.8	86.4
	Amikacin	81.1	66.7	79.5
	Nalidixic acid	73.0	46.7	81.1
	Ciprofloxacin	78.4	51.5	84.1

Study duration: 3 months/year

Table 99 *Pseudomonas aeruginosa*: susceptibility to antibiotics (%), strains isolated from nosocomial bacteraemia (C-CLIN Paris-Nord Network, including AP-HP, 1998-2002).

		1998	2000	2002
Number		147	106	178
Ticarcillin		53.7	64.2	58.2
Ceftazidime		71.4	82.1	80.7
Imipenem		82.3	83.2	80.8
Amikacin		78.9	83.0	80.4
Ciprofloxacin		54.4	65.7	63.5

Study duration: 3 months/year

Table 100 *Streptococcus pneumoniae*: susceptibility to beta-lactams and fluoroquinolones, strains isolated from bacteraemia in adults (CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002).

Antibiotic	c		Number of isolates	Number of isolates			Percentage of isolates		
	≤	>		S	I	R	S	I	R
Penicillin G	0.064	1	681	353	275	53	51.8	40.4	7.8
Amoxicillin	0.5	2	681	490	184	7	72.0	27.0	1.0
Cefotaxime	0.5	2	681	594	87	0	87.2	12.8	0.0
Levofloxacin	2	4	681	678	0	3	99.6	0.0	0.4
Moxifloxacin	1	2	681	678	1	2	99.6	0.1	0.3

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 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
 Interpretation criteria: CA-SFM
 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 101 *Streptococcus pneumoniae*: susceptibility to antibiotics, strains from bacteraemia in adults (CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002).

Antibiotic	d		Number of isolates	Number of isolates			Percentage of isolates		
	<	≥		S	I	R	S	I	R
Erythromycin	17	22	678	321	3	354	47.3	0.4	52.2
Lincomycin	17	21	678	341	59	278	50.3	8.7	41.0
Tetracyclines	17	19	678	457	52	169	67.4	7.7	24.9
Chloramphenicol	19	23	678	613	9	56	90.4	1.3	8.3
Trimethoprim + sulfamethoxazole	12	17	678	420	75	183	61.9	11.1	27.0
Rifampicin	14	19	678	674	2	2	99.4	0.3	0.3
Vancomycin	-	17	678	678	0	0	100.0	0.0	0.0

Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
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 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 102 *Streptococcus pneumoniae*: susceptibility to beta-lactams, strains isolated from bacteraemia in children (< 16 y.o.) [CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002].

Antibiotic	c		Number of isolates	Number of isolates			Percentage of isolates		
	≤	>		S	I	R	S	I	R
Penicillin G	0.064	1	191	93	78	20	48.7	40.8	10.5
Amoxicillin	0.5	2	191	139	50	2	72.8	26.2	1.0
Cefotaxime	0.5	2	191	161	30	0	84.3	15.7	0.0
Levofloxacin	2	4	191	191	0	0	100.0	0.0	0.0
Moxifloxacin	1	2	191	191	0	0	100.0	0.0	0.0

Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
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 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 103 *Streptococcus pneumoniae*: susceptibility to antibiotics, strains isolated from bacteraemia in children (< 16 y.o.) [CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002].

Antibiotic	d		Number of isolates	Number of isolates			Percentage of isolates		
	<	≥		S	I	R	S	I	R
Erythromycin	17	22	191	83	3	105	43.5	1.6	55.0
Lincomycin	17	21	191	89	23	79	46.6	12.0	41.4
Tetracyclines	17	19	191	129	13	49	67.5	6.8	25.7
Chloramphenicol	19	23	191	163	4	24	85.3	2.1	12.6
Trimethoprim + sulfamethoxazole	12	17	191	105	25	61	55.0	13.1	31.9
Rifampicin	14	19	191	191	0	0	100.0	0.0	0.0
Vancomycin	-	17	191	191	0	0	100.0	0.0	0.0

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Table 104 *Streptococcus pneumoniae*: susceptibility to beta-lactams, strains isolated from meningitis in children (< 16 y.o.) [CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002].

Antibiotic	c		Number of isolates	Number of isolates			Percentage of isolates		
	≤	>		S	I	R	S	I	R
Penicillin G	0.064	1	107	50	47	10	46.7	43.9	9.3
Amoxicillin	0.5	2	107	78	27	2	72.9	25.2	1.9
Cefotaxime	0.5	2	107	95	12	0	88.8	11.2	0.0

Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
 Interpretation criteria: CA-SFM
 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 105 <i>Streptococcus pneumoniae</i> : susceptibility to antibiotics, strains isolated from meningitis in children (< 16 y.o.) [CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002].									
Antibiotic	d	d	Number of isolates	Number of isolates			Percentage of isolates		
	<	≥		S	I	R	S	I	R
Erythromycin	17	22	107	47	3	57	43.9	2.8	53.3
Lincomycin	17	21	107	58	9	40	54.2	8.4	37.4
Tetracyclines	17	19	107	76	7	24	71.0	6.5	22.4
Chloramphenicol	19	23	107	90	3	14	84.1	2.8	13.1
Trimethoprim + sulfamethoxazole	12	17	107	63	15	29	58.9	14.0	27.1
Rifampicin	14	19	107	107	0	0	100.0	0.0	0.0
Vancomycin	–	17	107	107	0	0	100.0	0.0	0.0
Fosfomicin	–	14	107	106	0	1	99.1	0.0	0.9

Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
 Interpretation criteria: CA-SFM
 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 106 <i>Streptococcus pneumoniae</i> : susceptibility to beta-lactams, strains isolated from meningitis in adults (CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002).									
Antibiotic	c	c	Number of isolates	Number of isolates			Percentage of isolates		
	≤	>		S	I	R	S	I	R
Penicillin G	0.064	1	219	128	76	15	58.4	34.7	6.8
Amoxicillin	0.5	2	219	172	45	2	78.5	20.5	0.9
Cefotaxime	0.5	2	219	195	24	0	89.0	11.0	0.0

Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
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 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 107 <i>Streptococcus pneumoniae</i> : susceptibility to antibiotics, strains isolated from meningitis in adults (CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002).									
Antibiotic	d	d	Number of isolates	Number of isolates			Percentage of isolates		
	<	≥		S	I	R	S	I	R
Erythromycin	17	22	216	106	4	106	49.1	1.9	49.1
Lincomycin	17	21	216	122	18	76	56.5	8.3	35.2
Tetracyclines	17	19	216	158	14	44	73.1	6.5	20.4
Chloramphenicol	19	23	216	196	3	17	90.7	1.4	7.9
Trimethoprim + sulfamethoxazole	12	17	216	150	30	36	69.4	13.9	16.7
Rifampicin	14	19	216	216	0	0	100.0	0.0	0.0
Vancomycin	–	17	216	216	0	0	100.0	0.0	0.0
Fosfomicin	–	14	216	214	0	2	99.1	0.0	0.9

Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
 Interpretation criteria: CA-SFM
 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 108 *Streptococcus pneumoniae*: susceptibility to beta-lactams, strains isolated from AOM in children (< 16 y.o.) [CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002].

Antibiotic	c		Number of isolates	Number of isolates			Percentage of isolates		
	≤	>		S	I	R	S	I	R
Penicillin G	0.064	1	294	78	171	45	26.5	58.2	15.3
Amoxicillin	0.5	2	294	156	133	5	53.1	45.2	1.7
Cefotaxime	0.5	2	294	213	81	0	72.4	27.6	0.0

AOM: acute otitis media
 Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
 Interpretation criteria: CA-SFM
 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 109 *Streptococcus pneumoniae*: susceptibility to antibiotics, strains isolated from AOM in children (< 16 y.o.) [CNR des pneumocoques et Observatoires Régionaux du Pneumocoque, 2002].

Antibiotic	d		Number of isolates	Number of isolates			Percentage of isolates		
	<	≥		S	I	R	S	I	R
Erythromycin	17	22	294	60	0	234	20.4	0.0	79.6
Lincomycin	17	21	294	71	33	190	24.1	11.2	64.6
Tetracyclines	17	19	294	153	27	114	52.0	9.2	38.8
Chloramphenicol	19	23	294	232	9	53	78.9	3.1	18.0
Trimethoprim + sulfamethoxazole	12	17	294	138	56	100	46.9	19.0	34.0
Rifampicin	14	19	294	293	1	0	99.7	0.3	0.0
Vancomycin	-	17	294	294	0	0	100.0	0.0	0.0

AOM: acute otitis media
 Prospective multicenter study (19 regional observatories for pneumococci) - january to december 2002
 MIC by dilution in Mueller-Hinton agar + 4% horse-blood (CA-SFM)
 Interpretation criteria: CA-SFM
 Quality control: strains R6. RefParC. RefGyrA. RefEfflux. RefParc + GyrA
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Table 110 *Haemophilus influenzae*: susceptibility to antibiotics according to sample type (CNR *Haemophilus*, 2003).

	Percentage of AMX-R			Percentage of susceptible isolates				
	Number of isolates	Total	dont βase+*	Tetracyclines	Chloramphenicol	Kanamycin	Rifampicine	Cotrimoxazole
All samples	714	40.7	30.8	96.5	98.3	73.8	99.7	85.9
Spinal fluid	25	32.0	28.0	96.0	96.0	72.0	-	92.0
Blood	77	35.1	29.9	96.1	98.7	75.4	98.7	83.1
Respiratory tract	287	44.9	32.7	95.1	97.2	72.5	-	87.5
Pus from AOM	70	34.2	28.5	-	-	75.7	-	87.2
Pus from conjunctivitis	121	43.0	33.9	97.5	99.2	72.8	99.2	81.9
Other ENT samples	100	40.0	28.0	96.0	99.0	75.0	-	84.0
Other	20	40.0	20.0	-	-	80.0	-	90.0

Resistance to quinolones
 Nalidixic acid (Nal), MIC>8 mg/l
 - 2001: 0.13% (1 isolate)
 - 2002: 0.40% (3 isolates)
 - 2003: 0% (no isolate)

Ciprofloxacin activity
 - Nal-S isolates: modal MIC 0.007 mg/l
 - Nal-R isolates: MIC 0.06-0.12 mg/l

* beta-lactamase positive
 AMX-R: resistant to amoxicillin
 AOM: acute otitis media

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Table 111 Resistance of <i>Mycobacterium tuberculosis</i> to first-line antituberculosis drugs (isoniazid, rifampicin, ethambutol) by treatment history (AZAY-mycobactéries Network and CNR résistance aux antituberculeux, 2002).						
	Never treated		Previously treated		Unknown	
	n	%	n	%	n	%
Total number of isolates	1,350	100.0	100	100.0	159	100.0
– susceptibility to INH. RMP. EMB	1,281	94.9	77	77.0	142	89.3
– resistant to ≥1 antibiotic	69	5.1	23	23.0	17	10.7
Resistant to at least						
– INH	67	5.0	18	18.0	9	5.7
– RMP	12	0.9	14	14.0	2	1.3
– EMB	9	0.7	7	7.0	8	5.0
Resistant to INH + RMP (multiresistant)	12	0.9	10	10.0	1	0.6

INH: isoniazid; RMP: rifampicin; EMB: ethambutol

Table 112 Resistance of <i>Mycobacterium tuberculosis</i> to first-line antituberculosis drugs (isoniazid, rifampicin, ethambutol) by treatment history. Stratification by French metropolitan region (AZAY-mycobactéries Network and CNR résistance aux antituberculeux, 2001-2002).								
Region	Total n	Never treated		Previously treated				
		2001 Resistant n (%)	2002 Resistant n (%)	2001 Resistant n	2002 Resistant n	Total n	2002 Resistant n	
Alsace	–	–	–	–	–	–	–	–
Aquitaine	90	1 (1.1)	106	3 (2.8)	4	1	7	2
Auvergne	–	–	–	–	–	–	–	–
Bourgogne	11	0	19	1 (5.3)	0	0	2	0
Bretagne	23	0	20	0	1	0	1	0
Centre	25	1 (4.0)	12	2 (16.7)	3	1	2	1
Champagne–Ardenne	16	1 (6.3)	28	2 (7.1)	5	1	3	1
Corse	–	–	–	–	–	0	–	–
Franche–Comté	8	0	6	1 (16.7)	1	–	0	0
Ile–de–France	365	23 (6.3)	483	38 (7.9)	54	7	50	12
Limousin	21	0	22	1 (4.5)	1	0	3	1
Lorraine	31	2 (6.5)	29	2 (6.9)	4	0	4	0
Midi–Pyrénées	76	3 (3.9)	122	2 (1.6)	5	0	7	2
Nord–Pas–de–Calais	36	0	37	1 (2.7)	0	0	1	0
Normandie (Basse)	30	0	31	3 (9.7)	0	0	1	1
Normandie (Haute)	39	2 (5.1)	48	2 (4.2)	7	0	5	0
PACA	101	3 (3.0)	137	3 (4.3)	7	0	7	1
Pays de Loire	76	1 (1.3)	75	4 (5.3)	4	1	2	1
Picardie	17	1 (5.9)	28	0	2	0	1	0
Poitou–Charentes	13	0	12	0	2	0	0	0
Rhône–Alpes	78	4 (5.1)	135	4 (3.0)	2	0	4	1

Regional differences are not statistically significant
– : not available

Table 113 <i>Streptococcus uberis</i>: susceptibility to antibiotics of strains isolated from mammitis in cattle (RESAPATH Network, 2002)							
Antibiotic	Total number of isolates	Number of isolates			Percentage of isolates		
		S	I	R	S	I	R
Tetracycline	299	225	10	64	75.3	3.3	21.4
Erythromycin	311	219	19	73	70.4	6.1	23.5
Spiramycin	356	122	102	132	34.3	28.7	37.1
Lincomycin	284	198	30	56	69.7	10.6	19.7

APPENDIX 3

Notes

Lined area for notes with horizontal ruling lines.