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A case of toxigenic *Corynebacterium diphtheriae* in London

On 12 September 2008 an isolate of *Corynebacterium diphtheriae* var *mitis*, from a school age child, was reported to the Health Protection Agency (HPA) in London. The isolate was confirmed as toxigenic on 13 September by the HPA's Respiratory and Systemic Infection Laboratory.

The case had become unwell with fever, sore throat and generalised muscle aches after a recent travel to Asia. He was seen by his GP on 8 September. Throat swabs were taken and sent to the local laboratory. The patient was started on penicillin V and advised to be isolated at home. The patient had travelled with other members of his family, who were well.

Following the identification of a toxigenic strain, a public health investigation was initiated on the afternoon of 13 September. The immunisation status of the case and the family members could not be confirmed although the child was thought to have received some diphtheria vaccinations as a young child.

Close contacts were identified as the family members and their family doctor. In line with current guidance, close contacts had nasal and pharyngeal swabs taken, were offered erythromycin 500 mg four times a day for seven days as chemoprophylaxis, and diphtheria immunisation. All swabs from family contacts have since tested negative.

Diphtheria became rare in England and Wales following the introduction of mass immunisation in 1942 when the average number of notifications was about 60,000, with 4,000 deaths. Between 1986 and 1997 there were eight cases of classical respiratory diphtheria (with pseudomembrane) caused by toxigenic *C. diphtheriae*, all of whom had a history of travel to endemic countries. No further cases had been caused by this organism until the death, earlier this year, from *C. diphtheriae*, of an unimmunised child who had moved to the UK from Europe in late 2007 [1].

The current case presented with mild respiratory symptoms, compatible with partial immunisation. It is important to raise awareness among clinicians that mild diphtheria can present without a pseudomembrane and to include diphtheria in differential diagnoses for travellers to or from epidemic or endemic areas. Individuals travelling to such areas should ensure they are fully immunised with diphtheria-containing vaccine before travelling.

Primary immunisation coverage (three doses) in the UK for children aged two has been 94% since 2001, just below the World Health Organization target of 95%. There is, however, regional variation and coverage in London is lower than elsewhere in the UK with 86% coverage for 2006/07.

References

1. HPA. Death in a child infected with toxigenic *Corynebacterium diphtheriae* in London. *Health Protection Report HPR Wkly* [serial online] 2008 [cited 18 September 2008]; 2(19): news. Available at: <http://www.hpa.org.uk/hpr/archives/2008/news1908.htm#diph>.

Further information

HPA website: Frequently asked questions about diphtheria.

New guidelines on HIV testing in high-prevalence areas

New guidelines from the British HIV Association (BHIVA), the British Association for Sexual Health and HIV (BASHH) and the British Infection Society (BIS) [1] aim to increase the offer of HIV testing that was recommended by the Chief Medical Officer in September 2007 [2]. On the assumption that the prevalence of HIV infections that have already been diagnosed is a good indicator of the prevalence of undiagnosed HIV infection in a particular area, the new guidelines state that consideration should be given to offering HIV testing to all men and women aged 15 to 59 registering in general practice as well as to all general medical admissions in areas where the prevalence of diagnosed HIV infections is greater than two in 1,000.

To assist local discussions about implementing the guideline, the Health Protection Agency has used the latest available data (from the Survey Of Prevalent HIV Infections that have been Diagnosed (SOPHID) [3]) to show the primary care trusts (PCTs) in England where the prevalence of diagnosed HIV infection exceeded two adults per 1,000 population (aged 15-59 years) in 2007. Table 1 lists the PCTs with an overall prevalence above this threshold. In addition, table 2 shows other PCTs in which the prevalence is below the two per 1,000 threshold overall, but is above it in a constituent local/unitary authority of the PCT.

The 42 PCTs listed in the two tables account for 20% of the English population aged 15-59 years and 60% of all persons accessing HIV-related care in England in this age group. The majority of these PCTs are in London. PCTs outside London include Brighton and Hove, Manchester, Blackpool, Salford, Bournemouth and Eastbourne, which have historically had a relatively high prevalence of diagnosed HIV infection. Also included are PCTs which have experienced more recent increases. In areas around London, this includes: Luton, Watford, Harlow, Southend-on-Sea, Reading, Slough and Crawley; in the Midlands: Birmingham, Leicester, Nottingham and Northampton.

A universal offer of HIV testing is estimated to be cost-effective where the diagnostic rate of HIV is greater than one per 1,000 [4-7]. However, the evidence on the cost effectiveness of expanding HIV testing in the population of England is sparse. Therefore, local innovations to expand HIV testing should be the subject of formally designed service evaluations and be sufficiently large so as to better inform the implementation of the guidelines and the development of national policy.

Table 1. Primary care trusts in England where the prevalence of diagnosed HIV infection exceeded two adults per 1,000 population (aged 15-59 years) in 2007.

Primary Care Trust	Residents accessing HIV-related care (15-59)	Resident population* (1000s) (15-59)	Diagnosed HIV prevalence per 1,000	
			Rate	Rank
London				
Barking and Dagenham	427	101.7	4.20	19
Barnet	507	205.5	2.47	31
Brent Teaching	676	179.8	3.76	21
Camden	1,181	169.0	6.99	9
City & Hackney Teaching †	1,132	147.1	7.70	5
Croydon	824	214.4	3.84	20
Ealing	549	204.5	2.68	28
Enfield	587	178.0	3.30	23
Greenwich Teaching	711	144.2	4.93	14
Hammersmith and Fulham	906	122.6	7.39	6
Haringey Teaching	1,024	155.0	6.61	11
Hillingdon	336	157.6	2.13	32
Hounslow	516	147.2	3.51	22
Islington	1,110	136.1	8.16	3
Kensington and Chelsea	943	121.4	7.77	4
Lambeth	2,339	196.2	11.92	1
Lewisham	1,098	176.5	6.22	12
Newham	1,175	166.6	7.05	8
Redbridge	404	159.4	2.53	29
Southwark	1,830	194.5	9.41	2
Sutton and Merton ‡	619	249.9	2.48	30
Tower Hamlets	836	152	5.50	13
Waltham Forest	654	145.1	4.51	16
Wandsworth	880	204.4	4.31	18
Westminster	1,155	170.0	6.79	10
Out of London				
Blackpool	272	82.4	3.30	24
Bournemouth and Poole §	354	176.3	2.01	34
Brighton and Hove City	1,236	167.5	7.38	7
Heart Of Birmingham ¶	493	171.2	2.88	26
Leicester City	535	189.0	2.83	27
Luton	513	118.2	4.34	17
Manchester	1,459	312.8	4.66	15
Nottingham City	412	197.1	2.09	33
Salford	427	137.0	3.12	25

* Office for National Statistics population estimates for local/unitary authorities aggregated where appropriate to match primary care trust boundaries.

† Numbers accessing care, population estimates and diagnosed HIV prevalence in the City of London UA were 45, 5,700 and 7.89 per 1,000, and in Hackney UA were 1,087, 141,400 and 7.69 per 1,000.

‡ Numbers accessing care, population estimates and diagnosed HIV prevalence in the Sutton UA were 208, 116,000 and 1.79 per 1,000, and in Merton UA were 411, 133,700 and 3.07 per 1,000.

§ Numbers accessing care, population estimates and diagnosed HIV prevalence in the Bournemouth LA were 257, 98,500 and 2.61 per 1,000, and in Poole LA were 97, 77,800 and 1.25 per 1,000.

¶ Office for National Statistics 2006 population estimate for Heart of Birmingham Teaching PCT.

Table 2. Primary care trusts in England where the prevalence of diagnosed HIV infection exceeded two adults per 1,000 population (aged 15-59 years) in a constituent local/unitary authority but not in the primary care trust overall in 2007.

Primary care trust	Local authority	Residents accessing HIV-related care (15-59)	Resident population (1,000s) (15-59)*	Diagnosed HIV prevalence per 1,000
Berkshire East	Slough	282	77.4	3.64
Berkshire West	Reading	252	95.9	2.63
East Sussex Downs & Weald	Eastbourne	119	52.3	2.28
Northamptonshire	Northampton	281	128.2	2.19
South East Essex	Southend-on-Sea	259	93.8	2.76
West Essex	Harlow	101	48.0	2.10
West Hertfordshire	Watford	127	50.7	2.50
West Sussex	Crawley	126	62.8	2.01

* Office for National Statistics population estimates for local/unitary authorities.

There are over 77,000 people living with HIV in the UK, a third of whom remain unaware of their infection, potentially putting their sexual partners at risk of HIV [8]. Furthermore, a third of all newly diagnosed individuals each year are diagnosed late (CD4 cell counts <200 cells per cubic mm) and are at increasing risk of early death [8-10]. The expected benefits of increased HIV testing are a reduction in late HIV diagnoses (and in consequent mortality) and a reduction in the number of people unaware of their HIV infection and consequent HIV transmission [9-11].

In addition to considering wider HIV testing policies in areas of high prevalence, the new guidelines also recommend:

A. Universal offer of an HIV test in each of the following settings:

- Genitourinary medicine (GUM) or sexual health clinics,
- Antenatal services,
- Termination of pregnancy services,
- Drug dependency programmes,
- Healthcare services for those diagnosed with tuberculosis, hepatitis B, hepatitis C or lymphoma.

B. HIV testing should be also offered and recommended as part of routine care to the following patients:

- Any patient presenting for healthcare where HIV, including primary HIV infection, enters the differential diagnosis,
- All men and women diagnosed with a sexually transmitted infection,
- All sexual partners of HIV-infected men and women,
- All men that have disclosed sexual contact with other men,
- All female sexual contacts of men who have sex with men,
- All patients reporting a history of injecting drug use,
- All men and women known to be from a country of high HIV prevalence (>1% [12])
- All men and women who report sexual contact abroad or in the UK with individuals from countries of high HIV prevalence [12].

C. For the following groups in accordance with existing Department of Health guidance:

- Blood donors,
- Dialysis patients,
- Organ transplant donors and recipients,
- All patients requiring immunosuppressant therapy.

References

1. BHIVA website: <http://www.bhiva.org/>; BASHH website: <http://www.bashh.org/>; BIS website: <http://www.britisheinfectionsociety.org/>
 2. Chief Medical Officer, Professor Sir Liam Donaldson. *Improving the detection and diagnosis of HIV in non-HIV specialties including primary care, 2007*. London: Department of Health, 2007. <http://www.info.doh.gov.uk/doh/embroadcast.nsf/vwDiscussionAll/EE0FA479BAA64A1B80257355003DFB47>.
 3. HPA SOPHID website: <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1201094588844>
 4. Walensky RP, Weinstein MC, Kimmel AD, Seage GR, III, Losina E, Sax PE *et al*. Routine human immunodeficiency virus testing: an economic evaluation of current guidelines. *Am J Med* 2005; **118**: 292-300.
 5. Paltiel AD, Weinstein MC, Kimmel AD, Seage GR, III, Losina E, Zhang H *et al*. Expanded screening for HIV in the United States - an analysis of cost-effectiveness. *N Engl J Med* 2005; **352**: 586-95.
 6. Sanders GD, Bayoumi AM, Sundaram V, Bilir-S-Pinar, Neukermans CP, Rydzak CE *et al*. Cost-effectiveness of screening for HIV in the era of highly active antiretroviral therapy. *N Engl J Med* 2005; **352**: 570-85.
 7. Walensky RP, Freedberg KA, Weinstein MC, Paltiel AD. Cost-effectiveness of HIV testing and treatment in the United States. *Clin Infect Dis* 2007; **45 Suppl 4**: S248-S254.
 8. The UK Collaborative Group for HIV and STI Surveillance. *Testing Times - HIV and other sexually transmitted infections in the United Kingdom: 2007*. London: Health Protection Agency Centre for Infections.
 9. Chadborn TR, Baster K, Delpuch VC, Sabin CA, Sinka K, Rice BD *et al*. No time to wait: how many HIV-infected homosexual men are diagnosed late and consequently die? (England and Wales, 1993-2002). *AIDS* 2005; **19**: 513-20.
 10. Chadborn TR, Delpuch VC, Sabin CA, Sinka K, Evans BG. The late diagnosis and consequent short-term mortality of HIV-infected heterosexuals (England and Wales, 2000-2004). *AIDS* 2006; **20**: 2371-9.
 11. Marks G, Crepaz N, Janssen RS. Estimating sexual transmission of HIV from persons aware and unaware that they are infected with the virus in the USA. *AIDS* 2006; **20**: 1447-50.
 12. UNAIDS website: Latest epidemiology data <http://www.unaids.org/en/KnowledgeCentre/HIVData/Epidemiology/latestEpiData.asp>.
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Latest figures show MRSA bloodstream infections falling

The latest data from the mandatory surveillance of MRSA bloodstream infections show that there were 836 cases reported in England during the April to June quarter of 2008 [1]. This is a 14% decrease on the previous quarter (January to March 2008) when 969 reports were received and a 36% reduction in the corresponding quarter of 2007 (April to June) when 1,306 reports were received.

There was a 30% decrease in the number of reported MRSA bacteraemias received in the financial year 2007/08 compared to the financial year 2006/07, with a decrease in the rate from 1.67 to 1.16 cases per 10,000 bed-days.

Quarterly reports of MRSA bacteraemia: April 2006 to June 2008

Quarter	Number of MRSA bloodstream infection reports
April 2006 – June 2006	1,742
July 2006 – September 2006	1,651
October 2006 – December 2006	1,543
January 2007 – March 2007	1,447
April 2007 – June 2007	1,306
July – September 2007	1,082
October – December 2007	1,091
January 2008 – March 2008	969
April 2008 – June 2008	836

References

1. Quarterly figures for MRSA bacteraemia derived from mandatory surveillance (April to June 2008). Available at: <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1191942126541>.

Infection reports

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HCAI

Voluntary surveillance of candidaemia in England, Wales and Northern Ireland: 2007

Voluntary surveillance of candidaemia in England, Wales and Northern Ireland: 2007

There were 1967 reports of *Candida* spp isolated from blood specimens in England, Wales and Northern Ireland in 2007 (see table 1). This is a 4% increase in the number of candidaemia reports made to the HPA in 2006 (1892 reports), consistent with the increasing trend observed since 1990 [1]. A more pronounced increase (14%) had been noted between 2004 and 2005. The overall reported rate of candidaemia reached 3.55 per 100,000 population (95% CI: 3.39-3.71) in 2007 (see table 2). As reporting is voluntary, these increases may be due in part to improved ascertainment.

Table 1. Laboratory reports of candidaemia by region England, Wales and Northern Ireland (EWNI): 2007

Region	Number of reports (%)
North West	314 (16.0%)
North East	53 (2.7%)
Yorkshire & the Humber	149 (7.6%)
West Midlands	173 (8.8%)
East Midlands	163 (8.3%)
East of England	181 (9.2%)
South East	220 (11.2%)
London	376 (19.1%)
South West	129 (6.6%)
England	1,763 (89.6%)
Wales	91 (4.6%)
Northern Ireland	113 (5.7%)
England, Wales & NI	1,967 (100%)

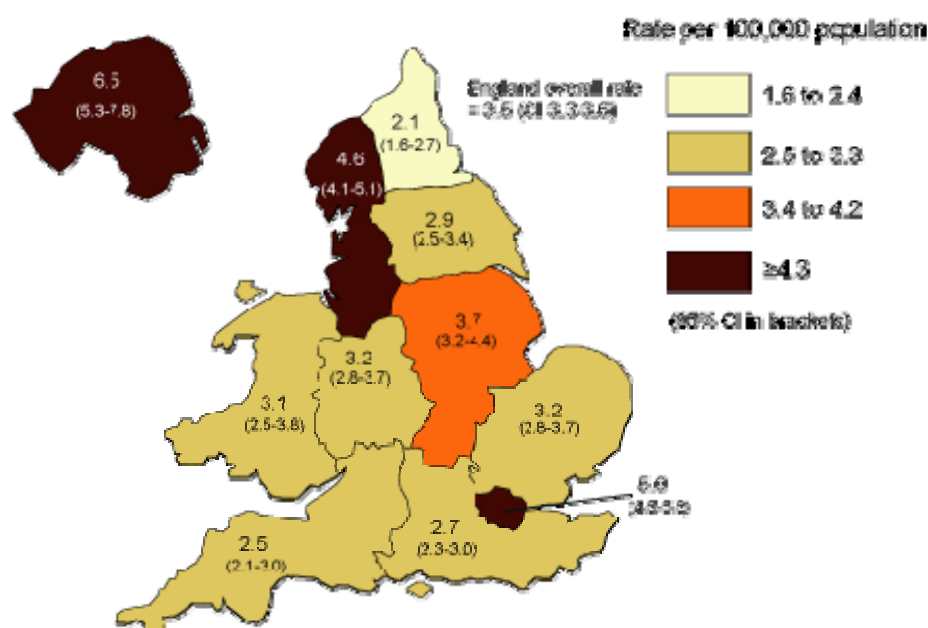
Table 2. Region-specific rates* of candidaemia reports (EWNI, 2007)

Region name	Rate (per 100,000)			
	2004	2005	2006	2007
North West	3.65	4.09	4.41	4.58
North East	4.28	3.56	3.56	2.07
Yorkshire & Humber	2.84	3.30	4.08	2.90
West Midlands	3.60	3.52	3.52	3.22
East Midlands	2.78	3.09	2.96	3.73
East of England	2.59	3.03	3.14	3.23
South East	1.74	1.67	2.16	2.67
London	2.10	3.46	4.02	5.01
South West	2.44	2.88	2.58	2.52
England	2.74	3.11	3.37	3.47
Wales	2.71	3.08	2.73	3.07
Northern Ireland	4.97	4.99	5.86	6.49
EWNI	2.81	3.17	3.41	3.55

* Rates calculated using 2006 mid-year resident population estimates based on 2001 census.
Source: ONS Population Estimates Unit.

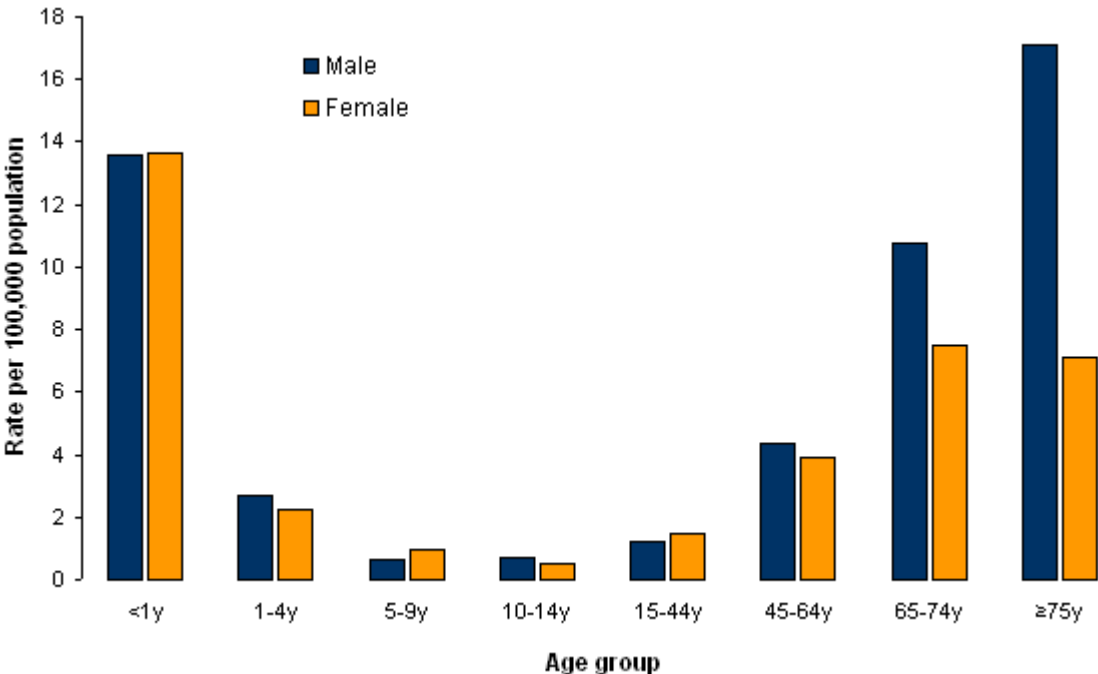
Considerable variations in the rates of candidaemia reports were noted between England, Wales and Northern Ireland (EWNI) in 2007 (figure 1), with reported rates in Northern Ireland being markedly higher (6.49/100,000) than for England (3.47) or Wales (3.07). There were increases in rates of candidaemia reports throughout EWNI between 2004 and 2007, with these increases being most pronounced in Northern Ireland: 4.97/100,000 in 2004 rising to 6.49/100,000 in 2007. Within the English regions, the rates of reports showed some variation, ranging from 2.07 in the North East to 5.01 in London. Rates of reports have increased in the majority of the geographical areas since 2004 (see table 2), with the most pronounced increases seen in London: from 2.10 in 2004 to 5.01 in 2007. The North East is the only geographical area to see a marked decrease in rates of reports: from 4.28 in 2004 to 2.07 in 2007.

Figure 1. Region-specific rates of candidaemia reports, England, Wales and Northern Ireland: 2007



Candidaemia rates were higher in males than females in most age groups (figure 2), particularly pronounced in the elderly (aged 75 and older) where the rate of reports in males (17.07/100,000) was over double of that seen in females (7.09). Rates in male and female infants (under one year) were similar to each other at 13.58 and 13.62/100,000 respectively. The rate for female infants has increased markedly from 8.68/100,000 in 2005 to 13.62/100,000 in 2007, whilst the rate for male infants decreased from 15.35/100,000 in 2005 to 13.58/100,000 in 2007.

Figure 2. Age-specific rates* of candidaemia per 100,000 population, England, Wales, and Northern Ireland: 2007



* Rates calculated using 2006 mid-year resident population estimates based on 2001 census.
Source: ONS Population Estimates Unit.

The proportion of reports in which *Candida* bloodstream infection was recorded without full species information continued to decrease, from 11.2% in 2004 to 9.9% in 2007 (table 3). Of the remainder, *Candida albicans* was the most frequently reported species in 2007, accounting for 52% of candidaemia reports, with the other common species including *C. glabrata* (19%) and *C. parapsilosis* (10%) (see table 3).

Table 3. Laboratory reports of candidaemia by species, England, Wales and Northern Ireland: 2007

Species	Number of reports (%)			
	2004	2005	2006	2007
<i>Candida albicans</i>	824 (54%)	959 (55%)	1,019 (54%)	1,015 (52%)
<i>Candida famata</i>	2 (0%)	3 (0%)	12 (1%)	2 (0%)
<i>Candida glabrata</i>	244 (16%)	306 (18%)	331 (17%)	381 (19%)
<i>Candida guilliermondii</i>	10 (1%)	12 (1%)	23 (1%)	27 (1%)
<i>Candida kefyr</i>	1 (0%)	4 (0%)	3 (0%)	1 (0%)
<i>Candida krusei</i>	28 (2%)	24 (1%)	24 (1%)	27 (1%)
<i>Candida lusitanae</i>	10 (1%)	13 (1%)	18 (1%)	22 (1%)
<i>Candida parapsilosis</i>	177 (12%)	182 (10%)	209 (11%)	196 (10%)
<i>Candida tropicalis</i>	52 (3%)	70 (4%)	58 (3%)	73 (4%)
<i>Candida pelliculosa</i>	0 (0%)	1 (0%)	0 (0%)	3 (0%)
<i>Candida</i> spp. - species not recorded	172 (11%)	155 (9%)	167 (9%)	194 (10%)
<i>Candida</i> spp - other named	19 (1%)	18 (1%)	28 (1%)	26 (1%)
Total	1539 (100%)	1747 (100%)	1892 (100%)	1967 (100%)

Reporting to species level is important for monitoring changes in the epidemiology of these infections, with different species being associated with infections in different patient groups and with differing levels of antifungal susceptibility [2]. For assistance with identification, laboratories can submit isolates to the Mycology Reference Laboratory in Bristol, <http://www.hpa.org.uk/srmd/mycology/index.htm>.

The analyses presented are based on data extracted from LabBase2* in August 2008 for the period from 2004 to 2007. Rates were calculated using 2006 mid-year resident population estimates based on 2001 census (Source: ONS Population Estimates Unit). Further data tables can be viewed in the full text online version: http://www.hpa.org.uk/infections/topics_az/fungal_infections/epi_data.htm.

References

1. Lamagni TL, Evans BG, Shigematsu M, Johnson EM. Emerging trends in the epidemiology of invasive mycoses in England and Wales (1990-1999). *Epidemiol Infect* 2001; **126**: 397-414.
2. Hobson RP. The global epidemiology of invasive *Candida* infections – is the tide turning? *J Hosp Infect* 2003; **55**: 159-68.

Footnote

* LabBase2 is the database that collects laboratory reports of all micro-organisms isolated at nearly 400 NHS and other laboratories throughout England and Wales. The database is managed and accessed at the Centre for Infections.