

HPA Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

12 January 2011 – Week 2



A full report will be published weekly on the [HPA website](#). An email alert is sent out once it is published. To receive this email, or if you have any queries about the report, please email Respcdsc@hpa.org.uk.

For further information on the surveillance schemes mentioned in this report, please see the [HPA website](#). Figures (including all those found in this report) displaying data from these schemes are available to download in PowerPoint format from the [HPA website](#).

Summary

GP and school closures over the Christmas/New Year period will have affected surveillance indicators so all data should be interpreted with caution. Indeed, several influenza indicators have apparently plateaued. GP consultation rates remain above baseline levels in all four countries. Influenza A H1N1 (2009) and B are the predominant circulating viruses with few, sporadic A (H3N2) viruses detected. The H1N1 (2009) virus strain is virologically and epidemiologically similar to that seen during the pandemic. The virus strains circulating are overall well matched to the current influenza vaccine.

- In week 1 (ending 9 January), the weekly influenza/influenza-like illness (ILI) consultation rates increased in England (108.4 per 100,000), Scotland (55.8 per 100,000), Wales (92.8 per 100,000) and Northern Ireland (274.4 per 100,000).
- The weekly national proportions of NHS Direct calls for cold/flu and fever have decreased in week 1.
- Eleven acute respiratory disease outbreaks were reported in UK in week 1, three in care homes, two in hospitals, five in prisons and one in a primary school. This brings the total reported this season so far to 146.
- Seventy-six of 156 (48.7%) specimens from patients with ILI presenting to sentinel GPs in England in week 1, were reported as positive for influenza. The proportion of specimens reported to DataMart (England) as positive for influenza decreased to 27.8% (1,104 of 3,968). The proportion of samples positive for RSV decreased slightly and was low for rhinovirus, parainfluenza, adenovirus and HMPV.
- Currently the main circulating influenza strains are influenza A (H1N1) and influenza B.
- From week 36, 112 deaths associated with influenza infection have been reported.
- By week 1, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 70.8%. For those in a risk group aged under 65 it was 46.3%.
- In Europe, several countries are continuing to report increasing influenza activity, primarily associated with influenza A H1N1 (2009). In the USA influenza activity has decreased slightly but continued to increase in Canada. In North America influenza A (H3N2) and B viruses have been predominant.

Weekly consultation rates in national sentinel schemes

Influenza/influenza-like illness (ILI)

A series of sentinel schemes operate across the UK, for further information please see the [HPA website](#).

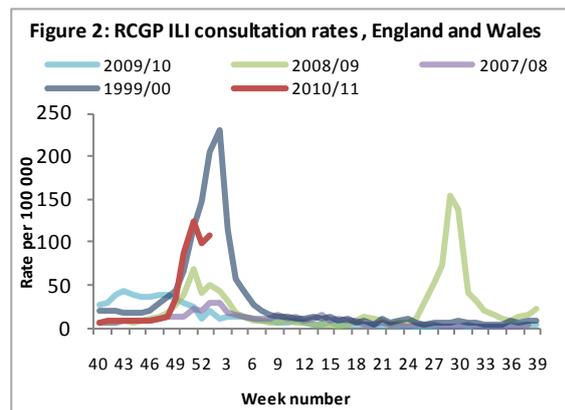
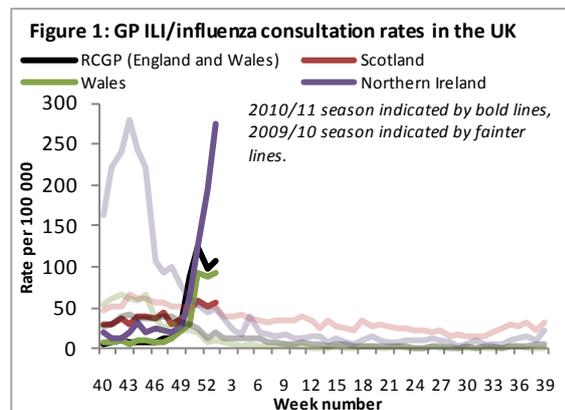
Due to bank holidays in weeks 52 and 1 (ending 9 January) GP surgeries were only open for three and four days respectively, which will have impacted GP consultation rates so data should be interpreted cautiously. The weekly ILI consultation rate increased slightly in England, Wales and Scotland, was stable in Wales and increased sharply in Northern Ireland (figure 1).

The overall ILI consultation rate from RCGP for England and Wales increased from 98.4 to 108.4 per 100,000, this is lower than the peak of 124.2 per 100,000 in week 51 but remains above baseline activity levels (figures 1 and 2). The ILI rate increased in all regions: with the largest increase from 98.9 to 115.9 per 100,000 in the central region.

By age group, decreases were observed in children aged under 5 years, with increases seen in most other age groups. The highest rate continued to be in the 15-44 year group, increasing from 120.2 to 143.3 per 100,000 (figure 3).

For further information and data from this scheme please see the [RCGP website](#).

The combined influenza/ILI rate in Northern Ireland has increased sharply from 195.2 (updated rate) to 274.4 per 100,000. This remains well above the threshold of 70 per 100,000 (figure 1). The rates increased in most age groups and continued to be



highest in the 15-44 year age group at 375.3 per 100,000, followed by the 45-64 year group at 296.0 per 100,000.

For further information and data from Northern Ireland please see the [Public Health Agency website](#).

The Scottish ILI rate increased slightly from 52 to 55.8 per 100,000, this is lower than the peak so far of 58.5 per 100,000 in week 51, but remains above the baseline threshold of 50 per 100,000 (figure 1). The rates increased in most age groups but continue to decrease in children aged 5-14 years (from 64.5 to 40.5 per 100,000).

For further information and data from Scotland please see the [Health Protection Scotland website](#).

The Welsh influenza rate increased slightly from 89.2 to 92.8 per 100,000 (similar to 92.2 per 100,000 in week 51) and remains above the baseline threshold of 25 per 100,000 (figure 1). By age group, the highest rate continued to be in the 15-44 year group, increasing from 111.2 to 118.8 per 100,000.

It should be noted that a change in the surveillance system used by Wales has led to an overall increase in reported rates since week 40 2010. For further information and data from Wales please see the [Public Health Wales website](#).

In the HPA/QSurveillance® scheme, the overall rate increased from 73.6 to 81.4 per 100,000 in week 1, which is similar to the rate of 80.2 seen in week 51 and is equivalent to 'above average influenza activity'. The rates decreased in children under 5 years, with increases seen in older age groups. The highest rate continued to be in the 15-44 year group (104.9 per 100,000).

The weekly ILI rate through QSurveillance® increased in most regions. The highest rates were in Northern Ireland (increased from 94.2 to 138.1 per 100,000) and North East England (increased from 80.7 to 98.0 per 100,000) (figure 4).

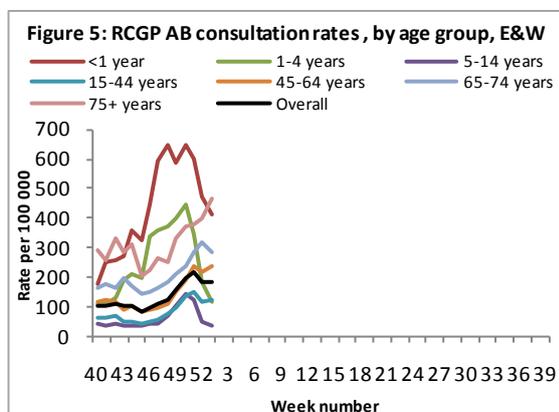
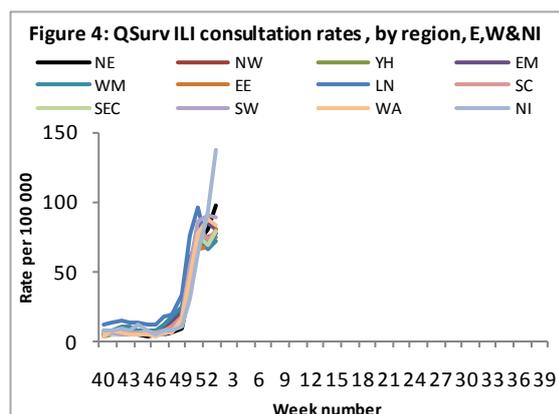
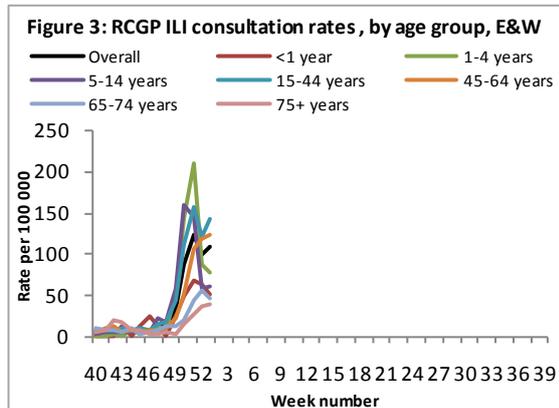
For further information and data from this scheme please see the Real-time Syndromic Surveillance page on the [HPA website](#).

Other respiratory indicators

The overall weekly consultation rate for acute bronchitis in England and Wales through the RCGP scheme increased slightly from 184.4 to 187.6 per 100,000 in week 1.

The acute bronchitis rates increased in most age groups over 15 years but decreases were observed in younger age groups. The highest rate was in the under one year group, though this had decreased from 471.8 to 411.3 per 100,000 (figure 5).

The overall weekly consultation rate for pneumonia from the RCGP scheme increased from 1.9 to 2.4 per 100,000 in week 1.

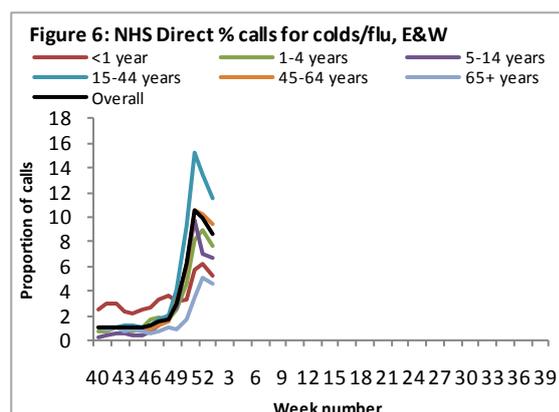


Community surveillance

The weekly national proportion of NHS Direct cold/flu calls for week 1 has decreased from 9.9% to 8.7%, this remains above the threshold level of 1.2%. By age group, decreases were observed in all age groups with the highest proportion continuing to be in the 15-44 year group (11.5%) (figure 6).

The proportion of calls for fever in the 5-14 year age group continued to decrease from 10.7% in week 52 to 8.9% in week 1, which is at the baseline level of 9%.

For further information and data from this scheme please see the Real-time Syndromic Surveillance page on the [HPA website](#).



Internet-based surveillance of influenza continues this season through a project run by the London School of Hygiene and Tropical Medicine. UK residents can sign up at [FluSurvey](#).

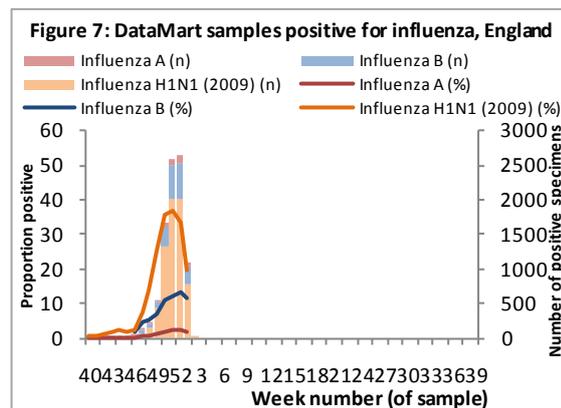
Eleven acute respiratory disease outbreaks were reported in the UK in week 1. Three outbreaks were in care homes (one influenza A non-subtyped/RSV and two unknown cause), two were in hospitals (one influenza A H1N1 (2009) and one influenza B), five in prisons (two influenza A H1N1 (2009) and three with unknown cause) and one in a primary school (influenza A H1N1 (2009)). This brings the total reported this season so far to 146; 116 (79.5%) from schools, 10 from care homes, four from hospitals, one from a military base, one from a nursery and 16 from prisons. Outbreaks should be reported to the local Health Protection Unit and Respcdsc@hpa.org.uk.

ILI rate from FluWatch, a community-based cohort surveillance system in England, are reported to be falling. The highest rates continue to be in the under sixteen year olds. Only a minority of ILI cases are reportedly consulting their GP. More information on FluWatch is available at <http://www.ucl.ac.uk/iph/research/cide/fluwatch>.

Microbiological surveillance

The majority of influenza viruses detected have been influenza A H1N1 (2009) and influenza B with few influenza A (H3N2) viruses.

Of 3,968 respiratory specimens reported to the English Data Mart virological surveillance system as taken in week 1, 1,104 (27.8%, decreased from 44.0% in week 52) were positive for influenza (772 H1N1 (2009), 52 influenza A not subtyped and 280 influenza B) (figure 7). The positivity rates decreased in most age groups. The highest age-specific positivity rate for H1N1 2009 was 21.2% in 0-5 year olds. In the 15-44 year group it decreased from 38.3% to 20.4%. For influenza B it was decreased from 34.4% to 17.9% in 5-14 year olds. The proportion positive for respiratory syncytial virus (RSV) decreased slightly from 10.1% to 9% and remained low for rhinovirus, HMPV, parainfluenza and adenovirus.



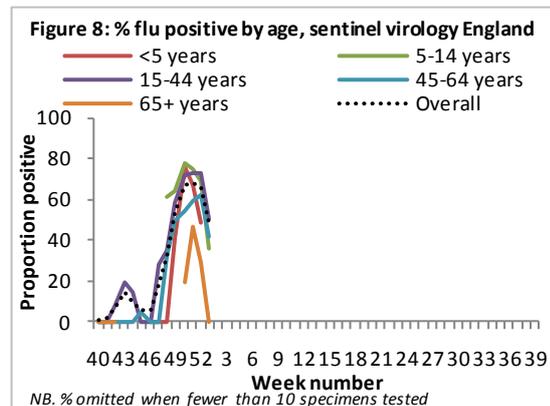
Of the 156 samples submitted via the two English GP-based sentinel schemes in week 1, 76 (48.7%) were positive for influenza (43 influenza H1N1 (2009), two A non-subtyped and 31 influenza B) (Table 1). The proportion positive decreased in all age groups with the highest proportion positive in adults aged 15-44 years at 50.7% (decreased from 72.5%) (figure 8). The proportion of samples positive for influenza through GP sentinel surveillance in Northern Ireland, Scotland and Wales also decreased in week 1 (table 1).

Table 1: Sentinel virological surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
49	164/309 (53.1%)	9/32 (28.1%)	2/6 (-)	19/29 (65.5%)
50	380/569 (66.8%)	31/76 (40.8%)	16/26 (61.5%)	25/34 (73.5%)
51	422/618 (68.3%)	124/154 (80.5%)	15/33 (45.5%)	25/30 (83.3%)
52	224/340 (65.9%)	122/151 (80.8%)	16/21 (76.2%)	15/19 (78.9%)
1	76/156 (48.7%)	27/48 (56.3%)	11/33 (33.3%)	14/22 (63.6%)

NB. Proportion positive omitted when fewer than 10 specimens tested; technical issues have led to Welsh data in table 1 being incorrectly displayed in recent weeks.

The HPA Respiratory Virus Unit (RVU) has isolated and antigenically characterised 114 influenza A H1N1 (2009), two influenza A (H3N2) and 146 influenza B viruses from community and hospital samples since week 40. All the influenza A H1N1 (2009) viruses characterised to date from hospitalised and community cases, are similar to the A/California/07/2009 vaccine strain. Both influenza A (H3N2) viruses are similar to the A/Perth/16/2009 H3N2 vaccine strain. The majority of influenza B viruses characterised belong to the B-Victoria lineage, similar to the current vaccine strain B/Brisbane/60/2008. Five influenza B viruses from the B-Yamagata lineage have been detected, one from a fatal case, three from hospitalised cases and one community case. They are closely related antigenically with good reactivity to reference sera and are similar to other influenza B viruses from this lineage that have been sporadically identified in 2009 and 2010.



Of 811 influenza H1N1 (2009) viruses reported as tested for antiviral susceptibility at RVU and regional labs since week 40 2010, 17 have been found to carry the H275Y mutation which confers resistance to the antiviral drug oseltamivir. Fifty-one H1N1 (2009) viruses have been fully tested for susceptibility, one of which was found to be phenotypically resistant to oseltamivir (including in the 17 reported above), while all 51 retained sensitivity to zanamivir. Three influenza A H3 viruses and fifty-eight influenza B viruses have been fully tested for susceptibility and found to be sensitive to oseltamivir and zanamivir.

There have been reports of secondary bacterial infections amongst influenza cases. Analysis of surveillance data has identified increases for a number of invasive bacterial pathogens in December 2010 compared to December 2009. This includes invasive *S. pneumoniae* (13% increase; 619 to 697 isolates confirmed by HPA national reference laboratory, the increase in cases is predominately seen in adults \leq 65 years, particularly in the 15-44 age group); Group A Streptococcus (36% increase; 103 to 161 isolates confirmed by HPA national reference laboratory) and meningococcal disease (150 cases confirmed by the HPA Meningococcal Reference Unit in December 2010. This number is higher than in December 2009 (88), but similar to the number in 2008 (192)).

Investigations are underway to determine whether influenza may be contributing to these increases. An [alert](#) was issued to front-line clinicians by the Chief Medical Officer on 10th January 2011 to raise awareness. More information will be published in the HPA [Health Protection Report](#) (HPR) on 14 January 2011.

In the 12 weeks up to 2 January 2010, over 80% of all lower respiratory tract isolates of *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Haemophilus influenzae* reported as tested, were susceptible to the antibiotics tetracycline and co-amoxiclav (table 2). There have been no significant changes in susceptibility in recent years.

Table 2: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 2 Jan 2011, E&W

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	2,654	94	215	80
<i>S. pneumoniae</i>	2,174	90	2289*	94*
<i>H. influenzae</i>	6,626	98	6,310	92

* *S. pneumoniae* isolates are not routinely tested for susceptibility to co-amoxiclav, however laboratory results for benzyl-penicillin are extrapolated to determine sensitivity to other beta-lactams such as co-amoxiclav.

Disease severity and mortality data

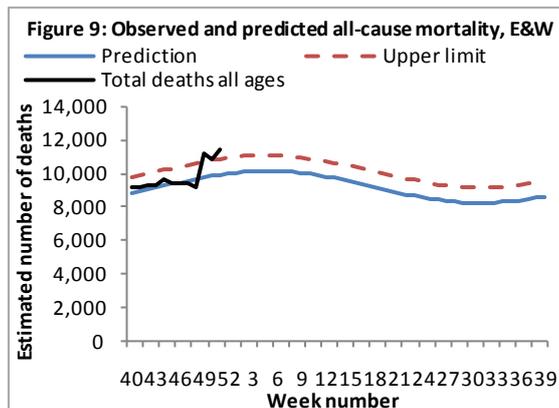
There have been reports of influenza hospitalisations and ICU admissions across the UK. For further information see <http://winterwatch.dh.gov.uk/>.

The HPA (and equivalent organisations in Scotland, Wales and Northern Ireland) are receiving and following up reports of deaths in patients where influenza is suspected to have contributed from various sources (including clinicians, laboratory reports and death certificates). Although the cases reported and confirmed to be associated with influenza infection do not constitute all cases that occur, they provide a representative picture of the types of patients and underlying factors associated with severe disease.

Up to 12 January 2011, 112 fatal cases from across the UK have been reported to the HPA and confirmed to be associated with influenza infection. Ninety-five of these cases were associated with H1N1 (2009) infection, five with influenza B infection and 12 as yet untyped influenza infection. The deaths have been mainly in younger adults and children. Among the 101 cases with information on age: six (6%) have been less than 5 years; nine (9%) from 5 to 14 years; 70 (69%) from 15 to 64 years and 16 (16%) older than 64 years.

Sixty-three of 81 fatal cases with available information (78%) were in one of the CMO-defined clinical risk groups for vaccination. The leading reported clinical risk factors for those with information were underlying neurological disease (n=14/37; 38%) and respiratory disease including asthma (n=17/42; 40%). Of cases with available information on immunisation history, 40 of 47 (85%) cases had not received 2010/11 trivalent influenza vaccine this season. Thirty-three of 35 cases with available information had not received monovalent pandemic influenza vaccination last season.

In week 51, an estimated 11,484 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is increased from 10,880 in week 50 and remains above the upper limit of expected levels for this time of year (figure 9). Potential factors for this excess include recent cold weather and circulating respiratory viruses.



Vaccine uptake

By week 1, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 70.8%, while in those aged under 65 in a risk group it was 46.3% (provisional data). For further information on the 2010/11 seasonal influenza vaccine programme see the [Department of Health Green Book](#) (an amended version of the influenza chapter was published in December 2010).

International Situation

[Europe \(European Centre for Disease Prevention and Control report\) 7 January 2011:](#)

Generally, reporting of influenza has been less complete over weeks 51 and 52 due to the holiday period, which reduces consulting rates and reporting to national centres and subsequently onto ECDC. During week 52/2010, medium influenza activity was reported by Belgium, France, Italy, Luxembourg, Malta, Norway, Portugal, Spain and the UK (Northern Ireland, Scotland and Wales). Denmark, Ireland and the UK (England) reported high intensity. Fourteen countries experienced low intensity influenza activity. Widespread activity was reported by seven countries and the UK (England and Wales). Regional activity was reported by Finland, Italy, Luxembourg and Spain and local activity by Germany, Malta and the UK (Northern Ireland and Scotland). Sporadic activity was reported by nine countries, and two countries (Austria and Bulgaria) reported no activity. Compared with the previous week, a greater number of countries—six in week 51 and 15, including the UK (Northern Ireland, Wales and Scotland), in week 52—reported increasing trends for their clinical activity.

After little change in week 51/2010, the percentage of sentinel specimens that tested positive for influenza rose to 46% in week 52/2010, indicating rising intensity. For combined sentinel and non-sentinel influenza positive specimens, 73% were type A and 27% were type B. Ninety-eight percent of sub-typed influenza A viruses were A(H1N1) 2009. In week 52/2010 six countries reported 56 SARI cases, of which 22 were known to have been infected by the A(H1N1) 2009 virus. Of the 613 SARI cases reported since week 40/2010, twelve deaths have been reported.

[United States of America \(Centre for Disease Control report\) 7 January 2011:](#)

During week 52 (December 26, 2010 – January 1, 2011), influenza activity in the United States decreased slightly. Of the 4,911 specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division, 995 (20.3%) were positive for influenza; 656 (65.9%) influenza A and 339 (34.1%) influenza B. Of the 656 influenza A viruses detected in week 52, 44 (6.7%) were A H1N1 (2009), 343 were not subtyped and 269 (41%) were H3N2. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. One influenza-associated pediatric death was reported and was associated with Influenza B virus infection. The proportion of outpatient visits for influenza-like illness (ILI) was 2.6%, which is above the national baseline of 2.5%. Four of the 10 regions (Regions 2, 3, 4, and 5) reported ILI above region-specific baseline levels; six states and New York City experienced high ILI activity, two states experienced moderate ILI activity, six states experienced low ILI activity, 35 states experienced minimal ILI activity, and data were insufficient from the District of Columbia and one state. The geographic spread of influenza in eight states was reported as widespread; Puerto Rico and 16 states reported regional influenza activity; the District of Columbia and 11 states reported local influenza activity, and Guam, the U.S. Virgin Islands, and 15 states reported sporadic influenza activity.

[Canada \(Public Health Agency report\) 7 January 2011:](#)

During weeks 51 and 52 the overall influenza activity in Canada continued to increase across the country. Twenty five percent of specimens tested were positive for influenza during the two-week period, an increase from previous weeks. The ILI consultation rate also increased, but was within the expected range. Influenza A was identified in 98.3% of positive influenza tests, and among those which were subtyped, 94% were influenza A/H3N2 and 6% were pandemic H1N1 2009. Both the number of paediatric and adult hospitalizations with influenza reported through IMPACT and CNISP surveillance systems increased during weeks 51 and 52 compared to the previous week.

[WHO influenza update 30 December 2010:](#)

The winter influenza season is now under way in parts of the Northern Hemisphere. North America is seeing increases of influenza-like illness (ILI) now above baseline levels in parts of Canada and the United States of America (US) associated primarily with influenza viruses A(H3N2) and type B. The United Kingdom of Great Britain and Northern Ireland (UK) has been experiencing a surge in both mild and severe cases for the last three weeks which has not yet peaked and is primarily associated with influenza A(H1N1) 2009 virus and to a lesser extent influenza type B. The pattern of illness associated with H1N1 (2009) virus infection in the UK is similar to last season primarily affecting young adults, particularly those with underlying chronic illness or pregnancy although a number have had no known risk factors. On the European continent, the Middle East

and in northern Asia rates of influenza-like illness are low but recent increases have been noted in some areas. In tropical regions, very little activity is noted in most of the world, however Sri Lanka has reported a marked increase in the number of both mild and severe cases related to H1N1 (2009) virus, including 22 deaths. As in the UK, the deaths in Sri Lanka have been predominantly in people under the age of 60 years and most have had preexisting medical conditions. No significant influenza transmission has been reported in Southern Hemisphere temperate regions. Notably, the large majority of viruses that have been characterized from North America and the UK have been antigenically similar to those contained in the current trivalent influenza vaccine. WHO continues to recommend vaccination for those at high risk of complications, where it is available, and early treatment of those at high risk or with severe or rapidly deteriorating disease.

[Avian Influenza \(WHO website\)](#): Since 2003, 516 human cases of H5N1 avian influenza have been reported to WHO from 15 countries. Of these, 306 (59%) have reportedly died (24 of 48, 50% in 2010). The latest cases are four unlinked cases from Egypt, four adults, two of whom died.

Acknowledgements

This report was prepared by Estelle McLean and Richard Pebody. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the HPA Real-time Syndromic Surveillance team, the HPA Respiratory Virus Unit, the HPA Modelling and Statistics unit, the HPA Dept. of Healthcare Associated Infection & Antimicrobial Resistance, regional microbiology laboratories, NHS Direct, ONS, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern Ireland and QSurveillance@.