

Volume 12
Number 29
18 July 2002

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Global AIDS/HIV epidemic: 14th international AIDS conference

The 14th international AIDS conference was held from 7-12 July 2002 in Barcelona, Spain. The theme of the conference was knowledge and commitment for action, which was selected to reinforce the need to review the knowledge gained through science and experience and use this knowledge to commit action.

While there have been success stories through the political commitment of governments to invest in prevention and surveillance programmes, seen from the examples of Uganda, Thailand and Cambodia, there was still a lot of evidence shown at the conference of increasing infections in Africa, Asia, the Caribbean, and eastern Europe. The largest numbers of cases are presently seen in sub-Saharan Africa, although both India and China have the potential for huge spread. In India, for example, the estimated number of prevalent HIV infections has increased 10-fold in the past decade to approximately four million. Behavioural surveys of the general population in both India and China demonstrated the potential for spread of HIV through low levels of condom use, and low levels of knowledge of HIV and prevention methods. The conference also heard about continuing outbreaks of sexually transmitted infections and evidence of increasing incidence in men who have sex with men, in European countries, North America and Australia. In parts of eastern Europe and central Asia, socio-economic change and large unemployment is attributed to the large increases in injecting drug use, which have resulted in increased transmission of HIV.

According to the newly released UNAIDS report (1), it is estimated that 40 million people are now living with HIV around the world. Five million of these were infected in 2001. UNAIDS considers that an adequate response for the management and control of this pandemic will require strengthened cooperation, increased coordination, and greater investments from developed and developing country governments, multilateral agencies, the private, voluntary, traditional, and academic sectors, researchers, and private foundations.

It was argued that Global control would require an effective and safe vaccine. Although phase III clinical trials have recently begun, the conference heard that substantial obstacles must be overcome before an effective vaccine can be put into widespread use.

Former presidents Bill Clinton and Nelson Mandela spoke at the closing session of the conference. Their speeches expressed the need for changing commitment into action, both through care support and preventing stigma towards those infected with HIV, and through the efficient delivery of funds from high income countries to those countries with most need. A world leaders AIDS action network is being launched by Bill Clinton and Nelson Mandela to 'raise global commitment to end AIDS' in an attempt to rally increased governmental and political leadership in the global effort to prevent AIDS. The conference made clear that progress in the fight against this pandemic will depend not only on scientific developments, educational and support programmes, but also on political commitment to global action. This action can only be successful through both inter-country and interagency collaboration, the removal of stigma, and adequate and enduring funding.

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First human cases of West Nile virus in the United States in 2002

Seven human cases of West Nile virus have been reported in Louisiana, in the United States (US) in towns east of Baton Rouge (1). These are the first human cases of West Nile virus in the US to have been reported to the Centers for Disease Control and Prevention (CDC) in 2002. The first three cases were all male, one case was 78 years of age and was diagnosed on 8 July 2002, and two further cases, aged 62 and 53 were diagnosed on 11 July. This week, state health officials have reported one 34 year old woman and 3 men, ages 17, 62 and 76 that have been diagnosed with West Nile Virus. All cases have been hospitalised.

West Nile virus is a flavivirus transmitted by *Culex* mosquitoes from infected birds to humans. It can also affect other mammals such as horses. It causes a flu-like illness, usually accompanied by a rash and can result in severe disease (meningitis or encephalitis) in less than 1% of those infected. It has a case-fatality rate in those with severe disease of 3 to 15%, and is highest among the elderly (2). There is no specific treatment for the virus.

There has been only one previous human case in Louisiana, which was reported on 29 September, 2001 (3). Ninety dead birds, five mosquito pools, and fourteen horses have all confirmed positive with West Nile virus (4). Health officials have planned an awareness campaign in order to inform those who may be at risk, and reduce transmission.

There have been 18 deaths from West Nile virus along the east coast of the US since it was first detected in New York in 1999. In 2001, there were 66 human cases and nine deaths reported.

1. Louisiana: human case number rises to seven in year 2002. In *proMED Mail* [online] 2002; Boston US: International Society for Infectious Diseases, 17 July 2002 [cited 18 July 2002]. Available online at <<http://www.promedmail.org>>.

2. Centers for Disease Control and Prevention. *West Nile Virus: question and answers* [online] 2002; Atlanta US: CDC, 10 July 2002 [cited 18 July 2002]. Available online at <<http://www.cdc.gov/ncidod/dvbid/westnile/q&a.htm>>.

3. Centre for Integration of Natural Disaster Information at United States Geological Survey. *West Nile Virus (Louisiana)* [online] 2001. Available online at <http://cindi.usgs.gov/hazard/event/west_nile/louisiana/la_human_mar_04.html>.

4. *West Nile Virus Surveillance Update*. New York US: New York State Department of Health, 12 July 2002.

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***Acinetobacter* spp and *Enterococcus* spp bacteraemia: England and Wales, 2001**

Key points

- In 2001 there were 911 reports of *Acinetobacter* spp and 4095 of *Enterococcus* spp bacteraemias from laboratories in England and Wales compared to 2000, increases of 23% and 17%, respectively.
- For both *Acinetobacter* spp and *Enterococcus* spp, reporting of antimicrobial susceptibility varied widely according to the region, species and antimicrobial agent.
- Two *Acinetobacter* isolates (one *A. baumannii* and one *A. lwoffii*) were reported as resistant to all of gentamicin, ciprofloxacin, imipenem and ceftazidime in 2001.
- Three per cent of *E. faecalis* and 19% of *E. faecium* isolates were reported as resistant to vancomycin, compared with 11% and 27% respectively in 2000.
- Many of the *E. faecalis* isolates reported to be resistant to ampicillin/amoxycillin and vancomycin are likely to have been mis-identified. The lower rate of vancomycin resistance in *E. faecalis* in 2001 may, however, indicate improved speciation.
- The proportion of enterococci resistant to vancomycin in the United Kingdom is among the highest in Europe, but is far lower than in the United States.

Acinetobacter spp and Enterococcus spp bacteraemia: England and Wales, 2001

Key points

- In 2001 there were 911 reports of *Acinetobacter* spp and 4095 of *Enterococcus* spp bacteraemias from laboratories in England and Wales compared to 2000, increases of 23% and 17%, respectively.
- For both *Acinetobacter* spp and *Enterococcus* spp, reporting of antimicrobial susceptibility varied widely according to the region, species and antimicrobial agent.
- Two *Acinetobacter* isolates (one *A. baumannii* and one *A. lwoffii*) were reported as resistant to all of gentamicin, ciprofloxacin, imipenem and ceftazidime in 2001.
- 3% of *E. faecalis* and 19% of *E. faecium* isolates were reported as resistant to vancomycin, compared with 11% and 27% respectively in 2000.
- Many of the *E. faecalis* isolates reported to be resistant to ampicillin/amoxycillin and vancomycin are likely to have been mis-identified. The lower rate of vancomycin resistance in *E. faecalis* in 2001 may, however, indicate improved speciation.
- The proportion of enterococci resistant to vancomycin in the United Kingdom is among the highest in Europe, but is far lower than in the United States.

This report describes *Acinetobacter* and *Enterococcus* spp bacteraemias diagnosed from specimens collected in 2001 by laboratories across England and Wales. All laboratory reports described within this review concern isolation of these species from blood culture, with or without cerebrospinal fluid. A change from last year's report on these bacteria is the adoption of the new English regional boundaries that were introduced in April 2002. Region and age-specific rates are calculated using 2000 resident population denominators for each corresponding region or age.

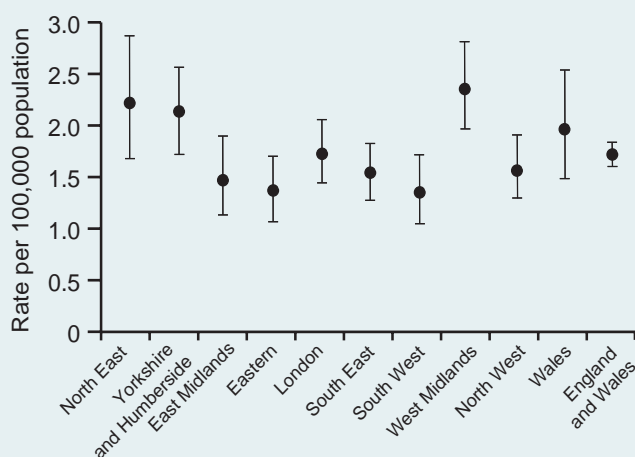
Acinetobacter spp

Laboratories in England and Wales reported 911

Acinetobacter spp bacteraemias in 2001 (table 1). This is an increase of 23% (745) on the previous year (1). Over half (465/911) of *Acinetobacter* bacteraemia isolates reported were not fully identified; of those isolates for which species was given, a quarter were identified as *Acinetobacter baumannii/calcoaceticus* and 17% were *Acinetobacter lwoffii*. It should, however, be added that definitive identification of *Acinetobacter* requires molecular techniques not available to routine diagnostic labs.

The reporting rate for *Acinetobacter* spp in 2001 for England and Wales was 1.72 per 100 000 population (figure 1). Rates in

Figure 1 Region-specific rates* of *Acinetobacter* spp bacteraemia, England and Wales: 2001



* rates calculated using 2000 mid-year resident population estimates

Table 1 Laboratory reports of *Acinetobacter* and *Enterococcus* spp bacteraemia by species, England and Wales: 2001

	Number of reports
<i>Acinetobacter</i> not fully identified	465
<i>Acinetobacter baumannii</i>	224
<i>Acinetobacter calcoaceticus</i>	28
<i>Acinetobacter haemolyticus</i>	16
<i>Acinetobacter johnsonii</i>	1
<i>Acinetobacter junii</i>	19
<i>Acinetobacter lwoffii</i>	158
Total	911
<i>Enterococcus</i> not fully identified	1004
<i>Enterococcus avium</i>	24
<i>Enterococcus casseliflavus</i>	16
<i>Enterococcus durans</i>	30
<i>Enterococcus faecalis</i>	1899
<i>Enterococcus faecium</i>	693
<i>Enterococcus gallinarum</i>	79
Streptococci group d	350
Total	4095

Table 2 Laboratory reports of *Acinetobacter* and *Enterococcus* spp bacteraemia by geographic area, England and Wales: 2001

	<i>Acinetobacter</i> spp		<i>Enterococcus</i> spp	
	no	(%)	no	(%)
North East	57	(6)	304	(7)
Yorkshire and Humber	107	(12)	313	(8)
East Midlands	62	(7)	238	(6)
Eastern	74	(8)	442	(11)
London	127	(14)	602	(15)
South East	124	(14)	553	(14)
South West	67	(7)	370	(9)
West Midlands	126	(14)	625	(15)
North West	109	(12)	387	(9)
Wales	58	(6)	261	(6)
England and Wales	911	(100)	4095	(100)

Table 3 *Acinetobacter* spp bacteraemia laboratory reports, England and Wales: 2001

<i>A. baumannii</i> / <i>A. calcoaceticus</i> (n=252)	resistant	r as % r+s	sensitive	no information	% of total
Ciprofloxacin	50	(36)	88	114	(45)
Imipenem	1	(1)	92	159	(63)
Ceftazidime	62	(56)	49	141	(56)
<i>A. Iwoffii</i> (n=158)					
Gentamicin	4	(4)	96	58	(37)
Ciprofloxacin	7	(8)	83	68	(43)
Imipenem	1	(3)	39	118	(75)
Ceftazidime	12	(19)	52	94	(59)

Figure 2 Gentamicin susceptibility data for *Acinetobacter* spp bacteraemia laboratory reports, England and Wales: 2001

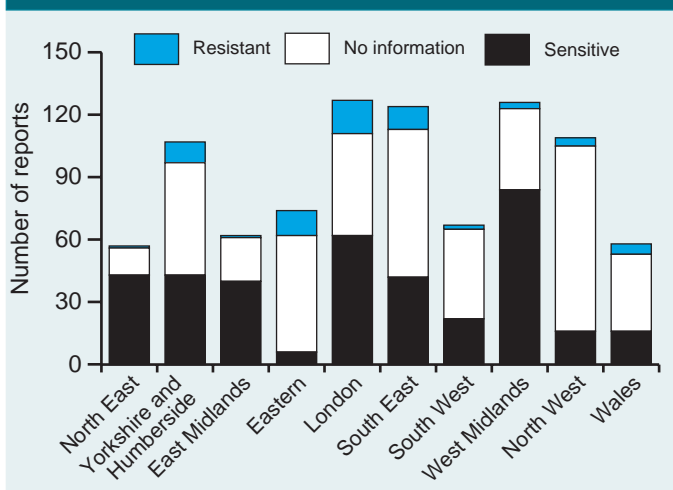


Figure 3 Ciprofloxacin susceptibility data for *Acinetobacter* spp bacteraemia laboratory reports, England and Wales: 2001

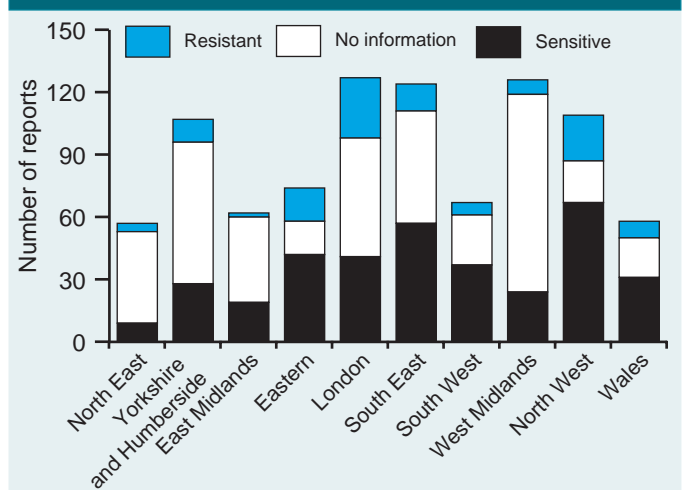


Figure 4 Imipenem susceptibility data for *Acinetobacter* spp bacteraemia laboratory reports, England and Wales: 2001

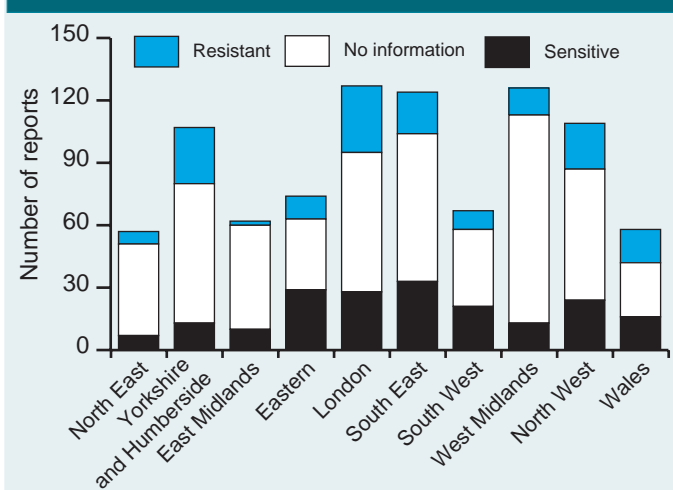
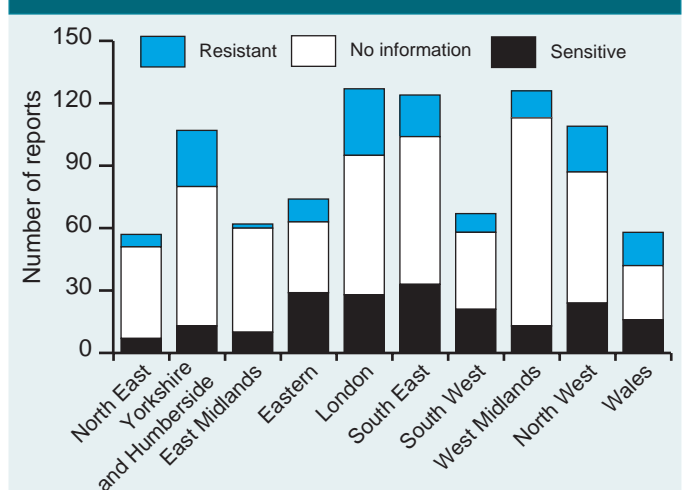


Figure 5 Ceftazidime susceptibility data for *Acinetobacter* spp bacteraemia laboratory reports, England and Wales: 2001



the regions varied from 2.36/100 000 in the West Midlands to 1.35/100 000 in the South West.

Wales and the West Midlands reported very similar numbers of *Acinetobacter* spp bacteraemias as 2000 (table 2). Many other regions reported notable increases in the number of *Acinetobacter* spp bacteraemias in 2001, with London reporting increases of over 50%. It should be remembered that several regions have experienced substantial boundary changes, such that this year's and last year's data do not cover the same areas; this does not apply to London.

Antimicrobial susceptibility reporting

Sixty-three per cent (578/911) of *Acinetobacter* spp bacteraemia reports included information on antimicrobial susceptibility. For *A. baumannii/A. calcoaceticus*, antimicrobial susceptibility information was most commonly provided for gentamicin (61% of isolates), followed by ciprofloxacin (55%), ceftazidime (44%), and imipenem (37%) – a slight improvement on 2000 (table 3). For *A. lwoffii*, susceptibility information was given for gentamicin for 63% of isolates, for ciprofloxacin in 57% of isolates, for ceftazidime in 41% of isolates, and for imipenem in only 25% of isolates.

Some regions were consistently better at reporting susceptibility information; for example, Wales gave susceptibility information on over 50% of isolates for all four antibiotics considered. By comparison, the North East region gave susceptibility information for between 9% and 25% of isolates in 2001, depending on the antibiotic. East Midlands and West Midlands regions gave susceptibility information for a maximum of 35% and 33% of isolates respectively (figures 2-5).

For both *A. baumannii/A. calcoaceticus* and *A. lwoffii*, resistance (as a proportion of isolates for which susceptibility was reported) was commonest to ceftazidime, followed by ciprofloxacin and gentamicin (table 3). Resistance to each of gentamicin, ciprofloxacin and ceftazidime was considerably higher in *A. baumannii/*

calcoaceticus than *A. lwoffii* as is generally the case. One imipenem-resistant isolate was reported for each species, though imipenem susceptibility was reported least frequently for both groups.

For all *Acinetobacter* spp bacteraemias, London reported the highest rates of gentamicin resistance (25%), followed by Eastern (18%), and Yorkshire and Humberside (16%) (figure 2). Ciprofloxacin resistance rates (figure 3) were also highest in London (41%), with the North East, Yorkshire and Humberside, and Eastern regions experiencing ciprofloxacin resistance in over 25% of isolates. There were eight imipenem-resistant isolates (figure 4); three from the South East, two from the North West and one from each of London, East Midlands, and Yorkshire and Humberside. Ceftazidime resistance (figure 5) was reported in over half of the isolates (for which susceptibility information was available) in Yorkshire and Humberside (68%), London (53%), West Midlands (50%), and Wales (50%).

Two *Acinetobacter* spp isolates were reported in 2001 that were resistant to all of gentamicin, ciprofloxacin, imipenem and ceftazidime (table 4). One was (surprisingly) *A. lwoffii* and the other *A. baumannii*. Both isolates were from the South East region.

Age distributions

The age-specific rates of the patients with *Acinetobacter* spp bacteraemias varied according to the species (figure 6). *A. baumannii/calcoaceticus* had the highest rate in those over 65 years, followed by those aged 45 to 64 years, and then those aged less than one year. A different pattern was seen in *A. lwoffii*, with the highest rates observed in babies under one year, followed by those over 65 years, although the numbers involved are small.

Enterococcus spp

Laboratories in England and Wales reported 4095 *Enterococcus* spp bacteraemias (table 1) in 2001, an increase of 17% (3501) on 2000¹. Forty-six percent of *Enterococcus* isolates were

Table 4 Multiple antibiotic resistance patterns for *Acinetobacter* spp bacteraemia laboratory reports, England and Wales: 2001

		Gentamicin			Ciprofloxacin			Imipenem			Ceftazidime			multiple resistance*	
		resistant (%) [†]	sensitive	no info	resistant (%) [†]	sensitive	no info	resistant (%) [†]	sensitive	no info	resistant (%) [†]	sensitive	no info	(%) [†]	resistant
Gentamicin	resistant (n=65) sensitive (n=472)				48 (87) 63 (16)	7 338	10 71	2 (6) 6 (3)	33 217	30 249	34 (85) 114 (38)	6 187	25 171	(9)	2/23
Ciprofloxacin	resistant (n=118) sensitive (n= 355)	48 (43) 7 (2)	63 338	7 10				6 (10) 2 (1)	55 175	57 178	64 (74) 76 (32)	23 160	31 119	(4)	2/49
Imipenem	resistant (n= 8) sensitive (n= 271)	2 (25) 33 (13)	6 217	0 21	6 (75) 55 (24)	2 175	0 41				3 (60) 103 (48)	2 110	3 58	(40)	2/5
Ceftazidime	resistant (n= 158) sensitive (n= 194)	34 (23) 6 (3)	114 187	10 1	64 (46) 23 (13)	76 160	18 11	3 (3) 2 (2)	103 110	52 82				(2)	2/88

* resistant to gentamicin, ciprofloxacin, imipenem and ceftazidime †as a percentage of reports with susceptibility information

Figure 6 Age-specific rates of *Acinetobacter* spp bacteraemia per 100,000 population, England and Wales: 2001

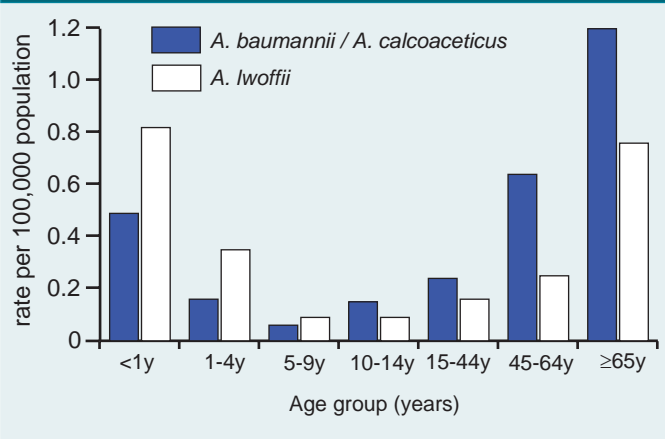


Table 5 *Enterococcus* spp bacteraemia laboratory reports, England and Wales: 2001

	resistant	r as % r+s	sensitive	no information	% of total
<i>E. faecalis</i> (n=1899)					
Ampicillin/ amoxycillin	107	(9%)	1047	745	(39%)
Vancomycin	35	(3%)	1020	844	(44%)
Teicoplanin	24	(4%)	584	1291	(68%)
Gentamicin	84	(61%)	53	1762	(93%)
<i>E. faecium</i> (n=693)					
Ampicillin/ amoxycillin	379	(85%)	68	246	(35%)
Vancomycin	86	(19%)	358	249	(36%)
Teicoplanin	40	(16%)	206	447	(65%)
Gentamicin	43	(60%)	29	621	(90%)

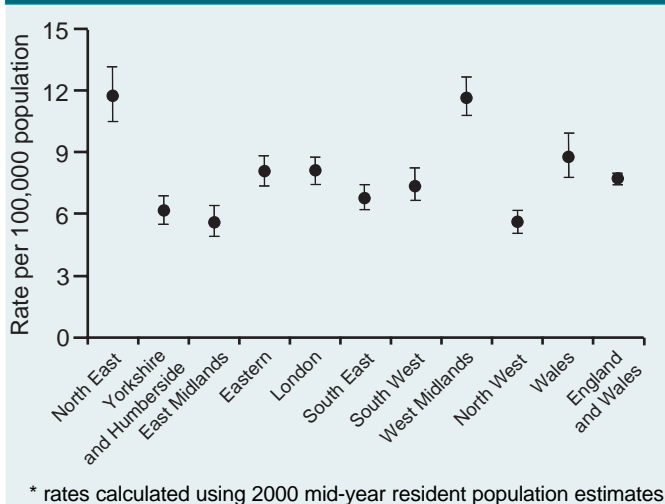
Table 6 Multiple antibiotic resistance patterns for *E. faecalis* bacteraemia laboratory reports, England and Wales: 2001

		Ampicillin/amoxycillin			Vancomycin			Teicoplanin			Gentamicin			multiple resistance*	
		resistant (%)†	sensitive	no info	resistant (%)†	sensitive	no info	resistant (%)†	sensitive	no info	resistant (%)†	sensitive	no info	(%)†	resistant
Ampicillin/ amoxycillin	resistant (n=107)				9 (9)	90	8	4 (7)	52	51	8 (47)	9	90	(0)	0/6
	sensitive (n=1047)				20 (2)	888	139	17 (3)	508	522	73 (63)	43	931		
Vancomycin	resistant (n=35)	9 (31)	20	6				12 (67)	6	17	3 (60)	2	30	(0)	0/4
	sensitive (n=1020)	90 (9)	888	42				11 (2)	545	464	73 (63)	43	904		
Teicoplanin	resistant (n=24)	4 (19)	17	3	12 (52)	11	1				1 (50)	1	22	(0)	0/2
	sensitive (n=584)	52 (9)	508	24	6 (1)	545	33				37 (61)	24	523		
Gentamicin	resistant (n=84)	8 (10)	73	3	3 (4)	73	8	1 (3)	37	46				(0)	0/34
	sensitive (n=53)	9 (17)	43	1	2 (4)	43	8	1 (4)	24	28					

* resistant to ampicillin/amoxycillin, vancomycin, teicoplanin and gentamicin

† as a percentage of reports with susceptibility information

Figure 7 Region-specific rates* of *Enterococcus* spp bacteraemia, England and Wales: 2001



* rates calculated using 2000 mid-year resident population estimates

reported as *Enterococcus faecalis*, and 17% as *Enterococcus faecium*. For a quarter of enterococcal bacteraemia isolates, the species was not given. The reporting rate for enterococcal bacteraemias in England and Wales in 2001 was 7.73 per 100 000 population (figure 7), with rates in the regions varying from 11.80 /100 000 population in the North East to 5.61/ 100 000 in the North West.

The four regions (Eastern, London, South West, and West Midlands) and Wales that have not changed their regional boundaries all reported increases in the number of reports of *Enterococcus* spp of 14% or more. The greatest increase (34%) was reported by Eastern region.

Antimicrobial susceptibility reporting

Sixty-four per cent of *E. faecalis* (1216/1899) and 69% of *E. faecium* reports (479/693) included information on antimicrobial susceptibility. Ampicillin/amoxycillin was the antimicrobial for which susceptibility was most commonly reported for both *E. faecium* and *E. faecalis* bacteraemias, being reported for just under two-thirds of

Table 7 Multiple antibiotic resistance patterns for *E. faecium* bacteraemia laboratory reports, England and Wales: 2001

		Ampicillin/amoxycillin			Vancomycin			Teicoplanin			Gentamicin			multiple resistance*	
		resistant (%)†	sensitive	no info	resistant (%)†	sensitive	no info	resistant (%)†	sensitive	no info	resistant (%)†	sensitive	no info	(%)†	resistant
Ampicillin/amoxycillin	resistant (n=379) sensitive (n=68)				74 (21)	283	22	37 (18)	171	171	40 (65)	22	317	(0)	0/23
					4 (6)	58	6	0 (0)	22	46	2 (22)	7	59		
Vancomycin	resistant (n=86) sensitive (n=358)	74 (95)	4	8				31 (74)	11	44	7 (50)	7	72	(0)	0/5
		283 (83)	58	17				7 (4)	185	166	33 (60)	22	303		
Teicoplanin	resistant (n=40) sensitive (n=206)	37(100)	0	3	31 (82)	7	2				0 (0)	4	36	(0)	0/4
		171 (89)	22	13	11 (6)	185	10				14 (64)	8	184		
Gentamicin	resistant (n=43) sensitive (n=29)	40 (95)	2	1	7 (18)	33	3	0 (0)	14	29				(0)	0/11
		22 (76)	7	0	7 (24)	22	0	4 (33)	8	17					

* resistant to ampicillin/amoxycillin, vancomycin, teicoplanin and gentamicin

† as a percentage of reports with susceptibility information

Figure 8 Ampicillin/amoxycillin susceptibility data for *Enterococcus faecalis* bacteraemia laboratory reports, England and Wales: 2001

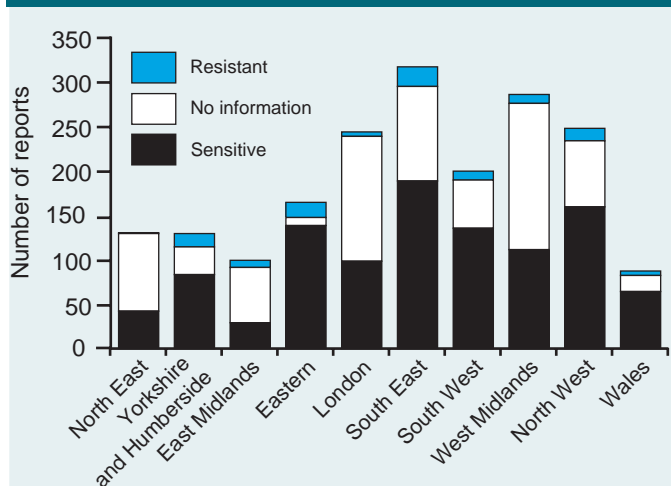


Figure 9 Ampicillin/amoxycillin susceptibility data for *Enterococcus faecium* bacteraemia laboratory reports, England and Wales: 2001

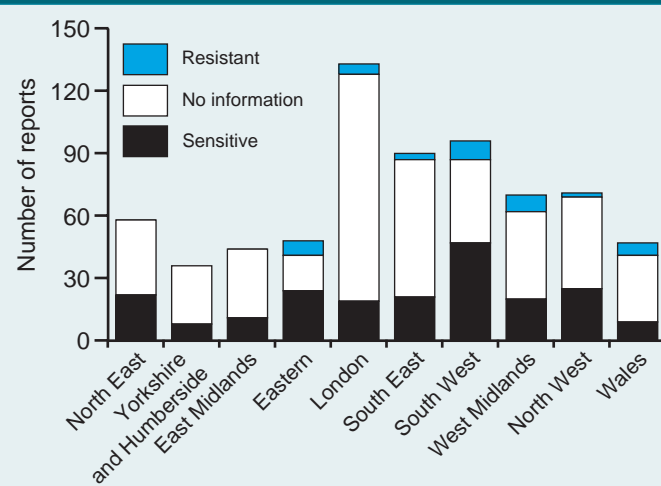


Figure 10 Vancomycin susceptibility data for *Enterococcus faecalis* bacteraemia laboratory reports, England and Wales: 2001

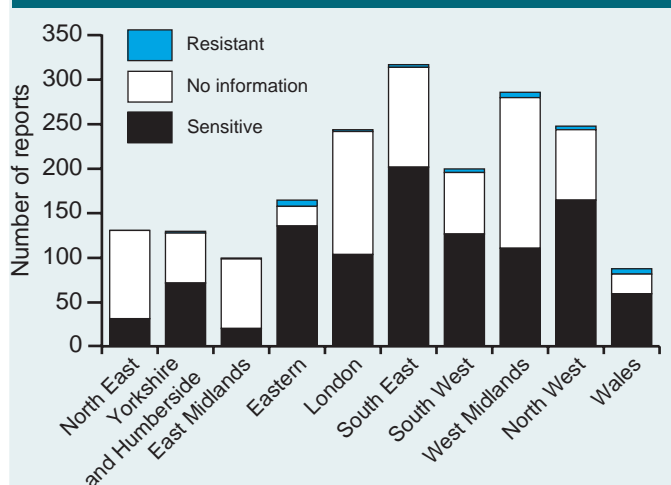
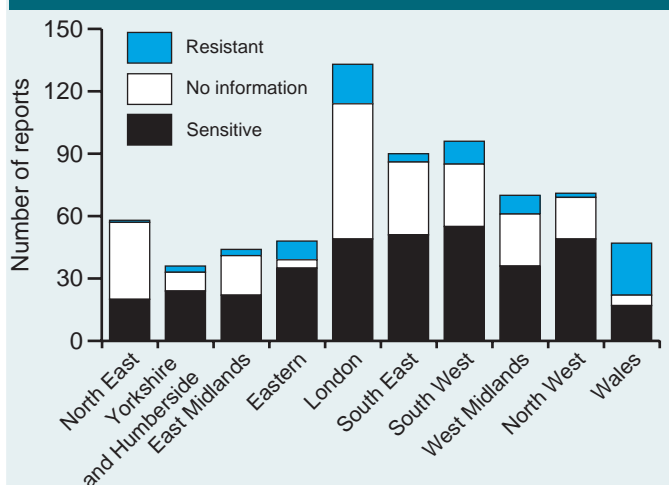


Figure 11 Vancomycin susceptibility data for *Enterococcus faecium* bacteraemia laboratory reports, England and Wales: 2001



isolates overall (table 5). Susceptibility information was given for vancomycin in 56% of *E. faecalis* and 64% of *E. faecium* isolates, and information was given for teicoplanin in 32% and 38% of reports respectively. Gentamicin susceptibility was only reported for 7% of *E. faecalis* isolates and 10% of *E. faecium* isolates. Susceptibility reporting among the regions varied according to the species and antimicrobial, with no clear patterns (figures 8 to 15).

Ampicillin/amoxycillin resistance was reported in 9% of *E. faecalis* (ranging from 22% in the East Midlands to 2% in the North East) and 85% of *E. faecium* isolates (from 95% in Wales to 67% in Yorkshire and Humberside). The disparity in the susceptibility rates of these two species to the same antimicrobials was also demonstrated by their relative resistances to vancomycin and teicoplanin. Resistance to these two antibiotics was reported in 3% and 4% respectively for *E. faecalis*, compared to 19% and 16% for *E. faecium*. Gentamicin resistance was reported in 60%

in *E. faecium* and 61% in *E. faecalis*, although the low rates of susceptibility information provided for this antimicrobial should be noted. In addition, it is not clear whether reports refer to the inherent low-level resistance of all enterococci, or high-level acquired resistance. Gentamicin can be combined with penicillin to overcome the inherent low-level resistance, but this is not possible with high-level resistance. Only high-level resistance should be reported.

No *E. faecalis* or *E. faecium* reports indicating resistance to all of ampicillin/amoxycillin, vancomycin, teicoplanin and gentamicin were received in 2001 (tables 6 and 7). Given the generally high levels of resistance in *E. faecium*, it was expected that some isolates would be resistant to all these antimicrobials, but it is possible that there were such isolates, and they were either not tested against all four antimicrobials or their susceptibility results were not reported. Such multi-resistant isolates are regularly received by the Antimicrobial Resistance Monitoring

Figure 12 Teicoplanin susceptibility data for *Enterococcus faecalis* bacteraemia laboratory reports, England and Wales: 2001

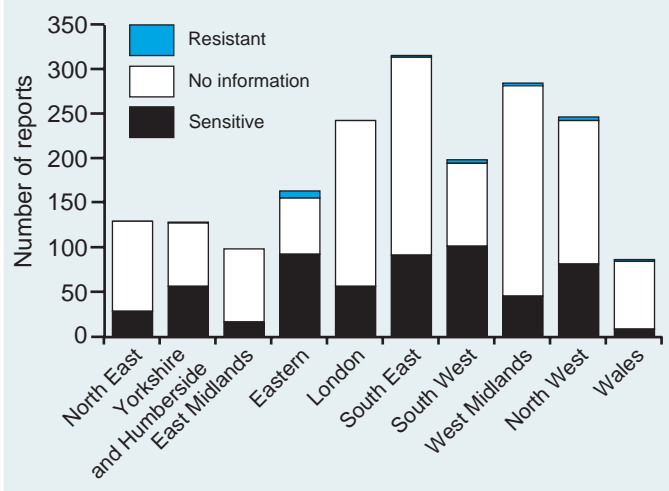


Figure 13 Teicoplanin susceptibility data for *Enterococcus faecium* bacteraemia laboratory reports, England and Wales: 2001

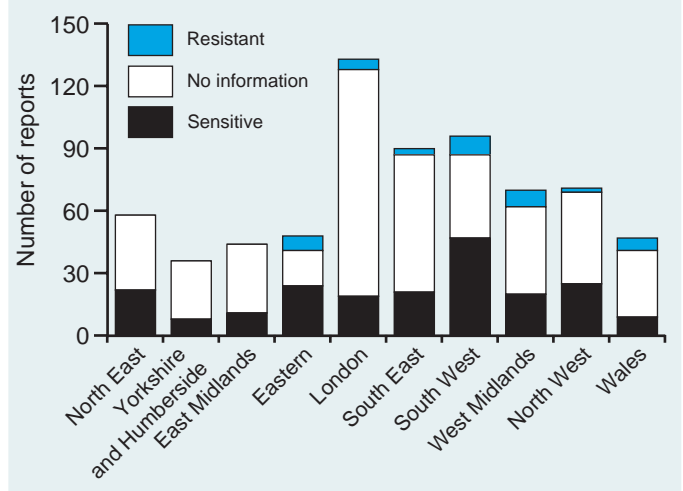


Figure 14 Gentamicin susceptibility data for *Enterococcus faecalis* bacteraemia laboratory reports, England and Wales: 2001

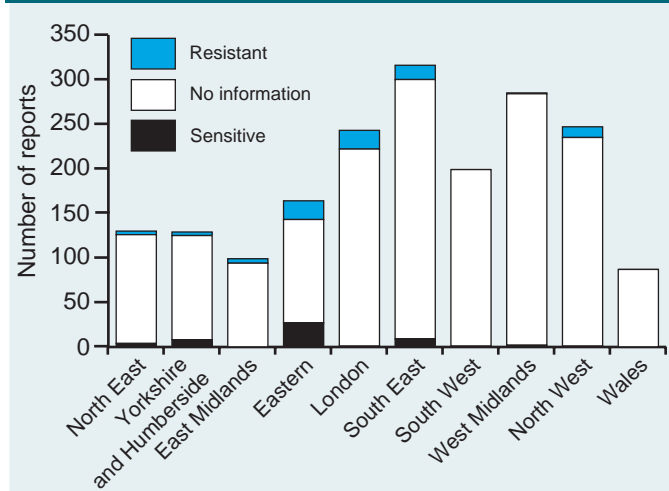


Figure 15 Gentamicin susceptibility data for *Enterococcus faecium* bacteraemia laboratory reports, England and Wales: 2001

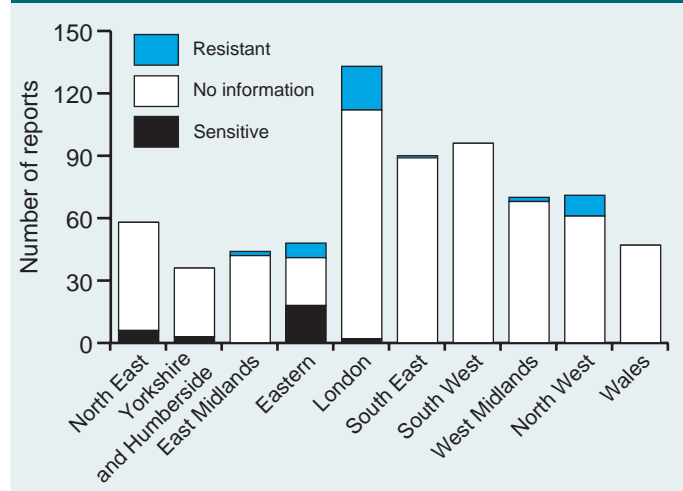
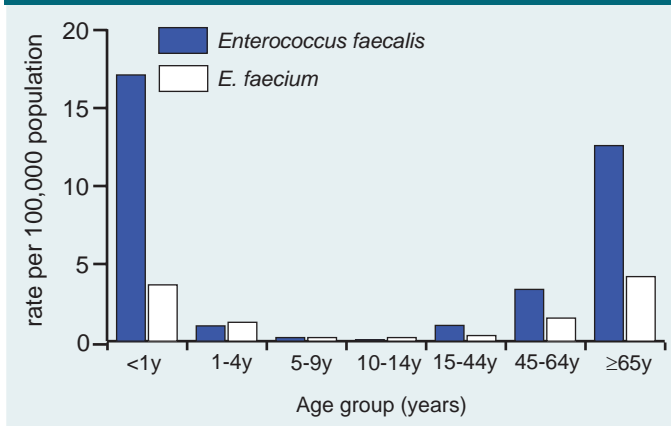


Figure 16 Age-specific rates of *Enterococcus* spp bacteraemia per 100,000 population: England and Wales, 2001



Reference Laboratory (ARMRL). Enterococci resistant to multiple antimicrobials are usually still susceptible to linezolid. This antimicrobial is not widely reported at the moment, and it should still be used with care, as there have been reports of emerging resistance. In addition, quinupristin/dalfopristin remains almost universally active, though it is rarely tested.

Age distributions

The age-specific rate of *E. faecalis* was highest in those aged under 1 year, followed by those aged 65 years and over (figure 16). The converse was true for *E. faecium*, which had a higher rate in the eldest age group when compared to the youngest, although there was not as great a disparity between the age groups for this species.

Discussion

Twenty-three per cent more *Acinetobacter* and 16% more *Enterococcus* spp bacteraemias were reported in 2001 than 2000, and the reporting rate for England and Wales has increased from 1.41 to 1.72 per 100 000 population for *Acinetobacter* spp, and from 6.64 to 7.73 per 100 000 population for *Enterococcus* spp. The proportion of different species within each genus was consistent between the two years, as were the age distributions. Although the age-specific rates seemed noticeably higher in *A. baumannii/calcoaceticus* in those aged under 1 year, and in *A. lwoffii* in those aged from 1 to 4 years in 2001 compared to 2000, the absolute numbers involved in these changes were very small.

It is not clear whether this increase in the number of reports reflects a true increase in incidence or improvements in reporting. As the increases in the number of reports of these two genera did not disproportionately affect any single species (as far as can be ascertained, given identification problems), region or age group affected, it is possibly due to a general improvement in reporting. Comparisons between 2000 and 2001 are somewhat hindered by a considerable number of these isolates (51% of *Acinetobacter* and 25% of *Enterococcus* spp) not being fully identified, and the introduction of the new regional boundaries.

The susceptibility results for *Acinetobacter* were compared to those of a sentinel survey carried out in the

UK in 2000². The routine surveillance results detailed here in general report lower proportions of resistant isolates than the sentinel survey, although resistance to certain antimicrobials is still high, with the carbapenems retaining most activity against *Acinetobacter* spp. For example, 89% of *A. baumannii* isolates were reported as ceftazidime resistant in the sentinel survey, and 56% in the routine reporting documented here. This is probably due to differences in methodology and/or selectivity of testing, but in any event, both methods indicate that ceftazidime is no longer widely active against *Acinetobacter* spp. The relative activities of the various antimicrobials were the same; for both the sentinel survey and routine reporting a greater proportion of isolates were resistant to ceftazidime, then ciprofloxacin, then gentamicin, and then imipenem. Furthermore, the higher proportion of *A. baumannii/calcoaceticus* isolates resistant to gentamicin, ciprofloxacin and ceftazidime than *A. lwoffii*, and similar resistance in both to imipenem, concurs with the conclusions of the sentinel survey.

A separate study of gram-positive cocci submitted by laboratories across the UK³ observed ampicillin resistance in over 90% of *E. faecium* isolates, while no *E. faecalis* isolates were found to be resistant to this antimicrobial. This suggests that many of the 107 reported ampicillin/amoxycillin-resistant *E. faecalis* isolates might have been other enterococcal species, probably *E. faecium*. From the routine reporting, vancomycin and teicoplanin resistance were reported in 3% and 4% of *E. faecalis* isolates respectively, although this is likely to be influenced by selective testing, as there is no mechanism that confers resistance to teicoplanin and not vancomycin. This compares to less than 1% vancomycin- or teicoplanin-resistant *E. faecalis* isolates in this study, further suggesting that some mis-identification of species has occurred. For *E. faecium*, levels of resistance to vancomycin and teicoplanin (19% and 16% respectively) were similar, although lower than those reported in the sentinel study (24% and 20%). The level of gentamicin resistance for both species also varied from that reported in the sentinel study, although the fact that gentamicin susceptibility was only reported for about 10% of isolates reduces the reliability of these figures as does the lack of discrimination between inherent and high level resistance.

In the first six months (from January to June 2001) of EARSS surveillance of vancomycin resistance in enterococci, the highest proportion of vancomycin-resistant *E. faecium* isolates was in Greece (24%) followed by Israel (15%)⁴. No resistant isolates were reported by Bulgaria, Spain, Hungary, Sweden, or Slovenia, although it must be borne in mind that participating laboratories are not necessarily representative of their country. Details of rates of VRE in Italy similar to those in Greece are also due to be published shortly⁵. It seems that levels of vancomycin-resistant enterococci (VRE) in the UK are among the highest in Europe. UK levels of certain other key antimicrobial/bacteria combinations, such as penicillin resistance in pneumococci and ciprofloxacin resistance in *E. coli*, however, are among the lowest in Europe.

The significance of VRE has recently been demonstrated by a report from the USA of the first vancomycin-resistant *S. aureus*⁶, in a renal patient with both VRE and MRSA infections. It appears that the *vanA* gene, which confers

resistance to vancomycin in enterococci, transferred to a *S. aureus* that was already methicillin-resistant (MRSA). This has important consequences, as vancomycin is one of a limited number of antimicrobials to retain activity against MRSA.

Acknowledgements

These reports would not be possible without the weekly contributions from microbiology colleagues in laboratories across England and Wales, without which there would be no surveillance data. Feedback is always welcome – please send comments to gduckworth@phls.org.uk. The support of colleagues within the PHLS, and CPHL in particular, is valued in the preparation of these reports.

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