

# HPA Weekly National Influenza Report

## Summary of UK surveillance of influenza and other seasonal respiratory illnesses

### 23 December 2010 – Week 51



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](mailto: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

Influenza activity continues to increase across the UK; GP consultation rates are now above baseline levels in England and Wales. Increasing numbers of severe cases, mainly in people aged under 65 years are being reported. 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. The HPA expects to see continued elevated influenza activity for several weeks.

- In week 50 (ending 19 December), the weekly ILI consultation rates increased across the UK (figure 1). The weekly influenza/influenza-like illness (ILI) consultation rates remain above baseline levels in England (87.1 per 100,000). The rates have increased above the baseline in Wales (85.6 per 100,000), but remain below baseline in Scotland (45.8 per 100,000) and Northern Ireland (64.6 per 100,000).
- Thirty-two acute respiratory disease outbreaks were reported in UK in week 50, 29 in schools, one in a nursery, one in a hospital and one in a prison. This brings the total reported this season so far to 120.
- One-hundred and sixty eight of 256 (65.6%) specimens from patients with ILI presenting to sentinel GPs in England in week 50, were reported as positive for influenza. The proportion of specimens reported to DataMart (England) as positive for influenza has increased to 38.9% (1031 of 2,648). The proportion of samples positive for RSV and rhinovirus is decreasing.
- Currently the main circulating influenza strains are influenza A (H1N1) and influenza B.
- Severe cases requiring ICU/ECMO admission have been reported. From week 36, 27 deaths associated with influenza infection have been reported. The majority of fatal cases reported were unimmunised.
- By week 50, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 68.5%. For those in a risk group aged under 65 it was 43.0%.
- On 21 December 2010 the UK Department of Health issued a letter to NHS staff in England to inform them that the use of antiviral drugs for the prevention or treatment of influenza is now recommended for any patient who is at risk from developing complications from influenza. More information is available at <https://www.cas.dh.gov.uk/ViewandAcknowledgment/ViewAlert.aspx?AlertID=101515>.
- In Europe most countries are starting to report early influenza activity. In the USA and Canada overall influenza activity has increased.

#### Weekly consultation rates in national sentinel schemes

##### Influenza/influenza-like illness (ILI)

In week 50 (ending 19 December), the weekly ILI consultation rates increased across the UK (figure 1).

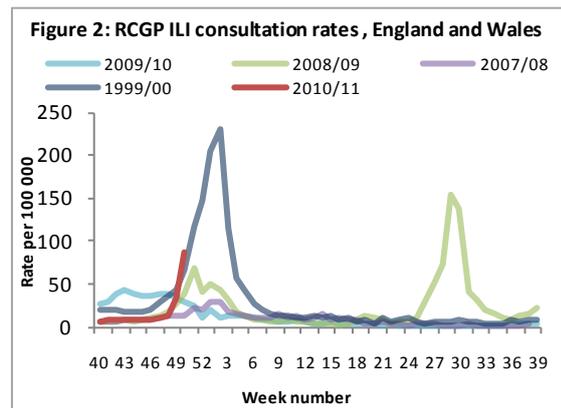
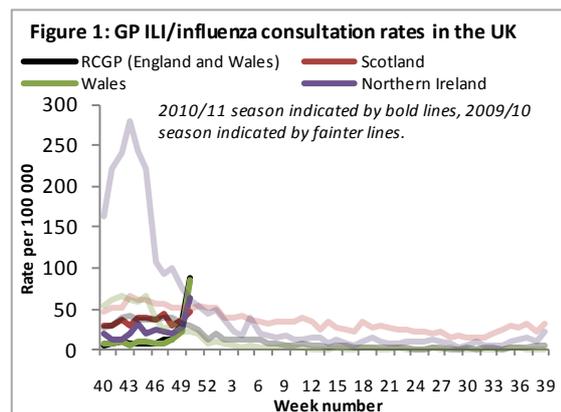
The overall ILI consultation rate from RCGP for England increased from 34.6 to 87.1 per 100,000. This rate is above baseline activity levels (figures 1 and 2). The ILI rate increased in all regions: from 17.5 to 55.5 in the north, from 38.4 to 94.9 in the central and from 37.7 to 93.4 in the southern region. The rates increased in all age groups. The highest rates were observed in the 5-14 year (increased from 58.2 to 160.3 per 100,000) and the 1-4 year (increased from 50.5 to 142.0 per 100,000) (figure 3) age groups.

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

The combined influenza/ILI rate in Northern Ireland has increased from 28.1 to 64.6 per 100,000, remaining below the threshold of 70 per 100,000 (figure 1). In Northern Ireland in week 50, the rates were highest in the 5-14 year age group at 114.3 per 100,000.

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

The Scottish ILI rate increased from 36.4 to 45.8 per 100,000 and is below the baseline threshold of 50 per 100,000 (figure 1). The highest rates were in the under 1 year and 1-4 year groups, at



287.9 and 244.5 per 100,000 respectively. The greatest increase was observed in the over 75 year group (14.1 to 34.0 per 100,000)

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

The Welsh influenza rate increased from 22.6 to 85.6 per 100,000 and is above the baseline threshold of 25 per 100,000 (figure 1). By age group, the highest rates were in the 15-44 year group (122.6 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. For further information and data from Wales please see the [Public Health Wales website](#).

In the HPA/QSurveillance® scheme, the overall rate increased from 21.7 to 54.9 per 100,000. The rates increased in all age groups with the highest rates observed in the 5-14 year group at 80.0 and the 1-4 year group at 74.7 per 100,000.

The weekly ILI rate through QSurveillance® in week 50 increased in all regions and highest rates continued to be observed in London at 75.8 per 100,000 (figure 4), followed by North West (59.3 per 100,000) and West Midlands (57.6 per 100,000)

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

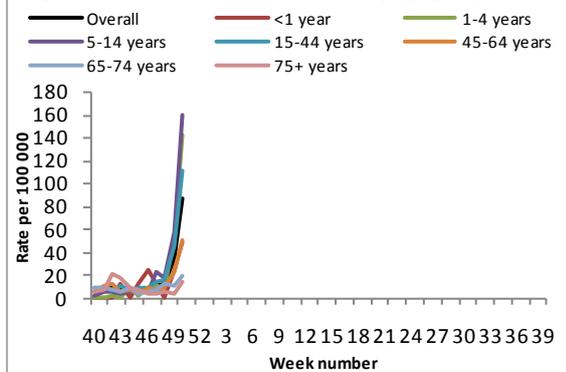
#### Other respiratory indicators

The overall weekly consultation rate for acute bronchitis in England and Wales through the RCGP scheme was 200.1 per 100,000, increasing from 159.4 per 100,000 in week 50.

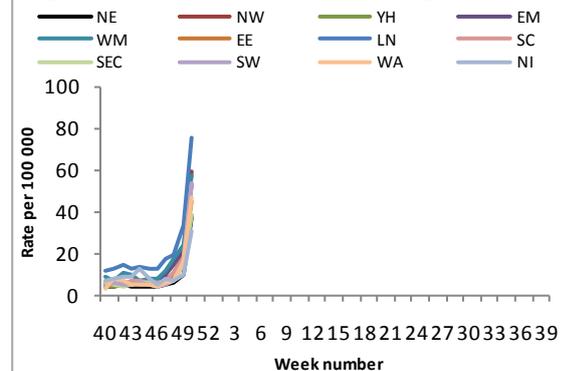
The acute bronchitis rates increased in all age groups, with the highest rates observed in the under 1 year group (increased from 584.7 to 645.5 per 100,000) (figure 5).

The overall weekly consultation rate for pneumonia from the RCGP scheme has increased from 1.7 to 3.5 per 100,000 in week 50.

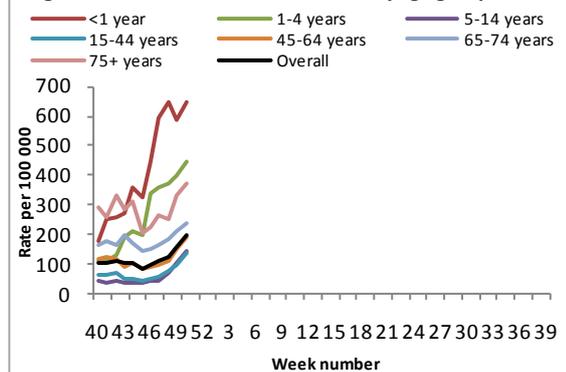
**Figure 3: RCGP ILI consultation rates, by age group, E&W**



**Figure 4: QSurv ILI consultation rates, by region, E,W&NI**



**Figure 5: RCGP AB consultation rates, by age group, E&W**



### Community surveillance

The overall proportion of calls to NHS Direct for cold/flu was 6.3%, which is increased from 2.9% in week 50. The national threshold for cold/flu calls in all ages is 1.2%; values above this level are indicative of influenza circulation in the community. By age group, the greatest increase was in the 15-44 year group (from 4.1% to 9.3%) (figure 6).

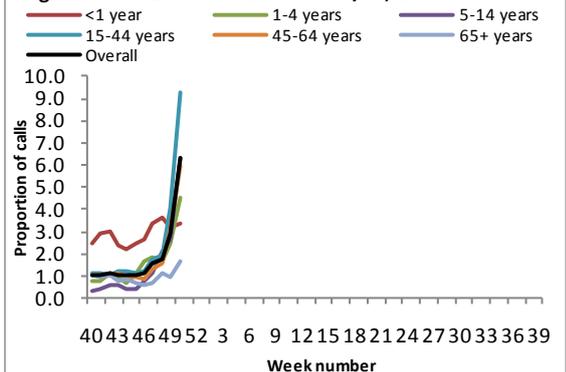
The proportion of calls for fever in the 5-14 year age group increased from 18.1% to 21.6%, remaining above the baseline level of 9%. For further information and data from this scheme please see the Real-time Syndromic Surveillance page on the [HPA website](#).

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](#).

Thirty two acute respiratory disease outbreaks were reported in UK in week 50, 29 were reported from schools (five influenza A H1N1 (2009), one B, one RSV and 22 with no results available yet). In addition, one H1N1 outbreak was reported from a hospital, one H1N1 and B outbreak was reported in a prison and one outbreak of unknown aetiology was reported in a nursery. This brings the total reported this season so far to 120; 111 (92.5%) from schools, four from care homes, two from hospitals, one from a military base, one from a nursery and one from a prison. Outbreaks should be reported to the local Health Protection Unit and [Respcdsc@hpa.org.uk](mailto:Respcdsc@hpa.org.uk).

FluWatch, a community-based cohort surveillance system in England, shows ongoing evidence of influenza transmission in the general population. ILI rates remain consistent with recent influenza seasons, with the

**Figure 6: NHS Direct % calls for colds/flu, E&W**



highest rates in 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>.

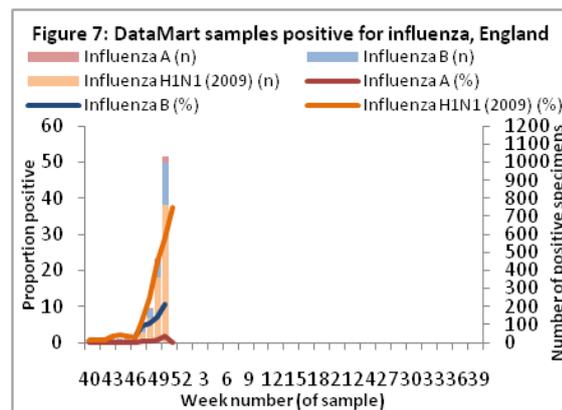
### Microbiological surveillance

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

Of 2,648 respiratory specimens reported to the English Data Mart system as taken in week 50, 1031 (38.9%) were positive for influenza (765 were H1N1 (2009), 33 influenza A not subtyped and 233 influenza B) (figure 7). The highest age-specific positivity rate for H1N1 2009 was 39.8% in 15-44 year olds, and for influenza B it was 28.4% in 5-14 year olds. The proportion positive for respiratory syncytial virus (RSV) and rhinovirus have decreased (from 16.1% to 11.9% and 9.3% to 5.5% respectively).

Of the 256 samples submitted via the two English GP-based sentinel schemes in week 50, 168 (65.6%) were positive for influenza (114 influenza H1N1 (2009), 53 influenza B and 1 influenza A, unknown subtype) (Table 1).

In week 50, 12 specimens were reported as positive for influenza through the sentinel GP scheme in Scotland, and 10 specimens were reported positive for influenza in Northern Ireland (table 1).



**Table 1: Sentinel virological surveillance in the UK**

Week	England	Scotland	Northern Ireland	Wales
46	7/128 (5.5%)	3/28 (10.7%)	0/8 (-)	0/2 (-)
47	25/125 (20%)	4/42 (9.5%)	0/7 (-)	0/4 (-)
48	51/158 (32.3%)	7/34 (20.6%)	0/8 (-)	0/10 (0%)
49	152/292 (52.1%)	8/31 (25.8%)	2/6 (-)	0/29 (0%)
50	168/256 (65.6%)	12/31 (38.7%)	10/17 (58.8%)	0/33 (0%)

NB. Proportion positive omitted when fewer than 10 specimens tested.

The HPA Respiratory Virus Unit (RVU) has isolated and antigenically characterised 73 influenza A H1N1 (2009), one influenza A (H3N2) and 55 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. The influenza A (H3N2) virus is 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. Three influenza B viruses from the B-Yamagata lineage have been detected, one from a fatal case and two from hospitalised cases. 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 405 influenza H1N1 (2009) viruses reported as tested for antiviral susceptibility at RVU and regional labs since week 40 2010, three have been found to carry the H275Y mutation which confers resistance to the antiviral drug oseltamivir. Five further H1N1 (2009) viruses, two influenza A H3 viruses and five influenza B viruses have been fully tested for susceptibility and found to be sensitive to oseltamivir and zanamivir.

**Table 2: Antimicrobial susceptibility surveillance, E&W**

In the 12 weeks up to 12 December 2010, over 80% of all 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.

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	2,677	94	211	82
<i>S. pneumoniae</i>	1,959	88	2084*	93*
<i>H. influenzae</i>	6,156	98	5,918	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

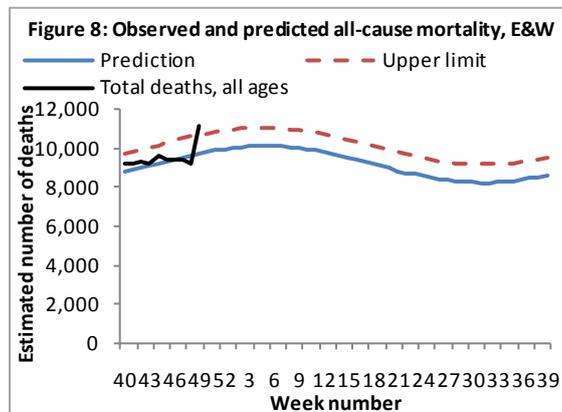
There have been reports of influenza hospitalisations and ICU admissions across the UK. Up to week 51, 62 new hospitalised H1N1 confirmed cases have been recruited to the MOSAIC study from hospitals in London and Liverpool. The average age is 36 years, with only one case >60 years of age and 11 are children. Of 27 adult women, 8 were pregnant. Asthma and obesity appear to be risk factors for severe disease. No patient

received antivirals prior to hospital admission. More details on the MOSAIC study are available at <http://clinicaltrials.gov/ct2/show/NCT00965354>.

Information collected from the units providing adult respiratory ECMO show that currently there are 16 adult patients being treated with respiratory ECMO. Of these patients all but one are H1N1 positive. There are 3 children now being treated with respiratory ECMO of whom 1 is H1N1 positive.

HPA is receiving reports of fatal influenza cases from various sources (clinicians, laboratory reports and death certificates). These reports have been reconciled and verified with clinicians. These will not represent all influenza-related deaths. From week 36 to 22 December 2010, 27 fatal cases have been verified by HPA as related to influenza infection in the UK. Of these verified fatal cases, 24 have been associated with H1N1 (2009) infection and 3 with influenza B infection. All cases have been under 65 years in age (median age =33 years, IQR= 8-45 years, range 1 to 55 years). Nine (33%) cases were aged under 18 years. Twelve (46%) of the 26 fatal cases with information available were in one of the CMO-defined clinical risk groups for vaccination. Of cases with available information on immunisation uptake, 21 out of 22 had not received trivalent influenza vaccination this season and 20 out of 21 had not received pandemic influenza vaccination last year.

In week 49, an estimated 11,193 all-cause deaths were registered in England and Wales (source: Office for National Statistics), an increase from the previous week and now above the upper limit of expected levels for this time of year (figure 8). Potential factors for this increase include recent cold weather and circulating respiratory viruses.



### Vaccine uptake

By week 50, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 68.5%, while in those aged under 65 in a risk group it was 43.0% (provisional data). For further information on the 2010/11 seasonal influenza vaccine programme see the [Department of Health Green Book](#).

On 14 December 2010, a letter was issued to the NHS to promote vaccine uptake particularly in areas and GP surgeries with the lowest levels reported. For further information see the [Department of Health website](#).

### International Situation

**Europe (European Centre for Disease Prevention and Control report) 12 December 2010:** During week 50/2010, 24 of the 25 reporting countries including UK (Northern Ireland, Scotland and Wales) reported low intensity of influenza activity while UK (England) experienced medium intensity and activity above baseline. In week 50, 22.1% of sentinel specimens were positive for influenza. Of the 347 influenza viruses detected, 67% were influenza type A of which the majority were Influenza H1N1 (2009), 33% were type B and a small number were A(H3). The circulating viruses detected to date have been similar to the current vaccine viruses. This indicates that the annual influenza epidemics are starting in Europe and that at present they are dominated by influenza A (H1N1) 2009 and B viruses. Eighty six SARI cases were reported by two countries (Belgium and Romania) during week 50/2010. For all of these cases the causative pathogen was unknown. Seventy three percent of the SARI cases were seen in children younger than seventeen years of age, all of whom had no underlying conditions.

**United States of America (Centre for Disease Control report) 11 December 2010:** During week 50, influenza activity in the United States increased. Of the 3,295 specimens tested, 363(11.0%) were positive for influenza. One human infection with a novel influenza A virus was reported. However, the proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold and one influenza-associated paediatric death was reported and associated with Influenza A(H3). The proportion of outpatient visits for influenza-like illness (ILI) was 1.8%, below the national baseline of 2.5%. All 10 regions reported ILI below region-specific baseline levels; Alabama and Georgia experienced high ILI activity, New York City and three states experienced low ILI activity, 45 states experienced minimal ILI activity, and the District of Columbia had insufficient data. The geographic spread of influenza in Puerto Rico and four states was reported as regional, and 20 states reported local activity; the District of Columbia, the U.S. Virgin Islands, and 21 states reported sporadic activity; Guam and six states reported no influenza activity.

**Canada (Public Health Agency report) 11 December 2010:** During week 50, the overall influenza activity in Canada increased from the previous week in regions of the Prairies, Ontario and Quebec. The proportion of positive influenza specimens reported during week 50 increased. Of the 3000 specimens 323 (10.8%)

were positive of which 96.6% are influenza A, 3.4% influenza B. Of the positive influenza A specimens subtyped, 94% were influenza A/H3N2 and 6% were pandemic H1N1 2009. The number of paediatric and adult hospitalizations with influenza has increased during week 50.

**WHO influenza update 17 December 2010:** Increasing influenza activity has been observed across parts of Europe, most notably in the United Kingdom, indicating the start of wintertime influenza epidemics in several countries. Influenza activity is also increasing in other temperate regions of the Northern Hemisphere, including East Asia and North America where there is evidence of the beginnings of the local winter influenza season. Worldwide, influenza A (H3N2), B, and H1N1 (2009) viruses are co-circulating with significant regional heterogeneity in the predominant circulating influenza viruses.

**Avian Influenza (WHO website):** A new case of human infection of H5N1 avian influenza has been reported in Indonesia. Since 2003, 510 human cases of H5N1 avian influenza have been reported to WHO from 15 countries. Of these, 303 (59%) have reportedly died (21 of 41, 51% in 2010).

### **Acknowledgements**

This report was prepared by Shelly Bolotin, Richard Pebody, Chinelo Obi and Hongxin Zhao. 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, QSurveillance, EMIS and EMIS practices, ONS, the Department of Health, Health Protection Scotland, National Public Health Service (Wales) and the Public Health Agency Northern Ireland.