This report summarises influenza and other major respiratory virus activity for the 2004/2005 season, please note that the data quoted are provisional and subject to revision.

The United Kingdom experienced low levels of influenza activity throughout the 2004/2005 season. Clinical activity increased slowly peaking late in the season (January to March) in comparison with the early peak in clinical activity observed in 2003/2004. In England, Scotland and Wales rates for influenza and influenza-like illness remained close to or below baseline levels and Northern Ireland, who do not use thresholds, recorded a peak in clinical activity below that of last season. Virological activity remained at low levels in England and Wales, with influenza A/Wellington/1/2004(H3N2)-like viruses identified as the dominant circulating strain. Detections of influenza B occurred late in the season representing 15% of detections characterised by ERNVL this season, and detection of RSV were at similar levels to 2003/2004.

Internationally the most significant events this season have been the continuing poultry outbreaks of avian influenza A (H5N1) in south east Asia, associated with sporadic cases/small clusters of human infection and the accidental distribution and subsequent destruction of virus panels containing the influenza A/Japan/305/57 H2N2 strain, similar to that which caused the 1957 - 58 influenza pandemic.

England (RCGP)
GP consultations for influenza-like illness followed a different pattern to that seen during the 2003/2004 season, passing the baseline threshold of 30 per 100 000 in week 01/05 and peaking at 39 consultations per 100 000, seven weeks later than the 2003/2004 season (62 per 100 000 in week 46/03). Consultation rates remained within the boundary of ‘normal seasonal’ activity for six weeks before declining in week 07/05 (Figure 1).

Regionally, consultation rates reached the earliest, and highest peak in northern England at 62 consultations per 100 000 in week 01/05. Consultation rates in central and southern regions peaked in weeks 03/05 (43 per 100 000) and 05/05 (35 per 100 000) respectively.

The highest consultation rates were reported from those aged between 0-4 years at 62 per 100 000 in week 52/04, less than half that of the 2003/2004 peak rate in the same age group. Other age groups peaked between weeks 01/05 and 03/05 (Figure 2).

Consultation rates for acute bronchitis peaked at 213 per 100 000 in week 01/05, at a similar rate and time as last season (227 per 100 000 in week 02/04) (Figure 3). The highest consultation rates were found among the 0-4 age group at 614 consultations per 100 000 in week 47/05, earlier and lower than the peak rate recorded in this age group last year (683 per 100 000 in week 51).

Summary
This report summarises influenza and other major respiratory virus activity for the 2004/2005 season, please note that the data quoted are provisional and subject to revision.

The United Kingdom experienced low levels of influenza activity throughout the 2004/2005 season. Clinical activity increased slowly peaking late in the season (January to March) in comparison with the early peak in clinical activity observed in 2003/2004. In England, Scotland and Wales rates for influenza and influenza-like illness remained close to or below baseline levels and Northern Ireland, who do not use thresholds, recorded a peak in clinical activity below that of last season. Virological activity remained at low levels in England and Wales, with influenza A/Wellington/1/2004(H3N2)-like viruses identified as the dominant circulating strain. Detections of influenza B occurred late in the season representing 15% of detections characterised by ERNVL this season, and detection of RSV were at similar levels to 2003/2004.

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Clinical indices of acute respiratory illness (England, Wales, Scotland and N. Ireland)

Figure 1 RCGP consultation rate for influenza – like illness, 2004/05 and recent years.
Wales (National Public Health Service): GP consultations rates in the sentinel GP scheme coordinated by CDSC Wales remained within the range of baseline activity (< 25 per 100 000) throughout the 2004/2005 season, peaking at 10 consultations per 100 000 in week 07/05 (Figure 4).

Scotland (Health Protection Scotland): In Scotland the peak rate occurred in Week 11/05 at 43 per 100 000, this peak in influenza activity was lower and later than the previous season (138 per 100 000 in week 46/03) and within the baseline threshold of 50 per 100 000 (Figure 4).

Northern Ireland (CDSC N. Ireland): The combined rate for influenza and influenza-like illness peaked in week 50/04 at 99 consultations per 100 000, a later and lower peak than during 2003/2004 (Figure 4). This is the fifth year of this enhanced surveillance scheme in Northern Ireland and baseline levels have yet to be established.

Medical Officers of Schools Association (MOSA): Rates of influenza-like illness and upper respiratory tract illness remained low in the Autumn term, and peaking in the Spring term. Two outbreaks of respiratory illness and one outbreak of confirmed influenza A were reported from MOSA schools this season.

Outbreak reports: The HPA Centre for Infections received 22 reports of laboratory confirmed respiratory virus outbreaks in England and Wales during the 2004/2005 season. The majority of outbreaks occurred between December and March with nine in hospital wards, seven in schools, four in nursing homes for the elderly and two in care homes. The causative agent for 20 of the outbreaks was identified as influenza A, one outbreak was caused by influenza B infection, and one by RSV. Of the 20 outbreaks caused by influenza A, samples of virus from six outbreaks were further subtyped and identified as influenza A (H3).
Mortality:
The peak in all cause mortality occurred in week 02/05 at 12733. This figure was lower than that observed in 2003/2004 (16282 in week 02/04) However this is by date of registration and reporting numbers can vary considerably over the holiday period.

NHS Direct total call activity:
The peak in NHS direct call activity occurred in week 53/05 at a rate of 350 calls per 100 000 population. The peak in the percentage cold/flu calls occurred during weeks 53/05 and 01/05 at 2.1%. The highest proportion of old/flu calls was recorded for those aged between 15 and 44 years at 2.7%.

Laboratory indices of acute respiratory illness

ERNVL Influenza Reference Laboratory

Since week 40/04 441 influenza viruses have been characterised; 263 (60%) influenza A/Wellington/1/2004(H3N2)-like viruses, 89 (20%) influenza A/New Caledonia/20/99 (H1N1)-like, 69 (16%) influenza B/Shanghai/361/02-like and 15 (3%) influenza B/Hong Kong/330/01-like and since the antiserum of the new variant Influenza A/California/7/2004 (H3N2) has been in use 5 (1%) A/California/7/2004 (H3N2)- like viruses.

Virological data from Northern Ireland:
Information on enhanced virological testing from influenza sentinel surveillance can be obtained from the Communicable Disease Surveillance Centre Northern Ireland.
http://www.cdscni.org.uk/

Virological data from Scotland:
Information on enhanced virological testing from influenza sentinel surveillance can be obtained from the Health Protection Scotland (HPS).
http://www.show.scot.nhs.uk/scieh/

Other NHS and HPA microbiology laboratories

Table 2: ‘Detections’ (isolation,PCR, direct immunofluorescence and paired sera tests) of influenza and RSV reported to CDSC by NHS and HPA microbiology laboratories. Data for England and Wales by RCGP region, by week of report

<table>
<thead>
<tr>
<th>Region</th>
<th>Influenza A</th>
<th>Influenza B</th>
<th>RSV*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern England</td>
<td>69</td>
<td>14</td>
<td>688</td>
</tr>
<tr>
<td>Central England</td>
<td>147</td>
<td>18</td>
<td>1672</td>
</tr>
<tr>
<td>Southern England</td>
<td>120</td>
<td>23</td>
<td>1303</td>
</tr>
<tr>
<td>Wales</td>
<td>110</td>
<td>25</td>
<td>241</td>
</tr>
<tr>
<td>Cumulative Total</td>
<td>446</td>
<td>80</td>
<td>3904</td>
</tr>
</tbody>
</table>

*RSV detection is by direct immunofluorescence (DIF) and PCR only.

**Table 1: ‘Detections’ PCR and isolation of influenza and RSV made by ERNVL Reference Laboratory. Samples from community and hospital sources, by week of report.**

<table>
<thead>
<tr>
<th>Influenza type ( subtype)</th>
<th>A (H1)</th>
<th>A (H3)</th>
<th>B</th>
<th>RSV*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative to date (week 40/2004 – 17/2005)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern England</td>
<td>40</td>
<td>164</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>Central England</td>
<td>21</td>
<td>148</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Southern England</td>
<td>60</td>
<td>356</td>
<td>99</td>
<td>14</td>
</tr>
<tr>
<td>Wales</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Scotland</td>
<td>20</td>
<td>26</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Region not known</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cumulative Total</td>
<td>145</td>
<td>696</td>
<td>144</td>
<td>37</td>
</tr>
</tbody>
</table>

*RSV detection is by PCR only

**Figure 4 : Total ( Community and Hospital) Influenza detections (PCR and Isolation) characterised by ERNVL, by week of specimen**

* Please note that for ease of comparison with other seasons data week 53/04 has been split between week 52/04 and 01/05.
Significant events during the 2004/2005 season

Influenza Vaccine Composition for 2005/2006 (northern hemisphere)
The composition of the influenza vaccine for the 2005/2006 season was announced by the World Health Organization in Geneva on 10 February 2005.

The decision on the influenza A (H3N2) candidate vaccine virus was postponed pending the identification of a suitable high growth reassortant. The decision was made on 12 March 2005, and based on the results of antigenic and genetic analyses and growth in hen’s eggs, a high growth reassortant virus derived from influenza A/New York/55/2004 (A/California/7/2004-like) virus and A/PR/8/34, has been identified as a suitable candidate influenza A (H3N2) vaccine virus.

Accordingly, it is recommended that the vaccine contain the following:

- an A/New Caledonia/20/99 (H1N1)-like virus
- an A/California/7/2004-(H3N2)-like virus
- a B/Shanghai/361/2002-like virus

* A/New York/55/2004 is available as a vaccine virus

Avian Influenza
Internationally the most significant event this season has been the continuing poultry outbreaks of avian influenza A (H5N1) in south east Asia, associated with sporadic cases/small clusters of human infection. Since January 2004, 89 human cases of avian influenza have been reported in Asia, of which 52 have been fatal.

Further information is available from http://www.who.int/csr/disease/avian_influenza/en/

Inadvertent international distribution of H2N2 influenza virus to laboratories.

The College of American Pathologists (CAP), which routinely sends panels of proficiency testing samples to laboratories for the purpose of quality control, distributed the H2N2 virus for the first time in October 2004. The Public Health Agency of Canada (PHAC) raised the alert on the 26 March after a local laboratory in Canada identified the virus as H2N2. Biodefense measures were immediately adopted and the source of the sample was investigated and identified as the proficiency testing panels distributed by CAP. CAP requested that all laboratories in receipt of the H2N2 virus panels confirm their destruction and alert national authorities of respiratory disease among laboratory workers.

Concern was generated by the incident because of the particular strain of influenza distributed by CAP. The influenza A/Japan/305/57 H2N2 virus, circulated at the beginning of 1957 and was highly transmissible among humans causing annual epidemics until 1968, when it ceased to circulate in the human population. As influenza A/H2N2 is not included in the current trivalent vaccine, individuals born after 1968 are expected to have limited or no immunity to H2N2 infection to this virus.

Further information is available from the WHO: http://www.who.int/csr/disease/influenza/h2n2_2005_04_18/en/

Influenza activity outside the UK

Ireland:
Influenza activity in Ireland peaked later this season than in 2003/2004 with an influenza-like illness consultation rate of 87 per 100 000 in week 01/05. Influenza A (H3) and A (H1), RSV and Influenza B co-circulated this season with Influenza A (H3N2) as the dominant subtype detected from sentinel specimens. Since the beginning of the season three influenza detections have been fully characterised; one influenza A/New Caledonia/20/99 (H1N1)-like virus, one influenza B isolate closely related to B/Jiangsu/10/03 and one influenza A (H3N2) which shows antigenic similarity to both the influenza A/Shantou/1219/04 and influenza A/Oslo/807/04.

Reports from Ireland can be obtained from NDSC: http://www.ndsc.ie/Publications/InfluenzaWeeklySurveillanceReport/20042005Season/

European summary:
European countries reported a late start to the influenza activity in comparison with the 2003/2004 season, with spatial analysis indicating both a west to east spread (p=0.000) and a south to north spread (p=0.008) of influenza across Europe. Based on subtyping data for all influenza virus detections up to week 16/05, 6622 (47%) were influenza A (unsubtyped), 4470 (32%) were influenza A (H3), of which 1609 were further subtype A (H3N2), 747 (5%) were influenza A (H1), of which 312 were further subtype as A (H1N1) and two as A (H1N2). Influenza B detections accounted for 2344 (17%) of influenza detections made this season.


European country reports can be obtained from EISS: http://www.eiss.org/

Canada:
Influenza activity started later in the season and at lower levels to 2003/2004 with clinical activity reaching a peak in week 06/05 at 49 cases of influenza-like illness per 1000 patient visits (79 per 1000 in week 52/03 in 2003/2004). Virologically, this season was dominated by influenza A (H3N2) with 51% of strains characterised identified as influenza A/Fujian/411/02-like and, since February 17 2005 when the antiserum became available, 33% influenza A/California/7/04.
Influenza activity started later than last season with activity peaking in early February. Of the 21,926 influenza viruses detected by WHO and National Respiratory and Enteric Virus Surveillance System (NREVSS), 1687 (76.8%) were influenza A and 5,089 (23.2%) were influenza B viruses. Of these influenza A viruses 5,500 (99.7%) were influenza A (H3N2) and 16 (0.3%) influenza A (H1) viruses. Antigenic characterisation has identified influenza A/California/7/2004-like viruses as the dominant strain this season.

US reports and definitions can be obtained from CDC.
http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm

Other country reports can be obtained from the World Health Organisation:
http://www.who.int/csr/disease/influenza/en/

Report prepared by Mary Cooke, Influenza Scientist, Department of Respiratory Diseases, CDSC Colindale)

If you wish to be included on our email notification list please send your address respcdsc@HPA.org.uk

*Incorporating data from the Royal College of General Practitioners (England), The National Public Health Service for Wales (NPHS), Scottish Centre for Infection and Environmental Health (SCIEH), CDSC (Northern Ireland), the Office for National Statistics (England and Wales) and NHS Direct (HPA West Midlands).

USA:

Canadian reports can be obtained from PHAC:
Canadian definitions:
http://www.phac-aspc.gc.ca/fluwatch/04-05/def04-05_e.html

Other country reports can be obtained from the World Health Organisation:
http://www.who.int/csr/disease/influenza/en/

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