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Eye of the needle: surveillance of significant occupational exposure to bloodborne viruses in healthcare workers

The latest report on surveillance of significant occupational exposures to bloodborne viruses in healthcare workers has been published by the Health Protection Agency Centre for Infections. Titled *Eye of the Needle*, the report details surveillance data on significant occupational exposures to bloodborne viruses in healthcare workers in England, Wales, and Northern Ireland [1]. Unless otherwise stated in the text, the data are based on a subset of 40 reporting centres which consistently reported to the surveillance scheme.

Occupational exposures to bloodborne viruses in the healthcare setting are an increasing public health concern. The report highlights that in 2005, there were two documented cases of hepatitis C seroconversion in healthcare workers. Eleven healthcare workers have now been reported as having contracted hepatitis C via this route, including the latest reported cases. Healthcare workers who initiated treatment within the eight months following the date of exposure have all achieved viral clearance.

Following reported occupational exposure to hepatitis C positive source patients, less than half (46%; 112/242) of healthcare workers reported follow-up at six months post-exposure. For the reports on exposures to hepatitis C positive source patients in 2005, only 20% (49/242) of healthcare workers returned for all the appropriate follow-up tests at the correct time points after first being exposed. This finding is worrying since the majority of hepatitis C infected cases show no symptoms of their infection. Symptoms of infection can take up to 30 years before the infection manifests itself, when chronic damage to the liver has already occurred. It is therefore essential that healthcare workers are made aware of the need to attend follow-up appointments and ensure they know the outcome of their exposure.

The report found that in the majority of cases of HIV occupational exposures, national guidance on the use of HIV post-exposure prophylaxis guidelines was followed. In 2005, 65% (62/94) of healthcare workers who initiated HIV post-exposure prophylaxis (PEP) following exposure to an HIV positive source patient, were prescribed the current recommended starter pack regimen of AZT (Zidovudine), 3TC (Lamivudine), and Nelfinavir. Guidelines from the Expert Advisory Group on AIDS, recommend that HIV PEP should be started as soon as possible after the exposure, ideally within an hour [2]. Thirty-four per cent (64/189) of healthcare workers exposed to HIV who initiated HIV PEP, did so within an hour of their exposure, and cumulatively 89% (169/189) started HIV PEP within 24 hours. There were no new HIV seroconversions in 2005 reported to the scheme; with the total number of UK documented HIV seroconversions remaining at five.

Percutaneous injuries, the majority of which involved hollowbore needles, were the most commonly reported type of exposure. Reports of exposures increased by 49% from 206 in 2002 to 306 in 2005. Reports of percutaneous injuries to source patients infected with hepatitis C have also seen an increase of 37% over the same time period, from 81 in 2002 to 111 in 2005. The number of reports involving medical professionals have increased by 78%, from 73 in 2002 to 130 in 2005; a greater percentage increase in reports over time than for nursing professionals (47%; from 102 to 150 between 2002 and 2005 respectively). Although doctors and dentists comprise a much smaller

group of healthcare workers, they reported a similar number of injuries, which suggests they have a higher injury rate.

The report highlights that preventable injuries are still occurring. Between 1997 and 2005, nearly half the incidents that occurred in the ward (45%; 425/954) were after the procedure had taken place. A lot of these incidents could have been prevented with proper adherence to the safe handling and disposal of sharps and clinical waste. There is guidance in place that details the recommended procedures for the prevention of exposure to bloodborne viruses in the healthcare setting [3] and Trusts should ensure that healthcare workers are aware and adequately trained on the implementation of these precautions in order to protect themselves from exposures. Employers should also have adequate systems in place, 24 hours 7 days a week; for the reporting and management of occupational exposures, and ensure that all staff members know how to report such incidents, in line with current guidance [2]. Primary Care Trusts working with local Health Protection Units should ensure that arrangements are in place for managing occupational exposures to healthcare workers occurring outside the hospital environment. In addition, Microbiologists and Virologists working with Occupational Health, Infectious Disease, and GUM colleagues are encouraged to ensure that appropriate and timely testing and follow-up arrangements are available and consistent with national guidance.

Incidents of healthcare workers occupationally exposed to bloodborne viruses in England, Wales and Northern Ireland, should be reported to Jane Aston/Sarah Tomkins at the Centre for Infections (tel: 020 8327 7152/7095).

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Health Protection Agency publishes its first migrant health report

The Health Protection Agency has published its first report on the health of migrants *Migrant health: infectious diseases in non-UK born populations in England, Wales, and Northern Ireland*. The report provides background information on migration to the United Kingdom (UK) and the general health needs of migrants, and collates data collected by the Agency on infectious diseases reported in 2004 among the non-UK born living in England, Wales, and Northern Ireland. The report aims to be a useful resource for health professionals and others with an interest in migrant health.

Migration affects virtually every country worldwide and is increasing globally. In 2001, at the time of the last UK census, 7.5% of people living in the UK were born abroad and in 2004, an estimated 582,100 people migrated to the UK for a period of 12 months or longer. The migrants who arrive in the UK are very diverse in terms of their reason for migration and their country of origin. Most are young adults who have voluntarily chosen to come to the UK, mainly to work or study, and many arrive from countries with a low prevalence of infectious disease. Some arrive from countries with a high prevalence of infections and may therefore have additional health needs compared with UK born people.

Surveillance data collated from across the Agency show that in 2004, 70% of the newly diagnosed tuberculosis and HIV cases reported in England, Wales, and Northern Ireland and 70% of malaria cases reported in the UK were born outside the UK. The most frequently reported countries of birth were from the South Asia and sub-Saharan Africa regions. Migrants may also be more at risk of other infectious diseases, including those that are commonly thought of as being travel related. Despite this disproportionate burden of infectious diseases, the prevalence of infection in these groups remains low. It has been demonstrated, for example, that the HIV prevalence among sub-Saharan African attendees of genitourinary medicine clinics in England, Wales, and Northern Ireland is less than four per cent. Furthermore, there is little evidence to suggest that the general UK-born population are at risk of catching disease from migrants, although UK-born ethnic minority communities may be at increased risk.

The increased burden of infection in some non-UK born populations is in large part related to the higher prevalence of infection in the countries from which they originate, and many infections are probably acquired prior to migration. The report shows, however, that some migrants are at ongoing risk of infectious diseases after arrival, either through travel to visit family and friends in their countries of origin, or as a result of exposure in the UK. It is therefore important to identify risk factors that may be amenable to public health action in the UK.

The report makes recommendations for addressing the increased burden of infectious disease in migrant populations including: strengthening provision of culturally appropriate and language-supported health services, increasing awareness of disease in migrant communities and their health care practitioners, and improving surveillance to better understand the prevalence of infections in people born abroad. Many organisations could have a role to play in implementing the report's recommendations, and the Agency will be taking this work forward with relevant partners, particularly in the NHS, to identify the most effective public health response.

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Guidelines for Hajj pilgrims 2006

The National Travel Health Network and Centre (NaTHNaC) have, this week, issued guidance detailing all the health requirements that Hajj pilgrims need to consider before they leave for their trip, some of which are required by the Ministry of Health of Saudi Arabia in order to enter the country [1]. This is available on the NaTHNaC website at http://www.nathnac.org/pro/clinical_updates/Hajj151106.htm. Guidance has also been published in the World Health Organization Weekly Epidemiological Record [2]. The Foreign and Commonwealth Office has also published an informational leaflet with more general advice for pilgrims, which is available at <http://www.fco.gov.uk/Files/KFile/6pp%20Hajj%20Guide06.pdf> [3].

Hajj, the Muslim pilgrimage to Mecca, is the largest annual gathering of its kind in the world. All adult Muslims who are physically and financially able to do so have a religious obligation to make the pilgrimage once in their lifetime, and each year, over two million Muslims from around the world gather in Mecca [4]. The Hajj takes place between the eighth and thirteenth day of the last month of the Islamic lunar calendar, and therefore falls at different dates each year. The next Hajj will take place between 29 December 2006 and 3 January 2007.

On 16 November 2006, the Agency organised a conference on 'Health at Hajj and Umrah' in association with the Muslim Council of Britain, and Queen Mary, University of London, which brought together experts from Saudi Arabia, Australia, Singapore and the UK to share information on providing effective health advice and support to pilgrims.

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Survey of *Salmonella* contamination of non-UK produced shell eggs on retail sale in the north west of England and London

The Food Standards Agency (FSA) has published its findings of a survey of salmonella contamination in eggs produced outside the United Kingdom (UK) and on retail sale in England [1]. The consumption level of eggs in the UK exceeds the national supply, resulting in the need to source eggs from outside the UK. This is the first survey to provide information on *Salmonella* contamination of non-UK eggs on retail sale, and was carried out against a backdrop of a change in the epidemiology of *S. Enteritidis* in England and Wales [2,3] and elsewhere in Europe [4]. The survey was carried out over a period of 16 months, between March 2005 and July 2006.

Shell and contents of 1744 samples of six pooled eggs from targeted retail premises in the north west of England and London were analysed for *Salmonella* during the course of the survey. The overall finding was that 157 (9.0%) samples were contaminated with *Salmonella* spp on the shell of the egg. When egg import data is taken into account, this results in an estimated prevalence of 3.3%; this is equivalent to 1 in every 30 'boxes' of six eggs. Of these 157 samples, *S. Enteritidis* were detected in 136, with a prevalence estimate of 2.6%, equivalent to 1 in every 40 'boxes' of six eggs.

Eggs sampled were produced in eight European Countries (Spain, France, The Netherlands, Germany, Portugal, Republic of Ireland, Belgium, and Poland), with most (66.3%) originating from Spain. *Salmonella* spp. was detected from 13.3% and 0.6% of eggs sampled that were produced in Spain and France, respectively. Most of the *Salmonella* contaminated eggs from Spain were linked with just one packing station and three producers. This finding could indicate problems of contamination within the layer flock or cross-contamination at the packing station.

Of the 157 *Salmonella* shell-positive samples, ten were also contents-positive (six samples also contained two separate *Salmonella* isolates), making a total of 173 distinct *Salmonella* isolates recovered from the survey. The isolates comprised eight different serotypes, of which most were *S. Enteritidis* (84.9%; 147/173). Other serotypes included *S. Mbandaka* (8.1%), *S. Rissen* (1.2%), *S. Braenderup* (0.6%), *S. Infantis* (0.6%), *S. Panama* (0.6%), and *S. Weltevreden* (0.6%). The remainder (3.4%) of serotypes were unnamed (*S. Unnamed*). There were nine different phage types (PTs) of *S. Enteritidis*, with PT1 predominating (81.6%). *S. Enteritidis* PT4 was not detected.

Eighty-three per cent of the *Salmonella* isolates were resistant to at least one antimicrobial drug; mostly resistant to nalidixic acid with concomitant reduced susceptibility to ciprofloxacin (NxCP) (78.6%). Resistance to NxCP was also found in *S. Enteritidis* isolates from Spanish eggs associated with multiple common source outbreaks of *S. Enteritidis* infection in England and Wales during 2002 to 2004 [1,2]. The subtype *S. Enteritidis* PT 1 NxCP was also commonly reported as the causative organism in outbreaks linked to the use of Spanish eggs [1,2]. Previous egg surveys have shown that antimicrobial resistance is uncommon in isolates of *S. Enteritidis* from UK-produced eggs [5,6].

It is not unusual for *Salmonella* to be present in the environment and therefore contributing to the contamination of the egg shell. Ten shell-positive samples were also contents-positive, which suggests that systemic infection with *Salmonella* in laying flocks may be an issue in some EU Member States. The findings from the FSA survey are supported by the recent European Food Safety Authority survey of salmonella in layer flocks across Europe, in which Spain had among the highest prevalence on its farms [7].

Eggs are a commonly consumed food that may occasionally be contaminated with *Salmonella* at different rates according to their place of origin. Consumers and caterers need to be aware of this continuing hazard, adopt appropriate control measures and follow advice provided by the Food Standards Agency [8,9] in order to reduce the risk of infection. *Salmonella* contamination of eggs has been one of the main microbiological food safety issues in the last 20 years, with outbreaks of *Salmonella* Enteritidis infection associated with raw shell eggs continuing to be a common cause of food borne illness.

The FSA survey was carried out by the Health Protection Agency (HPA) Centre for Infections Department of Gastrointestinal Infections, HPA London Food, Water, and Environmental Microbiology Services Laboratory, Chester Food and Environmental Microbiology Services, and Local Authorities

The final report for the non-UK retail egg survey can be found at <http://www.food.gov.uk/news/newsarchive/2006/nov/eggs>.

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Bacteraemia

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Pyogenic and non-pyogenic streptococcal bacteraemias, England, Wales, and Northern Ireland: 2005

Polymicrobial bacteraemias and fungaemias in England, Wales, and Northern Ireland: 2005

Pyogenic and non-pyogenic streptococcal bacteraemias, England, Wales, and Northern Ireland: 2005

Group A streptococci

Data from enhanced surveillance has shown a fall in reports of group A streptococcal (GAS) bacteraemia from 1688 in 2003 to 1535 in 2004 and 1238 in 2005 (table 1). The rate of GAS bacteraemias reported in England, Wales and Northern Ireland for 2005 was 2.2 per 100,000 population (95% CI 2.1-2.4). Regional variation in GAS bacteraemia ranged from 1.5/100,000 (95% CI 1.2-1.7) in the South East to 3.3/100,000 (95% CI 2.9-3.8) in Yorkshire and the Humber.

Table 1 Laboratory reports of streptococcal bacteraemia, England, Wales, and Northern Ireland: 2002 and 2005

	2002	2003	2004	2005
Pyogenic streptococci				
group A streptococci	1038	1688	1535	1238
group B streptococci	1068	1226	1176	1248
group C streptococci	220	275	255	275
group G streptococci	609	727	744	775
Total	2935	3916	3710	3536
Non-pyogenic streptococci				
'anginosus group'	553	612	631	676
'bovis group'	227	235	231	214
'mitis group'	783	1005	1074	1039
'mutans group'	44	45	41	48
'salivarius group'	197	189	226	280
'sanguinis group'	295	327	317	367
Total	2099	2413	2520	2624
Total identified streptococci	5034	6329	6230	6160
Other streptococci	90	90	99	91
Streptococci not fully identified	1111	1518	1645	1622
Genera closely related to streptococci	148	196	242	252

Reported resistance rates to clindamycin, erythromycin and tetracycline were 2.5%, 4.6%, and 16.8% respectively and have remained relatively stable since 2003 (table 2). Penicillin resistance has not been seen, to date, in the UK or elsewhere and remains the therapeutic drug of choice for group A streptococcal infections. Erythromycin resistance was commonly associated with combined resistance for other antibiotics; 33% and 67% of erythromycin resistant isolates also being resistant to clindamycin and tetracycline respectively.

Table 2 Trends in antibiotic resistance for streptococcal bacteraemias in England , Wales, and Northern Ireland: 2003 and 2005

	2003		2004		2005	
	No. tested	Resistance (%)	No. tested	Resistance (%)	No. tested	Resistance (%)
group A						
clindamycin	828	7 (0.8)	213	13 (6.1)	160	4 (2.5)
erythromycin	1408	59 (4.2)	903	34 (3.8)	649	30 (4.6)
tetracycline	1110	180 (16.2)	571	82 (14.4)	387	65 (16.8)
group B						
clindamycin	165	13 (7.9)	162	9 (5.6)	155	14 (9.0)
erythromycin	824	55 (6.7)	856	70 (8.2)	861	84 (9.8)
tetracycline	537	405 (75.4)	566	438 (77.4)	567	431 (76.0)
group C						
clindamycin	31	2 (6.5)	50	8 (16.0)	40	5 (12.5)
erythromycin	174	21 (12.1)	173	27 (15.6)	194	27 (13.9)
tetracycline	110	32 (29.1)	97	37 (38.1)	122	28 (23.0)
group G						
clindamycin	91	8 (8.8)	123	7 (5.7)	114	4 (3.5)
erythromycin	534	81 (15.2)	575	79 (13.7)	568	100 (17.6)
tetracycline	338	164 (48.5)	382	192 (50.3)	409	204 (49.9)
"anginosus"						
ampicillin/ amoxycillin	247	–(0)	270	2 (0.7)	282	–(–)
erythromycin	365	26 (7.1)	399	31 (7.8)	430	42 (9.8)
penicillin	413	13 (3.1)	461	14 (3.0)	491	21 (4.3)
tetracycline	211	34 (16.1)	218	27 (12.4)	233	50 (21.5)
"bovis"						
ampicillin/ amoxycillin	109	–(–)	129	–(–)	99	1 (1.0)
erythromycin	122	16 (13.1)	145	23 (15.9)	120	18 (15.0)
penicillin	139	6 (4.3)	167	3 (1.8)	138	10 (7.2)
tetracycline	72	40 (55.6)	88	41 (46.6)	84	49 (58.3)
"mitis"						
ampicillin/ amoxycillin	422	28 (6.6)	473	23 (4.9)	495	25 (5.1)
erythromycin	584	209 (35.8)	631	225 (35.7)	633	253 (40.0)
penicillin	627	125 (19.9)	721	148 (20.5)	753	161 (21.4)
tetracycline	328	94 (28.7)	305	94 (30.8)	378	117 (31.0)
"salivarius"						
ampicillin/ amoxycillin	89	–(–)	111	4 (3.6)	138	3 (2.2)

erythromycin	111	21 (18.9)	124	44 (35.5)	161	50 (31.1)
penicillin	122	27 (22.1)	160	32 (20.0)	192	52 (27.1)
tetracycline	73	16 (21.9)	78	16 (20.5)	109	20 (18.3)
"sanguinis"						
ampicillin/ amoxycillin	141	8 (5.7)	142	8 (5.6)	169	16(9.5)
erythromycin	189	52 (27.5)	193	54 (28/0)	230	82 (35.7)
penicillin	219	38 (17.4)	225	41 (18.2)	270	59 (21.9)
tetracycline	132	33 (25.0)	111	25 (22.5)	146	51 (34.9)

Group B streptococci

Reports of bacteraemia due to group B streptococcus (GBS) in England, Wales and Northern Ireland have increased from 1068 in 2002 to 1248 in 2005. From 2004 to 2005 there has been a 6% increase in the number of cases reported. The overall rate of GBS reports in all age groups was 2.3 per 100,000 (95% CI 2.1-2.4) in 2005 but was considerably higher in infants at 51/100,000 (95% CI 45-56).

Resistance of GBS blood culture isolates to clindamycin, erythromycin, and tetracycline was noted in 9.0%, 9.8% and 76.0% of reports respectively (table 2). Approximately 40% of clindamycin resistant isolates were also reported as resistant to both erythromycin and tetracycline (multi-resistant). Similarly, 44% of erythromycin resistant isolates were also reported as multi-resistant, although only 6% of tetracycline resistant isolates were multi-resistant.

Group C and G streptococci

Voluntary reporting has shown an increase in the number of reports of bacteraemia caused by group C streptococcus (GCS) from 220 in 2002 to 275 in 2005. Reports of bacteraemia due to group G streptococcus (GGS) have also increased from 609 in 2002 to 775 in 2005. The reported rate of bacteraemia due to GCS in England, Wales, and Northern Ireland in 2005 was 0.50 per 100,000 (95% CI 0.44-0.56) and the highest regional rate was observed in the West Midlands with 0.88/100,000 (95% CI 0.64-1.2). The rate of GGS bacteraemia reports in England, Wales and Northern Ireland was 1.4/100,000 (95% CI 1.3-1.5) with the highest reported rates being detected in the East of England with 2.2/100,000 (95% CI 1.8-2.7).

Reported resistance to tetracycline in GCS blood culture isolates fell markedly from the 38% peak in 2004 to 23% in 2005, lower than the pre-2004 levels (table 2). In contrast, tetracycline resistance observed in GGS stayed close to 50% between 2002 and 2005. Erythromycin resistance has remained close to 15% over the same time period in both GCS and GGS blood culture isolates having been considerably lower for GCS prior to 2004. Approximately half of erythromycin resistant isolates in GCS isolates were also resistant to clindamycin and tetracycline. For GGS, 14% of erythromycin resistant isolates were also resistant to clindamycin and tetracycline.

Non-pyogenic streptococci

Reports of bacteraemias due to non-pyogenic streptococci increased steadily between 2002 and 2005 from 2099 to 2624 reports for all groups combined. The largest increases were observed in the 'mitis' and 'salivarius' streptococcal groups where reports have increased by 32% and 42% respectively since 2002. In contrast, no increase has been observed in bacteraemia due to the 'bovis group' streptococci.

The highest frequency of reported penicillin resistance was observed in the 'salivarius group' with 27% of isolates reported as resistant. Erythromycin resistance was also high in the non-pyogenic groups compared to the 'pyogenic groups', with 26% of all non-pyogenic isolates reported as erythromycin resistant. Levels of tetracycline resistance increased across all groups except in the 'mitis group' and the 'salivarius group' where levels stayed at approximately 30% and 20% respectively. The highest levels of tetracycline resistance were observed in the 'bovis group' where almost 60% of isolates were reported as resistant.

Substantial numbers of reports continue to be made of streptococcal bacteraemias in which the organism is not fully identified. Precise species identification of isolates would improve the monitoring of disease trends of non-pyogenic streptococci and related genera in particular.

The Streptococcus and Diphtheria Reference Unit offers a referred (charged for) taxonomic identification service for streptococci and other related gram positive, catalase negative genera from systemic and other significant infections. A free-of-charge reference service, however, will continue

to be available for urgent public health investigations, outbreaks and incident management, either nosocomial or community based.

Laboratories are requested to send any pyogenic streptococcal isolates exhibiting a decreased sensitivity to penicillin to the Antibiotic Resistance Monitoring and Reference Laboratory (ARMRL) for confirmation. Both laboratories are based at the Health Protection Agency, Centre for Infections in Colindale. In addition, any streptococci (pyogenic or non-pyogenic) with suspected glycopeptide or linezolid resistance should be referred for further investigation.

The analyses presented are based on data extracted from LabBase2 on the 7 November 2006 for the period from 2002 to 2005. Further data tables can be viewed in the full text online version: http://www.hpa.org.uk/infections/topics_az/strepto/non_pyogenic/Streptococcal_Infections_Default.htm

Polymicrobial bacteraemias and fungaemias in England, Wales, and Northern Ireland: 2005

Polymicrobial bacteraemia is defined as the isolation of two or more different organisms from the same blood culture. These analyses are for specimens collected in 2005 for England, Wales, and Northern Ireland and are based on data extracted from the HPA's voluntary surveillance database. The data presented here differ in some instances from data in earlier publications due to the addition of late reports to the database.

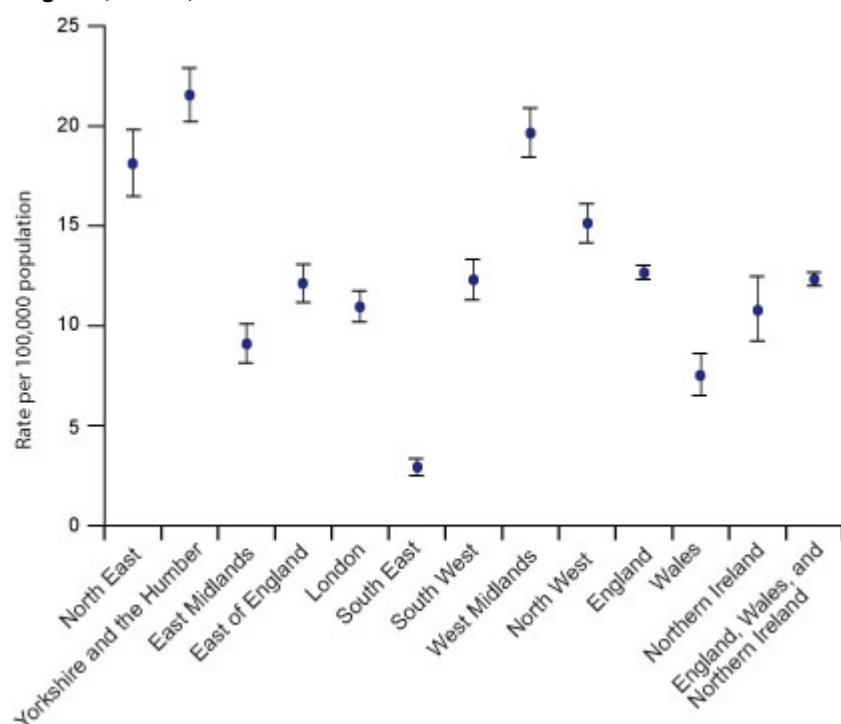
- 86,027 patient episodes involving either bacteraemia and/or fungaemia were identified from laboratories in England, Wales, and Northern Ireland in 2005 (table 1).
- The 86,027 patient episodes comprise 92,030 bacteraemias and 1819 fungaemias, representing 121 different genera of organisms.
- Of specimens collected in 2005, 6797 patient episodes (7.9% of all patient episodes) were identified as polymicrobial and 79,230 were identified as monomicrobial.
- Of the 6797 polymicrobial patient episodes, 5907 involved two different organisms, 770 involved three different organisms and 120 involved four or more organisms.
- The ten most frequently reported organisms involved in polymicrobial bacteraemias/fungaemias were (in descending order): *Staphylococcus*, *Enterococcus*, *Streptococcus*, *Escherichia*, *Klebsiella*, *Pseudomonas*, *Enterobacter*, *Proteus*, *Acinetobacter*, and coliforms.
- There was a 90% increase in the number of polymicrobial bacteraemias/fungaemias from 3577 in 2001 to 6797 in 2005. As a percentage of all patient episodes polymicrobial bacteraemias accounted for 7.9% in 2005, compared with 5.8% in 2001.
- The overall rate of polymicrobial bacteraemia episodes in England, Wales, and Northern Ireland is 12.3 per 100,000 population (figure 1). By country, the reported rates (per 100,000 population) were 12.7, 7.5, and 10.8 in England, Wales, and Northern Ireland, respectively.
- Within England, the lowest rate of polymicrobial bacteraemia was recorded for the South East (2.9 per 100,000), while the highest rates was recorded for Yorkshire and Humberside (21.5 per 100,000).

Table 1 Trends in reports of bacteraemias and fungaemias in England, Wales, and Northern Ireland: 2001 to 2005*

	2001	2002	2003	2004	2005
Total reported bacteraemias	64,215	71,053	86,460	88,058	92,030
Total reported fungaemias	1135	1257	1492	1642	1819
Number of patient episodes	61,342	67,684	81,103	82,244	86,027
Number of polymicrobial patient episodes	3577	4105	5988	6553	6797
Polymicrobial episodes as a percentage of all patient episodes:	5.8%	6.1%	7.4%	8.0%	7.9%

*Data extracted 26 th October, 2006

Figure 1 Regional distribution of episodes of polymicrobial bacteraemia and fungaemia rates, England, Wales, and Northern Ireland: 2005*



Further data tables and graphs about Pyogenic and non-pyogenic streptococcal bacteraemias, England, Wales, and Northern Ireland: 2005 can be viewed at:

http://www.hpa.org.uk/infections/topics_az/bacteraemia/polymic06/default.htm

Diary of events

For information about other conferences, courses, and events visit <http://www.hpa.org.uk/hpa/events>

▣ The sensible use of blood: The Royal Society of Medicine, Wessex Region

▣ Emergency Surgery: Don't Panic!

▣ The sensible use of blood: The Royal Society of Medicine, Wessex Region

The Royal Society of Medicine is holding a symposium titled *The sensible use of blood*, on Thursday 8 February 2007. The venue will be at The Education Centre, Salisbury District Hospital, Wiltshire, SP2 8BJ.

The aim of this symposium is to evaluate the various ways of minimising allogeneic blood transfusion in cardiovascular and transplant surgery. For more information and to register on line please go to <http://www.rsm.ac.uk/academ/zo-blood.htm>,

For more course details, contact Primrose Ante-Bennett on (+44) 020 7290 2965, Fax (+44) 020 7290 2977, or email: primrose.ante-bennett@rsm.ac.uk

▣ Emergency Surgery: Don't Panic!

The Royal Society of Medicine are hosting a conference Monday 11 December 2006, titles: *Emergency Surgery: Don't Panic!* This one-day conference will discuss the essential and practical skills required for the initial assessment, investigation and pre-operative care of the common general surgical emergencies.

For further details please contact Jennifer Lake on tel (+44) 020 7290 3919; fax (+44) 020 7290 2977
or email: jennifer.lake@rsm.ac.uk

To book on-line, visit the Royal Society of Medicine website at <http://www.rsm.ac.uk/academ/c10-esurg.htm>
