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News

Salmonella Enteritidis infection in England and Wales – update from a multi-Agency national outbreak control team

Following a sustained increase in the incidence of infections caused by *Salmonella* Enteritidis phage types (PT) other than PT4 (*S*. Enteritidis non-PT4) in England and Wales since 2000, a multi-Agency outbreak control team (OCT) was convened in August 2004 (1). Its remit was to examine the evidence surrounding the increase, to identify appropriate interventions and make recommendations for tackling the problem.

The OCT concluded that eggs imported from Spain were implicated as the main cause for the increased numbers of infections and that the use of Spanish eggs in the catering industry was the main cause for general outbreaks. The OCT agreed a number of actions:

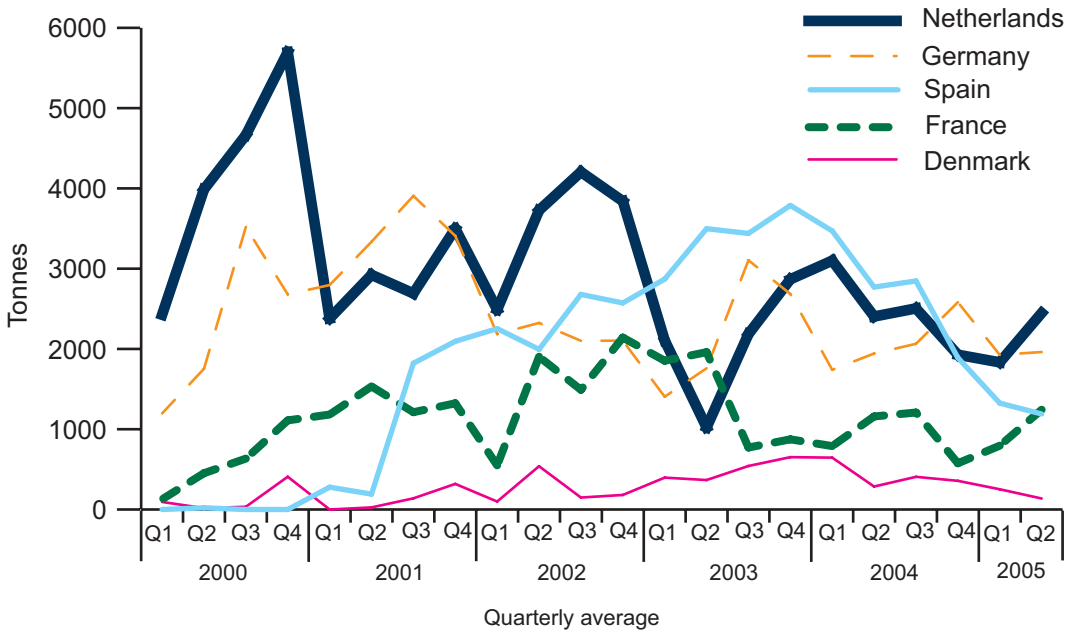
- The evidence received by the OCT be presented to the European Commission.
- The Food Standards Agency continue formal discussions with the Spanish Authorities into the actions being taken in reducing salmonella contamination in the Spanish laying flock.
- The OCT issue advice to the relevant sectors of the catering industry and to egg importers on the use of Spanish eggs.
- The Health Protection Agency (HPA) issue the results of microbiological and epidemiological investigations on its website.
- Continued active surveillance of, and response to, outbreaks of *S*. Enteritidis infection in England and Wales to be undertaken.

A targeted national risk communication strategy was launched in October 2004 to raise awareness among egg importers, caterers and the general public (2,3). This followed a local initiative in north west England in July and August, where a particularly high number of outbreaks of *S*. Enteritidis PT 14b infection occurred (4). A meeting between the United Kingdom (UK) and Spanish Authorities was held in Madrid on 21 October 2004 and a meeting with representatives of the Chinese restaurant Industry was held on 5 November 2004. A dossier of evidence was presented to the Standing Committee on the Food Chain and Animal Health (SCFCAH) at its meeting on 17 December 2004 (5). Representatives of the HPA and the Department for the Environment, Food, and Rural Affairs (Defra) met with representatives of the UK egg industry on 3 March 2005 and this preceded a meeting between representatives from the HPA, the UK egg industry and the Spanish egg industry (INPROVO) on 11 April 2005.

Sourcing of non-UK eggs in the UK

Between July and September 2004, 9415 tonnes of eggs in the UK were sourced from outside the UK, with Spain the single most common supplier (figure 1). Between October and December 2004, 7762 tonnes were sourced from abroad (an 18% decline) and in the first quarter of 2005 the sourcing of eggs from outside the UK declined further (6614 tonnes, a 15% decline). During the same period the sourcing of eggs from Spain declined by 53% (2847 tonnes to 1325 tonnes). This decline continued into the second quarter of 2005 (1190 tonnes; a 10% decline). The decline in sourcing from other countries was not sustained during this period, with increased sourcing from France and the Netherlands.

Figure 1 Sourcing of non-UK eggs in the UK showing the five most common suppliers. Provisional data for January 2000 to June 2005 by quarter (Source: DEFRA)



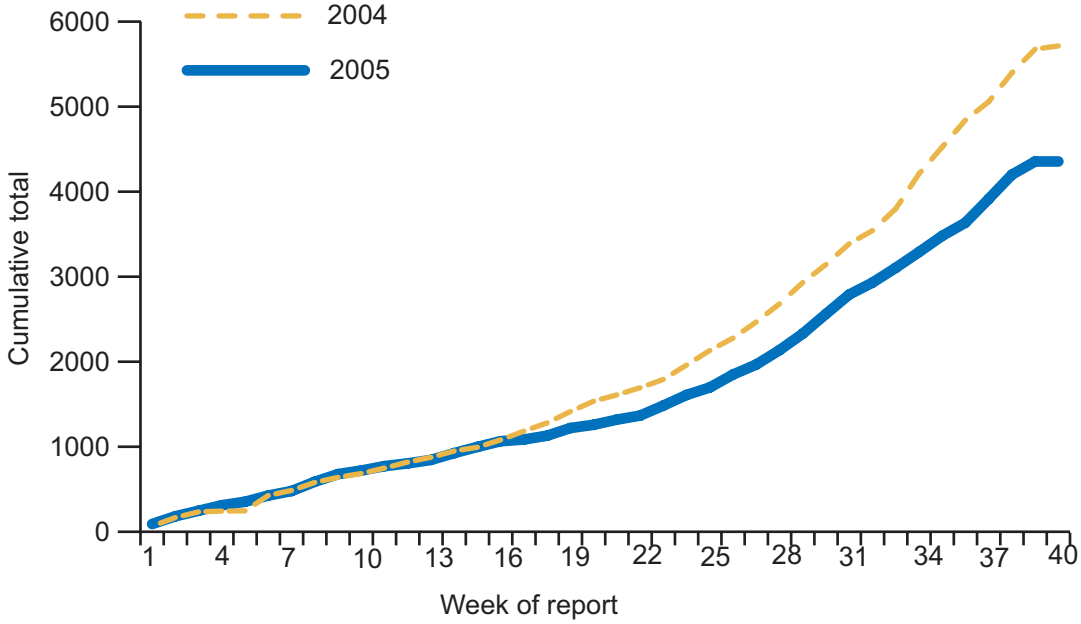
***Salmonella* Enteritidis in Great Britain chicken flocks**

Most sampling of chicken flocks in Great Britain is undertaken for statutory monitoring or for surveillance purposes, so most incidents and isolations reported are not associated with clinical disease but with identification of subclinical carriage of salmonella. In 2004 there were 11 reports of *S*. Enteritidis incidents in chickens – 34 fewer than in 2003 (6). The reported phage types were PT4 (six incidents), PT6 (two) and one each of PTs 7, 11, and 35. One incident occurred in a broiler flock (PT11) with the remaineder in layer flocks. One provisional *S*. Enteritidis PT4 incident in a layer flock was reported in the first quarter of 2005 (source: Veterinary Laboratories Agency). The main phage types in British poultry are, therefore, PTs 4, 6, and 7, which is consistent with previous years.

Laboratory reports of human *S*. Enteritidis infection

Between 1 January and 30 September 2004 the HPA Laboratory of Enteric Pathogens (LEP) reported on 6679 human infections with *S*. Enteritidis in England and Wales. In the same period in 2005, 5393 human infections were confirmed by the LEP, a 19% decrease in incidence. When cases known to be associated with foreign travel were excluded (965 and 1038 cases respectively) the decline was greater (5714 to 4355 cases, 24% [figure 2]).

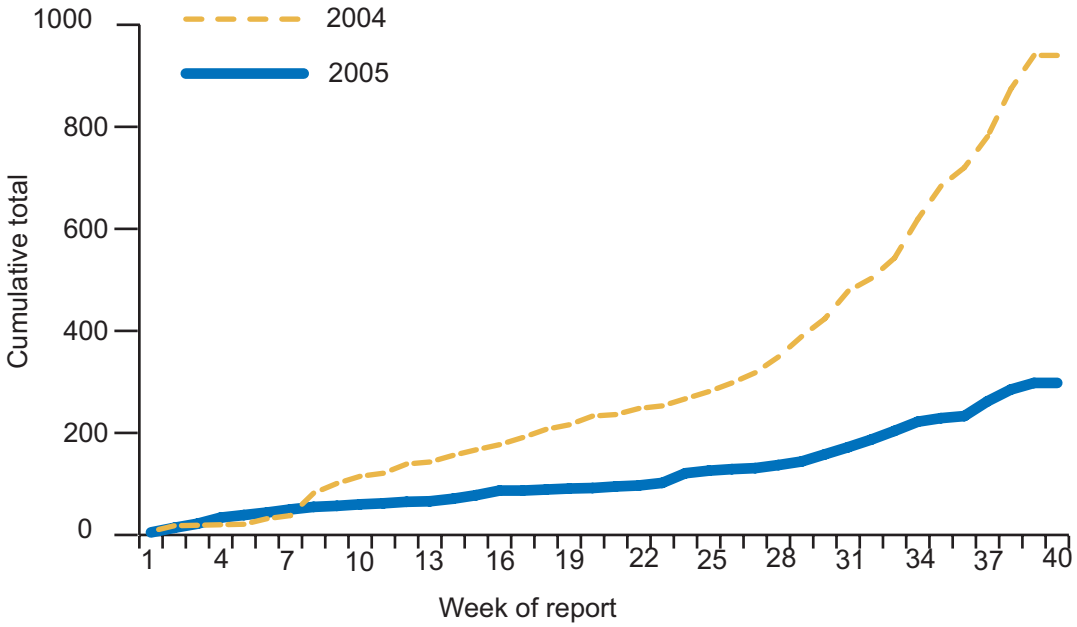
Figure 2 Non travel-associated *S* . Enteritidis human infections confirmed by the LEP* from January to June. England and Wales: 2004 and 2005



* LEP = the Health Protection Agency Laboratory of Enteric Pathogens.

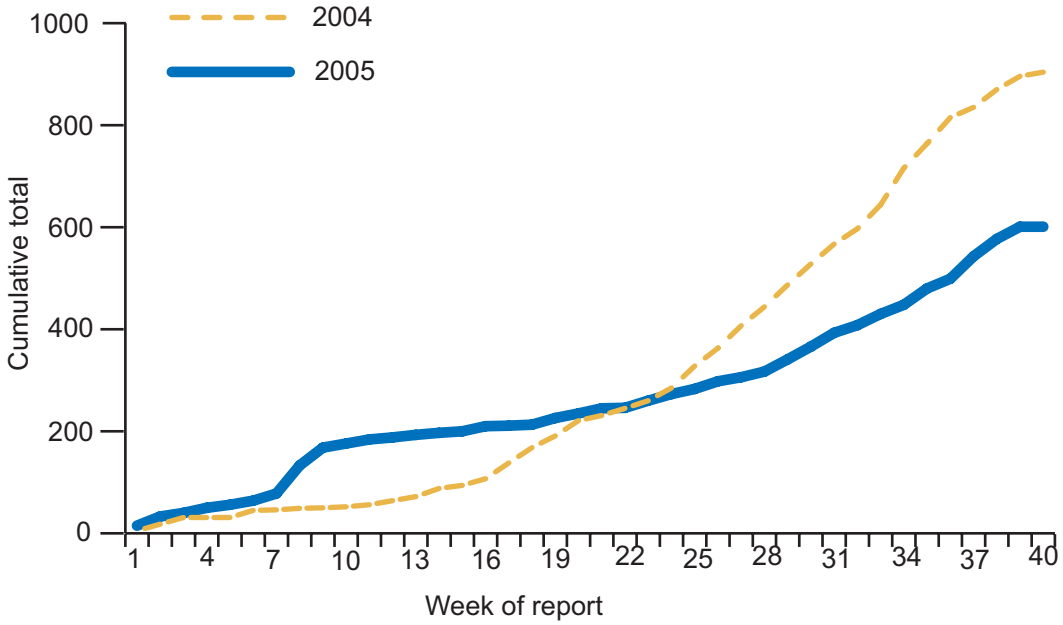
Two subtypes of *S*. Enteritidis, PT14b and PT1 resistant to nalidixic acid with decreased susceptibility to ciprofloxacin (NxCpL), were commonly reported as the causative organism in outbreaks linked to the use of Spanish eggs (5). In the first nine months of 2005 the incidence of *S.* Enteritidis PT14b has declined by 63% compared to the same time period in 2004 (1012 to 372 isolates). When known travel-associated cases were excluded, the decline was 68% (940 to 298 isolates [figure 3]). The incidence of *S*. Enteritidis PT 1 NxCpL declined by 30% (all cases: 1089 to 758 isolates) and 34% (non travel-associated cases: 904 to 601 isolates) over the same time period [figure 4]). The slower decline in *S*. Enteritidis PT1 NxCpL infection is due in part to an outbreak in North East London in February 2005 with 108 confirmed cases.

Figure 3 Non travel-associated *S* . Enteritidis PT 14b human infections confirmed by the LEP* from January to June. England and Wales, 2004 and 2005



* LEP = the Health Protection Agency Laboratory of Enteric Pathogens.

Figure 4 Non travel-associated *S* . Enteritidis PT 1 NxCpL human infections confirmed by the LEP* from January to June, England and Wales: 2004 and 2005



* LEP = the Health Protection Agency Laboratory of Enteric Pathogens.

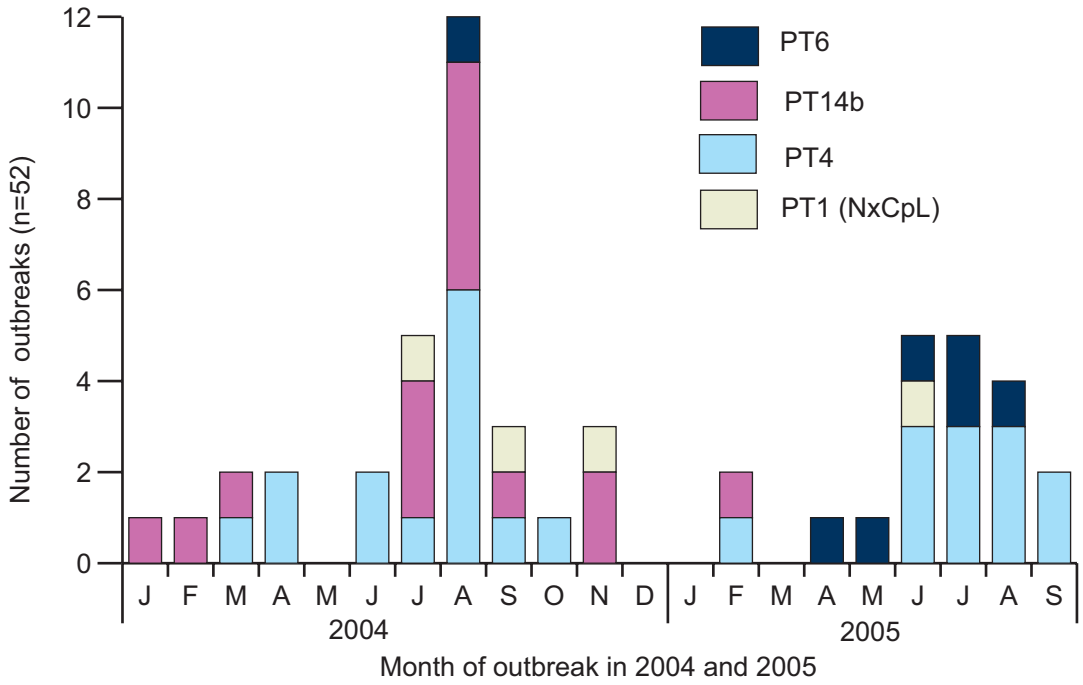
The incidence of two common *S*. Enteritidis phage types, not known to be associated with the use of non-UK eggs, have increased in the first nine months of 2005 compared to the same period in 2004. The incidence of *S*. Enteritidis

PT6 infection has increased by 24% (325 to 402 isolates) while the incidence of *S*. Enteritidis PT8 infection has increased by 62% (254 to 412 isolates). When cases associated with foreign travel were excluded the increases were broadly similar (295 to 370 isolates [25%], and 204 to 323 isolates [58%] for PT6 and PT8 respectively).

General outbreaks of *S*. Enteritidis infection

Between 1 January and 31 December 2004, the HPA Centre for Infections (CfI) received initial reports of 45 general outbreaks of *S*. Enteritidis infection. The most commonly reported subtypes were PT4 (14), PT14b (14) and PT1 NxCpL (4) and outbreaks tended to occur in the latter half of the year. Thirty-four outbreaks were linked to commercial catering premises with restaurants most commonly reported (28 outbreaks). Between 1 January and 30 September 2005, CfI received initial reports on 32 outbreaks (figure 5). The most commonly reported subtypes were PT4 (12), PT6 (6) PT25 (3), and PT 21 (3), with a single outbreak each of *S*. Enteritidis PT14b and PT1 NxCpL infection reported. Twenty-eight of these outbreaks were associated with commercial catering premises with 18 reported in restaurants.

Figure 5 Initial reports of outbreaks of *S* . Enteritidis infection reported to CfI , England and Wales, 2004 (January to December) and 2005 (January to September). Main phage types shown.



Conclusions

Decreased sourcing of eggs from outside the UK since autumn 2004 has been associated with a substantial decline in the incidence of human *S*. Enteritidis infection in England and Wales, especially with certain subtypes. This suggests that even relatively small reductions in the prevalence of *S*. Enteritidis in eggs available directly, or indirectly, to consumers in the UK can have a significant effect on human infection. Although the prevalence of *S*. Enteritidis in UK eggs is low (7) no egg can be guaranteed to be free from Salmonella. The current UK Food Standards Agency (FSA) advice to members of the public preparing food for people who are particularly vulnerable to salmonella infection (babies and toddlers, the elderly, pregnant women, and those who are already ill) is to make sure that eggs are cooked until the whites and yolk are solid (8).

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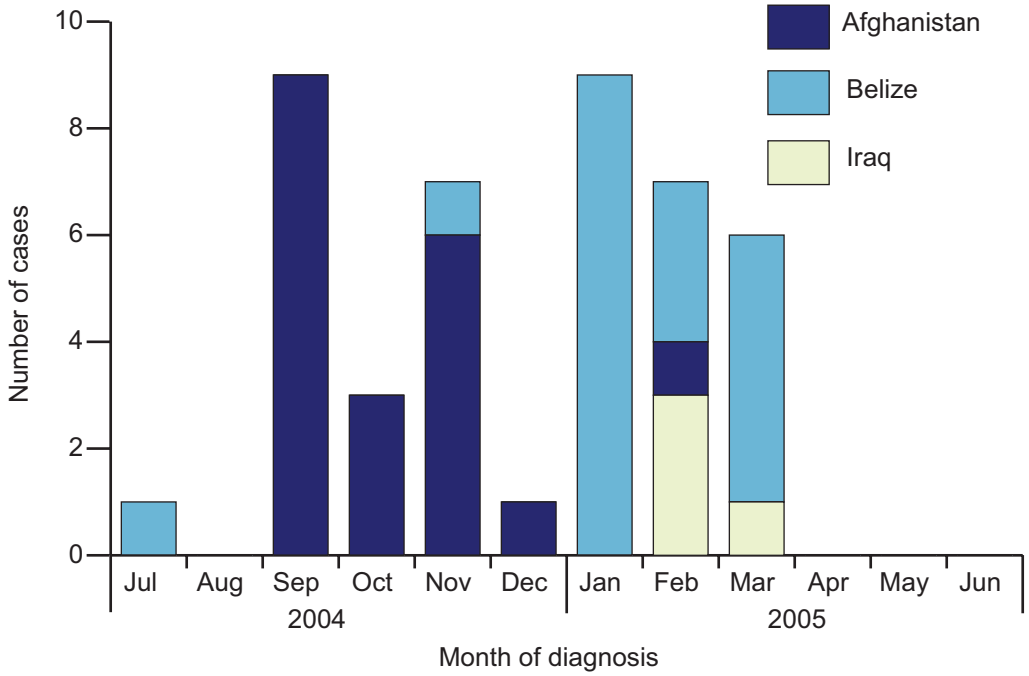
Cutaneous leishmaniasis in the UK Armed Forces

From July 2004 to June 2005 cutaneous leishmaniasis was diagnosed in 43 members of the British Armed Forces; 33 were confirmed by at least one laboratory technique, and ten were diagnosed on clinical grounds alone (figure). Of these, 20 had served in northern Afghanistan, 19 in Belize, and four in Iraq. All were repatriated to the United Kingdom (UK) for treatment in accordance with current UK military treatment protocols (1).

Figure Cutaneous leishmaniasis in the UK Armed Forces: July 2004 to June 2005



One outbreak occurred in northern Afghanistan, in a camp situated in a rural area. UK personnel were accommodated in tents arranged in three rows close to an area of recently cleared scrub, where many wild rodents

had been observed. The risk of infection was related to the proximity of sleeping accommodation to the area of cleared scrub (2). The camp was far from human habitation and it seems likely that this was a zoonotic outbreak, with rodents acting as the reservoir. The organism in this case was *L. major*.

Several cases had atypical clinical features, including secondary lesions due to the Koebner phenomenon, sporotrichoid lymphatic spread, poor responses to established treatments, and milia around recently healed lesions (which could be mistaken as a sign of recurrence). These 20 cases were associated with significant morbidity. Four months later, four of the 20 cases were still not fit for their next overseas deployment, and one had to be evacuated with a recurrence.

A second outbreak occurred in Belize, among UK personnel exercising in the jungle environment. On this occasion, cases were due to a failure to fully adopt preventative measures, which are based on personal action aimed at bite avoidance and collective action aimed at controlling the number of sand flies. Troops deploying to Belize are advised to cover exposed skin at dawn and dusk, to treat their clothes with insecticide, to use insect repellent throughout the day, to use a mosquito net when sleeping, and to use a hammock when camping in the jungle. In addition, the number of sand flies is controlled by the regular use of environmental insecticide dispersed through a thermal insecticidal fogger (Swingfog).

Cutaneous leishmaniasis is a protozoan parasitic infection that is caused by parasites of the genus *Leishmania* that are transmitted by female sand flies (3). It is usually a zoonotic disease, with rodents or canids acting as the natural reservoirs, but in urban areas and refugee camps it is also transmissible from person-to-person (4). In either case, the most common presentation in humans is cutaneous ulcers, usually on exposed parts of the body. It is endemic throughout the Middle East, North Africa, the Mediterranean basin, sub-Saharan Africa, and countries of the former Soviet Union, with localised foci in parts of South America,. The World Health Organization estimates that 1.5 million cases occur each year worldwide (5). Transmission occurs in both rural and urban/peri-urban settings and in 2003 there were large numbers of cases reported in cities of the Middle East, including Kabul, where the situation was particularly severe (6,7)

Personnel from the UK Armed Forces are regularly deployed to areas of the world where unusual diseases are common. Such deployments increasingly include members of the Reserve Forces and Territorial Army who may have returned to civilian life before their symptoms present. UK Armed Forces personnel are frequently deployed to areas of the world where leishmaniasis is endemic, and are a major source of cases imported into the UK. Civilian GPs and other medical practitioners should consider the diagnosis of cutaneous leishmaniasis when seeing patients who have recently been deployed overseas with the UK Armed Forces who present with cutaneous ulcers.

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Avian Influenza A (H5N1) update

Avian influenza A (H5N1) has been identified as the agent responsible for recent outbreaks of disease in domestic birds in Romania and Turkey. Although investigations into human infection in Asia indicate that avian influenza H5N1 is not transmitted easily from birds to humans, spread of avian H5N1 to these two areas increases the possibility that additional human cases of H5N1 could occur. The risk of infection with avian H5N1 for most people would be extremely low. Those at increased risk include workers engaged in culling infected poultry and those who work or live in regions affected by H5N1 and have contact with poultry.

In response to these developments, the European Commission has blocked the import of live birds, poultry meat, and other poultry products from the affected countries and both Turkish and Romanian authorities have taken actions to restrict the movement of livestock and cull infected birds. In addition, the European Centre for Disease Control (ECDC) has published an interim assessment of the public health risk from avian H5N1 and guidance for protection of workers against occupational infection and for travellers to affected areas <http://www.ecdc.eu.int>.

The World Health Organization (WHO) recommended that all countries located along bird migration routes should be vigilant for signs of disease in wild and domestic birds as recent events imply that migrating birds may play a role in the direct spread of H5N1 to new areas.

The presence of avian influenza H5N1 in birds in Greece has yet to be confirmed.

Launch of the Global Patient Safety Challenge 2005/2006 (13 October 2005): healthcare-associated infection

On 13 October 2005, the World Health Organization (WHO) launched the Global Patient Safety Challenge 2005-2006 with the theme ‘Clean care is safer care’, chaired by Sir Liam Donaldson, Chair of the World Alliance for Patient Safety. This builds upon the momentum generated by the fifty-eighth World Health Assembly briefing held in May 2005 to introduce the Global Patient Safety Challenge to WHO member states.

The Global Patient Safety Challenge is a core element of the work of the World Alliance for Patient Safety, covering a significant aspect of risk to patients receiving health care, while changing every two years. The Challenge for the period 2005-6 is to address the problems of healthcare-associated infection. The Global Patient Safety Challenge will bring together the WHO Guidelines on hand hygiene in healthcare (advanced draft) with actions on blood safety, injection, immunisation safety, safe clinical practices, safe water, and sanitation and waste management.

Reducing accidents and the risk of error in healthcare requires a significant and sustained response at global and national levels, across all levels of the healthcare system. For this reason, WHO and its partners launched the World Alliance for Patient Safety, in October 2004, to advance the patient safety goal ‘first do no harm’ and cut the number of illness, injuries and death suffered by patients.

For more information on the launch of the Global Patient Safety Challenge or for more information about the work of the World Alliance for Patient Safety, visit the patient safety pages on the WHO website at <http://www.who.int/patientsafety>.

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Healthcare Associated Infections

Laboratory reports of candidaemia, England, Wales, and Northern Ireland: 2004
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Laboratory reports of candidaemia, England, Wales, and Northern Ireland: 2004

Summary

- There were 1493 reports of *Candida* spp blood isolates in England, Wales, and Northern Ireland made in 2004 through routine laboratory reporting.
- The overall rate of reports of candidaemia was 2.73 per 100,000 population in 2004, an increase from 2.53/100,000 reported in 2003.
- There was considerable variation in region-specific rates of candidaemia, with Northern Ireland being the highest, 4.91/100,000, and South East the lowest, 1.62/100,000.
- The largest regional change in rate from 2003 was observed in North East region, which increased from 2.76/100,000 in 2003 to 4.20/100,000 in 2004.
- The highest age-specific rate of candidaemia in 2004 was in males aged under 1 year at 12.59/100,000.
- The proportion of reports in which *Candida* infection was recorded without full species decreased from 11.4% in 2003 to 9.2% in 2004.
- *Candida albicans* was the most frequently reported species in 2004, accounting for 55% of reports, with the other common species including *C. glabrata* and *C. parapsilosis*.

Introduction

This report summarises data on microbiological identifications of *Candida* spp blood isolates reported on a voluntary basis to the Health Protection Agency's Centre for Infections from laboratories in England, Wales, and Northern Ireland. These data were extracted on 15 September 2005. Late submission of reports from 2004 may occur subsequent to the publication of this report, therefore, the data published here are provisional.

Results and discussion

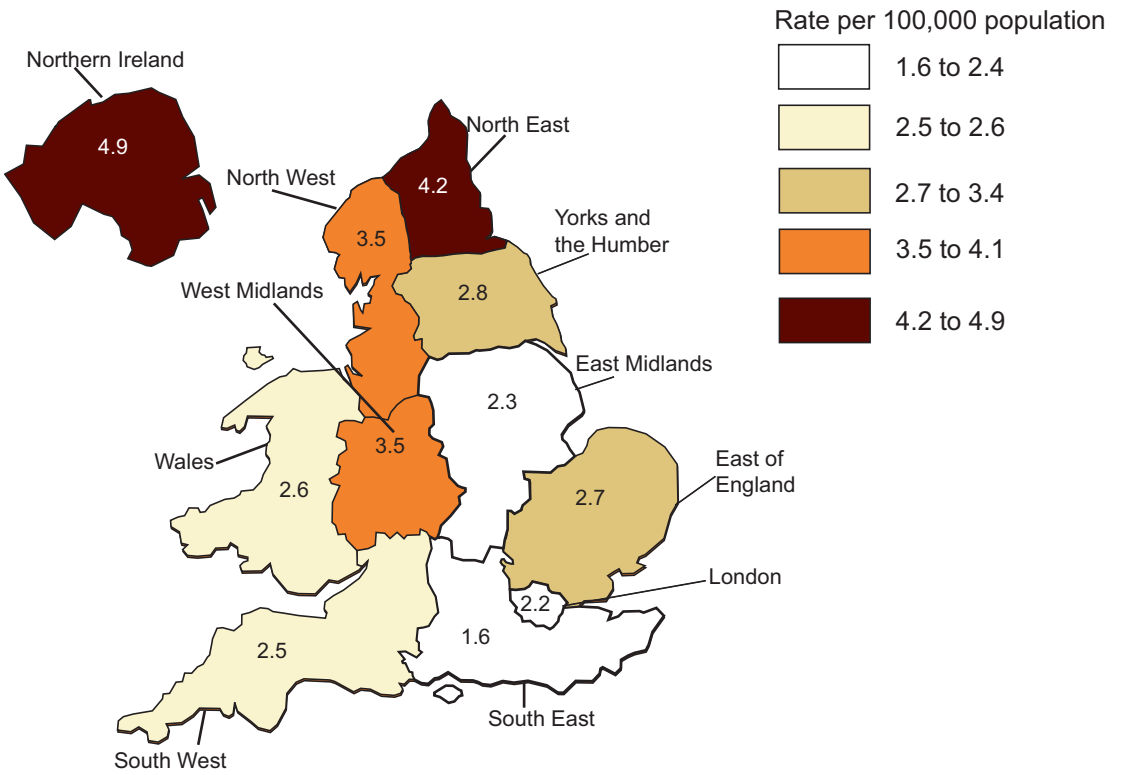
There were 1493 reports made of *Candida* spp isolated from blood specimens in England, Wales, and Northern Ireland in 2004 from 172 laboratories, a 7.6% increase from the 1380 reports in 2003 (1). The overall rate of candidaemia reports was 2.73 per 100,000 population (95%CI: 2.59-2.87) in 2004 compared with 2.53/100,000 (95%CI: 2.40-2.67) in 2003, representing a continuation of the increasing trend observed since 1990 (1,2). The increase in reported rate may be due, in part, to improved ascertainment, but follows rises reported elsewhere attributable to the increasing pool of vulnerable individuals (3,4).

There was considerable variation in rates of reports of candidaemia between regions in England, Wales, and Northern Ireland. The largest number of reports was received from the North West region, which accounted for 16% of the total (239 reports) (table 1). Wales reported the lowest number of cases, accounting for 4% of reports. The highest region-specific rate was observed in Northern Ireland at 4.91/100,000 (95%CI: 3.92-6.08) and the lowest was in the South East region at 1.62/100,000 (95%CI: 1.35-1.92) (figure 1 and table 2). These differences in regional rates may be partly attributable to variations in completeness of reporting, but may also be affected by variations in numbers of vulnerable patients according to the distribution of treatment centres. The largest regional change in rate from 2003 was observed in North East region, where the reported rate increased from 2.76/100,000 (95%CI: 2.15-3.48) in 2003 (1) to 4.20/100,000 (95%CI: 3.45-5.08) in 2004.

Table 1 Laboratory reports of candidaemia by region, England, Wales and Northern Ireland: 2004

Region	Number of reports	
North East	107	(7.2%)
Yorkshire & Humber	142	(9.6%)
East Midlands	98	(6.6%)
East of England	146	(9.8%)
London	160	(10.7%)
South East	131	(8.8%)
South West	124	(8.3%)
West Midlands	186	(12.4%)
North West	239	(16.0%)
England	1333	(89.3%)
Wales	76	(5.1%)
Northern Ireland	84	(5.6%)
England, Wales, & Northern Ireland	1493	(100.0%)

Figure 1 Region-specific rates* of candidaemia reports, England, Wales, and Northern Ireland: 2004



*Rates calculated using 2004 mid-year resident population estimates based on 2001 census, Source: ONS Population Estimates Unit.

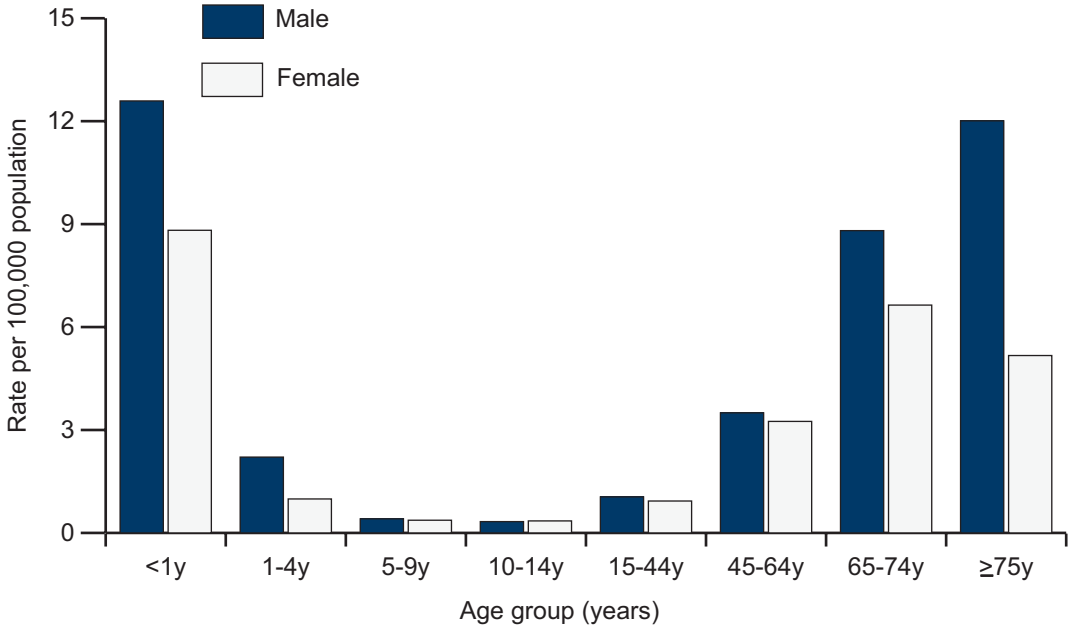
Table 2 Region-specific rates* of candidaemia reports (with 95% confidence intervals), England, Wales, and Northern Ireland: 2004

Region Name	Rate	Confidence interval 95%
North East	4.2	3.4-5.1
Yorkshire & Humber	2.8	2.4-3.3
East Midlands	2.3	1.9-2.8
East of England	2.7	2.2-3.1
London	2.2	1.8-2.5
South East	1.6	1.4-1.9
South West	2.5	2.0-2.9
West Midlands	3.5	3.0-4.0
North West	3.5	3.1-4.0
Wales	**2.6**	**2.0-3.2**
Northern Ireland	**4.9**	**3.9-6.1**
England	**2.7**	**2.5-2.8**
England, Wales, and Northern Ireland	**2.7**	**2.6-2.9**

*Rates calculated using 2004 mid-year resident population estimates based on 2001 census, Source: ONS Population Estimates Unit.

The incidence of bloodstream infections due to *Candida* spp was highest in those aged under one year, and rates were higher in males than females in all age groups (figure 2). The highest age-specific rate of candidaemia was in males aged under 1 year at 12.59 per 100,000 population (95%CI: 9.07-17.02) in 2004 (42 reports), an increase from 9.61/100,000 (95%CI: 6.53-13.65) in the same age group in 2003 (31 reports) (1), though the actual number of cases reported were small. This was closely followed by males aged 75 years and over, a rate of 12.01/100,000 (95%CI: 10.36-13.84), which was over double the rate of 5.17/100,000 (95%CI: 4.33-6.12) for females in this age group.

Figure 2 Age-specific rates* of candidaemia per 100,000 population, England, Wales, and Northern Ireland: 2004



*Rates calculated using 2004 mid-year resident population estimates based on 2001 census, Source: ONS Population Estimates Unit.

Candida albicans was the most commonly reported species in 2004, with 818 reports, representing 55% of the total (table 3). The relative proportion of candidaemia reports involving *C. albicans* increased for a second year with a concomitant decrease in *C. glabrata* reports, in contrast to the pattern described in 2001 and 2002 (1,2,5,6) and that from other countries which described the increasing importance of non-albicans species in invasive infections (7).

Table 3 Laboratory reports of candidaemia by species, England, Wales, and Northern Ireland: 2004

Species	Number of reports	
Candida albicans	818	(54.8%)
Candida famata	2	(0.1%)
Candida glabrata	240	(16.1%)
Candida guilliermondii	10	(0.7%)
Candida kefyr	1	(0.1%)
Candida krusei	28	(1.9%)
Candida lusitaniae	10	(0.7%)
Candida parapsilosis	177	(11.8%)
Candida tropicalis	52	(3.5%)
Candida spp – species not recorded	155	(10.4%)
Total	**1493**	**(100.0%)**

The proportion of reports in which *Candida* infection was recorded without full species information decreased from 11.4% in 2003 (1) to 10.4% in 2004. 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. For assistance with identification, laboratories can submit isolates to the Mycology Reference Laboratory in Bristol, <http://www.hpa.org.uk/srmd/mycology/index.htm>.

Acknowledgments
These reports would not be possible without the ongoing contributions from microbiology colleagues in laboratories across England, Wales, and Northern Ireland, without which there would be no surveillance data. In addition, the support of colleagues within the Health Protection Agency's Mycology Reference Laboratory and Local and Regional Services is particularly valued in the preparation of the reports. Feedback is welcome, and should be addressed to Andrew Pearson, email: Andrew.Pearson@hpa.org.uk.

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Diary

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Diploma in Hospital Infection Control. Residential course on engineering in infection control: steam sterilisation, washer-disinfectors, specialist ventilation and other aspects of hospital hygiene

There will be two courses in 2006: one from 8 to 12 May and another from 2 to 6 October. Both will be held at Eastwood Park Training Centre in Falfield (near Bristol), a specialist centre for healthcare engineering.

The course is a module for the Diploma in Hospital Infection Control, but can also be taken by those not registered for the DipHIC. This course is registered for 35 CPD points. The fee is £1285 (residential) or £1005 (non-residential). For details regarding registration and further information about the courses please write to Greta Howell, Laboratory of Healthcare Associated Infection, HPA, 61 Colindale Avenue , London NW9 5EQ , or email <greta.howell@hpa.org.uk>.