



# Health Protection Report

weekly report

Volume 2 Number 41 Published on: 10 October 2008

## Current News

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- ▶ Tenth annual report on zoonoses in the United Kingdom
- ▶ Precautionary advice on UV emissions from low-energy light bulbs
- ▶ Rescheduling of publication of *C. difficile* infection data from PCOs

## Infection Reports

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### Enteric

- ▶ General outbreaks of foodborne illness in humans, England and Wales: weeks 36-40/2008
- ▶ Salmonella infections (faecal specimens), England and Wales: reports to the HPA (Salmonella data set), August 2008
- ▶ Common gastrointestinal infections, England and Wales: laboratory reports, weeks 36-40/2008
- ▶ Less common gastrointestinal infections, England and Wales: laboratory reports weeks 27-39/08

### Respiratory infections supplement

- ▶ Laboratory Surveillance of influenza and other respiratory viruses in the United Kingdom: October 2007 to May 2008

*P Mook, R Pebody, H Zhao, J Ellis, M Zambon, DM Fleming, JM Watson*

# News

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- ▶ **Tenth annual report on zoonoses in the United Kingdom**
  - ▶ **Precautionary advice on UV emissions from low-energy light bulbs**
  - ▶ **Rescheduling of publication of *C. difficile* infection data from PCOs**
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## Tenth annual report on zoonoses in the United Kingdom

The tenth UK annual report on zoonoses has been published by Defra [1], bringing together information on trends in incidence of the key zoonoses in recent years and reports on outbreaks.

The report covers the principal food and water-borne zoonoses – *Campylobacter*, *Salmonella*, Verotoxin-producing *E. coli* O157 (VTEC O157) and *Cryptosporidium* – as well as the main notifiable zoonotic diseases of animals: bovine tuberculosis, brucellosis, anthrax, rabies, West Nile Virus, BSE and avian influenza.

Main sections of the report cover:

- ▶ ***Campylobacter***, the most commonly-reported cause of bacterial food poisoning in humans in 2007. There was an increase in human cases of 10% over the year, with more than 55,000 being reported. However, the long-term trend has been a fall from the peak of over 65,000 cases reported in 2000.
- ▶ ***Salmonella*** In 2007, 13,213 laboratory reports of *Salmonella* in humans were recorded in the UK, a decrease of 6.2% compared to the 14,060 confirmed cases in 2006. The report discusses a number of incidents affecting egg, meat and other agricultural product sectors but notes that, of the *Salmonella* serotypes covered by EU legislation, the estimated prevalence in the UK of 0.06% was well below the target 1% prevalence.
- ▶ ***E. Coli* VTEC O157** Human cases of VTEC O157 infection fell in the UK by 9.8% in 2007 compared with 2006.
- ▶ **Bovine tuberculosis** There was an increase in both new incidents of bovine tuberculosis in cattle during 2007 and in the number of herds tested.
- ▶ **Lyme borreliosis** Throughout 2007, there was an increase in reports, with seasonal trends similar to those seen in previous years.
- ▶ **Avian influenza** The finding of H5N1 in a wild swan in Scotland and of low pathogenic avian influenza H7N3 in poultry in Norfolk is discussed.
- ▶ **Q fever** A cluster of Q fever cases was identified in 2007 in the Cheltenham area. Despite extensive investigations by the HPA and VLA, no source was identified.

## Reference

1. *Zoonoses Report: United Kingdom 2007*. London: Department for Environment, Food and Rural Affairs, 2008. Available at:  
[http://www.defra.gov.uk/animalh/diseases/zoonoses/zoonoses\\_reports/zoonoses2007.pdf](http://www.defra.gov.uk/animalh/diseases/zoonoses/zoonoses_reports/zoonoses2007.pdf).

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## Precautionary advice on UV emissions from low-energy light bulbs

Following research by the Health Protection Agency's Radiation Protection Division [1] showing that some energy saving compact fluorescent lights can emit ultraviolet radiation at levels higher than the guideline levels promulgated by the International Commission on Non-Ionizing Radiation Protection, the Agency has recommended caution in the use of such lamps in certain situations.

Certain types of compact fluorescent light bulbs (CFLs) – “open (single envelope) CFLs” [2] – should not be used where people are closer than 30 cm (1 ft) from the bare light bulb for more than one hour a day; and for such situations open CFLs should be replaced by the encapsulated types of low-energy bulbs, the Agency has advised [2].

Encapsulated (double envelope) compact fluorescent light bulbs do not emit significant amounts of UV radiation. Neither do the larger, long-tube "strip lighting" design fluorescent lights, commonly used in offices, workplaces and homes, present any risk to health, it has been stressed.

However, it is acknowledged that exposure to UV radiation can cause particular problems for those suffering from medical conditions such as Lupus. The Agency, Government and the lighting industry have met with patient groups to give advice on the use of compact fluorescent light bulbs.

As a result of the Agency's work, the Government is pressing the EU to take account of the findings in future European legislation.

### References

1. Khazova M and O'Hagan JB. Optical radiation emissions from compact fluorescent lamps. *Radiation Protection Dosimetry* Advance Access, published online August 30, 2008. Available at <http://rpd.oxfordjournals.org/cgi/content/abstract/ncn234v1>
2. A press notice, including illustrations of the types of lamps affected by the warning and further background information, is available from the HPA website at: [http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb\\_C/1223534061375?p=1204186170287](http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1223534061375?p=1204186170287)

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## Rescheduling of publication of *C. difficile* infection data from PCOs

The Department of Health in conjunction with the HPA have decided to defer the publication of quarterly *C. difficile* mandatory reporting data by Primary Care Organisations (PCOs). The introduction of regular publication of the *C. difficile* PCO data will be moved from October 2008 to April 2009.

Analysis of the reported *C. difficile* infections for the year April 2007-March 2008 indicates that the quality of the baseline year (financial year 2007/08) is not sufficiently robust for publication in its current format. The DH is working with the HPA to improve the data quality and ensuring that the April 2009 PCO publication will reflect the improved quality of the historical data. It is important that the publication of baseline data is robust as it provides a basis for assessment for key stakeholders, including Acute Trusts, care homes, and the local communities.

The HPA envisages publishing the *C. difficile* PCO data on April 16, 2009, alongside the *C. difficile* data from the Acute Trusts. The intention is to publish PCO level data for the financial year 2007/08 as well as all seven quarters of data from April 2007 to December 2008. The timeline of subsequent publications will be posted on the HPA and DH websites.

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## Infection reports

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### Enteric

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- ▶ **Less common gastrointestinal infections, England and Wales: laboratory reports weeks 27-39/08**

#### General outbreaks of foodborne illness in humans, England and Wales: weeks 36-40/2008

Preliminary information has been received about the following outbreaks.

Health Protection Unit	Organism	Location of food prepared or served	Month of outbreak	Number ill	Cases positive	Suspect vehicle	Evidence
North East HPU – North/land	Campylobacter	Function	Sept	4	4	–	–
North East HPU - Cnty Durham & Tees	S. Enteritidis PT14B	Restaurant	Sept	5	5	–	–

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#### Salmonella infections (faecal specimens), England and Wales: reports to the HPA (Salmonella data set), August 2008

Details of serotypes of 1124 Salmonella infections recorded in August are given in the table below. In September 2008, 777 Salmonella infections were recorded and preliminary information was received about one outbreak (see table above).

Organism	Cases: August 2008
S. Enteritidis PT4	103
S. Enteritidis (other PTs)	502
S. Typhimurium	212
S. Virchow	24
Others (typed)	283
<b>Total <i>Salmonella</i> (provisional data)</b>	<b>1124</b>

## Common gastrointestinal infections, England and Wales: laboratory reports, weeks 36-40/2008

Laboratory reports	Number of reports received					Total reports 36-40/08	Cumulative total to	
	36/08	37/08	38/08	39/08	40/08		40/08	40/07
<i>Campylobacter</i>	1233	1103	951	692	80	4059	36730	40641
<i>Escherichia coli</i> O157 *	51	66	43	49	9	218	779	646
<i>Salmonella</i> †	232	163	202	147	33	777	7001	9122
<i>Shigella sonnei</i>	35	16	19	8		78	516	829
Rotavirus	25	50	22	17	5	119	13008	12344
Norovirus	33	51	21	42	6	153	4236	3858
Cryptosporidium	201	194	149	107	18	669	2449	2289
Giardia	91	88	64	47	15	305	2301	2262

\*Vero cytotoxin-producing isolates (data from Health Protection Agency's Laboratory of Gastro-intestinal Pathogens (LGP)).

† Data from Health Protection Agency's Laboratory of Gastro-intestinal Pathogens.

## Less common gastrointestinal infections, England and Wales: laboratory reports weeks 27-39/08

Laboratory reports	Total reports 27-39/2008	Cumulative total to 39/2008	Cumulative total to 39/2007
Adenovirus*	15	50	43
Astrovirus	3	21	13
Sapovirus	1	5	2
<i>Shigella boydii</i>	26	89	93
<i>Shigella dysenteriae</i>	12	52	30
<i>Shigella flexneri</i>	83	287	251
<i>Plesiomonas</i>	10	25	36
<i>Vibrio</i> spp.	28	74	81
<i>Yersinia</i> spp	1	12	50
<i>Entamoeba histolytica</i>	18	53	56
<i>Blastocystis hominis</i>	75	297	465
<i>Dientamoeba fragilis</i>	12	41	108

\* includes Adenovirus EM faeces and Adenovirus group F.

# Respiratory infections supplement

## Surveillance of influenza and other respiratory viruses in the United Kingdom: October 2007 to May 2008

*P Mook, R Pebody, H Zhao, J Ellis, M Zambon, DM Fleming, JM Watson*

### Summary

Influenza activity in the United Kingdom (UK) remained at low levels during the 2007/08 season. Clinical indices of activity remained at the lower end of the range of 'normal seasonal activity' and peaked in early-January 2008 in England and Scotland. Activity remained within baseline levels in Wales for the duration of the season. Virological detection also remained at low levels in England and Wales with influenza A/Solomon Island/3/2006 (H1N1)-like virus identified as the dominant circulating strain although there was some influenza B activity later in the season. During the season, outbreaks, mainly caused by influenza B, were reported in care homes, schools, hospitals and a prison.

During the 2007/08 season, 11% of the influenza A(H1) viruses circulating in the UK were found to be resistant to oseltamivir along with 23 other countries in Europe with oseltamivir resistance rates ranging from 1% to 67%. Oseltamivir resistant influenza viruses were also found outside Europe.

Internationally, the H5N1 avian influenza virus continued to spread in poultry and cause sporadic cases in humans. An H5N1 outbreak in wild birds was reported during January 2008 in Dorset, UK. There were no associated human cases. In June 2008, there was an outbreak of H7N7 avian influenza in poultry in Oxford, UK which also had no associated human cases.

### Introduction

In the UK, the activity of influenza and other respiratory viruses in humans is monitored throughout the year, but there is a particular focus on the winter season between October (week 40) and May (week 20). Data is collated from a variety of sources to provide information on circulating influenza strains for early detection of strains with epidemic potential and to contribute towards the decision on influenza vaccine composition for the following year. Surveillance activities also produce timely reports on influenza activity and burden of disease for health professionals, the media and public.

### Methods

Influenza surveillance is dependent on both clinical and virological data collected from across the UK. The information sources have been previously described [1, 2]. This season, reporting of surveillance information by these sources continued to be tested via the Department of Health funded Health Protection Informatics (HPI) website in parallel with established methods of reporting. The aim of submitting influenza surveillance data via the HPI is to make the data available to relevant groups in a more timely way.

### Results

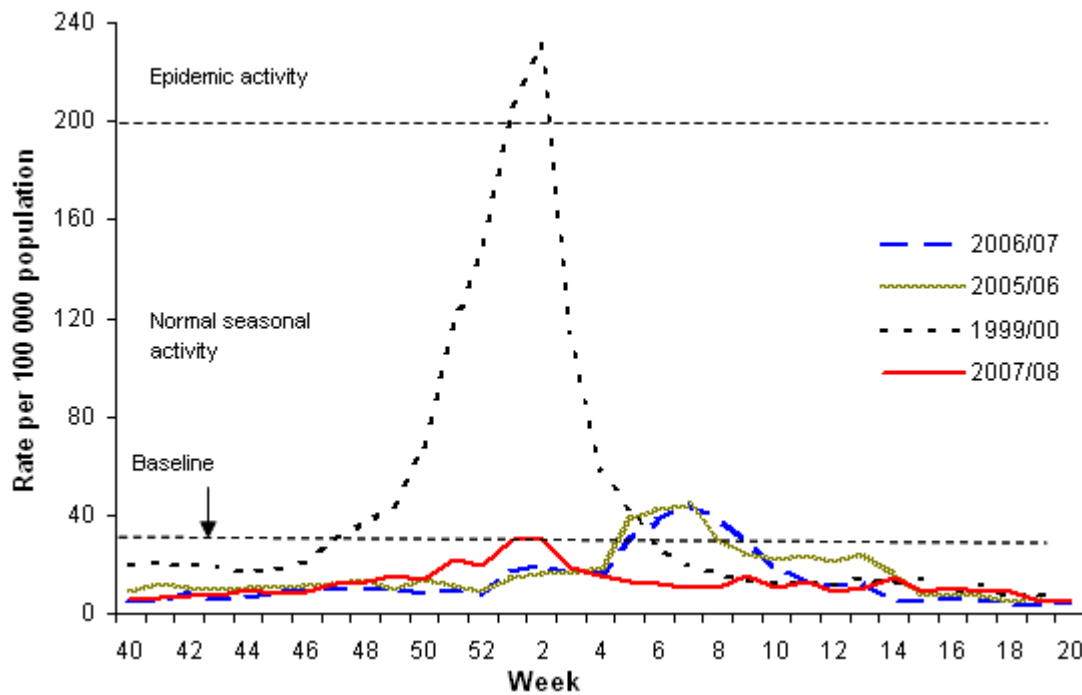
#### Clinical

##### *RCGP Weekly Returns Service*

The weekly General Practitioner (GP) incidence rate for ILI remained at or near baseline levels (<30 new episodes per 100,000 population) for the duration of the season. (It should be noted that RCGP incidence rates in this report only refer to first or new episodes of infection diagnosed by a GP.)

ILI levels increased to the baseline threshold in week 01/08 at 29.7/100,000 before peaking in week 02/08 at 30.5/100,000 population, which is at the low end of the range of 'normal seasonal activity'. The rate declined back to baseline levels in week 03/08. Activity peaked earlier than in the 2006/07 season (43.7/100,000 in week 07/07) (Figure 1).

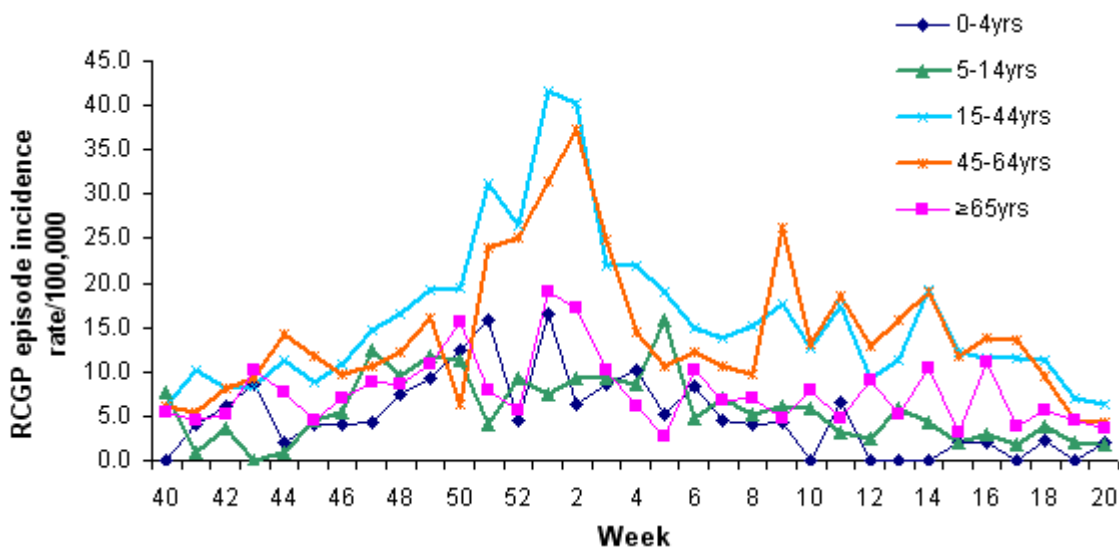
**Figure 1. RCGP incidence rates for influenza-like illness: England 2007/08 and recent years**



The highest ILI incidence rates were among those aged 15-44 years (41.5/100,000 in week 01/08) and those age 45-64 years (37.4/100,000 in week 02/08) (Figure 2). Rates were highest in central England (39.5/100,000 in week 02/08), followed by the south (29.4/100,000 in week 02/08) and the north (15.9/100,000 in week 02/08).

RCGP rates for acute bronchitis peaked in week 01/08 (203.1/100,000). This rate peaked higher than last season (184.5/100,000 in week 01/07). The rates were highest among children aged 0 to 4 years in week 48/07 (514.3/100,000), followed by people age 65 years and over (467.7/100,000) in week 01/08.

**Figure 2. RCGP incidence rates for influenza-like illness by age group, 2007/08**



*Q FLU - HPA and Nottingham University Division of Primary Care*

The consultation rates for ILI peaked at 22.1/100,000 in week 01/01. The age specific rates were highest among those aged 15-44 years at 28.7/100,000 (week 01/0) and 45-64 years at 26.7/100,000 (week 01/08), mirroring the RCGP data. The trends were also similar to those indicated by the RCGP data but the overall reported rates were lower. No thresholds have yet been set for Q FLU.

#### Wales – National Public Health Service (NPHS Wales)

Consultation rates in the sentinel GP scheme in Wales remained within baseline levels (<25/100,000) for the duration of the season. The rate peaked in week 01/08 at 8.5/100,000 (Figure 3) which was lower and earlier than the peak in the 2006/07 season of 17.8/100,000 in week 07/07.

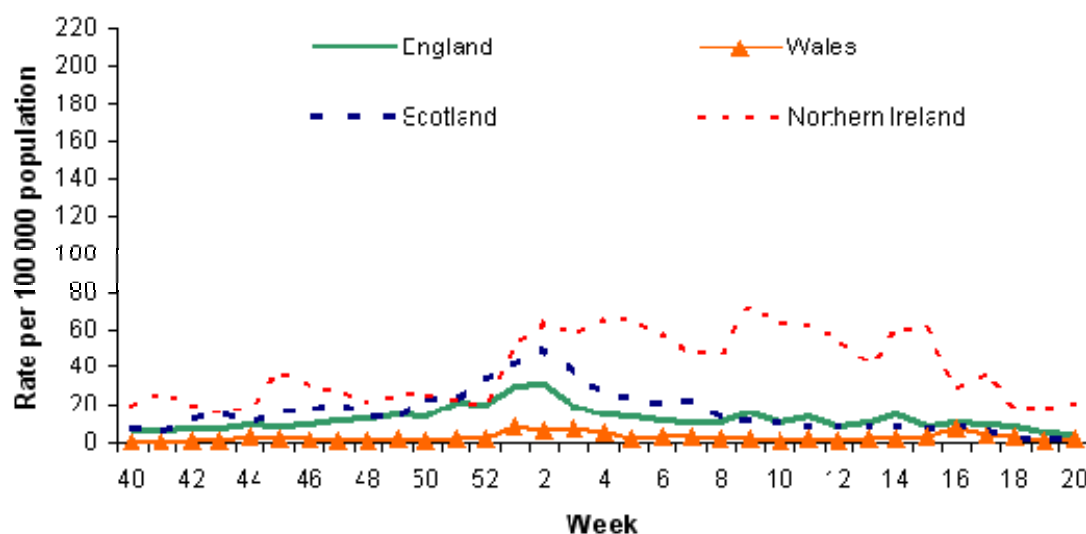
#### Scotland – Health Protection Scotland

GP consultation rates in the flu spotter scheme for Scotland (Figure 3) remained within baseline levels (<50/100,000) until week 02/08 when the rate peaked at 50/100,000. This was considerably lower than the peak in the 2006/07 season of 158/100,000 in week 02/07.

#### Northern Ireland – Communicable Disease Surveillance Centre (CDSC Northern Ireland)

This is the eighth year of the enhanced surveillance scheme in Northern Ireland and baseline levels are yet to be established. The combined consultation rate for influenza and ILI peaked in week 05/08 at 64.5/100,000. This peak was lower than the previous season (204/100,000 in week 05/07) (Figure 3).

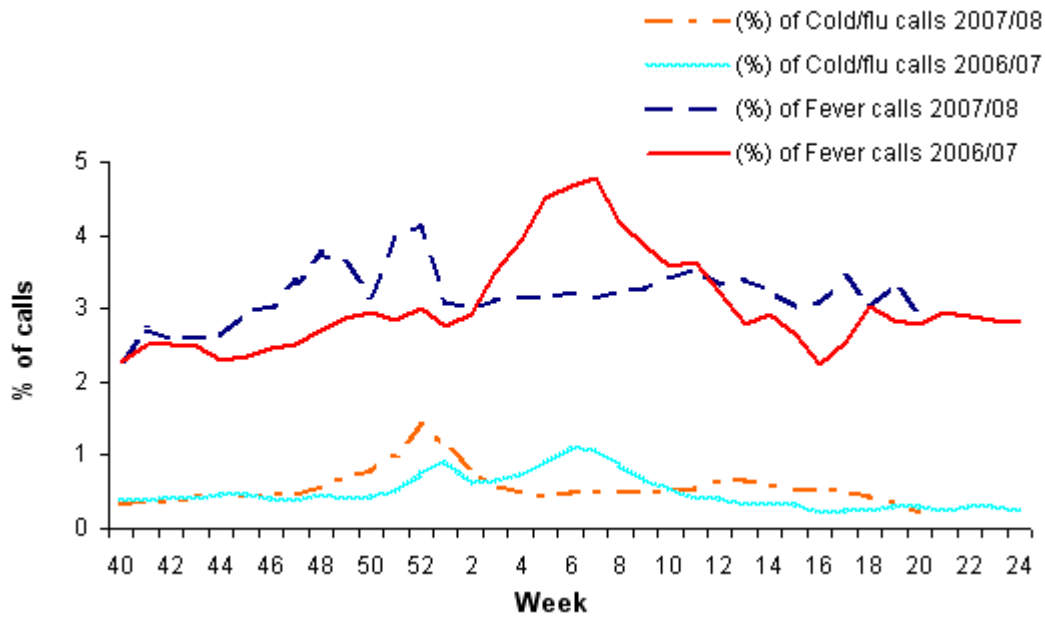
**Figure 3. GP consultation rates for influenza-like illness for England, Wales, Scotland and Northern Ireland, 2007/08**



#### NHS Direct for England and Wales

The national proportion of NHS Direct 'cold/flu' calls for all ages peaked during weeks 52/07 at 1.4% (Figure 4), just above the baseline threshold of 1.2% of total calls [3]. The highest proportion of 'cold/flu' calls was among those aged 15 to 44 years at 2.1% in week 52/07; this value was above the baseline threshold of 1.4% and was consistent with the age distribution for ILI incidence rates in the RCGP scheme. The national proportion of 'fever' calls for all ages peaked during week 52/07 at 4.1% and was highest among those aged 0-4 years at 14.8%, above the baseline threshold of 12.3% of total calls.

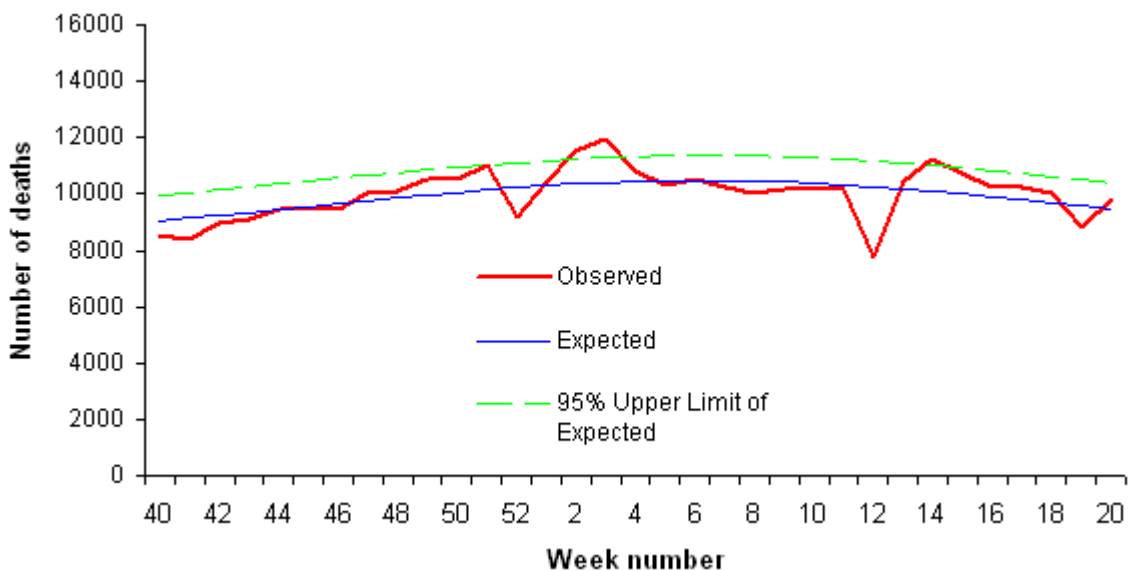
**Figure 4. NHS Direct proportion of 'cold/flu' and fever calls: 2005/06 and 2007/08**



**Mortality in England and Wales ( Office for National Statistics)**

The weekly total number of estimated deaths due to all causes peaked at 11,954 in week 03/08 (Figure 5). The pronounced troughs in Figure 5 during the 2007/08 season and other seasons are likely to be as a result of public holidays in which registry offices are shut. Increases the following week are likely to be in part due to registering “rebound”. This peak was higher and earlier than for the previous season (11,322 in week 08/07). The weekly number of total respiratory deaths peaked at 2388 (week 01/07). The annual estimate of excess mortality due to influenza is calculated using a time series model [4]. Each year it is revised to incorporate data from the current season and the fitted model provides a figure for the most recent season and readjusts the previous years' figures. (Table 1). Only 219 extra deaths due to influenza were estimated for 2007/08.

**Figure 5. Deaths by all causes, 2007/08**



**Table 1 Estimated excess mortality due to influenza in England and Wales**

<b>Influenza Season</b>	<b>Number of excess deaths</b>
88/89	1061
89/90	27675
90/91	8426
91/92	5951
92/93	1590
93/94	14079
94/95	2012
95/96	15428
96/97	21170
97/98	-
98/99	17386
99/00	21497
00/01	841
01/02	6913
02/03	6472
03/04	5215
04/05	1914
05/06	-
06/07	-
07/08	219

## Virological

### *Virological Surveillance in General Practice*

There are two complementary surveillance schemes that use sentinel GPs to collect samples for virological analysis in England. These schemes are the RCGP/HPA Community Surveillance Scheme and the HPA Virological Surveillance Scheme. A subset of the GPs involved in the RCGP sentinel clinical surveillance scheme, also participates in virological surveillance (RCGP/HPA Community Surveillance Scheme), by sending respiratory specimens directly to the Respiratory Virus Unit (RVU), at the Centre for Infections, for testing (Figure 6). Virological data are obtained by analysing influenza strains using antigenic and molecular methods. Table 2 shows the surveillance data obtained via these two surveillance schemes and similar data provided by Northern Ireland and Scotland. Virus isolates are derived from respiratory specimens provided by these sentinel GP schemes or by hospital diagnostic laboratories.

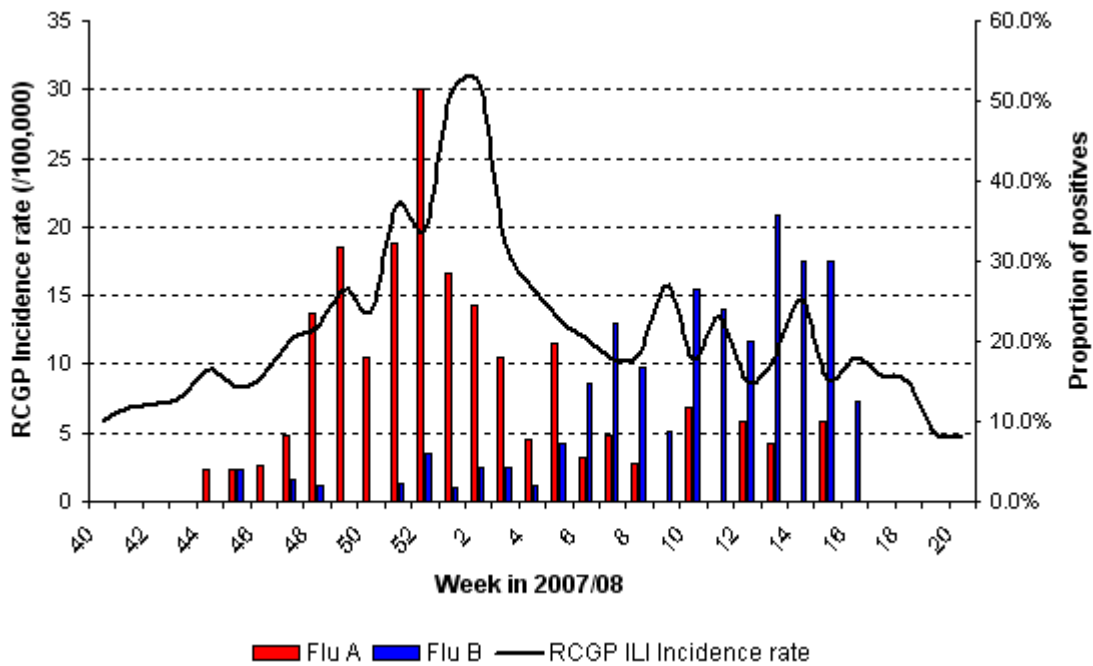
**Table 2 Sentinel GP Surveillance Data**

Location	Predominant influenza virus type	No. of Samples	No. of influenza positives (%)	Peak week of positives for influenza		No. of positives in peak week (%)	
				Flu A	Flu B	Flu A	Flu B
England (RCGP/HPA Community Surveillance Scheme)	A(H1) early B late	1219	294 (24%)	52/07	10/08	34 (52%)	9 (26%)
England (HPA Virological Surveillance Scheme)	A(H1) early B late	509	154 (30%)	01/08	08/08	17 (37%)	7 (50%)
Northern Ireland	B	149	38 (26%)	03/08	10/08	2 (17%)	11 (55%)
Scotland	A(H1) early B late	692	131 (19%)	02/08	10/08	14 (48%)	12 (43%)

Influenza A(H1) and influenza B were the predominant virus types isolated from community samples throughout the UK. All the sentinel GP schemes, with the exception of that in Northern Ireland, indicated that influenza A(H1) dominated in the early part of the season (until approximately week 05/08) and influenza B dominated thereafter. The peak week of positives for influenza virus in England correlated well with the peak week of clinical activity but the peak weeks in Northern Ireland and Scotland were later than the clinical indicators in those countries.

In total, the RVU identified 387 positive community samples for influenza between week 40/07 and week 20/08. This figure is based on those respiratory specimens submitted directly to the RVU from the RCGP/HPA Community Surveillance Scheme, the HPA Virological Surveillance Scheme, and outbreaks. 73.1% were identified as influenza A viruses while 26.9% were influenza B viruses. These detections were predominantly from those aged 15-44 years.

**Figure 6. RCGP clinical and virological influenza surveillance, 2007/08**



*Reports of Influenza Infection from Hospital Laboratory Reporting*

Laboratory reports (NHS and HPA) by week of specimen indicated there were 540 confirmed influenza A infections between week 40/06 and 20/07, peaking in week 01/07. One hundred and fifty six of these were detected by serological test methods. There were 576 confirmed influenza B infections during this same period, peaking in week 14/08. One hundred and seventy three of these were detected by serological test methods.

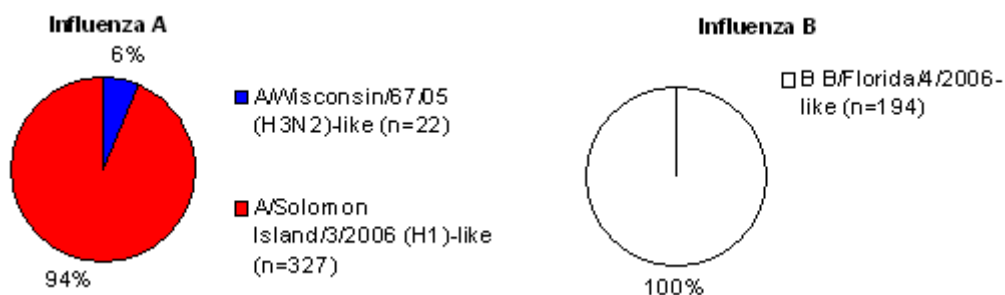
Between week 40/07 and week 20/08, the RVU identified 501 hospital samples as positive for influenza. 64.9% were identified as influenza A viruses while 35.1% were influenza B viruses. These detections were mainly from children aged less than five years.

The peak week for positive samples for influenza A (combined figures from community and hospital sources submitted to the RVU), was week 01/08, with 87 positives (84 of these were A(H1)). This correlates well with the peak week of clinical activity. The peak week for influenza B was later, in week 10/08 with 31 positives.

*Virus Characterisation*

Influenza A viruses were the dominant strain this season with 60.2% (327) isolated as A/Solomon Island/3/2006 (H1N1)-like and 4.1% (22) A/Wisconsin/67/05 (H3N2)-like. The remaining 35.7% (194) were influenza B viruses, all of which antigenically similar to the B/Florida/4/2006-like virus (B/Yamagata/16/88 lineage) (Figure 7).

**Figure 7. Influenza strains characterised by RVU/VRD from community and hospital sources**



### *Antiviral Resistance*

Surveillance data of the antiviral drug susceptibility of influenza viruses circulating in the UK during the 2007/08 season showed that 11% (38/347) of A(H1N1) tested viruses were resistant to oseltamivir [6]. These viruses retain sensitivity to zanamivir, amantadine and rimantadine. To date, resistant viruses have been detected in 24 European countries, including the UK with the oseltamivir resistance rates ranging from 1% to 67% [6]. They have also been detected elsewhere outside of Europe [7].

### *Vaccine Match*

Of the influenza viruses characterised during the 2007/08 season, all the influenza A strains showed a good match with the corresponding 2007/08 influenza vaccine components – an influenza A/Solomon Island/3/2006 (H1N1)-like virus and an influenza A (H3) A/Wisconsin/67/05 (H3N2) - like virus. All the influenza B viruses analysed this season belonged to the B/Yamagata lineage (B/Florida/4/2006-like viruses). These viruses were antigenically and genetically distinct from the B/Victoria lineage (B/Malaysia-like virus) which was included in the 2007/08 northern hemisphere influenza vaccine.

### *Vaccine Uptake Monitoring on Behalf of the Department of Health*

Influenza vaccine uptake for the 2007/08 season was 73.5% for those aged 65 years and over in England [5]. All 152 Primary Care Trusts (PCTs) participated in the vaccination programme and 146 PCTs achieved uptake rates of 70% or more.

### *Outbreaks*

The Centre for Infections received 26 reports of acute respiratory illness (ARI) outbreaks from across the UK. Most (69%) were from elderly care homes (affecting those aged over 65 years) with the remainder from schools, hospital wards and a prison. Of the 23 outbreaks with laboratory confirmation, 18 were confirmed as due to influenza B infection (including 14 of the care home outbreaks), two as influenza A(H3), one as RSV, one as rhinovirus and one as parainfluenza type 3. Three of these outbreaks were reported to have associated deaths. These outbreaks were caused by influenza B, parainfluenza and unknown causes.

### *Influenza activity elsewhere in Europe*

Influenza activity first increased above baseline levels in Europe between weeks 48/07 to 51/07 and peaked in most countries between weeks 04/2008 and 08/2008. Clinical consultation rates have been lower than during the 2006-2007 season for the majority of countries. The highest consultation rates have generally been reported in the 0-4 and 5-14 age groups. However, Ireland, Norway and Switzerland also reported elevated consultation rates in the 15-64 age group. During the season, 16,763 influenza viruses were detected in Europe. Of these, 61% were influenza A viruses and 39% influenza B viruses. Of the 3,504 viruses further characterised, 10 were A/New Caledonia/20/99 (H1N1)-like, 2141 were A/Solomon Island/3/2006 (H1N1)-like, 21 were A/Wisconsin/67/2005 (H3N2)-like, 23 were A/Brisbane/10/2007 (H3N2)-like, 1293 were B/Florida/4/2006-like (B/Yamagata/16/88 lineage) and 16 were B/Malaysia/2506/2004-like (B/Victoria/2/87 lineage).

### *Other viruses*

One thousand two hundred and sixteen community samples were submitted to the RCGP/HPA Community Surveillance Scheme, of which 28 (3%) were positive for Respiratory Syncytial Virus (RSV). Five hundred and nine community samples were submitted to the HPA Virological Surveillance Scheme, of which 26 (5%) were positive for RSV, four for adenovirus, one for coronavirus, 10 for human metapneumovirus, one for mycoplasma, two for parainfluenza, 14 for rhinovirus and one sample tested positive for both parainfluenza and rhinovirus.

The total number of NHS and HPA laboratory detected RSV infections was 5439 between weeks 40/07 and 20/08, peaking in week 49/08 at 572 reports. Of these, 4453 (81.9%) were specimens taken from infants aged less than one year. This was an increase in the number of infections reported during the 2006/07 season (3495). Detections of parainfluenza by these laboratories were also monitored. The predominant parainfluenza serotype throughout the 2007/08 season was serotype 3, peaking in week 19/08. The majority of specimens were from those aged four years and under for all serotypes.

## Discussion

The season was characterised by the circulation of influenza A, predominantly influenza A/Solomon Island/3/2006 (H1N1)-like, early in the season and influenza B/Florida/4/2006-like virus in the latter part. This was a trend reflected throughout Europe. The last season with substantial influenza B activity was 2005/06 which is in keeping with the concept that influenza B activity tends to occur every two to three seasons.

Confirmed infections of RSV followed the established seasonal pattern during the 2007/08 season, which is characterised by a gradual increase in detections from mid-October, reaching a peak in December/early January. The peak number and total number of detections this year increased compared with the previous two seasons but were still within normal limits.

Influenza activity was low in the UK during the 2007/08 season, making it the eighth consecutive season of low activity. While virological data from sentinel GP surveillance schemes were consistent with the peak weeks of clinical activity in England, those in Northern Ireland and Scotland were some weeks later, perhaps as a result of influenza B circulating later in the season. In England, RCGP incidence rates remained within baseline levels for the majority of the season and normal seasonal activity was only observed in week 02/07. NHS Direct cold/flu calls for the 15 to 44 years age group were a better indicator of influenza activity than fever calls this season: cold/flu calls rose above baseline levels in this age group and the peak of calls correlated with RCGP incidence rates for the same age group. Activity in Wales remained at baseline levels for the duration of the season, as it had in 2006/07, and it peaked one week before that observed in England (week 01/08) while in Scotland, normal seasonal activity was observed for only one week, the same week as in England (week 02/08). Clinical activity in Northern Ireland in 2007/08 peaked in week 05/08 and the updated consultation rate was higher than elsewhere in the UK. Without validated thresholds it is difficult to interpret the significance of the finding.

The most important feature of this season is the finding of the wide-spread oseltamivir resistance of influenza A(H1N1). Throughout Europe and elsewhere, of those influenza A(H1N1) viruses tested for antiviral drug susceptibility during the 2007/08 season, some were found to be resistant to oseltamivir. According to WHO [7], preliminary test results show that the viruses carry the specific neuraminidase mutation (H274Y) that confers oseltamivir resistance in N1, while no sign of adamantane resistance by genetic analysis have been found. The HPA will continue to test the antiviral drug susceptibility of influenza viruses circulating in the UK during 2008/09.

### Seasonal Influenza Outbreaks

The majority of laboratory confirmed ARI outbreaks during the 2007/08 season were due to Influenza B, particularly in care homes for those aged 65 years and over. Confirmed influenza B outbreaks in these closed settings (one of which had associated deaths) continued to be reported until relatively late into the season (week 17/08). These outbreaks along with the age specific incidence data for this season challenges the widely held view that influenza B causes only mild disease and predominantly affect school aged children. The age group involved with the majority of outbreaks (those aged 65 and over) did not correspond with the age groups with highest influenza activity, as identified by the RCGP Weekly Returns Service and QFLU (15-44 years) emphasising the importance of undertaking virological sampling of ILI cases in those over 65 years of age in primary care surveillance schemes.

### Avian influenza (H5N1) in humans and animals

During 2008, the number of new human cases of avian influenza A(H5N1) virus infection continued to increase as did the number of associated deaths globally. Since the beginning of the outbreak in 2003, 15 countries had confirmed cases: Azerbaijan, Bangladesh, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao People's Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey and Viet Nam. As of 19 June 2008, 385 human cases were reported; of which 243 (63%) were fatal [8]. Bangladesh reported its first human case in 2008. Four other countries (Indonesia, Egypt, Vietnam and China) continued to report new cases and deaths in 2008. The World Health Organization (WHO) continue to categorise the current threat of pandemic influenza as Phase 3: there are human infection(s) with a new subtype, but no new human to human spread or, at most, very limited transmission to a close contact [9].

During the 2007/08 season, outbreaks of avian influenza A(H5N1) in animals continued to be reported from Asia, Middle East, Africa and Europe. Twenty countries reported new animal cases in 2008 (figures as of 29 July 2008), of which five were in Europe (Russia, Switzerland, Turkey, Ukraine and the United Kingdom) [10].

On 10 January 2008, the Department for the Environment, Food and Rural Affairs (Defra) confirmed an outbreak of the highly pathogenic H5N1 avian influenza strain amongst mute swans in the Chesil Beach area of Dorset [11].

### **Avian influenza (H7N7) in poultry in the UK**

On 3 June 2008, Defra confirmed an outbreak of avian Influenza in chickens on premises near Banbury in Oxfordshire, England after preliminary tests were positive for the H7 strain. This was later confirmed as a highly pathogenic H7N7 strain [12, 13]. All birds on the premises were slaughtered as a precautionary measure. There were no human cases of H7N7 associated with these outbreaks, but antiviral drugs were offered to those exposed to the birds without protection and those involved in the incident response. Seasonal influenza vaccine was offered where appropriate [14].

### **Vaccine recommendations**

The WHO recommended that the components for the 2008-09 vaccine for the northern hemisphere should contain the following:

- an A/Brisbane/59/2007 (H1N1)-like virus
- an A/Brisbane/10/2007 (H3N2)-like virus\*
- a B/Florida/4/2006-like virus#

\* A/Brisbane/10/2007 is a current southern hemisphere vaccine virus.

# B/Florida/4/2006 and B/Brisbane/3/2007 (a B/Florida/4/2006-like virus) are current southern hemisphere vaccine viruses.

### **Acknowledgements**

The authors are grateful to all microbiologists, consultants in communicable disease control, infection control nurses, and GPs, especially those within the primary care networks, for their contribution to the surveillance schemes. We are appreciative to Joy Field and Praveen Sebastian Pillai at the CFI for their administrative and technical support. Thanks are also due to colleagues at the HPA Primary Care Unit West Midlands, Health Protection Scotland, NPHS Wales and CDSC Northern Ireland for contributing data to this report.

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