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# CDR WEEKLY



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## News

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### Future arrangements for microbiology laboratory services in England

Following the circulation in late June of a discussion document, the chief medical officer for England and the Permanent Secretary at the Department of Health have now decided the way forward for microbiology laboratory services currently run by the PHLS (1). The details are available online at [www.doh.gov.uk/cmo/laboratories](http://www.doh.gov.uk/cmo/laboratories).

Key decisions include:

- Most laboratories will move from the PHLS to the NHS and will do so in April 2003, and will receive the same resources next year as this.
- Nine named laboratories will transfer from the PHLS to the Health Protection Agency (HPA) at that time, but regional directors of public health will consider whether at least the routine diagnostic microbiology in these labs could transfer over to NHS management in due course.
- All microbiology laboratories will need to be part of multidisciplinary managed pathology networks when these become established.
- Regional microbiologists will be appointed to oversee reference and specialist work, including that on food, water, and environmental (FWE) samples. Specialist clinical staff will be retained by the HPA to supervise such work.
- From April 2003, the HPA will be the commissioning body for all reference and specialist services, with resources guaranteed at the same level until April 2004 (for FWE work) and April 2005 (other specialist work).
- There will need to be continuity in certain of the current PHLS functions, like central purchasing, the production of culture media, the training of microbiology specialist registrars, and the preparation of certain standard operating procedures.

Some of the details are unclear and clarification is being sought from the DH by the PHLS. It is also planned that CDSC and the central public health laboratories of the PHLS will also transfer to the HPA next April, together with other functions, such as those currently provided by consultants in communicable disease control and their teams. The PHLS in Wales, including CDSC Wales, are expected to transfer at the same time to the National Public Health Service – Wales.

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1. Chief Medical Officer. *Getting ahead of the curve. Action to strengthen the microbiology function in the prevention and control of infectious diseases*. London: Department of Health, 24 June 2002. Available online at <http://www.doh.gov.uk/cmo/idstrategy/index.htm>.

## New guidelines for renal dialysis/transplantation units

The Department of Health has recently released the *Good practice guidelines for renal dialysis/transplantation units: prevention and control of blood-borne virus infection* (1). Previous guidance for the prevention and control of the hepatitis B virus (HBV) in renal and dialysis and transplantation units was issued in 1972 by the Rosenheim Advisory Group (2). These latter guidelines have formed the basis for the safe practice of dialysis in the United Kingdom (UK) since 1972. New blood borne viruses including hepatitis C virus (HCV) and human immunodeficiency virus (HIV) have been identified since then but additional guidance has not been issued. The Department of Health (DH) therefore asked the PHLS to review current practice with regard to prevention and control of BBV infection in patients and staff in renal dialysis and transplantation units and to produce good practice guidelines.

A working group was convened by the PHLS and concluded that the basic precautions recommended previously had been effective against HBV infection and had probably also controlled other BBVs. A survey carried out in UK renal units by the PHLS in 1996 showed that most units followed the Rosenheim recommendations for the prevention and control of HBV. Many units, however, were failing to immunise haemodialysis patients against HBV and procedures for identifying and managing patients with HIV and HCV were more variable than those for HBV. The working group's conclusions have therefore emphasised the importance of strict observance of universal precautions within units to minimise the risk of BBV transmission.

Some of the main recommendations are as follows:

- Immunisation against HBV is recommended for patients on dialysis or on transplantation programmes. This recommendation also applies to staff in clinical contact with patients. Home carers should be tested for hepatitis B surface antigen (HBsAg) and those found to be negative should be vaccinated against HBV.
- Patients should be tested regularly for BBVs to allow early identification of BBV infection in a unit. The patient's informed consent to testing should be obtained. All patients admitted or re-admitted to a unit should be tested for HBsAg, HIV and HCV antibody. In addition, any patients who are negative for HCV antibody and are immunosuppressed, have undergone a renal transplant or who are being admitted from a unit where there has been a recent HCV transmission should be tested for HCV RNA.
- Renal units should regularly conduct local risk assessment and regularly review infection control policies. Strict infection control policies should be employed by staff to prevent cross-infection between dialysis patients.
- Where there is evidence that HBV, HCV, or HIV transmission has occurred in a unit, the local infection control team should be notified, infected patients should be dialysed in segregated areas, immunisation against HBV should be given and an outbreak control team set up.
- Patients infected with HBV should be dialysed in separate isolation facilities with a dedicated dialysis machine. Patients with HCV should also be segregated from uninfected patients during dialysis. Segregation of HIV infected patients should be based on a local risk assessment.

Copies of the document *Good Practice Guidelines for Renal Dialysis/Transplantation Units* are available to download from the Department of Health website at <<http://www.doh.gov.uk/cmo/renalguide>>.

Printed copies can be obtained from Department of Health Publications, PO Box 777, London, SE1 6XU; tel: 08701 555 455; fax: 01623 724524.

1. *Good practice guidelines for renal dialysis/transplantation units*. London: Department of Health, 2002.

2. *Report of Rosenheim Advisory Group Hepatitis and the treatment of chronic renal failure*. London: Department of Health and Social Security, 1972.



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## Bacteraemia

Last updated: 19 September 2002

Next update due: 17 October 2002

### *Staphylococcus aureus* bacteraemia: England and Wales, first six months of 2002

#### Key points

- 5825 reports of *Staphylococcus aureus* were voluntarily reported by laboratories in England and Wales in the first six months of 2002
- 93% of reports contained information on susceptibility to methicillin, an improvement of 3% compared to 2001
- In England and Wales in the first half of 2002, 44% of reports of *S. aureus* with susceptibility information indicated resistance to methicillin
- Two cases of glycopeptide-intermediate *S. aureus* (GISA) have been reported in England and Wales
- Comparison of the voluntary and mandatory reporting schemes reveals a considerable difference in the total number of reports, but only a small difference in the proportion of methicillin resistant *S. aureus* (MRSA)

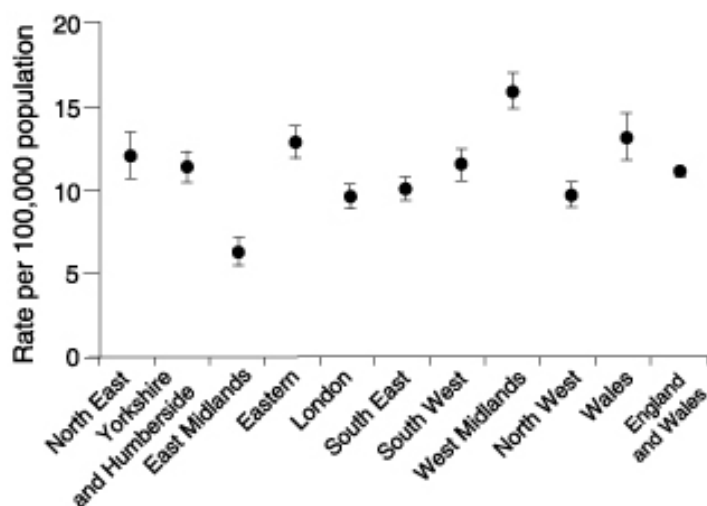
This report carries details of bacteraemias due to *Staphylococcus aureus* bacteraemia, diagnosed from specimens collected during the first six months (1 January to 30 June) of 2002 under the voluntary and mandatory bacteraemia reporting schemes. These bacteria were isolated from blood culture, with or without cerebrospinal fluid (CSF), by laboratories across England and Wales. Rates were calculated using 2000 resident population denominators (the most recent available) for each region or age group. Regional analyses were carried out according to the new English regional boundaries (as of 1 April 2002).

This is only a brief summary of mandatory MRSA bacteraemia reporting from January to June 2002, for the purpose of comparison with the voluntary laboratory reporting. A full Trust-by-Trust breakdown will feature in the next *S. aureus* bacteraemia update, due in December.

#### Voluntary reporting of *S. aureus* bacteraemia

In the first six months of 2002 there were 5825 reports of *S. aureus* in England and Wales (table 1). The region with the greatest number of reports was West Midlands (845; 15% of the total), and that with the least was East Midlands (263; 5% of the total). These two regions also had the highest and lowest reporting rates (figure 1): 15.8 per 100,000 population and 6.3/100,000 population respectively. The reporting rate for England and Wales overall was 11.0/100,000 population over the six months.

**Figure 1 Voluntary reporting rates of *Staphylococcus aureus* bacteraemia (95% confidence intervals) per 100,000 population: England and Wales, first six months of 2002**



**Table 1 Voluntary reporting of *Staphylococcus aureus* bacteraemia and methicillin susceptibility data: England and Wales, first six months of 2002\***

	Resistant	%#	Sensitive	No information	%	Total
North East	122	44%	153	33	11%	308
Yorkshire & Humber	205	38%	338	29	5%	572
East Midlands	99	41%	143	21	8%	263
Eastern	306	45%	370	21	3%	697
London	307	47%	344	52	7%	703
South East	356	50%	354	102	13%	812
South West	215	40%	317	37	7%	569
West Midlands	368	44%	477	0	0%	845
North West	227	39%	354	89	13%	670
Wales	170	48%	186	30	8%	386
England and Wales	2375	44%	3036	414	7%	5825

\* provisional data; # R as a percentage of R+S

**Table 2 *Staphylococcus aureus* bacteraemia reports (voluntary reporting) and susceptibility data: England and Wales, first six months of 2002**

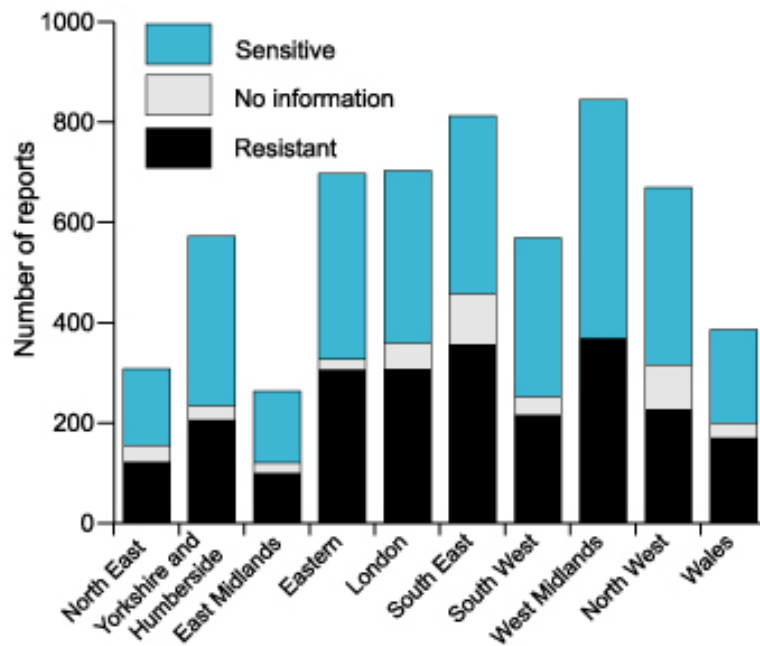
	Resistant	%*	Sensitive	No information	%
Ciprofloxacin	746	57%	571	4508	77%
Fusidic acid	325	8%	3779	1721	30%
Mupirocin	96	5%	1918	3811	65%
Rifampicin	39	1%	2565	3221	55%
Vancomycin	2	0.1%	2678	3145	54%

\* R as a percentage of R+S

#### Antimicrobial susceptibility

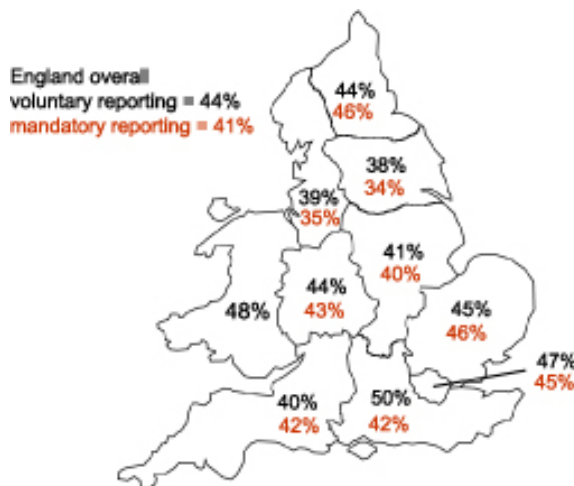
Ninety-four per cent of *S. aureus* bacteraemia reports (5499/5825) contained information on susceptibility to any antimicrobial. Information on susceptibility to methicillin was included in 93% of reports overall (table 1, figure 2). The level of provision of this information varied between the regions. The West Midlands, as well as having the greatest number of reports, was also the only region with complete reporting of methicillin susceptibility information. At the other end of the range, the South East and North West both had the greatest percentage (13%) of reports without methicillin susceptibility information.

**Figure 2 Voluntary reporting of *Staphylococcus aureus* bacteraemia and methicillin susceptibility data: England and Wales, first six months of 2002**



There were 2375 reports of methicillin-resistant *S. aureus* (MRSA) isolates in England and Wales in the first half of 2002. This represents 44% of the total number of isolates for which susceptibility information was received. The South East had the highest percentage of MRSA isolates at 50%, and the lowest was Yorkshire and Humberside, with 38% (figure 3).

**Figure 3 Methicillin resistance in *Staphylococcus aureus* bacteraemia reports – MRSA as a percentage of isolates whose susceptibilities were reported: England and Wales, first six months of 2002\***



\* provisional data

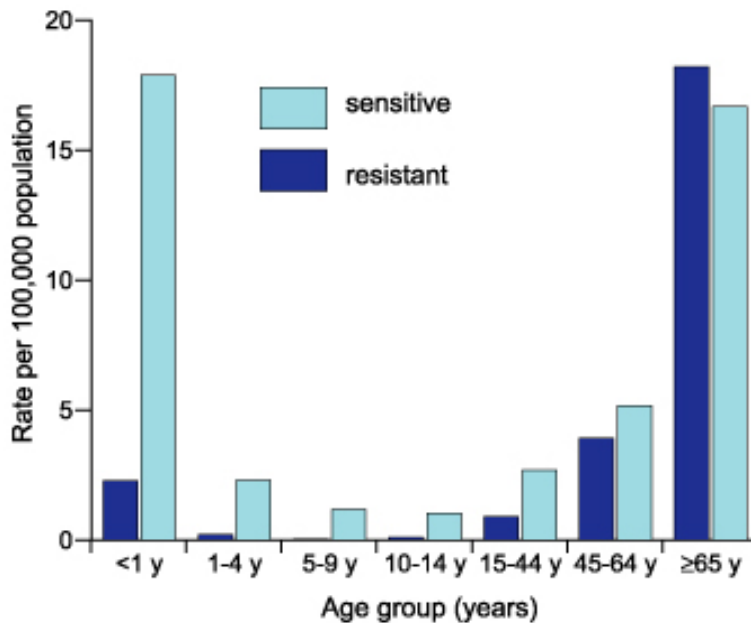
The susceptibility of *S. aureus* to other antimicrobials was also examined (table 2). Provision of susceptibility information was not as complete as for methicillin. There was no information on ciprofloxacin susceptibility in 77% of reports, on mupirocin in 65%, or on rifampicin in 55%. Aside from methicillin, fusidic acid was the only antimicrobial for which susceptibility information was included in more than half of reports; only 30% of reports did not include information on susceptibility to this antimicrobial. Fifty-seven per cent of reports that included information on susceptibility to ciprofloxacin indicated resistance to it. Eight per cent of reports indicated resistance to fusidic acid, 5% to mupirocin, and 1% to rifampicin.

Forty-six per cent of reports included information on susceptibility to vancomycin. Six reports of *S. aureus* with some resistance to vancomycin (termed glycopeptide intermediate *S. aureus* [GISA]) were received in this time period, but on investigation four were found to have been mis-reported due to inputting error during reporting procedures. Of the two genuine cases (0.07%; 2/2682), the first was previously reported in the *CDR Weekly* (1).

### Age distributions

The age-specific rate of MSSA was highest in those aged under one year, followed by those aged over 65 years, and was higher than the MRSA rate in all age groups except those over 65 years (figure 4). Age-specific rates of MRSA were highest in those over 65, followed by those aged between 45 and 64 years.

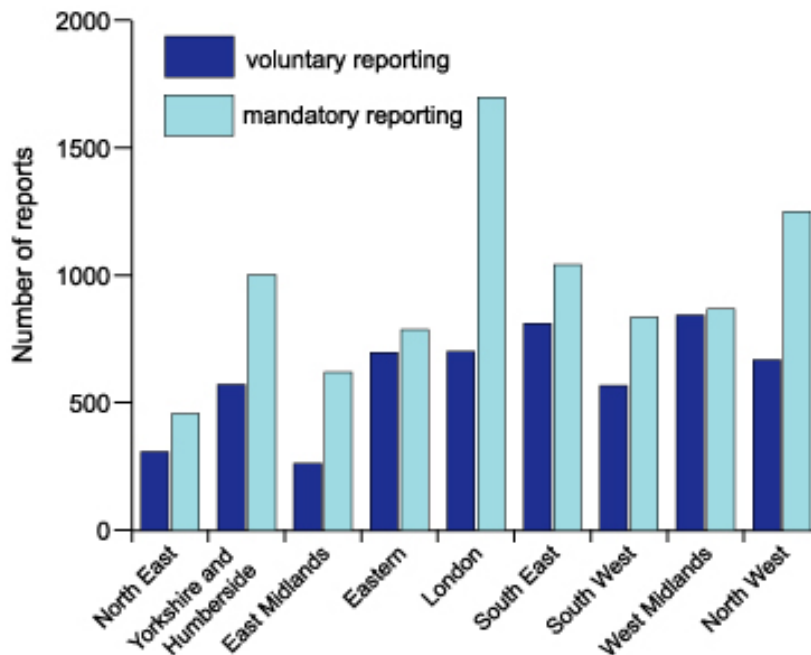
**Figure 4 Age-specific *Staphylococcus aureus* bacteraemia voluntary reporting rates and methicillin sensitivity per 100,000 population: England and Wales, first six months of 2002**



### Mandatory MRSA bacteraemia reporting

During the first six months of 2002, more reports of *S. aureus* bacteraemia were received under the mandatory reporting scheme as compared to the voluntary laboratory reporting for all English regions (figure 5). A total of 8572 reports were received under the mandatory reporting scheme, compared to 5439 from voluntary laboratory reporting (this excludes Wales which does not contribute to the mandatory scheme). The West Midlands had the smallest difference (24) in the number of reports, the number of voluntary reports representing 97% of the number of mandatory reports. The greatest discrepancy was in London, where mandatory reporting revealed over twice the number of reports: 1700 compared to 703 received under the voluntary scheme.

**Figure 5 Comparison of the total number of *Staphylococcus aureus* reports received under the voluntary and mandatory reporting schemes: England, first six months of 2002**



Despite these differences in absolute numbers, there was not much difference between the voluntary and mandatory reporting in the percentage of reports that indicated resistance to methicillin (figure 3). For England as a whole the proportion of MRSA was 44% under the voluntary laboratory reporting and 41% under the mandatory scheme. Most regions were within 1 to 2% difference, apart from Yorkshire and Humberside (4%), North West (4%), and South East (8%).

## Discussion

Under the voluntary laboratory reporting scheme in the first six months of 2002, 44% of *S. aureus* bacteraemia reports with information on methicillin susceptibility were resistant to methicillin, compared to 42% in 2001 (2). Regional comparisons between 2001 and 2002 are hindered by the changes to the boundaries of a number of regions in April 2002, but of the regions that did not experience any changes, Eastern, South West, West Midlands, and Wales, all had small increases in the proportion of MRSA. London was the only region that experienced a decrease, from 51% in 2001 to 47% in the first half of 2002.

There was an overall decrease in the number of reports without susceptibility information for methicillin, from 10% in 2001 to 7% in the first half of 2002. This might account for some of the apparent increase in the proportion of reports of MRSA. At the regional level, most regions showed a decrease in the number of reports without susceptibility information. London had the largest decrease, from 21% of reports lacking this information in 2001 compared to 7% in the first half of 2002. The South West and Wales, however, both experienced increases in the proportion of reports without susceptibility information, from 5% to 7% and from 4% to 8% respectively.

During the first six months of 2002, the first isolate with intermediate resistance to vancomycin was reported in England and Wales (1). A second GISA isolate was also reported during this period. In July, the first case of vancomycin-resistant *S. aureus* was reported from the United States (US)(3,4), but no further cases of VRSA have been reported, either from the US, United Kingdom, or anywhere else in the world. Laboratories are reminded that any *S. aureus* isolates with apparent intermediate or full resistance to vancomycin should be notified to the Antimicrobial Resistance Monitoring Reference Laboratory at the Central Public Health Laboratory.

Comparison of the voluntary laboratory reporting scheme with the results of the mandatory scheme has shown that although there is a large difference in the number of reports received from some regions both schemes report similar proportions of MRSA.

EARSS (European Antimicrobial Resistance Surveillance System) has recently reported the results of three years of Europe-wide surveillance of *S. aureus* (5). The most recent year for which complete data is available is 2001. Among participants in the EARSS scheme 45.4% of *S. aureus* bacteraemias in England and Wales were resistant to methicillin in 2001, the second highest proportion in Europe, after Malta. By comparison, voluntary reporting to CDSC over the same time period described 42% MRSA (2). In addition, from the beginning of the mandatory MRSA surveillance in April 2001 to December of that year, the proportion of MRSA in acute Trusts in England was 40% (2).

One possible reason for this discrepancy is that the EARSS data only comes from a subset of laboratories in England and Wales, whereas over 90% of laboratories in England and Wales voluntarily report data to CDSC (6). This is highlighted by the total number of isolates; information on 1488 isolates was submitted to EARSS in 2001, compared to 12,631 to CDSC (2). In addition, the EARSS report mentions that university hospitals may be over-represented in the scheme, which may also explain this discrepancy.

## 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. Laboratory reporting is the bedrock of national surveillance. Feedback is welcome, and should be addressed to Georgia Duckworth, email [gduckworth@phls.org.uk](mailto:gduckworth@phls.org.uk). In addition, the support from colleagues within the PHLS, CPHL in particular, is valued in the preparation of the reports.

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1. PHLS. *Staphylococcus aureus* with reduced susceptibility to vancomycin. *Commun Dis Rep CDR Wkly* [serial online] 2002 [cited 18 September 2002]; **12** (20): news. Available at <http://www.phls.org.uk/publications/cdr/archive02/News/news2002.html#gisa>.
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5. EARSS. EARSS annual report 2001. On-going surveillance of *S. pneumoniae*, *S. aureus*, *E. coli*, *E. faecalis*/*E. faecium*. Bilthoven, The Netherlands: RIVM, 2002.
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## Diary

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

### Applications of molecular technology

A joint meeting of the Association of Clinical Microbiologists and the Association of Medical Microbiologists are holding a joint meeting on Thursday 31 October 2002 the the Central Public Health Laboratory in Colindale. The topic will be applications of molecular technology, and there will be sessions on molecular detection of antibiotic resistance, TB typing and resistance markers, molecular epidemiology of meningococci , using proteomics to explore Salmonella survival , advances in bioinformatics, HIV resistance testing, hepatitis B quantitation - uses and abuses, and uses of viral load assessments. The cost of attendance is £20 for members of either body, and £40 for non-members. For further information contact S Skidmore PHLS Midlands, PRH, Telford TF6 6TF; telephone 01952 641222 ext 4353, email [sskidmore@mids.phls.nhs.uk](mailto:sskidmore@mids.phls.nhs.uk).



### Health protection course

The Department of Social Medicine, University of Bristol is offering a short course on Health protection principles and practice of managing incidents and outbreaks, co-ordinated by Dr James Stuart, regional epidemiologist. The course will run from 7 to 11 April 2003. The aim of this course is to increase understanding of methods for controlling infectious diseases and environmental hazards and to increase confidence in handling incidents and outbreaks. Interested parties can find out full course and booking details on the Department of Medical Science website at <http://www.epi.bris.ac.uk/shortc/shortc.htm>