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## MAIN STORIES THIS WEEK:

- ▾ [Outbreak of tuberculosis in a Portsmouth primary school](#)
- ▾ [Low levels of RSV activity indicate that prophylaxis with Palivizumab no longer appropriate](#)
- ▾ [International conference on emerging infectious disease 2004](#)



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## REPORTS BY INFECTION:

### Respiratory:

- ▾ [Influenza surveillance in the United Kingdom: October 2002 to May 2003](#)
- ▾ [Laboratory reports of respiratory infections made to CDSC from Health Protection Agency and NHS laboratories in England and Wales](#)



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- ▾ [Unusual infections associated with foreign travel – part one: Intestinal protozoan infections](#)



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## CDR SUBSCRIPTION:

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## News

Last updated: 4 March 2004  
Next update due: 11 March 2004

-  [Outbreak of tuberculosis in a Portsmouth primary school](#)
-  [Low levels of RSV activity indicate that prophylaxis with Palivizumab no longer appropriate](#)
-  [International conference on emerging infectious disease 2004](#)

## Outbreak of tuberculosis in a Portsmouth primary school

An outbreak of tuberculosis (TB) has occurred in a primary school in Portsmouth. TB prevalence in Portsmouth (7.0 per 100,000) is lower than that of England and Wales as a whole (12.0 /100,000). The index case, a Caucasian teacher (in her thirties), teaches pupils at the school in year six (age 10 to 11 years; below the age of eligibility for BCG in the routine schools programme). There is currently no clear indication of where the teacher acquired the infection. The catchment area of the school is 99% Caucasian, but is one of the most socio-economically deprived areas of the city.

The index case became symptomatic with a productive cough, weight loss, night sweats, lethargy, and weakness in late July or early August 2003. When the case sought medical advice she was prescribed inhalers and antibiotics. The teacher continued to work until December 2003 and was notified as smear-positive pulmonary tuberculosis in January 2004.

Standard contact management procedures were employed according to British Thoracic Society (BTS) guidelines (1). All nine close family contacts of the index case were found to be infected (as determined by Heaf testing) and one of them found to have TB disease on clinical assessment. All pupils in year six were screened by Heaf testing. Thirty-six of 59 pupils had Heaf test results graded from 2-4, and clinical assessment of these 36 pupils revealed three who had evidence of TB disease on chest X-ray. Five staff working closely with year six children were also screened at this stage, one of whom had a positive Heaf result but had a clear chest x-ray.

In response to the high rate of infection in pupils in year six (61%) screening was extended to all other pupils and staff members in the school. Two hundred and fifty additional children were Heaf tested, of whom 23 had grade 2-4 responses. Six of these 23 were found to have evidence of TB disease. Eleven of 65 additional staff tested had Heaf results grade 2-4, although none showed evidence of disease. The results of screening children and staff at the school are summarised in the table 1.

**Table 1 Number of children and staff at school found to have TB infections and tuberculosis disease**

Group	Number	Number of infections (rate%)	Number with TB disease (rate%)
Children	309	59 (19 )	9 (3 )
Staff	70	12 ( 17)	-
<b>Total</b>	<b>379</b>	<b>71 (19)</b>	<b>9 (2 )</b>

All infected pupils and staff members are now receiving chemoprophylaxis, and those with evidence of TB disease are being treated, according to BTS guidelines (2). Those with Heaf test results of 0-1 will be re-tested after Easter.

Emphasis is now being placed on ensuring good compliance with prophylaxis and treatment. Parents and teachers have been under considerable emotional stress as a result of this incident, some children on medication have been ostracised and there has been some bullying behaviour towards them. In view of this support for children, their parents and teachers has been arranged through Educational Psychology and Family and Therapy Services.

Additional measures taken include screening children who were in year six during the previous academic year and who are now dispersed in local secondary schools. Full results of this exercise are awaited.

This incident demonstrates the importance of considering tuberculosis as a diagnosis in anyone with a chronic cough, even where tuberculosis does not have a high local incidence or where the patient is not from a recognised higher risk group. This is particularly important where the patient is in an occupation where delayed diagnosis may have important public health consequences. Awareness of tuberculosis needs to be raised among clinicians who may only very rarely see cases but who can play a vital role in early diagnosis and limiting spread.

## References

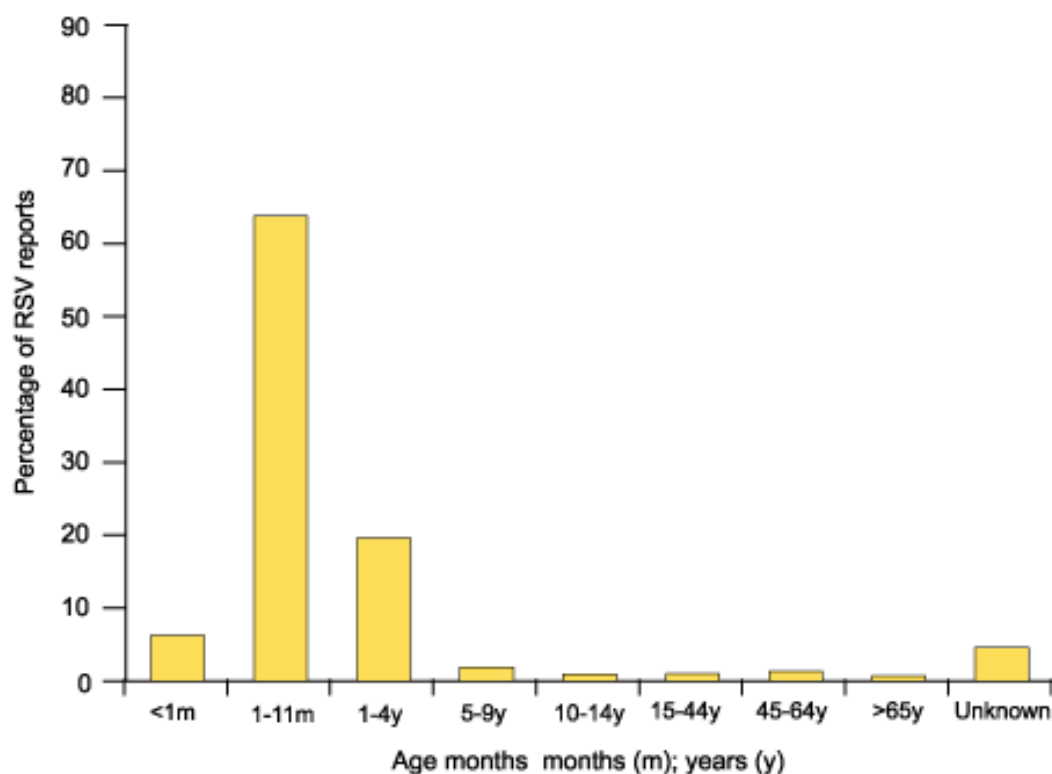
1. Joint Tuberculosis Committee of the British Thoracic Society. Control and prevention of tuberculosis in the United Kingdom: Code of Practice 2000. *Thorax* 2000; **55**: 887-901.
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## Low levels of RSV activity indicate that prophylaxis with Palivizumab no longer appropriate

Outbreaks of respiratory syncytial virus (RSV) infection occur each winter and usually peak in December or January. RSV is one of the most common causes of acute respiratory infection in very young children, in whom the most common clinical manifestation is bronchiolitis. Almost all of the laboratory reports received by the Health Protection Agency Communicable Disease Surveillance Centre relate to specimens taken from children aged less than 1 year (figure 1).

Figure 1 Age distribution (%) of RSV laboratory reports received by CDSC during the 2003/04 season, England and Wales



Palivizumab, an RSV-specific immunoglobulin, is licensed in the United Kingdom (UK) for prevention of serious lower respiratory tract infection caused by RSV; requiring hospitalisation in:

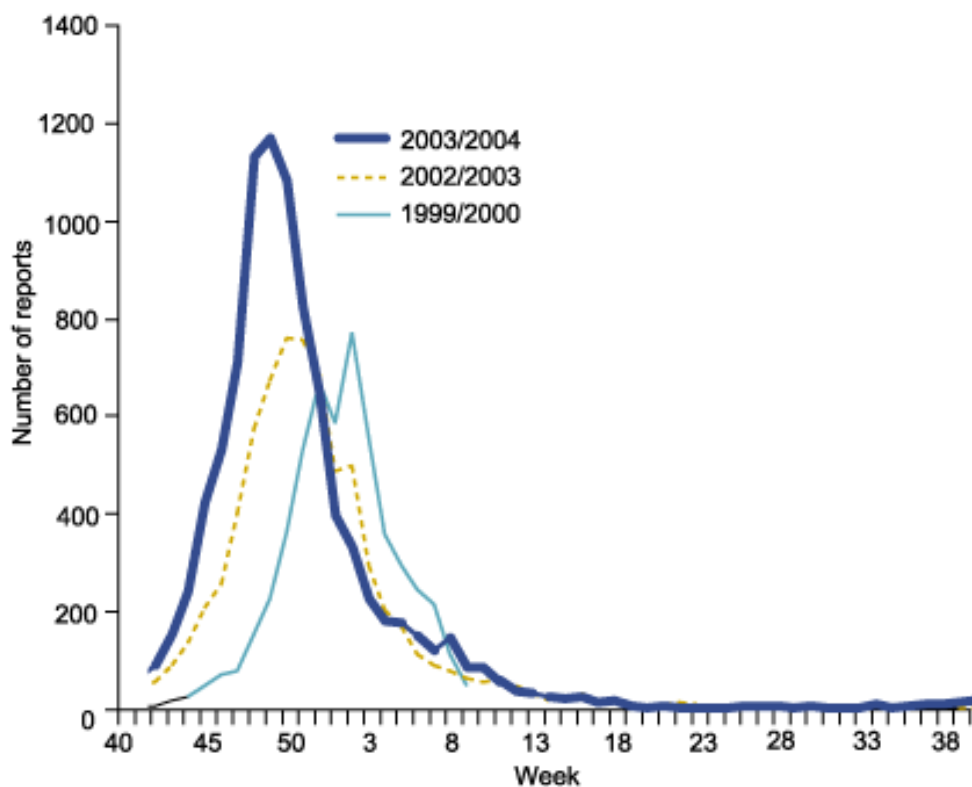
- Infants born at 35 weeks gestation or less, and who are aged under 6 months at the onset of the RSV season.
- Children aged under 2 years who have received treatment for bronchopulmonary dysplasia in the last 6 months.

Current UK guidance summarised on the HPA website states that prophylaxis should start at the onset of the RSV season and finish at the end of the season. More information is available at:

<http://www.hpa.org.uk/infections/publications/pdf/RSVpaper.pdf>.

On the basis of laboratory reports made to the HPA, the RSV season for 2003/2004 appears to be over with activity having peaked at the beginning of January 2004. Levels of RSV activity are now within the range of baseline activity (figure 2). As a result, prophylactic administration of Palivizumab is no longer recommended.

**Figure 2 Laboratory reports of RSV received by CDSC from NHS and Health Protection Agency microbiology laboratories, by date of specimen, 2003/04 and recent years**



## International conference on emerging infectious disease 2004

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The biannual emerging infection conference was held in Atlanta, United States, from 29 February to 3 March 2004. As in previous conferences the majority of presentations were by United States authors (as were the sponsoring bodies), but the meeting reflected a number of important international issues, equally relevant to the United Kingdom and the rest of Europe.

Paradoxically, the start of the conference featured the announcement of further attacks on a disappearing infection – poliomyelitis. There was renewed commitment to the elimination of polio transmission by the end of 2004 from the World Health Organization (WHO), Rotary International, and the Ministers' of Health of the remaining six countries with indigenous transmission. It was noted by David Heymann (WHO) that the opportunity of global eradication of polio may not persist. Dr Heymann pointed out that smallpox, eradicated in 1980, could not be eradicated now because of the numbers of HIV infected people internationally and the dangers of giving live smallpox vaccine to those who are HIV-infected.

Three of the stronger themes running through the conference were influenza and SARS, antimicrobial resistance, and food and waterborne gastrointestinal disease. Presentations on influenza were looking both backwards to the unique 1918-19 pandemic of 'Spanish flu', challenging some of the classic dogmas about this episode and forward within the context of the current intense epidemics of highly pathogenic avian influenza (H5N1) across east and south east Asia. A constant theme was how the world would protect itself should a new pandemic strain emerge from this.



European contributions to the sessions on food and waterborne gastrointestinal disease were especially strong including analyses of the proportion of gastrointestinal infections attributable to different food types. A notable and welcome feature this year was the presence of people responsible for, or interested in, animal health.

Abstracts and conference proceedings are available through the Conference website at <http://www.conferencearchives.com/iceid>.

## Respiratory

Last updated: 4 March 2004

Next update due: 1 April 2004

-  [Influenza surveillance in the United Kingdom: October 2002 to May 2003](#)
-  [Laboratory reports of respiratory infections made to CDSC from Health Protection Agency and NHS laboratories in England and Wales](#)

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### Influenza surveillance in the United Kingdom: October 2002 to May 2003

#### Summary

Low levels of influenza activity were observed in the United Kingdom (UK) in the 2002/2003 season. For the second consecutive season the general practitioner consultation rate for influenza-like illness (ILI) remained within the range of base line activity. Rates for ILI were highest in the 5 to 14 years age group, while adults aged over 65 years had the lowest rates. Rates for acute bronchitis were highest in the 0 to 4 years age group, followed by adults aged over 65 years.

Both influenza A and B viruses co-circulated during 2002/2003. Influenza B was the most common type in circulation during the early part of the season, and influenza A was the most common type detected over the later half of the season. Subtype A (H3N2) made up the majority of influenza A detections with influenza A (H1N1) and A (H1N2) subtypes detected in very low numbers. Most viruses characterised were antigenically similar to the vaccine strain in use during the winter.

Reports of influenza outbreaks were low, and mainly associated with influenza B infections in schools. Laboratory reports of respiratory syncytial viruses (RSV) followed the expected seasonal pattern peaking during week 49, and *Mycoplasma pneumoniae* reports remained low. The 2002/2003 influenza season was characterised by the emergence from southern China of a novel coronavirus responsible for severe acute respiratory syndrome (SARS). At the end of February 2003 SARS spread along international routes of travel, causing epidemics in major cities in south east Asia and Canada. The World Health Organization (WHO) issued a global alert and co-ordinated a rapid response across the world. By early July 2003 it appeared that SARS had been contained. The clinical and laboratory findings from the surveillance in the UK for SARS cases during the epidemic period of SARS activity in 2003 will be reported in the 2003/2004 annual influenza report.

[Click here to view a PDF file of this report](#) 



## Laboratory reports of respiratory infections made to CDSC from Health Protection Agency and NHS laboratories in England and Wales

Data are recorded by week of report, but only include specimens taken in the last eight weeks (*ie*, recent specimens)

**Table 1 Reports of influenza infection made to CDSC, by week of report: weeks 06-09/04**

Week	06/04	07/04	08/04	09/04	Total
Week ending	08/02/04	15/02/04	22/02/04	25/02/04	
<b>Influenza A</b>	<b>31</b>	<b>9</b>	<b>6</b>	<b>12</b>	<b>58</b>
Isolation	3	–	1	1	5
DIF	2	1	2	1	6
Four-fold rise in paired sera	12	–	–	2	14
PCR	3	–	–	–	3
Other	11	8	3	8	30
<b>Influenza B</b>	<b>2</b>	<b>1</b>	<b>–</b>	<b>1</b>	<b>4</b>
Isolation	–	–	–	–	–
DIF	–	1	–	–	1
Four-fold rise in paired sera	1	–	–	–	1
PCR	–	–	–	–	–
Other	1	–	–	1	2
<b>Influenza (untyped)</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
Isolation	–	–	–	–	–
DIF	–	–	–	–	–
Four-fold rise in paired sera	–	–	–	–	–
PCR	–	–	–	–	–
Other	–	–	–	–	–

DIF = Direct Immunofluorescence.

'Other' = 'Antibody detection - Single high titre' or 'method not specified'

**Table 2 Respiratory viral detections by any method (culture, direct immunofluorescence, PCR, four-fold rise in paired sera, single high serology titre, genomic, electron microscopy, other method, other method unknown), by week of report: weeks 06-09/04**

Week	06/04	07/04	08/04	09/04	Total
Week ending	08/02/04	15/02/04	22/02/04	25/02/04	
Adenovirus*	26	18	14	42	100
Coronavirus	–	–	–	–	–
Parainfluenza†	3	1	3	12	19
Rhinovirus	7	14	7	15	43
Respiratory syncytial virus (RSV)	313	215	222	311	1061

\*Respiratory samples only. Excludes diagnoses made by electron microscopy (EM)

†Includes parainfluenza types 1, 2, 3, 4, and untyped.

‡Excludes diagnosis made by electron microscopy (EM).

**Table 3 Respiratory viral detections by age group: weeks 06-09/04**

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Unknown	Total
Adenovirus*	15	13	5	47	18	2	–	100
Coronavirus	–	–	–	–	–	–	–	–
Influenza A	3	1	4	21	12	17	–	58
Influenza B	–	–	–	2	–	2	–	4
Parainfluenza†	9	3	–	2	4	–	1	19
Rhinovirus	24	10	1	5	2	–	1	43
Respiratory syncytial virus (RSV)	885	92	22	18	14	22	8	1061

\*Respiratory samples only. Excludes diagnoses made by electron microscopy (EM).

†includes parainfluenza types 1, 2, 3, 4, and untyped.

**Table 4 Laboratory reports of infections associated with atypical pneumonia by week of report (non-pneumonic cases\*): weeks 06-09/04**

Week	06/04	07/04	08/04	09/04	Total
Week ending	08/02/04	15/02/04	22/02/04	25/02/04	
<i>Coxiella burnetii</i>	–	–	–	1	1
Respiratory <i>Chlamydia</i> sp†	3	1	2	5	11
<i>Mycoplasma pneumoniae</i>	4	6	–	5	15
<i>Legionella</i> sp	–	9	8	1	18

\* Non-pneumonic cases in brackets.

†Includes *Chlamydia psittaci*, *Chlamydia pneumoniae*, and *Chlamydia* sp detected from blood, serum, and respiratory specimens.

**Table 5 Reports of legionnaires' disease (pneumonic and non-pneumonic\*) cases in England and Wales, by week of report: weeks 06-09/04**

Week	06/04	07/04	08/04	09/04	Total
Week ending	08/02/04	15/02/04	22/02/04	25/02/04	
Nosocomial	–	1	–	–	1
Community	–	4	7	1	12
Travel abroad	–	3	1	–	4
Travel UK	–	1	–	–	1
<b>Total</b>	–	<b>9</b>	<b>8</b>	<b>1</b>	<b>18</b>
Male	–	8	7	1	16
Female	–	1	1	–	2

\* Non-pneumonic cases in brackets.

Eighteen cases were reported with pneumonia. Sixteen males aged between 37 and 84 years and F 36Y and F 86y. One case was hospital acquired and 12 cases were due to community-acquired infection. Two deaths occurred, both community related: M 61y and M 84y.

Five cases were travel associated: Dubai (1), England (1), France & Italy (1), Portugal (1), and South Africa (1).

## Travel health

Last updated: **4 March 2004**  
Next update due: **1 April 2004**

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 [Unusual infections associated with foreign travel – part one: Intestinal protozoan infections](#)

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### Unusual infections associated with foreign travel – part one: Intestinal protozoan infections

*In May 2004, new quarterly tables of imported infections will be published in CDR Weekly, starting with the first quarter of 2004. They will include all the main infections that are important in terms of foreign travel, that are reported by laboratories in England, Wales, and Northern Ireland. Some of the infections included in the table are not commonly seen in the UK. This is the first of three articles that will summarise the epidemiology of some of the more unusual infections associated with foreign travel. Part one will cover intestinal protozoan infections, part two rickettsial infections, and part three will cover helminths.*

Foreign travel is increasing including, travel to destinations with tropical and sub-tropical climates. In 2002, there were 59.4 million visits abroad made by United Kingdom (UK) residents, nearly three times the number in 1982 (1). The number of UK residents visiting tropical regions of the world such as Africa, Asia, the Caribbean and south and central America has increased by an average of 8.4% since 1995. Preliminary figures from the Office for National Statistics show that these trends are likely to continue into 2003 (2). Many countries in the tropics are endemic for infectious diseases that either do not occur, or occur rarely in the UK. With the increase in travel to tropical regions of the world, more UK travellers are being exposed to infections such as malaria, dengue fever, and typhoid. Most of these infections are known about in the UK and are easily diagnosed and picked up by most surveillance systems. There are, however, other more unusual infections that travellers may be exposed to, especially travellers who may be going further afield (away from main tourist centres) or perhaps staying or working with local populations.

#### Part one: Intestinal protozoan infections

The intestinal protozoa that infect humans, to be discussed in this article, are amoebae and *Cyclospora spp.* *Cryptosporidium* and *Giardia* are discussed in the CDSC/ NaTHNaC baseline report of illness in England, Wales, and Northern Ireland associated with foreign travel (2).

#### Amoebae (sub-phylum Sarcodina)

Many species of amoeba can infect humans: *Entamoeba histolytica*, *E. dispar*, *E. hartmanni*, *E. coli*, and *Endolimax nana*. All live in the large intestine of humans, but most do not cause invasive disease and therefore exist as commensal organisms. They are prevalent worldwide, but the highest burden of disease with pathogenic strains occurs in low-income countries.

The only organism that is pathogenic in this group is *Entamoeba histolytica* (although non-pathogenic strains do exist), which is responsible for amoebic dysentery (amoebiasis). It affects millions of people worldwide with approximately 100,000 deaths annually (3). The majority of infections are asymptomatic, with an estimated ten per cent of those infected developing symptoms. Clinical presentations are usually dysentery (acute colitis) but more chronic cases can go on to develop liver abscesses.

There are two morphologically indistinguishable strains of *E. histolytica*, *E. histolytica* which is pathogenic, and *E. dispar* which is not. Only the pathogenic strain causes disease but cysts from both strains can often be seen in laboratory samples (Co-infection with *E. dispar* and *E. histolytica* is possible).

The main route of transmission is via the faecal-oral route and by direct contact from person-to-person. Infection occurs most commonly in areas with poor sanitation and food hygiene. The main reservoirs for infection are humans who asymptotically excrete *E. histolytica* cysts in their faeces. Travellers from high-income countries to low-income countries are particularly at risk of infection from *E. histolytica*, especially if eating and drinking in unsanitary conditions.

**Figure 1 Laboratory reports of *Entamoeba histolytica* by history of travel, England, Wales, and Northern Ireland: 1990 to 2002**

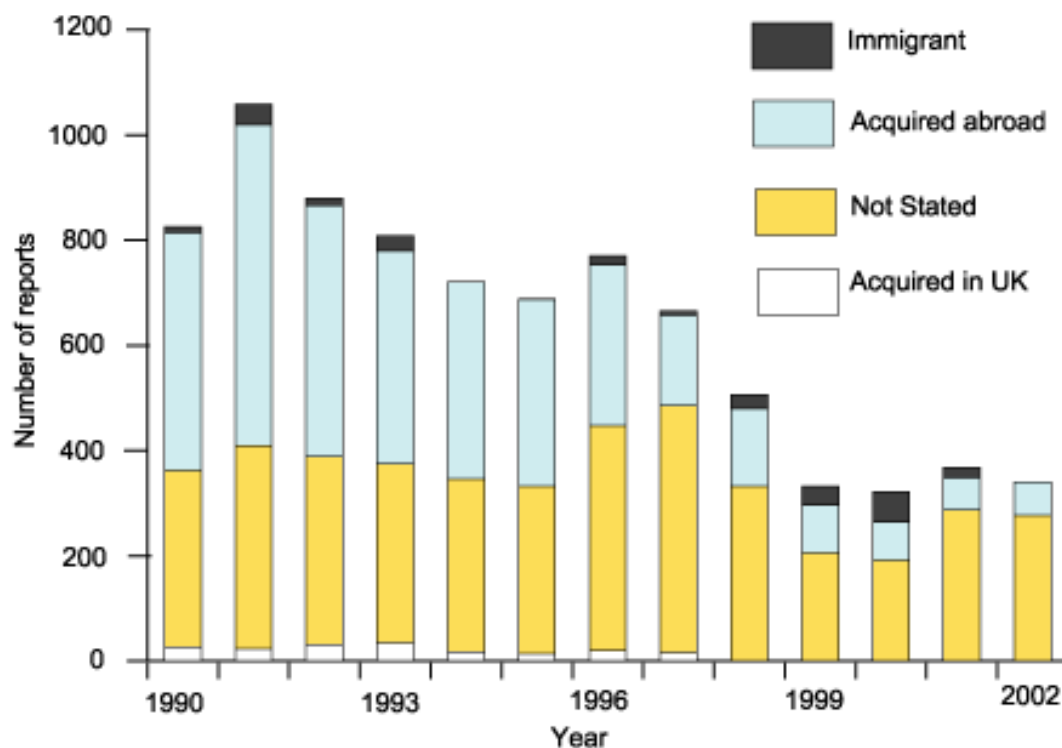


Figure 1 shows the laboratory reports of *Entamoeba histolytica* in England, Wales, and Northern Ireland extracted from LabBase on 12 February 2004. There has been a steady decline in reports from 1990 to 1999, after which the trend remained relatively unchanged. Until 1995, over 50% of the cases were reported as being associated with foreign travel and/or immigration. After 1995, around 30% of cases were reported as being associated with foreign travel and/or immigration. It seems therefore, that reporting of travel history has worsened over time. *E. histolytica* is of low prevalence in the UK, and therefore it can be assumed that most, if not all infections with *E. histolytica* will have been acquired abroad. Thirty per cent (1161/3845) of cases that reported a travel history, reported recent travel to sub-Saharan and southern Africa, a further seven per cent (287/3845) to unspecified countries in Africa, 29% (1106/3845) reported recent travel to the Indian sub-continent. Most of the reports of cases in immigrants did not state a country of acquisition.

Care must be used when interpreting the above data, as travel history is generally under-reported and furthermore, insufficient information is available to distinguish between short-term travellers, immigrants, and foreign visitors to the UK.

### **Cyclospora spp (sub-phylum Coccidia)**

Human infection with *Cyclospora cayetanensis* was first described in 1979 (4). *Cyclospora* spp are coccidian protozoan parasites that infect the small intestine in humans. The clinical presentation is usually watery diarrhoea like that seen with cryptosporidiosis, although many infections are asymptomatic. It is morphologically similar to *Cryptosporidium* spp, but undergoes exogenous sporulation (*ie*, it requires time outside the body to mature and become infectious) unlike *Cryptosporidium* spp, which are excreted from the human body, fully sporulated. This means that direct person-to-person

transmission through faecal exposure, or food or water contaminated with freshly excreted oocysts (eg, by a chef), are unlikely to cause disease. It is possible that contamination of food and/or water with faecal material is the likely route of transmission, but disease will only occur if the oocysts have matured. There were 11 outbreaks of (probable) food borne cyclosporiasis, documented in north America in the 1990s, most of which seemed to have been transmitted by fresh produce, possibly sprayed with contaminated water (5).

*Cyclospora* spp are prevalent worldwide (although the global prevalence of the infection is unknown), with outbreaks seen in residents of, and travellers to north, central, and south America, the Caribbean, eastern Europe, India, South Africa, and south east Asia. The organism appears to be endemic in Nepal, Haiti, and Peru and most of the information on the epidemiology of *Cyclospora* spp has been derived from these countries (6).

**Figure 2 Laboratory reports of *Cyclospora* spp by history of travel, England, Wales, and Northern Ireland: 1993 to 2002**

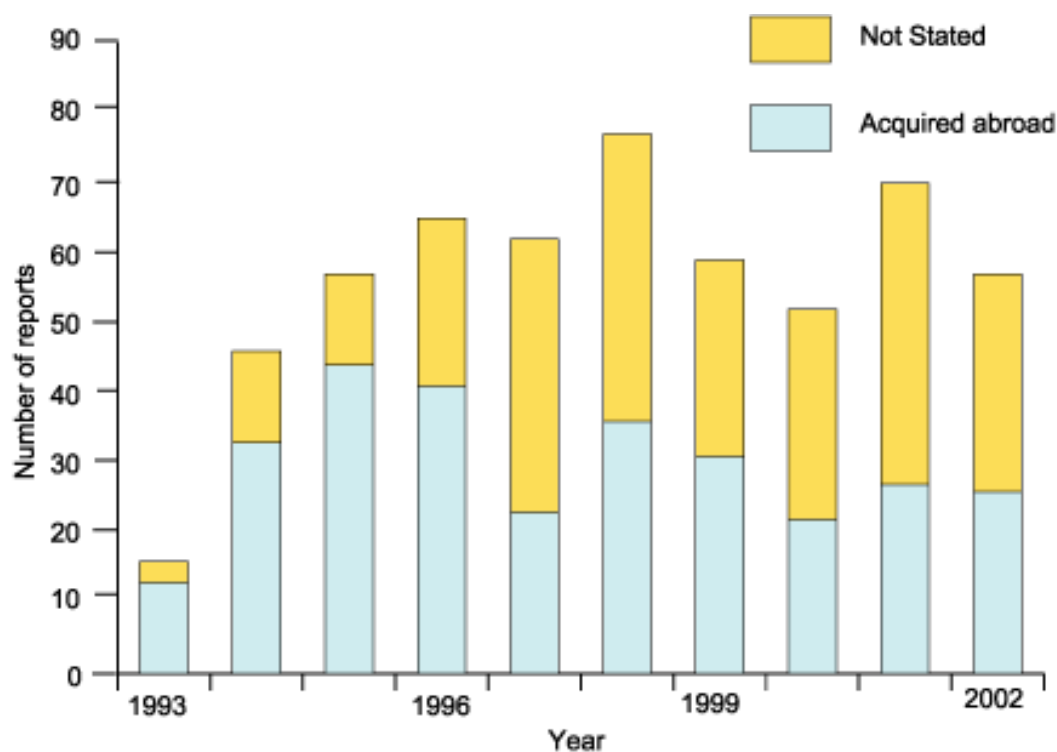


Figure 2 shows the laboratory reports of *Cyclospora* spp in England, Wales, and Northern Ireland extracted from LabBase (13 February 2004). Since 1994, there have been an average of 60 reports of *Cyclospora* spp per year showing no particular trends. Just over 50% (308/598) of all reports were of cases reported as being acquired abroad. Thirty-two per cent (98/308) of cases reported recent travel to the Indian sub-continent (mainly Nepal and India) and 29% (90/308) to south east Asia and the far east (just over half to Indonesia). The countries of acquisition of *Cyclospora* spp for England, Wales, and Northern are consistent with the regions of the world where the organism is endemic.

The data must be interpreted with some caution due to under-reporting for both *Entamoeba* spp and *Cyclospora* spp. There is a need to enhance travel history reporting, to improve our understanding of travel-associated infections seen in this country.

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**Zoonoses**

Last updated: 4 March 2004

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▾ [Common animal associated infections, England and Wales laboratory reports: weeks 06-09/04](#)

▾ [Common imported infections, England and Wales laboratory reports: weeks 06-09/04](#)

### Common animal associated infections, England and Wales: laboratory reports: weeks 06-09/04

	Total reports for weeks 06-08		Cumulative totals for weeks 06-09	
	2004*	2003	2004*	2003
<i>Borrelia burgdorferi</i> *‡	22	9	22	9
<i>Leptospira hardjo</i> †§	–	–	–	–
<i>Leptospira icterohaemorrhagiae</i> †§	–	–	3	3
<i>Leptospira other</i> †§	–	–	1	6
<i>Pasteurella haemolytica</i>	2	–	3	1
<i>Pasteurella multocida</i>	12	16	43	50
<i>Pasteurella pneumotropica</i>	–	1	1	1
<i>Pasteurella</i> spp	6	3	12	9
<i>Toxocara canis</i>	–	–	–	–
<i>Toxocara cati</i>	–	–	–	–
<i>Toxocara</i> spp	–	–	–	–
<i>Toxoplasma gondii</i>	2	2	10	6
<i>Toxoplasma</i> spp	6	2	4	12

\* provisional data; † by specimen date; ‡ Lyme Disease Reference Laboratory and CDSC

§ *Leptospira* Reference Laboratory and CDSC.

NA = Not available.

**Common imported infections, England and Wales: laboratory reports, weeks 06-09/04**

Organism	Total reports for weeks 06-09		Cumulative totals for weeks 06-09	
	2004*	2003	2004*	2003
Arbovirus	–	–	–	–
Dengue virus	3	1	6	7
<i>Ascaris</i> spp	11	4	20	13
Hookworms (unspecified)	4	1	9	4
<i>Leptospira</i> spp†	–	–	–	–
<i>Ancylostoma duodenale</i>	–	–	–	–
<i>Necator americanus</i>	–	–	–	–
<i>Hymenolepis diminuta</i>	–	–	–	–
<i>Hymenolepis nana</i>	2	–	2	2
<i>Hymenolepis</i> spp	–	–	–	–
<i>Schistosoma haematobium</i>	–	–	–	–
<i>Schistosoma intercalatum</i>	–	–	–	–
<i>Schistosoma mansoni</i>	3	–	5	1
<i>Schistosoma</i> spp	2	1	6	2
<i>Strongyloides stercoralis</i>	7	–	9	6
<i>Strongyloides</i> spp	–	–	–	1

\* Provisional data

† *Leptospira* Reference Laboratory and CDSC

NA = Not available.

**Comments: weeks 06-09/04**

**Lyme borreliosis:** 11 females, 10 males.

M 30y, tick bite in Sweden; M 36y, no clinical details (NCD); M 40y, forces personnel – diagnosed in Germany 2003; M 38y, erythema migrans; M 33y, travel to United States; M 38y, forestry worker; M 44y tick bite; M 49y, annular rash and erythema; M 58y, tick bite; M 82y, oligoarthritis – visited Massachusetts.

F 28y, rash on thigh; F 29 y, tick bite; F 35y 'insect bite'; F 39y, rash; F 58y, 'insect bite' and erythema migrans; F 69y, erythema migrans, recent tick exposure; F 70y, tick bite and rash upper arm; F 28y, F 32y, F 62y, F 63y, all with no clinical or epidemiological details.

**Leptospirosis:**

No comments to report.

**Pasteurella:** 13 females, seven males.

***P. multocida*:** eight females, four males.

F 57y, cat bite, cellulites on arm; M 2y, pyrexia and swollen hand; M 57y with chronic renal failure; M 71y, septic cat scratch to hand; M 25y, seven females aged between 8 and 84 years with no clinical details/exposure history.

***P. spp*:** 4 females, two males.

F 40 y, dog bite to left hand; F 69y, F 70y, F 74y, M 40y, and M 43y with no clinical or epidemiological details.

**Toxoplasmosis:** four females, four males.

***Toxoplasma gondii*:** two females.

F 33y; F 50y, no clinical details.

***Toxoplasma* spp:** two females, four males.

M 16y, cervical lymphadenopathy; M 25y, lymphadenopathy; F 61y, F 66y, M 16y, and M 56y, all with no clinical details or exposure history.

**Dengue:** one female, two males.

**Dengue virus untyped:** F 53y, M 34y, and M 23y; all with no clinical details/travel history.

***A. lumbricoides:*** Ten females, One male.

Nine females aged between 21 and 28 years, one female age not stated; M 31y, all with no clinical details/travel history.

## **Hookworm disease (ancylostomiasis)**

**Hookworm unspecified:** One female, three males.

F 27y, travel to Kenya; M 31y, M 35y, and M 44y no clinical details/travel history.

**Schistosomiasis:** two females, three males.

***S. mansoni:*** F 31y, F 32y, and M 21y with no clinical details/travel history.

***Schistosoma spp:*** M 23y, M 28y with no clinical details/travel history.

**Strongyloidiasis:** one female, six males

***S. stercoralis*** : F 37y, six males aged between 23 and 58 years, all with no clinical details/travel history.

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## Diary

Last updated: **29 January 2004**

For information about other conferences, courses, and events visit

[http://www.hpa.org.uk/hpa/about\\_us/events.htm](http://www.hpa.org.uk/hpa/about_us/events.htm)



[Health Protection Agency chlamydia diagnosis forum education meetings – moving towards a national chlamydia programme](#)



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### Health Protection Agency chlamydia diagnosis forum education meetings – moving towards a national chlamydia programme

Arrangements have been made to hold a half-day educational meeting for those involved in diagnosis, screening, laboratory testing, and management of genital chlamydia infection on the following dates:

- 31 March 2004 – Health Protection Agency's Specialist and Reference Laboratory (SRMD), Colindale, London.
- 19 April 2004 – Postgraduate Centre, University Hospital, Birmingham.
- 6 May 2004 – Postgraduate Centre, Bristol Royal Infirmary .
- 13 May – Thistle Hotel, Liverpool.

The training is funded by an educational grant from the Department of Health. There is no cost for this event. To obtain a course outline and receive a nomination form please contact:

Sabrina Senior  
Learning Education and Development,  
Health Protection Agency  
61 Colindale Avenue  
London NW9 5DF

tel. 020 8200 1295 ext: 3622.

Please note that admittance will only be to registered delegates.

If you have any further queries please contact Joanna Edwards on 020 8200 1295 ext. 4946 or Sue Skidmore 01952 64122.

# Influenza surveillance in the United Kingdom: October 2002 to May 2003

JP Crofts, CA Joseph, M Zambon, J Ellis, DM Fleming, JM Watson

## Summary

Low levels of influenza activity were observed in the United Kingdom (UK) in the 2002/2003 season. For the second consecutive season the general practitioner consultation rate for influenza-like illness (ILI) remained within the range of base line activity. Rates for ILI were highest in the 5 to 14 years age group, while adults aged over 65 years had the lowest rates. Rates for acute bronchitis were highest in the 0 to 4 years age group, followed by adults aged over 65 years.

Both influenza A and B viruses co-circulated during 2002/2003. Influenza B was the most common type in circulation during the early part of the season, and influenza A was the most common type detected over the later half of the season. Subtype A (H3N2) made up the majority of influenza A detections with influenza A (H1N1) and A (H1N2) subtypes detected in very low numbers. Most viruses characterised were antigenically similar to the vaccine strain in use during the winter.

Reports of influenza outbreaks were low, and mainly associated with influenza B infections in schools. Laboratory reports of respiratory syncytial viruses (RSV) followed the expected seasonal pattern peaking during week 49, and *Mycoplasma pneumoniae* reports remained low.

The 2002/2003 influenza season was characterised by the emergence from southern China of a novel coronavirus responsible for severe acute respiratory syndrome (SARS). At the end of February 2003 SARS spread along international routes of travel, causing epidemics in major cities in south east Asia and Canada. The World Health Organization (WHO) issued a global alert and co-ordinated a rapid response across the world. By early July 2003 it appeared that SARS had been contained. The clinical and laboratory findings from the surveillance in the UK for SARS cases during the epidemic period of SARS activity in 2003 will be reported in the 2003/2004 annual influenza report.

**Keywords:** *influenza, epidemiology, outbreak, surveillance*

## Introduction

Surveillance of influenza is carried out by the Health Protection Agency (HPA) throughout the year, but with a particular focus over the winter months October to May. The aims of influenza surveillance are to:

- Monitor circulating strains of influenza virus and to detect new subtypes and strains of epidemic potential.
- Use the information acquired during monitoring to contribute to the decision on the vaccine composition for the following season.
- Compare current strains with those seen in previous years.
- Provide timely and up-to-date information on influenza activity for healthcare professionals.
- Assess the impact of influenza activity on morbidity and mortality.
- Keep the mass media and public informed.

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JP Crofts, CA Joseph, JM Watson  
Respiratory Diseases Department  
HPA Communicable Disease Surveillance Centre

M Zambon, J Ellis  
Enteric, Respiratory, and Neurological Virus Laboratory  
Health Protection Agency  
Specialist and Reference Microbiology Division

DM Fleming  
Royal College of General Practitioners  
Birmingham Research Unit

### Address for correspondence

Jonathan Crofts  
Respiratory Diseases Department  
Health Protection Agency  
Communicable Disease Surveillance Centre  
61 Colindale Avenue  
London NW9 5EQ  
tel: 020 8200 6868  
fax: 020 8200 7868  
email: jonathan.crofts@hpa.org.uk

## Methods (sources of data)

Influenza surveillance relies broadly on two main sources of data for monitoring influenza activity: clinical and virological. Previous reports have described in detail the format and type of data sources used for influenza surveillance in England, Wales, Scotland, and Northern Ireland (1). The use and principle of thresholds for describing levels of influenza activity based on consultation rates with general practitioners (GPs) in different sentinel schemes in England, Wales, and Scotland have also been described (2). A brief summary of the sources of data

used for influenza surveillance in the United Kingdom (UK) by the HPA is given below:

### Clinical

**Royal College of General Practitioners (RCGP) weekly returns service.** A weekly reporting service from sentinel GP practices distributed throughout England, from which morbidity data from each new consultation is recorded as the working diagnosis made by the general practitioner. Unpublished diagnostic guidelines for acute respiratory infections have been circulated to participants in the RCGP scheme. Rates for influenza-like illness (ILI), acute bronchitis, and total respiratory disease are of particular relevance. Similar schemes are run in Northern Ireland, Scotland, and Wales. All rates are reported per 100,000 of the general population.

**NHS Direct.** A telephone service throughout England and Wales run by nurses to provide medical advice to the public. Call rates are compiled for a number of diagnostic algorithms including the proportion of calls for cold/flu and fever by age group and by NHS Direct site. The potential of this information is being assessed for its contribution to the surveillance of influenza activity in the community

**Medical Officers of Schools Association (MOSA).** A boarding school surveillance scheme operated by the Medical Officers of Schools Association (MOSA) principally to detect early outbreaks. Weekly rates per 1000 boarding school pupils from sentinel schools are provided for influenza and influenza-like illness.

### Influenza vaccine uptake monitoring

In May 2000 the Department of Health (DH) announced a change to the existing policy for influenza vaccination and for the first time recommended that all patients aged 65 years and over, regardless of underlying disease risk, should be offered vaccine. Monitoring of uptake among this population group was also introduced and is undertaken by the HPA Communicable Disease Surveillance Centre (CDSC), Colindale, on behalf of DH. The data is collected monthly for the period October to December and an annual national uptake target was set at 70% for 2002/2003. Since 2002 the data has been collected from general practices through named flu immunisation coordinators in primary care trusts (PCTs).

### Virological

**Respiratory Virus Unit (RVU), Enteric, Respiratory, and Neurological Laboratory (ERNVL), Specialist Microbiologist Reference Division (SRMD) Colindale.** This is the reference laboratory for subtyping, antigenic and genetic characterization of influenza, and other respiratory viruses. The laboratory receives specimens/isolates referred from the network of laboratories (both HPA and NHS) around the UK. ERNVL also participates in community surveillance schemes and collaborates with local health protection services and laboratories in investigating outbreaks.

**RCGP/ERNVL Virological Surveillance Scheme.** Community-based sampling for influenza by GPs from the RCGP spotter practice scheme.

**CDSC Virological Surveillance of Influenza Scheme.** Community based sampling for influenza by GPs outside the RCGP scheme and in collaboration with HPA and NHS laboratories.

**HPA/NHS laboratory reports.** A voluntary reporting system to CDSC from HPA and NHS laboratories in England and Wales of influenza A or B positive specimens. Clinical specimens that yield positive results for influenza either by single elevated serological titre, sero-conversion, antigen detection, culture, or genomic detection are reported.

### Deaths

**Office for National Statistics (ONS).** Weekly registration of deaths by age and cause. This is used for assessing the impact of influenza from year-to-year.

### Outbreaks

Information is collected on outbreaks of influenza and other respiratory illness in England and Wales reported to CDSC Colindale or the HPA's ERNVL.

### International

Influenza activity outside the UK is received using information from the following organisations:

- World Health Organization (WHO) <<http://oms2.b3e.jussieu.fr/flunet/news.html>>,
- Centers for Disease Control and Prevention (CDC Atlanta) in the United States <<http://www.cdc.gov/ncidod/diseases/flu/fluivirus.htm>>,
- European Influenza Surveillance Scheme (EISS) <<http://www.eiss.org>>.

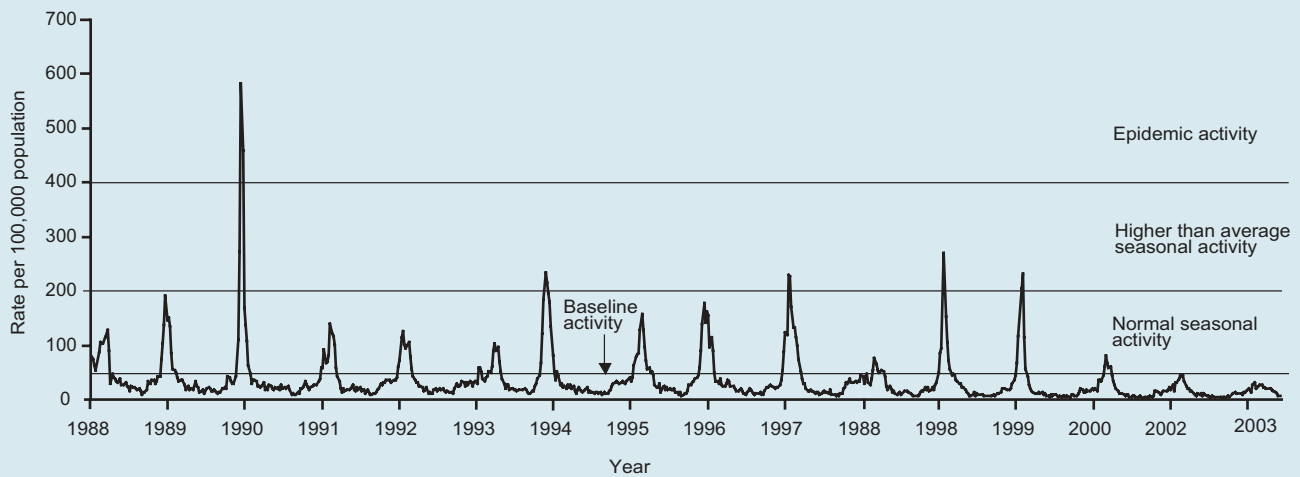
Unless otherwise stated the data in this report covers the period October 2002 to May 2003 (weeks 40/02 to 20/03), but does not include laboratory or clinical data specifically relating to the investigation of suspected SARS cases in the UK during which UK SARS surveillance was implemented (March 2003 to July 2003). This information will be documented in the annual influenza report for the 2003/2004 season.

## Results

### Clinical

**Royal College of General Practitioners (RCGP), England.** In the RCGP sentinel scheme the rate for 'influenza-like illness' (ILI) remained below the baseline threshold of 50 consultations per 100,000 of population throughout the season (figure 1). Rates started to rise in week 52/02 reaching an overall peak of 31/100,000 in week 02/03 and then remained little changed until decreasing in week 10/03. The highest consultation rates were seen in children aged between 5 and 14 years (59/100,000 week 04/03) followed by children aged between 0 and 4 years (54/100,000 in week 07/03) (figure 2). Distribution of rates by RCGP region showed that the northern (43/100,000 in week 02/03) and central (42/100,000 in week 07/02) regions

**Figure 1** Weekly consultation rates for influenza like illness, RCGP Weekly Returns Service: 1988-2003



had the highest consultation rates, while the southern region had the lowest peak (23/100,000 in week 08/03).

RCGP consultation rates for acute bronchitis reached a maximum in week 01/03 of 198/100,000. As expected the highest rates were seen in children aged from 0 to 4 years age group (727/100,000 in week 49/02) and those aged over 65 years (422.9/100,000 in week 02/03) (figure 3). These rates were slightly higher than the previous years figures for the 0 to 4 years age group (643/100,000 in 2001/2002) and slightly lower than the rate of 573/100,000 in 2001/2002 for those aged 65 years and over. The consultation rate for the combined total of respiratory disease definitions 649/100,000 remained lower than the previous year peak of 788/100,000.

**Wales**

Consultation rates in the sentinel GP scheme co-ordinated by CDSC Wales remained within the range for 'baseline activity' of less than 25/100,000 population for the duration of the 2002/2003 season. Rates peaked at 8/100,000 in week 01/03.

**Scotland**

Consultation rates for influenza and flu like illness (ILI) in the sentinel GP scheme co-ordinated by the Scottish centre for Infection and Environmental Health (SCIEH), remained within the range for 'baseline activity' of less than 50/100,000 for the duration of the 2002/2003 season. Rates peaked at 42/100,000 in week 03/03.

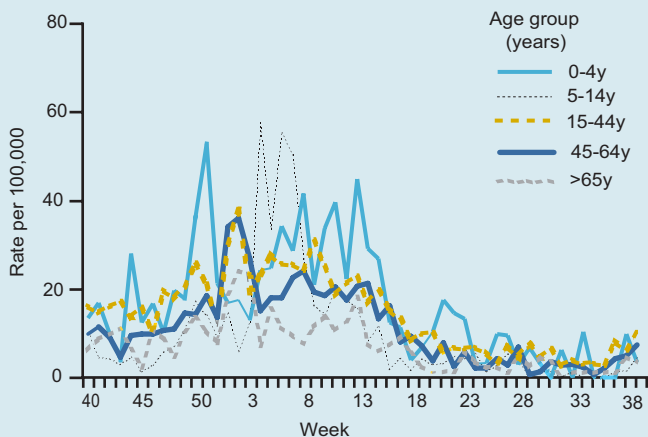
**Northern Ireland**

During the third year of enhanced surveillance, co-ordinated by CDSC Northern Ireland, consultation rates were higher than those of the previous year. The scheme has only been running for three years and so baseline values have not yet been determined. A peak rate of 9/100,000 (week 06/03) for flu and 70/100,000 (week 07/03) for flu-like illness, and a combined rate for flu and flu-like illness of 74/100,000 (week 07/03) were observed during 2002/2003.

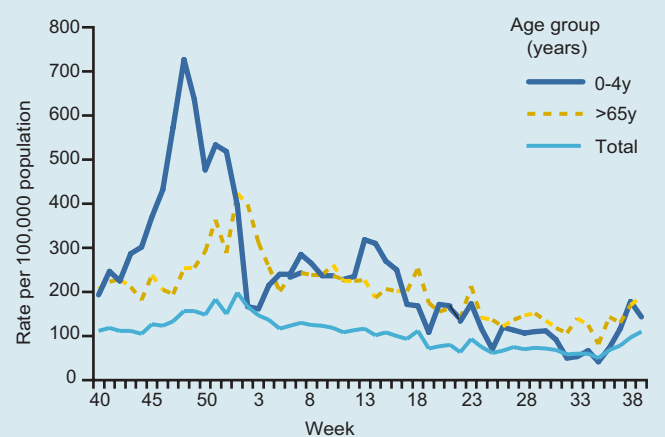
**NHS Direct**

During weeks 40-52/02 the total call rate followed a

**Figure 2** RCGP consultation rate for influenza and influenza-like illness by age, England: 2002-03

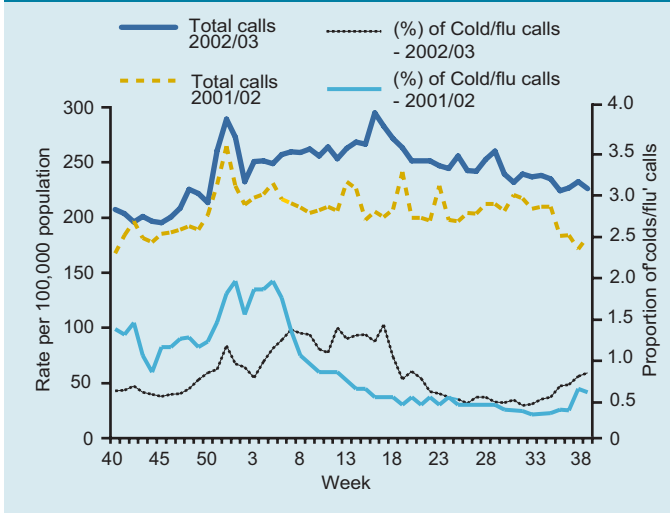


**Figure 3** Consultation rates in general practice for acute bronchitis by age (RCGP): 2002-03





**Figure 4** NHS Direct total call rate and proportion of 'colds/flu' calls: 2002-03 and 2001-02



for influenza B (41%), while children aged 0 to 4 years had the highest positivity rate for influenza A (16%). Those aged 65 and over had the lowest influenza positivity rate followed by the 15 to 44 years age group.

**CDSC surveillance scheme.** Sixteen laboratories contributed to the scheme receiving 280 specimens from 29 GPs. Forty specimens (14%) were positive for influenza (20 A, 20 B, and 18 were positive for other viruses, including RSV). The percentage of positive specimens for influenza by age group were: 17% (0 to 4 years), 8% (5 to 14 years), and 8% (15 to 44 years). No specimens positive for influenza were detected among people aged 65 years and over. The 5 to 14 years age group had the highest number of specimens detected for influenza B (29%).

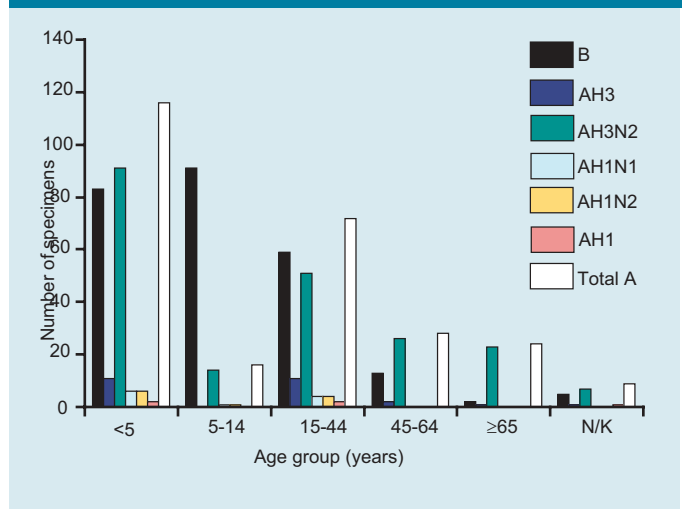
**Mortality**

The total number of deaths due to all causes by week of registration peaked at 18,303 in week 02/03. The number of deaths registered during the previous week was only 7072 indicating that the unusually high peak was due to a backlog of unprocessed reports over the Christmas period. In comparison with the previous number of 358,543 deaths registered (provisional data) during the 2001/2002 season, the total number of deaths registered between week 40/02 and 20/03 showed little difference at 357,279. Fifteen deaths were registered with influenza as the cause of death during the 2002/2003 season compared to 32 in the previous season. The combined number of deaths attributed to acute bronchitis, pneumonia, and influenza was 24,226 between weeks 40/02 and 20/03 compared with 24,851 for the previous 2001/2002 season. The total estimated number of excess deaths (calculated using a time series model based on the method of Serfling) (3) attributable to influenza between week 40/02 and week 20/03 was 4616 compared to 5794 for the previous season (table 2).

**Outbreaks**

During the 2002/2003 influenza season there were nine outbreaks reported to CDSC. These occurred from the

**Figure 5** Age distribution and subtyping for influenza specimens detected by ERNVL: 2002-03

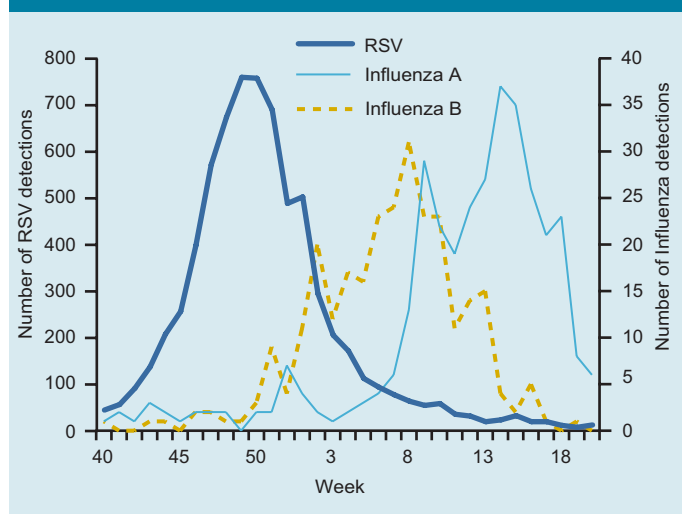


end of January 2002 to mid-March 2003. Seven of the reported outbreaks occurred in schools, with attack rates ranging from 7% to 58%. Influenza virus was isolated in eight out of the nine outbreaks, with five outbreaks attributed to flu B, one with mixed infections of influenza B and A (H3N2), and two outbreaks associated with A (H3N2).

**Influenza activity elsewhere**

Influenza activity across Europe remained low during the 2002/2003 season and was marked by influenza B activity predominating in western Europe until week 06/03, particularly in Spain and Portugal. This was followed by a rise in influenza A (H3N2) activity in central and eastern Europe which then moved into western Europe. More than 99% of the viruses detected through the European Influenza Surveillance Scheme (EISS) network were closely related to the northern hemisphere 2002/2003 vaccine strains. A very small number of H3N2 viruses showing reduced reactivity

**Figure 6** Laboratory reports (all methods) by week of specimen for influenza A, B, and RSV



to A/Panama/2007/99 antiserum were detected in Norway and England at the end of January. These were characterised as A/Fujian/411/2002-like. They were not associated with any unusually severe disease (4).

The 2002/2003 influenza season was mild in the US. Influenza morbidity peaked during early to mid-February 2003, and pneumonia and influenza mortality peaked during late February. The predominant virus varied by region and time of season. The season was characterised by influenza B as the most common virus type detected early in the season, particularly in the states of Texas and Missouri, followed by influenza A viruses making up the majority of detections later in the season. Fifty-six per cent of detections were influenza B and of the influenza A detections 70.3% were subtyped as A(H1) viruses. The majority of influenza B isolates characterised were of the B/Victoria lineage and were antigenically similar to the vaccine strain (5).

In Hong Kong, outbreaks of avian influenza A (H5N1) in poultry populations were reported on a number of occasions in both domestic poultry and wildfowl populations during the Christmas and new year period of 2002/2003. Two human cases infected with A (H5N1) were reported in Hong Kong in February 2003. These occurred among members of a family who had travelled to southern China. No further cases were detected (6).

In the Netherlands there was a major outbreak of highly pathogenic avian influenza (HPAI) A (H7N7) virus on chicken farms between February and May 2003 which spread to Belgium and Germany. Over 30 million chickens were culled in attempts to control the outbreak. Human cases of conjunctivitis and influenza-like illness, with confirmed laboratory detection of H7N7 virus were reported among those involved in controlling the outbreak (7). There was one death reported from which A (H7N7) virus was detected (8).

**Southern hemisphere.** During the southern hemisphere winter (May to August 2003) the Fujian strain of influenza A H3N2 made up the majority of isolations reported to the World Health Organization (WHO) collaborating centre in Melbourne, Australia. According to the collaborating centre, Australia experienced one of its biggest influenza seasons since 1998. During the peak period of influenza activity in August 2003, all regions in Australia (except the Northern Territory) reported large outbreaks of influenza. New Zealand also recorded the highest levels of influenza consultations for the last three years during the winter of 2003 with the peak period occurring during June and July. The Fujian strain also circulated in New Zealand.

**Africa.** A number of influenza A(H3N2) outbreaks occurred in African countries with populations weakened by humanitarian and economic situations during the 2002/2003 season. A notable epidemic of respiratory illness attributable to H3N2 occurred in Madagascar with 22, 646 cases reported and a 3% case mortality. A further outbreak of H3N2 occurred in The Democratic Republic of Congo with a case fatality of between 3% and 3.5% according to age. In both

countries the strain of A (H3N2) was Panama-like and related to the vaccine strain (9).

### Vaccine match

In the UK, the majority of circulating strains isolated in 2002/2003 showed a good match with the influenza vaccine components and the vaccine is likely to have conferred substantial protection.

### Discussion

Influenza activity was very low during the 2002/2003 season. In England, the clinical levels remained within the base line range of 0 to 50 consultations per 100,000 population. A similar situation was seen in Scotland and Wales where rates for influenza-like illness in the respective surveillance schemes also remained within base line levels throughout the season. In Northern Ireland, rates were also low but, to date, no base lines have been agreed. RCGP rates were highest in the 0 to 4 years and the 5 to 14 years age groups, and lowest in the over 65 years age group.

Influenza B virus was the main influenza type detected in circulation for the majority of the season, while influenza A detections became the major type detected in the later half of the season (end of February). Influenza B traditionally causes milder symptoms than influenza A, and commonly affects the younger age groups (10). This was observed in England where clinical indicators for influenza like illness were highest among the younger age groups. The majority of circulating influenza A and B viruses were a good match to those of the vaccine components so it is likely that the vaccine would have conferred good protection. It is also likely that the older age group population would have developed reasonable levels of immunity as the influenza A H3N2 strain has been circulating for a number of years. Very few detections of the new H1N2 subtype (first detected in circulation during the 2001/2002 season) were made during the 2002/2003 season. The number of outbreaks reported were lower than the previous year and the majority occurred in schools and were caused by influenza B.

General practitioner consultation rates for acute bronchitis followed the expected seasonal pattern and peaked during week 01/03. The highest rates were seen in young children aged between 0 and 4 years (week 48/02) and adults aged over 65 years (week 01/03). Laboratory reports for RSV peaked in week 49/02. Over 90% of RSV infections reported were among children aged between 0 and 4 years. It is likely that RSV made a significant contribution to levels of acute bronchitis and influenza like illness in children aged between 0 and 4 years and bronchitis rates in adults aged 65 years and over. Testing for RSV in adults is less common compared with young children so may account, in part, for the uneven age distribution of reports received. Mycoplasma infections for 2002/03 remained at low levels

### Vaccine uptake

This is the third year of very low influenza activity in England, and across the UK generally, thus the effectiveness of the high vaccine uptake among the

elderly is difficult to interpret. Consultation rates of acute respiratory infection and acute bronchitis have been lower in this age group than in earlier years of low influenza activity, suggesting that morbidity has been reduced by vaccination

### **Influenza A (H3N2)**

A recent genetic drift variant of A(H3N2), A/Fujian/411/2002, was detected at very low levels in Europe (including England) during the winter 2002/2003. Further detections of this strain were made in the UK during the spring and early summer in travellers returning from the eastern Asia. These were detected during the surveillance for potential SARS cases in the UK at the time of the global epidemic in 2003 (The 2003/2004 annual influenza report will document the period of SARS surveillance in 2003 and the results of the laboratory work from this period). Given the low levels of the new variant, detected circulating during the winter 2002/2003, the H3N2 component (a Moscow-like strain) of the vaccine recommended by the WHO for the 2003/2004 season in the northern hemisphere remained unchanged from that recommended for the 2002/2003 season (11). The Fujian strain was then reported commonly during the southern hemisphere winter (May to Sept 2003) with both Australia and New Zealand reporting their highest influenza rates in recent years. As a result, the vaccine recommendations for the 2004 winter season in the southern hemisphere announced by WHO include an AH3N2 A/Fujian/411/2002-like strain (12).

### **Avian influenza**

Outbreaks of avian influenza are monitored closely around the world not only because of their threat to the poultry industry, but also because of the possibility of a pandemic threat posed by avian influenza to the human population. Two serious incidents of transmission of avian influenza to human populations have been documented in the last ten years. In 1997 an outbreak in Hong Kong of subtype A (H5N1) caused six fatalities, while transmission of A (H9N2) also in Hong Kong caused only a mild illness (in two young children).

In February 2003 two cases of A (H5N1) were reported by the Hong Kong authorities, one of whom died. These occurred in a family that had recently travelled to southern China (6). The close relationship between the human populations in southern China (including Hong Kong) and domestic animal populations in which influenza viruses circulate makes this area of the world a likely site for the emergence of novel influenza viruses of pandemic potential (13), and for this reason this geographic region is under enhanced influenza virus surveillance.

In the Netherlands, an outbreak of highly pathogenic avian influenza (HPAI) A (H7N7) virus on chicken farms resulted in over 30 million chickens being culled. The outbreak also affected the poultry industry in Belgium and Germany. Although transmission to humans in Holland was documented, the majority of symptoms were reported as mild with conjunctivitis the major symptom. Influenza A (H7N7) virus was detected in a

veterinarian, aged 57 years, who had visited an infected farm and who subsequently died of pneumonia. WHO concluded that the death was an isolated occurrence, as no efficient human-to-human transmission of the avian H7N7 influenza virus strain was detected (8). Further reports of human infections of H7N7 declined with the introduction of stringent safety measures. As well as comprehensive physical protection, workers were also vaccinated against human influenza strains to prevent potential mixing of human and avian influenza virus and also given prophylaxis with the antiviral drug Oseltamivir. In the UK, imports of live poultry and hatching eggs from the affected countries were banned. The Department for Environment, Food, and Rural Affairs (DEFRA) considered the threat of avian influenza to flocks in the UK to be low, but as a precaution DEFRA prepared a bio-security code for poultry owners to minimise the introduction of disease into their birds. The influenza reference laboratory, ERNVL, has also made arrangements to provide routine testing for avian influenza virus infection should the need arise.

### **NHS Direct virological sampling**

The number of sites that collected call data during the 2002/2003 season remained at 22, the same as for the previous year. The overall call rate remained higher than during 2001/2002, but this was not a significant increase and there are signs that the system may be settling down, although a few more years data are still needed in order to determine baselines. A pilot study, which has been developed for the 2003/2004 season (subject to ethical approval), will examine the feasibility of collecting diagnostic samples from callers, using influenza as a test study organism. This collaborative work involves NHS Direct, the Regional Surveillance Unit (HPA West Midlands), and the HPA CDSC and Respiratory Virus Unit, Colindale.

### **Respiratory mortality**

The figures for both all cause mortality and respiratory deaths (acute bronchitis, pneumonia and influenza) between weeks 40/02 and 20/03 were similar to that of the 2001/2002 season. The total estimated number of excess deaths attributable to influenza was approximately 1000 deaths lower compared with the previous season (table 1). This supports the clinical data, which indicates that the last two influenza seasons have been mild with low levels of influenza activity. The influenza B activity which predominated during 2002/2003 may account for the reduction in excess deaths since this strain is known to affect younger age groups and cause a milder illness than influenza A.

### **Thresholds**

In England, thresholds based on the RCGP rates of influenza like illness have been used since 1997 to inform health professionals and the general public of the levels of influenza activity and indicate when it is most appropriate to consider prescribing antiviral drugs. The currently used threshold values (consultations per 100,000) are: <50 (baseline), between

50 and 200 (normal seasonal activity), between 200 and 400 (higher than average seasonal activity), and >400 (epidemic activity). There has been a secular decline in the levels of consultations for influenza illness over the last 20 years. A recent analysis of integrated clinical and laboratory historical data for England now suggests that the alternative threshold values of 0 to 30 (baseline), between 30 and 200 (normal seasonal activity), and >200 (epidemic activity) would be more appropriate for describing levels of influenza activity in England (14). Further discussions are planned with the Department of Health and RCGP to take this proposal forward.

### NICE guidance and Oseltamivir

In July 2003, the National Institute of Clinical Excellence (NICE) published final guidance (subject to appeal) on the use of oseltamivir and amantadine for the prophylaxis of influenza (15). Oseltamivir is recommended for the post-exposure prophylaxis of influenza in at-risk individuals aged 13 years or over who are not effectively protected by vaccination, and have been exposed to someone with influenza-like illness (ILI) in the same household. In addition, oseltamivir is recommended for the post-exposure prophylaxis of influenza in at-risk individuals aged 13 years or over, who are able to begin prophylaxis within 48 hours of exposure, whether or not they have been vaccinated, if they live in residential care establishments where a resident or staff member has influenza-like illness. Oseltamivir is not recommended for post-exposure prophylaxis in healthy people aged under 65 years, or for seasonal prophylaxis, while amantadine is not recommended for either post-exposure or seasonal prophylaxis.

### Vaccine recommendations

In March 2003 the WHO announced the recommended vaccine components for the 2003/2004 winter season in the northern hemisphere. The recommended components for the 2003/2004 vaccine for the northern hemisphere are (10):

- an A/New Caledonia/20/99(H1N1)-like virus
- an A/Moscow/10/99(H3N2)-like virus (The widely used vaccine strain is A/Panama/2007/99)
- A B/Hong Kong/330/2001-like virus a B victoria like virus.

As a result of insufficient data, the decision on the A (H3N2) component was deferred until March 2003. Haemagglutination-inhibition (HI) tests identified an increasing proportion of virus isolates distinguishable from A/Panama/2007/99 and similar to A/Fujian/411/2002. Since no A/Fujian/411/2002-like virus, isolated in embryonated eggs, was suitable for use as a vaccine candidate at the time, and since many isolates were antigenically related to A/Panama/2007/99, it was recommended an A/Moscow/10/99 (H3N2)-like virus be used for the A (H3N2) component of vaccines to be used in the 2003-2004 season.

In October 2003 the WHO announced the recommended vaccine components for the southern

hemisphere winter 2004. The A (H3N2) component will be replaced with an A/Fujian/411/2002 like strain to take account of the new data from virus isolations during the 2003 southern hemisphere winter. Suitable egg grown vaccine candidates which are A/Fujian/411/2002-like are: A/Kumamoto/102/2002 and A/Wyoming/3/2003.

### Acknowledgements

The authors are grateful to all of the general practitioners, especially those within the RCGP research network, for their commitment to providing swabs for combined clinical-virological surveillance. We are also grateful to the microbiologists, consultants in communicable disease control (CCDCs) and infection control nurses for their continued support of the surveillance schemes, and Joy Field at CDSC and Praveen Sebastianpillai at the HPA's ERNVL for administrative and technical support of the data. We also thank the Scottish Centre for Infection and Environmental Health, CDSC (Wales), and CDSC (Northern Ireland) for contributing their data to this report.

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