



Health Protection Report

weekly report

Volume 2 Number 23 Published on: 6 June 2008

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News

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UK outbreak of H7N7 avian influenza

The avian influenza virus subtype that caused an outbreak of the disease in Banbury, Oxfordshire, this week has been identified as H7N7. The UK Department for the Environment Farming and Rural Affairs (Defra) and the Health Protection Agency (HPA) are both involved in managing the animal and human health implications of this outbreak.

The Oxfordshire outbreak has led to the culling of more than 20,000 chickens and the imposition of a protection zone of 3km and a surveillance zone of 10km. Bird gatherings and movement restrictions apply within these zones. Defra and the HPA have stressed that the risk to public health is very low. The best possible evidence has been used in deciding on the measures to protect those exposed to the virus and involved in the clean-up operation.

A total of 80 people were either provided with post-exposure prophylaxis or, in the case of those involved in the culling and clean-up operation, with personal protective equipment and pre-exposure prophylaxis.

References

1. "Confirmed H7 avian influenza in Oxfordshire poultry farm", HPA press release, 4 June 2008, http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1212564245501?p=1204186170287.
 2. "Avian influenza (bird flu): Latest situation", Department for Environment, Food and Rural Affairs website: <http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/latest-situation/index.htm>.
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Children at two schools in south east England offered hep. A vaccination

More than 200 schoolchildren have been offered hepatitis A vaccine after the identification of two clusters of the disease in the southeast of England.

The index case was a schoolchild who developed clinical symptoms on 3 March. Subsequently, infection of three members of a second family was microbiologically confirmed on the 28 May.

The existence of a second cluster was confirmed when two cases were microbiologically confirmed in a third family, one of whose members attended a special needs school. Another school-aged child in the second family was a classmate of the index case.

The local Health Protection Unit subsequently made available hepatitis A vaccine to children at the two schools where cases have been identified. It also disseminated advice about the importance of good hygiene in school settings.

Staff members who had direct contact with children at the special needs school are also being offered hepatitis A vaccine. Specimens from the cases are currently undergoing further testing at the HPA's Centre for Infections.

Groups most commonly at risk of infection with hepatitis A are intravenous drug users, men who have sex with men and international travellers. The disease is less severe in young children who are often asymptomatic despite being infected. The HPA believes that susceptibility in the general population is high and that the potential risk of outbreaks has increased in recent years.

Infection reports \ Supplement

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Respiratory infections

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Laboratory reports of respiratory infections made to Cfl from HPA and NHS laboratories in England and Wales: weeks 18-22/08

Table 1 Reports of influenza infection made to Cfl, by week of report

Week	Week 18	Week 19	Week 20	Week 21	Week 22	Total
Week ending	04/05/08	11/05/08	18/05/08	23/05/08	01/06/08	
Influenza A	4	8	–	7	1	20
Isolation	–	3	–	–	–	3
*DIF	–	1	–	–	–	1
Four-fold rise in paired sera	–	–	–	–	–	–
PCR	1	1	–	3	–	5
†Other	3	3	–	4	1	11
Influenza B	32	29	22	36	113	132
Isolation	4	6	4	7	1	22
*DIF	1	–	3	2	1	7
Four-fold rise in paired sera	–	–	–	–	–	–
PCR	18	9	9	16	1	53
†Other	9	14	6	11	10	50
Influenza (untyped)	–	–	–	–	–	–
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), by week of report

Week	Week 18	Week 19	Week 20	Week 21	Week 22	Total
Week ending	04/05/08	11/05/08	18/05/08	25/05/08	01/06/08	
Adenovirus*	13	36	26	40	16	131
Coronavirus	–	2	–	2	2	6
Parainfluenza†	22	33	21	47	39	162
Rhinovirus	22	31	15	44	23	135
Respiratory Syncytial Virus (RSV)	10	15	12	8	9	54

* Respiratory samples only.

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

Table 3 Respiratory viral detections by age group

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Un-known	Total
Adenovirus*	21	24	12	49	16	9	–	131
Coronavirus	1	–	1	1	1	2	–	6
Influenza A	3	2	-	4	9	2	–	20
Influenza B	5	12	3	26	34	50	2	132
Parainfluenza†	78	45	4	13	15	6	1	162
Rhinovirus	55	27	7	22	18	6	–	135
Respiratory syncytial virus (RSV)	42	12	6	9	10	11	–	90

* Respiratory samples only.

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

Table 4 Laboratory reports of infections associated with atypical pneumonia, by week of report

Week	Week 18	Week 19	Week 20	Week 21	Week 22	Total
Week ending	04/05/08	11/05/08	18/05/08	23/05/08	01/06/08	
<i>Coxiella burnettii</i>	1	3	1	6	1	12
Respiratory <i>Chlamydia</i> sp.*	1	2	1	7	–	11
<i>Mycoplasma pneumoniae</i>	13	21	6	15	7	62
Legionella sp.	–	–	–	–	–	–

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

Table 5a Reports of legionnaires' disease cases in England and Wales, by week of report

Week	Week 18	Week 19	Week 20	Week 21	Week 22	Total
Week ending	04/05/08	11/05/08	18/05/08	23/05/08	01/06/08	
Nosocomial	–	–	–	–	1	1
Community	–	2	1	3(1*)	2	8
Travel Abroad	1	–	–	3	1	5
Travel UK	3(3*)	–	1	–	–	4
Total	4	2	2	6	4	18
Male	1	–	2	5	3	11
Female	3	2	0	1	1	7

* Non-pneumonic case(s)

14 cases were reported with pneumonia and four with non-pneumonic infection; 11 males aged from 37 to 84 years and seven females aged from 27 to 73 years. Eight cases had community acquired infection and one acquired infection in hospital. One death was reported in a female 73 years of age.

Nine cases were travel associated: France/Italy (1), Germany/Italy (1), Greece (1), Italy (1), Portugal (1) and United Kingdom (4).

Table 5b Reports of legionnaires' disease by region of report in England and Wales

Region	Nosocomial	Community	Travel abroad	Travel UK	Total
North East	–	–	–	–	–
Yorkshire & Humber	–	–	–	–	–
East Midlands	–	2	1	–	3
East of England	–	–	2	1	3
London	–	1	–	–	1
South East	–	1	–	–	1
South West	1	–	–	–	1
West Midlands	–	2	1	–	3
North West	–	1 (1*)	–	3 (3*)	4
Wales	–	1	1	–	2
Total	1	8	5	4	18

* Non-pneumonic case(s)

Supplement

Surveillance of influenza and other respiratory viruses in the United Kingdom: October 2006 to May 2007

P Mook, CA Joseph, J Ellis, M Zambon, DM Fleming, JM Watson

Summary

Influenza activity began late in the United Kingdom and remained at low levels during the 2006/2007 season. Clinical indices of activity remained at the lower end of the range of 'normal seasonal activity' and peaked in mid-February 2007 in England and mid-January in Scotland. Activity remained within baseline levels in Wales for the duration of the season. Virological activity also remained at low levels in England and Wales with influenza A/Wisconsin/67/05 (H3N2)-like virus identified as the dominant circulating strain. During the season, outbreaks, mainly caused by influenza A, were reported in schools, care facilities and military barracks.

Internationally, the H5N1 avian influenza virus continued to spread in poultry and cause sporadic cases in humans. An H5N1 outbreak in poultry was reported during February 2007 in a farm in Suffolk but there were no laboratory confirmed human cases. There was also an outbreak of H7N2 avian influenza in poultry in North West England and North Wales in May 2007 that was associated with four confirmed human cases: two in Wales and two in England.

Introduction

In the United Kingdom (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). Information 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 vaccine composition for the following year. Surveillance activities also produce timely reports on the 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]. This season, reporting of surveillance information by these sources via the Department of Health-funded Health Protection Informatics (HPI) website was piloted in parallel with established methods of reporting. It is proposed that in future all influenza surveillance data will be submitted by this route with the aim of making the data available to relevant groups in a more timely way.

This new means of submitting data was exploited during the 2006/07 season in an investigation of the usefulness of school absenteeism data as an early warning system for influenza activity in the community [2]. From January to April 2007, 11 schools in five Health Protection Agency (HPA) regions in England submitted weekly returns, via the website, of absenteeism data. These data were then compared with established indices of influenza activity, Royal College of General Practitioners (RCGP) episode incidence rate of influenza-like illness (ILI) and NHS Direct call rate for fever.

NHS Direct established formal syndromic thresholds which were used during the 2006/07 season, based on data from previous seasons [3].

Information was also collected on influenza activity from QFLU, a national primary care surveillance system which provides general practice derived data from over 3300 practices spread throughout the UK, covering a total population of about 22 million patients. It was set up by the University of Nottingham Division of Primary Care and EMIS (a supplier of general practice computer systems) in collaboration with the HPA (West Midlands). QFLU, which is

part of QResearch, can provide daily influenza data and is specifically set up to support pandemic influenza planning. Although included in weekly reports towards the end of the 2005/06 season, influenza data collected by QFLU were documented by the HPA for the duration of the 2006/07 season.

Results

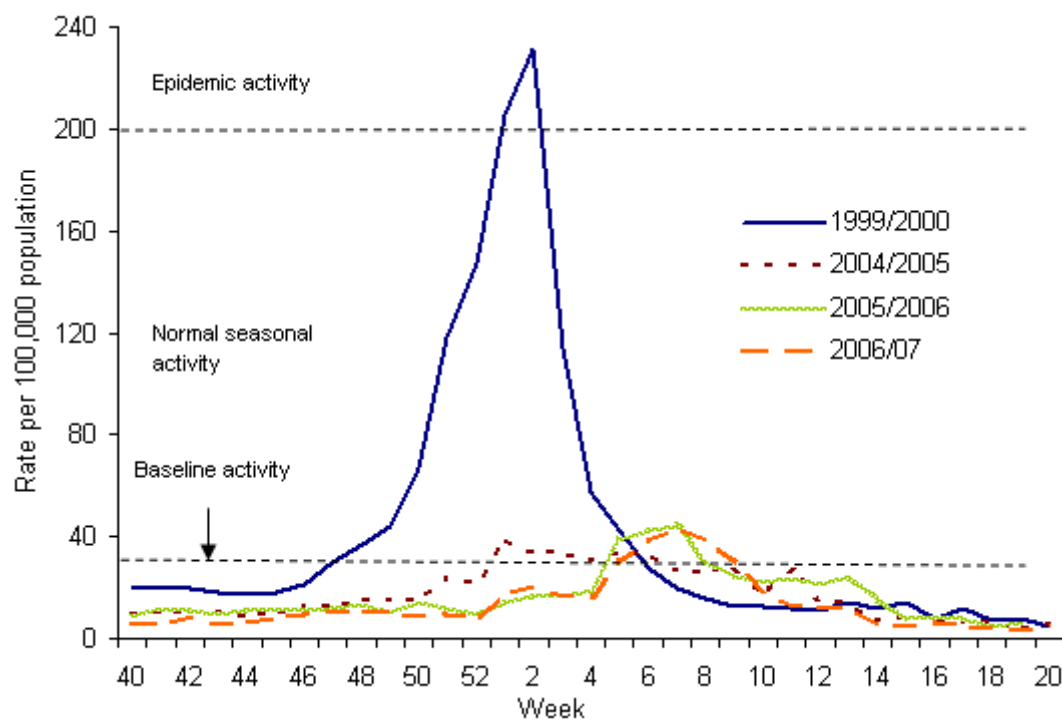
Clinical

RCGP Weekly Returns Service

The weekly GP incidence rate for ILI remained near baseline levels (< 30 new episodes per 100,000 population) during 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 for an illness such as ILI or acute bronchitis.)

ILI levels began to increase over the baseline threshold in week 06/07 before peaking in week 07/07 at 43.7 per 100,000 population, which is at the low end of the range of 'normal seasonal activity'. Rates remained within this range for four weeks before declining back to baseline levels in week 10/07. Activity peaked at much the same time as in the 2005/06 season although these are both relatively late compared to previous years. The peak rate was also similar to that in the 2005/06 season (42.2 per 100,000 in week 07/06) (figure 1).

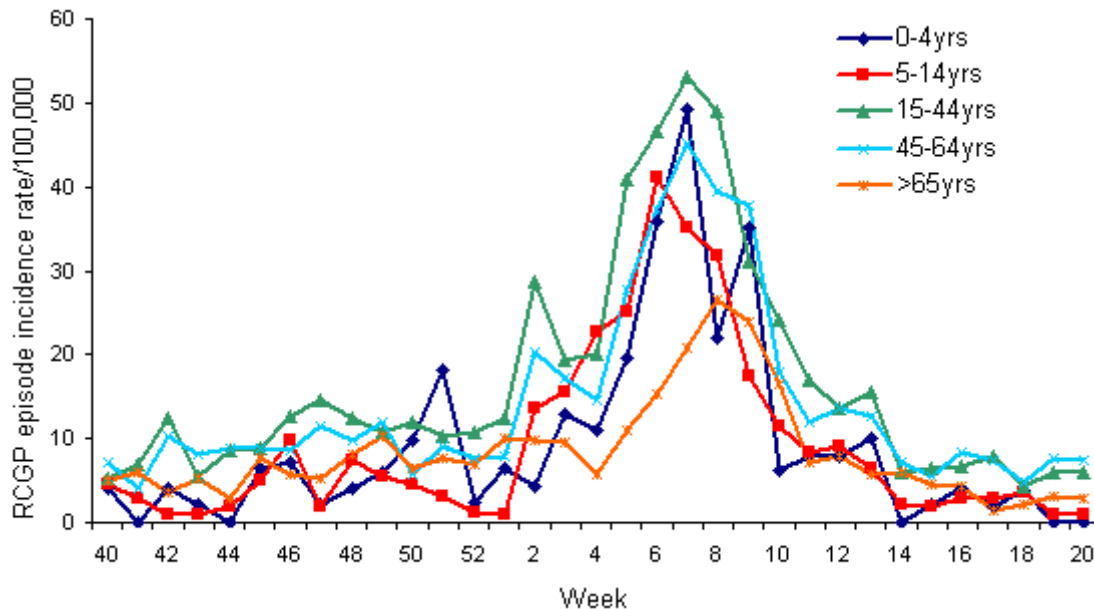
Figure 1 RCGP incidence rates for influenza-like illness: England 2006/07 and recent years



The highest incidence rates were among those aged 15-44 years (53.1/100,000 in week 07/07) (figure 2). Rates were highest in central England (53.8/100,000 in week 07/07), followed by southern England (43.4/100,000 in week 07/07). In contrast, northern England peaked last and with the lowest rate (32.9/100,000 in week 09/07).

RCGP rates for acute bronchitis peaked in week 01/07 (184.5 per 100,000). This rate peaked higher and later than last season (169/100,000 in week 52/05). The rates were highest among children aged 0 to 4 years in week 51/06 (524.0/100,000), followed by people age 65 years and over (446.9/100,000) in week 01/07. Compared to the 2005/06 season, the rate for the 0 to 4 years age group was slightly lower while that for the 65 years and over age groups was higher (598.5/100,000 and 374.7/100,000 in 2005/06 respectively).

Figure 2 RCGP incidence rates for influenza-like illness by age group, 2006/07



Q FLU - HPA and Nottingham University Division of Primary Care

The consultation rates for ILI peaked at 28.7/100,000 in week 07/07, the same week as reported by the RCGP. Rates were highest among those aged 15-44 years at 36.3/100,000 (week 07/07). The trends were 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 2006/2007 season. The rate peaked in week 07/07 at 17.7/100,000 (figure 3).

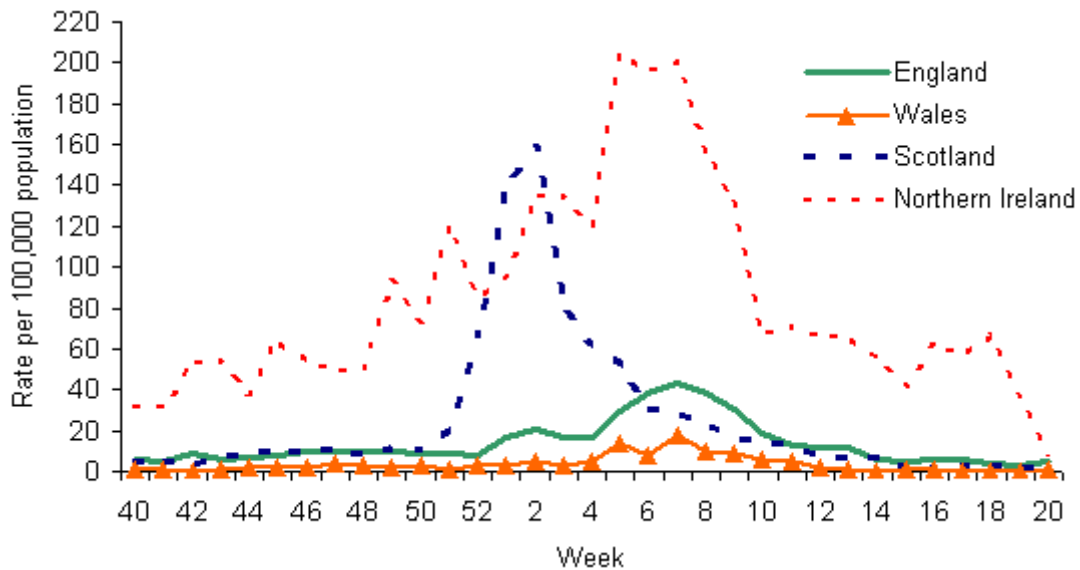
Scotland – Health Protection Scotland

GP consultation rates in the flu spotter scheme for Scotland (figure 3) remained within baseline levels (< 50/100,000) until week 52/06. Activity then increased to normal seasonal levels for five weeks before returning to baseline levels in week 06/07. The rate peaked in week 02/07 at 158/100,000, which was higher than the peak of the previous season (33/100,000 in week 01/06) when activity remained within baseline levels.

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

This is the seventh 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 05/07 at 204/100,000. This peak rate occurred earlier and was higher than the previous season (101/100,000 in week 08/06) (figure 3).

Figure 3 GP consultation rates for influenza-like illness for England, Wales, Scotland and Northern Ireland, 2006/07



NHS Direct for England and Wales

The proportion of NHS Direct 'cold/flu' calls for all ages peaked during weeks 06/07 and 07/07 at 1.1% (figure 4), just below the baseline threshold of 1.2%. The highest proportion of 'cold/flu' calls was among those aged 15 to 44 years at 1.6% in week 06/07; 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 (figure 5). The proportion of 'fever' calls peaked during week 07/07 at 4.8% and was highest among those aged 0-4 years, at 15.8%, also during week 07/07; this value was above the baseline threshold of 15%. The trends in age groups most affected have changed since the last season: during the 2005/06 season, cold/flu calls were highest among those aged between 5-14 years at 1.8% in week 06/06 and most 'fever' calls were recorded for children aged between 5-14 years 12.8% in week 05/06.

Figure 4 NHS Direct proportion of 'cold/flu' and fever calls: 2005/06 and 2006/07

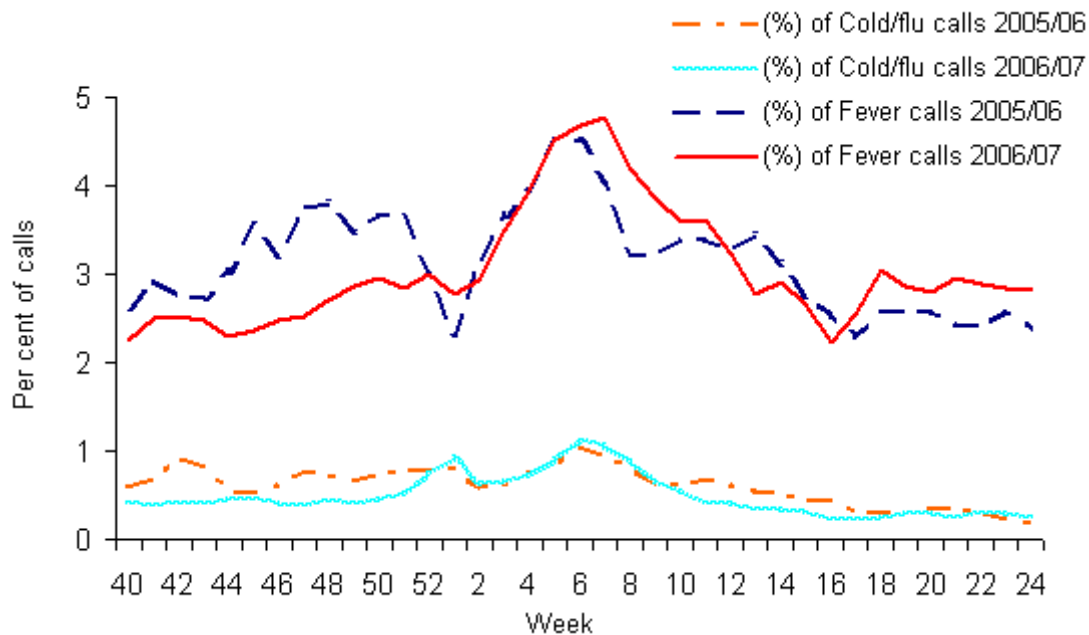
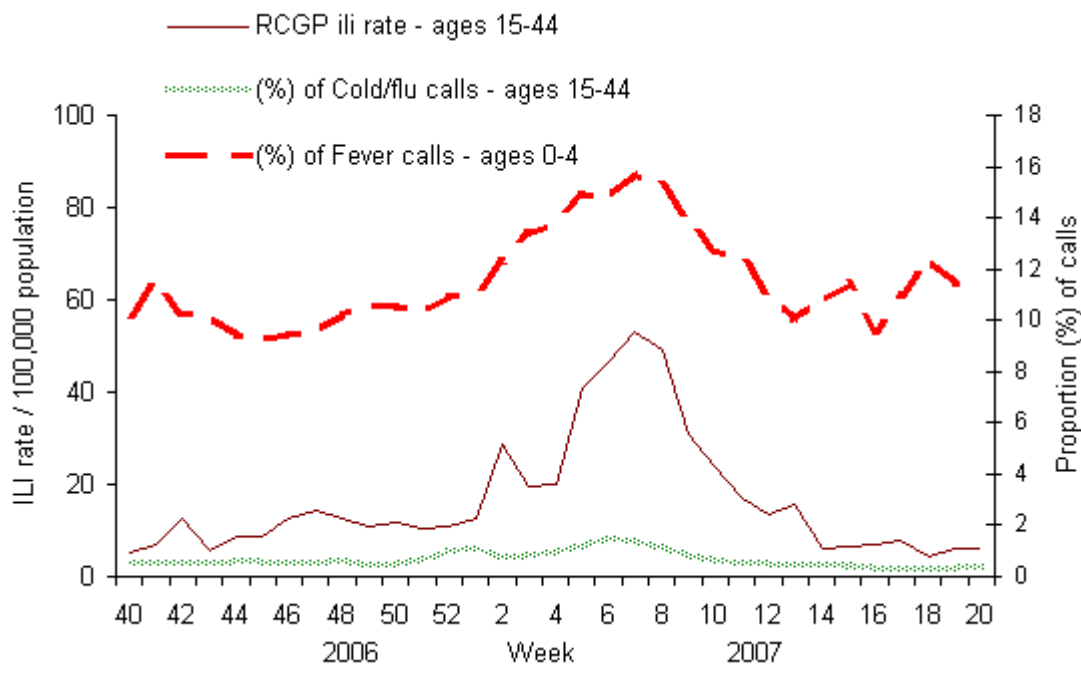


Figure 5 GP episode incidence rates and NHS Direct calls among the peak age groups during weeks 40-20



Mortality

The Office for National Statistics temporarily suspended reporting of rapid weekly death estimates before the end of the influenza season because of problems following the introduction of a new electronic registration system at local registrar offices. As a result, mortality data for the 2006/07 season was based on data from week 40/06 to 13/07. The weekly total number of estimated deaths due to all causes peaked at 11,322 in week 08/07. This number was lower and later than for the previous year (11,851 in week 02/06). The weekly number of actual respiratory deaths peaked at 1746 (week 01/07). Twenty deaths were specifically attributed to influenza during the season. The annual estimate of excess mortality due to influenza is calculated using a time series model [4]. Due to the missing data, no estimated excess could be calculated for the 2006/07 season but estimates for previous years have been recalculated (table 1).

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

Influenza Season	Number of excess deaths
88/89	358
89/90	26945
90/91	8125
91/92	5967
92/93	1687
93/94	14544
94/95	2480
95/96	16241
96/97	21770
97/98	0
98/99	17982
99/00	22040
00/01	1067

01/02	7078
02/03	6559
03/04	5207
04/05	1795
05/06	0
06/07	No Estimate

* Each year the model is revised to incorporate data from the current season. The fitted model provides a figure for the most recent season and readjusts the previous years' figures.

Virological

Respiratory Virus Unit (RVU), HPA

A subset of the general practitioners (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 RVU for testing. A complementary GP based virological surveillance scheme (HPA Virological Surveillance Scheme) utilizes HPA Regional Microbiology Network (RMN) laboratories for the majority of testing but also provides some additional specimens directly to the RVU. Virus strains are either obtained by isolation from respiratory specimens provided by these sentinel GP schemes, or are submitted by hospital diagnostic laboratories. Virological data are obtained by analysing influenza strains using antigenic and molecular methods.

Table 2 shows the surveillance data obtained via HPA surveillance schemes, compared to data provided by Northern Ireland and Scotland.

Table 2 Sentinel GP surveillance data

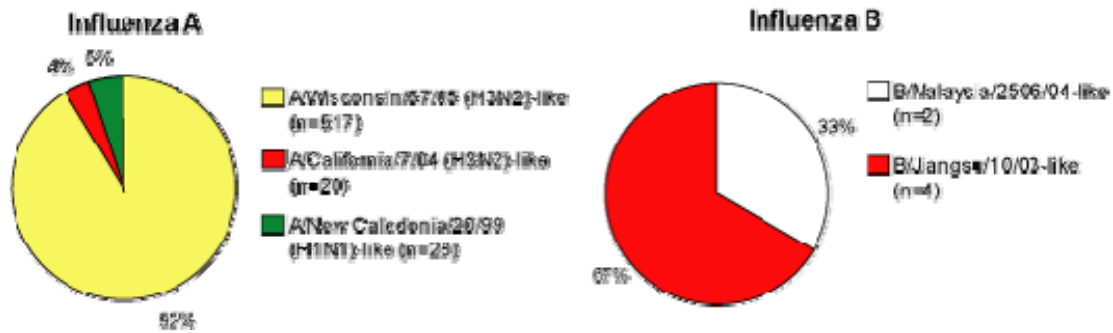
Location	No. of Samples	No. of influenza positives by any method	Peak week of positives for influenza	Predominant influenza virus type
England (RCGP/HPA Community Surveill. Scheme)	1538	432	07/07	A(H3)
England (HPA Virological Surveill. Scheme)	489	170	06/07	A(H3)
Northern Ireland	111	47	05/07	A(H3)
Scotland	616	110	52/07	A(H3)

According to these schemes, influenza A (H3) was the predominant virus type isolated from community samples throughout the UK. The peak week of positives for influenza in England, Northern Ireland and Scotland correlated well with the peak week of clinical activity in those countries (within two weeks) but the timing of these peaks varied between countries.

In total, the RVU identified 467 positive community samples for influenza between week 40/06 and week 20/07. This figure is based on those respiratory specimens submitted directly to the RVU from both the RCGP/HPA Community Surveillance Scheme and the HPA Virological Surveillance Scheme. The majority (461(98.7%)) were identified as influenza A viruses. During this same period, the laboratory also identified 427 hospital samples positive for influenza with similar proportions of influenza A viruses. Community detections were predominantly from those aged 15-44 years, while hospital detections were mainly from children aged less than five years.

Five hundred and seventy one influenza viruses were further characterised (figure 6). Influenza A viruses were the dominant strain this season with 90.5% (517) isolated as influenza A(H3) A/Wisconsin/67/05 (H3N2)-like, 4.9% (28) as influenza A/NewCaledonia/20/99 (H1N1)-like and 3.5% (20) as influenza A/California/7/2004 (H3N2)-like. 0.4% (2) were influenza B viruses, antigenically similar to B/Malaysia/2506/2004-like and 0.7% [5] B/Jiangsu/10/2003-like viruses.

Figure 6 Influenza strains characterised by RVU/VRD from community and hospital sources



Laboratory Reports - England and Wales

Laboratory reports (NHS and HPA) by week of specimen indicated there were 655 confirmed influenza A infections between week 40/06 and 20/07, peaking in week 06/07 at 84 reports. Two hundred and fifty six of these were detected by serological test methods. Fifty influenza B infections were also confirmed and of these 43 were detected by serological test methods. This is in contrast to the previous season, when influenza B was the dominant circulating strain.

Vaccine match

In the UK, the majority of circulating strains in 2006/07 showed a good match with the corresponding influenza vaccine component. The influenza A (H3) A/Wisconsin/67/05 (H3N2)-like virus that predominated in the UK was included in the vaccine for this season.

Vaccine uptake monitoring on behalf of the Department of Health

Influenza vaccine uptake for the 2006/07 season was 73.9% (5,778,599/ 7,814,532) for those aged 65 years and over in England [5]. All 152 Primary Care Trusts (PCTs) participated in the vaccination programme and 137 PCTs achieved uptake rates of 70% or more.

Outbreaks

The Centre for Infections received 38 outbreak reports of ILI across England and Wales during the season. Most (53%) were from schools (affecting those aged between four and 18 years) with the remainder from care homes (affecting those aged over 65 years), hospital wards and army barracks [6]. Of the 13 outbreaks with laboratory confirmation, 12 were confirmed as due to influenza A infection and one as influenza B.

Influenza activity elsewhere

Influenza activity began in most countries in Europe in mid-January, peaking in February and returning to levels seen outside the winter period by late March. Medium intensity of clinical influenza activity was reported by most countries, but high intensity was reported in seven countries. During the season, 16,827 influenza viruses were detected; of these 98% were influenza A viruses. Of the 2,701 viruses further characterised, 2013 (74.5%) were A/Wisconsin/67/2005 (H3N2)-like; 444 (16.4%) A/California/7/2004 (H3N2)-like; 228 (8.4%) A/New Caledonia/20/99 (H1N1)-like; 14(0.5%) B/Malaysia/2506/2004-like and 11 (0.4%) B/Jiangsu/10/2003-like.

Influenza activity in the United States of America peaked in mid-February while in Canada the peak was early March. In both countries Influenza A was the predominant virus detected in 2006/07. Of the influenza A viruses that were subtyped, the majority were A(H1) (63.5%) in the USA and A(H3) (70.3%) in Canada. The dominant strain was influenza A/New Caledonia/20/99 (H1N1)-like in the USA and influenza A/Wisconsin/67/2005 (H3N2)-like in Canada.

Other viruses

One thousand five hundred and thirty eight community samples were submitted to the RCGP/HPA Community Surveillance Scheme, of which 47 were positive for Respiratory Syncytial Virus (RSV). Four hundred and eighty nine community samples were submitted to the HPA Virological Surveillance Scheme, of which four were positive for RSV, four for adenovirus, four for herpes simplex virus, two for human metapneumovirus, one for picornavirus, two for parainfluenza and two for rhinovirus.

The total number of NHS and HPA laboratory detected RSV infections was 4217 up to week 20/07, peaking in week 01/07 at 449 reports. Of these, 3495 (82.9%) were specimens taken from infants aged less than one year old. This was a decrease in the number of infections reported in the previous season (6,745). Detections of parainfluenza by these laboratories were also monitored. The predominant parainfluenza serotype throughout the 2006/07 season was serotype 3, peaking in week 18/07. The majority of specimens were from those aged four years and under for all serotypes.

Discussion

Influenza activity was low in the UK in the 2006/07 winter; this was the seventh consecutive season of low activity. While virological data from sentinel GP surveillance schemes were consistent with the peak weeks of clinical activity in England, Northern Ireland and Scotland, variation in the timing of peak activity in these countries was observed. In England, RCGP incidence rates remained within baseline levels for the majority of the season and normal seasonal activity was only observed between week 06/07 and 09/07, peaking in week 07/07. NHS Direct cold/flu calls for the 15-44 year 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 2005/06, and its peak week was the same as that observed in England. In Scotland, normal seasonal activity was observed between week 52/06 and 05/07, peaking in week 02/07; activity during the 2005/06 season did not increase above baseline levels. Clinical activity in Northern Ireland in 2006/07 was twice that observed in 2005/06 but no validated thresholds are currently in use and it is therefore difficult to usefully interpret these data.

The season was characterised by the circulation of influenza A, predominantly influenza A(H3) A/Wisconsin/67/05 (H3N2)-like virus, which also dominated in Europe. Compared to the previous season, when influenza B was the predominant circulating virus in the UK and Europe, there have been relatively few influenza B confirmed infections (influenza B activity tends to occur every 2-3 seasons).

Confirmed infections of RSV followed the established seasonal pattern during the 2006/07 season, which is characterised by a gradual increase in detections from mid-October, reaching a peak in late December/early January. The total number of detections was low this year, as was the peak, compared with the 2005/2006 season.

Seasonal influenza outbreaks

Compared to the 2005/06 season which had 715 outbreaks ILI reported to Cfl (mostly occurring in schools and due to influenza B [7]), the 2006/07 season had far fewer and, of those reported, a smaller proportion were from schools. This corresponds with the age groups with highest influenza activity for these seasons, as identified by the RCGP Weekly Returns Service: 15-44 years age group in 2006/07 and 5-14 years age group in 2005/06. It was noticeable that nursing home outbreaks occurred later in the season than the school outbreaks. All virologically confirmed outbreaks indicated that influenza A was the responsible virus except for one instance in which the outbreak was confirmed as being due to influenza B.

The large scale of influenza B activity across England and Wales during the 2005/06 season, which was manifest mainly as outbreaks reported from schools, was not detected by most of the routine surveillance schemes, although the RCGP Weekly Returns Service did detect increased activity in 5-14 years age group. It was hoped that an early warning of increased influenza activity, especially for the mild form of the disease caused by the influenza B virus, could be provided by monitoring and reporting school absenteeism [8]. Such a warning at the school level could enable targeted responses from local Health Protection Units. A pilot study to investigate the usefulness of school absenteeism data was carried out during the 2006/07 season, involving 11 schools from five HPA regions and utilising online reporting via the HPI website. The results of this study were encouraging when compared to established indices of influenza activity (RCGP Weekly Returns Service and NHS Direct) and would seem to justify expanding the scheme in future seasons to collect more data on the usefulness of absenteeism as a measure of influenza activity [2].

Avian influenza (H5N1) in humans and animals

During 2007, the number of new human cases of avian influenza A(H5N1) virus infection continued to increase as did the number of associated deaths. Since the beginning of the outbreak in 2003, 14 countries had confirmed cases: Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao People's Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey and Viet Nam. By the end of 2007, 351 human cases were reported; of which 217 (62%) were fatal [9]. Indonesia, which has had more confirmed infections than any other country since the beginning of the outbreak, had the most confirmed infections in 2007. No new human cases were reported in Thailand, one of the areas where human cases were first reported, in 2007, but Pakistan, Myanmar, Nigeria and Lao People's Democratic Republic all reported their first cases. Vietnam had eight new cases and five deaths during 2007 after a year without cases or deaths in 2006, the first such year in Viet Nam since 2003. Azerbaijan, Djibouti, Iraq and Turkey each had cases and, in some instances, deaths for the first time in 2006 but have had no cases in 2007. By the end of 2007 there was no evidence of widespread asymptomatic infection in humans or human to human transmission despite small clusters of human to human infection in Indonesia. The World Health Organization (WHO) continues 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 [10].

During the 2006/07 season, outbreaks of avian influenza A(H5N1) in animals continued to spread from Asia to Africa and Europe. Thirty four countries reported animal cases in 2007, of which 11 were in Europe (Czech Republic, France, Germany, Hungary, Poland, Romania, Russia, Slovenia, Turkey, Ukraine, and the United Kingdom) [11]. Following an excess of deaths in turkeys on a farm in Holton, Suffolk, the presence of highly pathogenic avian influenza (HPAI) H5N1 of Asian Lineage (Clade 2) was confirmed in February 2007 [12]. This was the first recorded outbreak of H5N1 in poultry in the UK. A 3km protection zone, 10km surveillance zone and 30km restricted zone, relating to the movements of birds, were implemented. All birds on the site were culled and sent to a rendering plant for disposal while the infected premises were decontaminated and cleaned. With effect from the 12 March 2007, all zone restrictions were lifted. There were four cases of human illness associated with response to the incident but all tested negative for H5N1 infection.

Avian influenza (H7N2) in humans and poultry

In May 2007, an outbreak of avian influenza H7N2 in North Wales was associated with four confirmed cases of human infection: two in North Wales and two in North West England [13]. The cases were associated with the purchase of poultry in a market in North West England. In Wales, 256 people were identified as potential contacts of avian influenza and, in North West England, 110 people. Cases and contacts were offered oseltamivir.

Vaccine recommendations

The WHO recommended that the components for the 2007-08 vaccine for the northern hemisphere should contain the following:

- an A/Solomon Islands/3/2006 (H1N1)-like virus;
- an A/Wisconsin/67/2005 (H3N2)-like virus* ;
- a B/Malaysia/2506/2004-like virus.

* Candidate vaccine viruses include: A/Wisconsin/67/2005 (H3N2) and A/Hiroshima/52/2005.

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* Amended 9 June 2008.