

# Healthcare associated Infections

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## Voluntary surveillance of candidaemia in England, Wales, and Northern Ireland: 2006

### Introduction

These analyses are based on data extracted from our voluntary surveillance database, LabBase 2\*, on the 7<sup>th</sup> September 2007 for the period 2003-2006. The data presented here differ in some instances from data in earlier publications due to the addition of late reports to the database.

Rates were calculated using 2006 mid-year resident population estimates based on the 2001 census for England, Wales, and Northern Ireland. Regional analyses were made with reference to the Government Office Regions introduced in April 2002.

### Overall trend in reports

There were 1873 reports of *Candida* spp isolated from blood specimens in England, Wales, and Northern Ireland in 2006 (see [Table 1](#)). This is a 7% increase in the number of candidaemia reports made to the HPA since 2005 (1747 reports), consistent with the increasing trend observed since 1990 [1].

**Table 1 Laboratory reports of candidaemia by region: England, Wales and Northern Ireland 2006**

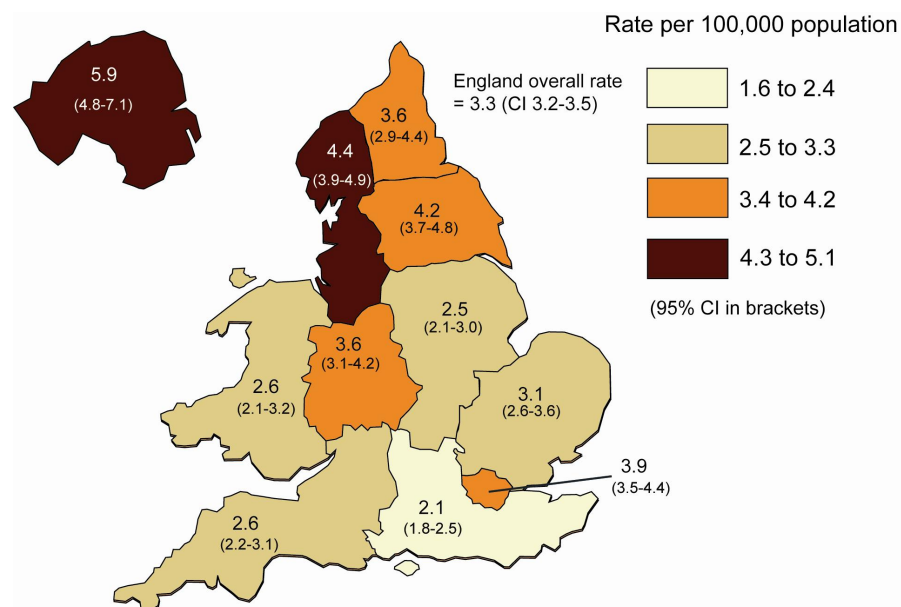
<b>Region</b>	<b>Number of reports (%)</b>	
North East	94	(5%)
Yorkshire & Humber	218	(12%)
East Midlands	110	(6%)
East of England	172	(9%)
London	296	(16%)
South East	176	(9%)
South West	134	(7%)
West Midlands	194	(10%)
North West	300	(16%)
<b>England</b>	<b>1694</b>	<b>(90%)</b>
<b>Wales</b>	<b>77</b>	<b>(4%)</b>
<b>Northern Ireland</b>	<b>102</b>	<b>(5%)</b>
<b>England, Wales &amp; NI</b>	<b>1873</b>	<b>(100%)</b>

A more pronounced increase (14%) was noted between 2004 and 2005. The overall reported rate of candidaemia reached 3.38 per 100,000 population (95% CI: 3.23-3.53) in 2006 (see [Table 2](#)). As reporting is voluntary, these increases may be due in part to improved ascertainment.

## Region-specific rates

Considerable variations in rates of candidaemia reports were noted between countries in 2006 (figure 1), with reported rates in Northern Ireland being markedly higher at 5.86/100,000 than for England (3.34) or Wales (2.60).

Figure 1 Region-specific rates of candidaemia reports, England, Wales, and Northern Ireland: 2006



Within the English regions, rates of reports showed some variation, ranging from 2.14 in the South East to 4.38 in the North West. Rates of reports increased in all geographical areas since 2002 (see Table 2), with the most pronounced increases seen in the North West, from 2.59 in 2002 to 4.38 in 2006.

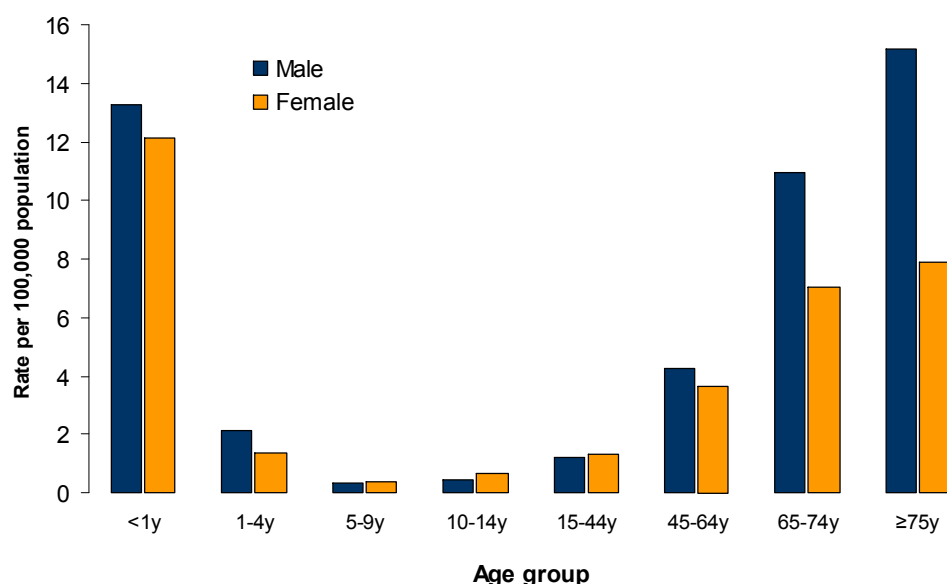
Table 2 Region-specific rates of candidaemia reports; England, Wales and Northern Ireland

Region name	Rate (per 100,000)			
	2003	2004	2005	2006
North West	2.59	3.59	4.10	4.38
North East	2.80	4.32	3.60	3.68
Yorkshire & Humber	2.62	2.96	3.40	4.24
West Midlands	3.20	3.62	3.75	3.61
East Midlands	2.47	2.52	2.74	2.52
East of England	2.62	2.70	3.01	3.07
South West	2.34	2.50	2.92	2.62
South East	1.97	1.62	1.56	2.14
London	2.71	2.23	3.55	3.94
<b>England</b>	<b>2.55</b>	<b>2.75</b>	<b>3.12</b>	<b>3.34</b>
<b>Wales</b>	<b>1.77</b>	<b>2.61</b>	<b>2.97</b>	<b>2.60</b>
<b>Northern Ireland</b>	<b>4.35</b>	<b>4.97</b>	<b>4.99</b>	<b>5.86</b>
<b>England, Wales &amp; N.I.</b>	<b>2.57</b>	<b>2.81</b>	<b>3.17</b>	<b>3.38</b>

## Age-specific rates

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 (15.20/100,000) was nearly double that in females (7.89). Rates in male and female infants (under 1 year) were similar to each other at 13.29 and 12.11/100,000 respectively.

Figure 2 Age-specific rates of candidaemia per 100,000 population; England, Wales, and Northern Ireland: 2006



## Species-specific data

The proportion of reports in which *Candida* bloodstream infection was recorded without full species information continued to decrease, from 9.9% in 2005 to 8.9% in 2006 (Table 3). Of the remainder, *Candida albicans* was the most frequently reported species in 2006, accounting for 54% of candidaemia reports, with the other common species including *C. glabrata* (18%) and *C. parapsilosis* (11%).

Table 3 Laboratory reports of candidaemia by species; England, Wales, and Northern Ireland

Species	2003		2004		2005		2006	
	no.	(%)	no.	(%)	no.	(%)	no.	(%)
<i>Candida albicans</i>	762	(55%)	824	(54%)	959	(55%)	1005	(54%)
<i>Candida famata</i>	7	(1%)	2	(0%)	3	(0%)	12	(1%)
<i>Candida glabrata</i>	229	(16%)	244	(16%)	306	(18%)	328	(18%)
<i>Candida guilliermondii</i>	13	(1%)	10	(1%)	12	(1%)	23	(1%)
<i>Candida kefyr</i>	1	(0%)	1	(0%)	4	(0%)	3	(0%)
<i>Candida krusei</i>	25	(2%)	28	(2%)	24	(1%)	23	(1%)
<i>Candida lusitanae</i>	10	(1%)	10	(1%)	13	(1%)	18	(1%)
<i>Candida parapsilosis</i>	151	(11%)	177	(12%)	182	(10%)	209	(11%)
<i>Candida tropicalis</i>	41	(3%)	52	(3%)	70	(4%)	58	(3%)
<i>Candida pelliculosa</i>	0	(0%)	0	(0%)	1	(0%)	0	(0%)
<i>Candida</i> spp - species not recorded	147	(11%)	171	(11%)	155	(9%)	166	(9%)
<i>Candida</i> spp - other named	12	(1%)	19	(1%)	18	(1%)	28	(1%)
<b>Total</b>	<b>1398</b>	<b>(100%)</b>	<b>1538</b>	<b>(100%)</b>	<b>1747</b>	<b>(100%)</b>	<b>1873</b>	<b>(100%)</b>

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>>.

### **Suggested citation**

Data found in the *Health Protection Report* summary publication and on the online full text version can be cited as: HPA. Candidaemia in England, Wales and Northern Ireland: 2006. *Health Protection Report* [serial online] 2007 [date cited]; 1(42): HCAI

### **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 microorganisms isolated at nearly 400 NHS and other laboratories throughout England and Wales. The database is managed and accessed at the Centre for Infections.