

HPA Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses
28 January 2010 (Week 04)



Summary

- Pandemic influenza activity is generally decreasing across the UK.
- In week 03 (ending 24 January), the weekly influenza/influenza-like illness (ILI) consultation rate decreased or remained stable in all schemes across the UK
- The [National Pandemic Flu Service](#) (NPFS) continues to issue antiviral drugs to people in England with an influenza-like illness who call or log onto the internet site. This service will continue until 11 February 2010, from this date onwards, antivirals will be authorised via health care professionals. The number of assessments and antiviral collections through this service have decreased over the past week.
- A decrease in respiratory syncytial virus detections has been observed recently and GP consultation rates for acute bronchitis continue to fall, especially in people aged under 5 years and 65 or over.
- The main influenza virus circulating in the UK continues to be the pandemic (H1N1) 2009 strain, with few influenza H1 (non-pandemic), H3 and B viruses detected. Thirty-six of 4,975 pandemic viruses tested have been confirmed to carry a mutation which confers resistance to the antiviral drug oseltamivir; three are phenotypically resistant to the drug but retain sensitivity to zanamivir.
- The majority of pandemic influenza cases continue to be mild. The weekly number of pandemic influenza cases reported as admitted to hospital has been decreasing recently. The cumulative number of deaths reported due to pandemic (H1N1) 2009 in the UK is 391 (figure for England to 21 January 10).
- The UK pandemic influenza vaccination programme continues for people at high risk for severe disease, health-care workers and healthy children aged between 6 months and 5 years. For further information see the [Department of Health website](#).
- According to the World Health Organisation (17 January), more than 209 countries have reported cases of pandemic influenza (H1N1) 2009, including at least 14,142 deaths. Very few regions are reporting increasing influenza activity, although influenza remains active in parts of North Africa and South, West and East Asia. Influenza B viruses accounted for 18.2% of all influenza detections worldwide, an increase from 10.9% last week.

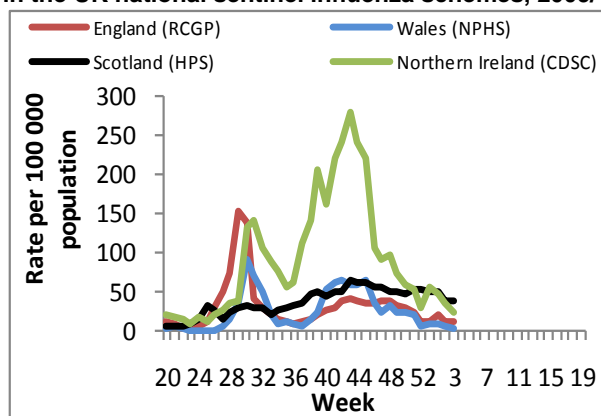
Weekly consultation rates in national sentinel influenza schemes

The National Pandemic Flu Service (NPFS) became operational in England on Thursday 23 July at 15.00. The service issues antiviral drugs to people with an influenza-like illness who do not fall into a specified risk group (e.g. aged less than 1 year, pregnant or with a high-risk underlying medical condition). According to [FluSurvey](#), an internet-based monitoring system for influenza surveillance which relies on members of the public reporting their health status weekly, the proportion of participants with influenza-like illness who reported that they contacted their GP fell after NPFS was launched. This will have affected GP consultation rates from week 30 onwards. The under 1 year olds are the only age group that are not assessed by NPFS and will always be referred to the health service. NPFS is currently not operational in Northern Ireland, Scotland and Wales. For further information on the different schemes, including why differences are seen between the four countries, please see [Interpreting the HPA National Weekly report](#).

In week 03 (ending 24 January), the weekly influenza/influenza-like illness (ILI) consultation rate decreased or remained stable in all schemes across the UK (table 1, figures 1 and 2).

The overall RCGP (England and Wales) ILI consultation rate was stable at 12.8 per 100,000, which is below the winter baseline activity threshold of 30 per 100,000. The rate increased slightly in the southern region, was stable in the central region and decreased in the north.

Figure 1: GP weekly consultation rates for influenza/ILI in the UK national sentinel influenza schemes, 2009/10.



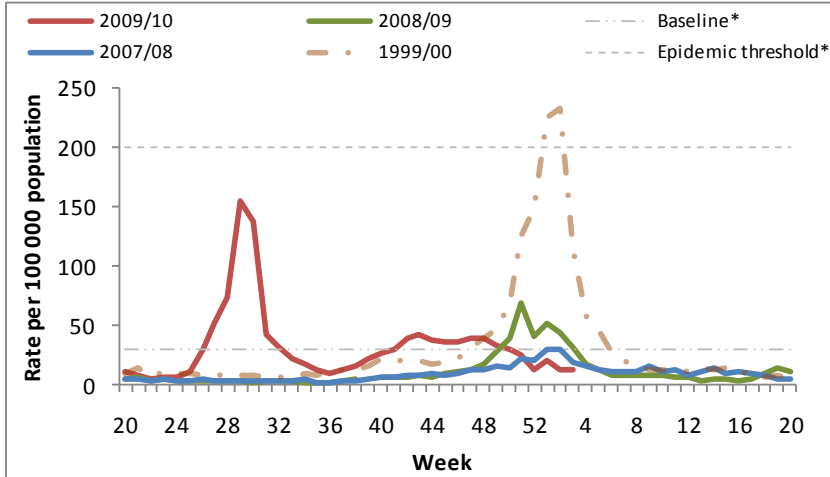
The combined influenza/ILI rate in Northern Ireland has decreased and remains below the threshold of 70 per 100,000. The ILI rate in Scotland decreased slightly, remaining below the baseline threshold of 50 per 100,000. The Welsh influenza rate also decreased, and stays below the baseline threshold of 25 per 100,000. The weekly ILI QSurveillance rate decreased.

Table 1: UK GP weekly consultation rates for influenza/ILI

Week Number	Clinical rate per 100,000				
	53	1	2	3	
Week-ending date	Baseline	03-Jan	10-Jan	17-Jan	24-Jan
RCGP (E & W)	30	11.2	19.9	12.1	12.8
RCGP North	30	9.1	10.2	11.9	9.1
RCGP Central	30	15.1	27.5	14.3	14.3
RCGP South	30	9.5	18.6	10.9	13.4
Northern Ireland	70*	57.2	48.8	36.1	23.2
Scotland	50	51.4	51.8	39.5	38.8
Wales	25	9.9	9.75	6.7	4.8
QSurveillance® (UK**)	N/A	13.3	19.7	14.7	12.8

*Provisional threshold defined in September 2009; ** based on data from 43% of England's population, 10% of the population in Wales, 17% in Northern Ireland and 0% in Scotland.

Figure 2: RCGP weekly consultation rate for influenza-like illness 2009/10 and recent years



* Baseline threshold: under 30 per 100,000; epidemic threshold: over 200 per 100,000. NB. As week 53 appears in 2009 but not in previous years the figure for week 52 in this graph is an average of week 52 and week 53 data.

The consultation rates in the RCGP scheme decreased in many age groups however, an increase was observed in the 1-4 year group (from 5.8 to 14.2 per 100,000) and 5-14 year group (from 1.2 to 8.1 per 100,000). The highest rate was in the 45-64 year age group (15.3 per 100,000).

A similar pattern was seen the QSurveillance® scheme; the rate in the 1-4 year-olds increased from 21.3 to 28.3 per 100,000 and in the 4-14 year-olds from 7.5 to 8.9 per 100,000. Rates in all other age groups decreased or were unchanged.

In Wales, the rates decreased or remained fairly stable in all age groups. The highest rates were in adults aged 25-34 years (10.5 per 100,000) and 45-64 years (7.7 per 100,000).

In Northern Ireland, the rates decreased in most age groups with the greatest decrease in the 5-14 year-olds (from 41.1 to 12.9 per 100,000)

In Scotland, the rates decreased in most age groups, though increased in children aged 1-4 years (from 165 to 175 per 100,000) and 5-14 years (from 27.2 to 33.7 per 100,000).

Figure 3: RCGP weekly consultation rate for influenza-like illness (ILI) 2009/10, by age group

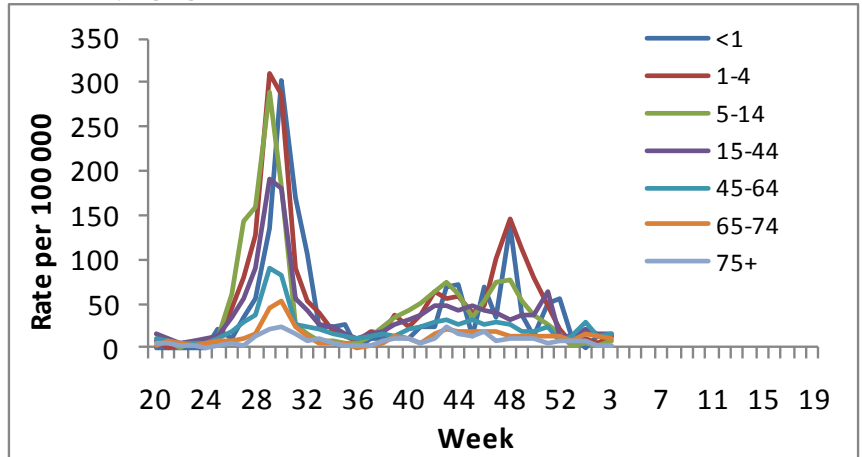
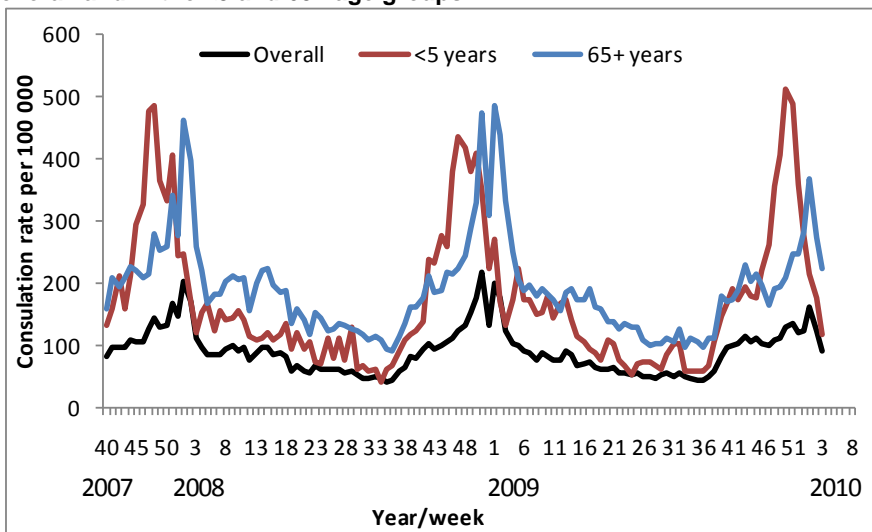


Figure 4: RCGP weekly consultation rate for acute bronchitis 2007 – 2010, overall and in the <5 and 65+ age groups



The overall weekly consultation rate for acute bronchitis in England and Wales through the RCGP scheme decreased in week 03 from 121.3 to 91.2 per 100,000. The rates decreased in all age groups, with the greatest decrease in those aged 65 or over years (decreased from 273 to 222.8 per 100,000). The rate in the 65+ groups remains the highest, followed by the <5 years group (decreased from 175.5 to 117.5 per 100,000) (figure 4).

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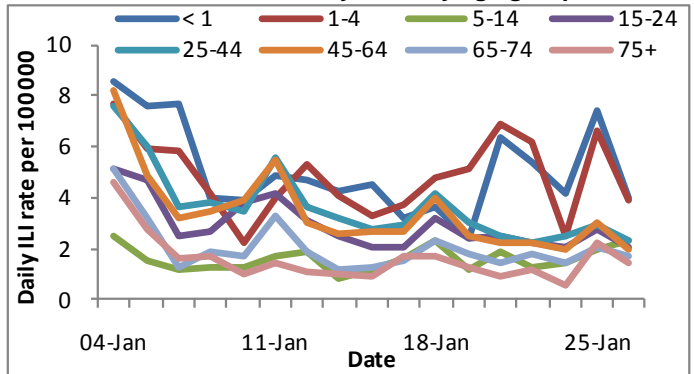
Enhanced Daily & Weekly Syndromic Surveillance (<http://www.hpa.org.uk/hpr/infections/primarycare.htm>)

QSurveillance®

The GP consultation rates are likely to have been affected by the introduction of the National Pandemic Flu Service on 23 July.

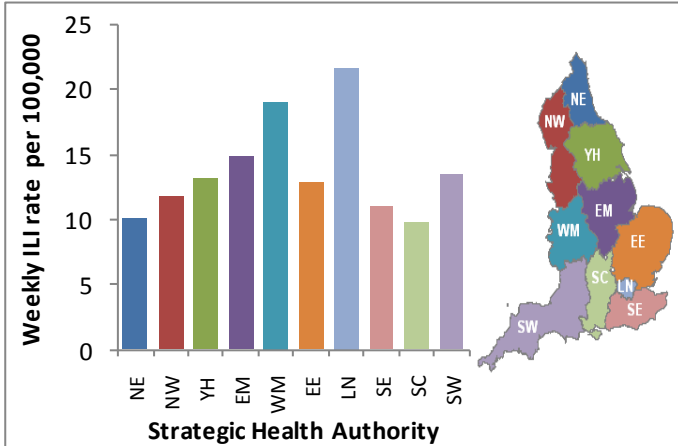
The daily GP ILI consultation rate on Tuesday 26 January was 2.2 per 100,000, a slight decrease from 2.4 per 100,000 on Tuesday 19 January. The highest rates were in children aged under one year and 1-4 years (4.0 and 3.9 per 100,000 respectively) (figure 5).

Figure 5: Daily consultation rates for influenza-like illness from QSurveillance®, January 2010, by age group



*Based on data from 43% of England's population, 10% if the population in Wales, 17% in Northern Ireland and 0% in Scotland.

Figure 6: Weekly consultation rates for influenza-like illness (ILI) from QSurveillance®, Week 03 (ending 24 January 2010) by Strategic Health Authority



Daily rates in all English SHAs are at levels equivalent to estimated rates corresponding to 'baseline activity'. The highest weekly rates remain in the West Midlands and London SHAs (figure 6).

Daily consultation rates for pneumonia from QSurveillance® are at slightly lower levels compared to recent weeks and are within expected levels for this time of year.

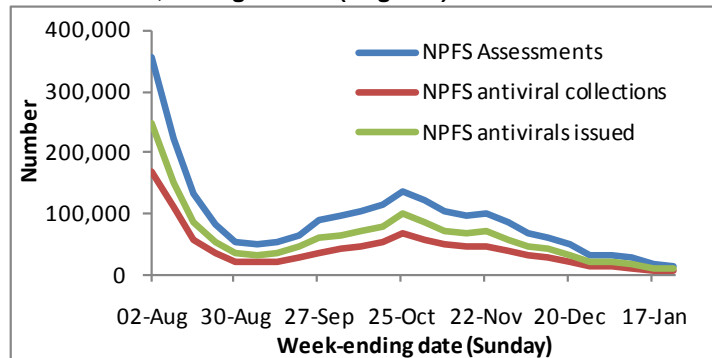
National Pandemic Flu Service (NPFS)

The [National Pandemic Flu Service \(NPFS\)](http://www.npfs.gov.uk) became operational in England at 15.00 on 23 July 2009. This service will cease on 11 February 2010; from this date onwards, antivirals will be authorised via health care professionals and collection points will continue to function until the end of the current influenza season.

For further information see the Department of Health website:

http://www.dh.gov.uk/dr_consum_dh/group_s/dh_digitalassets/documents/digitalasset/dh_111598.pdf

Figure 7: Weekly number of assessments and antivirals issued and collected, through NPFS (England)



In the last week, the overall number of collections of antivirals has decreased by 17% (figure 7), and is at low levels in all regions and age groups.

Microbiological surveillance

The predominant influenza strain circulating is still the pandemic H1N1 2009. Detection of respiratory syncytial virus (RSV) through sentinel and non-sentinel surveillance has decreased recently (table 2 and figure 8). In the last two weeks, five other (non-influenza) viruses have been detected through the HPA/RMN GP-based sentinel surveillance scheme; two RSV, two rhinovirus and one human metapneumovirus.

Table 2: Number of other respiratory viruses reported from HPA and NHS laboratories in England and Wales by week of report

	Week 53	1	2	3
Week-ending	03-Jan	10-Jan	17-Jan	24-Jan
Influenza B	2	2	1	4
Adenovirus	34	73	43	53
Parainfluenza	19	24	22	16
Rhinovirus	153	154	126	100
RSV	744	1128	793	465

Table 3: Number of laboratory confirmed cases of pandemic influenza A (H1N1) 2009 in the UK

Country	Number of lab-confirmed cases
England	20,349
Scotland	6,558
Northern Ireland	658
Wales	1359
Total UK	28,924

Since week 40 2009 (October), the Respiratory Virus Unit (RVU) have detected four influenza A (H3) viruses. Two of these viruses have been characterised as A/Perth/16/2009-like, which is not one of the northern hemisphere 2009/10 seasonal influenza vaccination strains (it is a component of the 2010 southern hemisphere influenza vaccine). Only one seasonal influenza A (H1) virus has been detected in the same time period, in mid-December 2009.

There have now been 28,924 laboratory confirmed cases of pandemic (H1N1) 2009 in the UK since the beginning of the pandemic (table 3).

Enhanced Virological Community and Primary Care Surveillance

In England three schemes for virological surveillance of influenza are being used: two GP-based (RCGP/HPA and HPA/RMN) and one through NPFS (previous through NHS Direct). Schemes through primary care are also used in Wales, Scotland and Northern Ireland. It is important to note that samples taken in recent weeks may still be awaiting processing so these data should be treated with caution. More details on these schemes can be read at ['Interpreting the HPA National Weekly Influenza Report'](#).

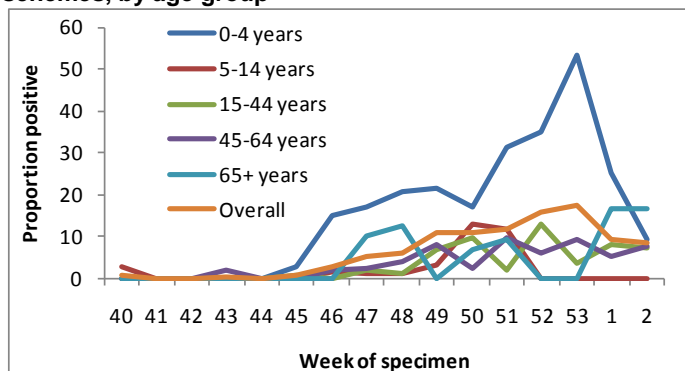
The positivity rates from the two English sentinel schemes increased slightly in week 03 but remained at low levels. Very few specimens have been received in recent weeks in Wales, Scotland and Northern Ireland (table 4, figure 10). The highest rates continue to be in children and young adults (table 5).

Table 4: Total number of samples tested and positive for pandemic influenza A (H1N1) 2009 from sentinel virological schemes in England (GP and NPFS), Wales, Scotland and Northern Ireland by week*

Week	England (GP)			England (NPFS)			Wales (GP)			Scotland (GP)			N. Ireland (GP)		
	Total tested	Pandemic n	%	Total tested	Pandemic n	%	Total tested	Pandemic n	%	Total tested	Pandemic n	%	Total tested	Pandemic n	%
47	397	130	32.7	793	183	23.1	12	3	25.0	520	210	40.4	42	12	28.6
48	335	94	28.1	754	112	14.9	10	1	10.0	393	113	28.8	41	11	26.8
49	353	82	23.2	701	77	11.0	14	2	14.3	315	72	22.9	11	2	18.2
50	285	66	23.2	682	62	9.1	3	0	0.0	242	51	21.1	51	3	5.9
51	226	40	17.7	446	28	6.3	17	1	5.9	178	23	12.9	25	1	4.0
52	135	34	25.2	—	—	—	4	1	25.0	73	17	23.3	8	1	12.5
53	63	18	28.6	—	—	—	0	0	—	67	11	16.4	13	1	7.7
1	130	15	11.5	458	22	4.8	0	0	—	66	5	7.6	5	0	—
2	96	11	11.5	736	25	3.4	0	0	—	8	8	—	4	1	—
3	49	6	12.2	433	24	5.5	1	0	—	3	3	—	0	0	—

* All data are based on week of specimen, except for Northern Ireland which is by week of report; proportion positive omitted if fewer than 10 specimens tested in one week.

Figure 8: Proportion of samples testing positive for RSV through the two GP-based England sentinel virological schemes, by age group



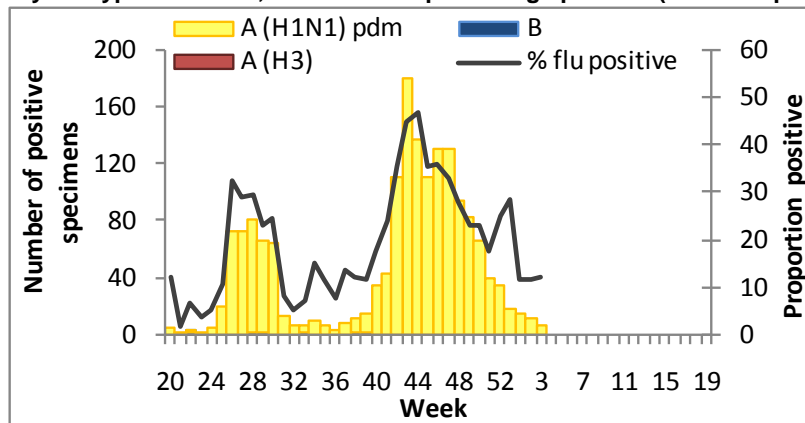
NB. Data for most recent week omitted due to reporting lag

Table 5: Total number of samples tested and positive for pandemic influenza A (H1N1) 2009 from England sentinel virological schemes for the latest four weeks by age group

Age Group	England (GP)		England (NPFS)*	
	Total tested	Pandemic n %	Total tested	Pandemic n %
<5	47	5 10.6	not tested	
5-14	17	4 23.5	282	28 9.9
15-24	52	11 21.2	189	4 2.1
25-44	103	17 16.5	543	27 5.0
45-64	94	13 13.8	535	12 2.2
65+	25	0 0.0	78	0 0.0

NB. Children aged under 5 are not sampled through the NPFS scheme.

Figure 9: The number of samples testing positive for influenza in the two GP-based English sentinel virological schemes by subtype and week, with the total percentage positive (week of specimen)



NB. Data for the most recent weeks are subject to change due to reporting lag; proportion positive omitted if fewer than 10 specimens tested in one week.

Antiviral susceptibility

Testing for antiviral susceptibility is carried out at the Respiratory Virus Unit, Centre for Infections, Colindale. Since the beginning of the pandemic a total of 4,975 pandemic influenza viruses have been analysed for the marker commonly associated with resistance to oseltamivir in seasonal influenza (H275Y); a total of 36 samples have been found to carry this mutation in the UK.

Table 6: Pandemic influenza tested for antiviral susceptibility at RVU, by test method, source and age group

Age Group	Samples tested for Resistance				Proportion resistant
	Screened for H275Y mutation		Fully tested		
	Hospital	Community	Hospital	Community	
<1	222	10	8	1	0%
1-4	385	51	11	1	0.92%
5-14	958	320	62	27	0%
15-44	817	170	60	9	0.30%
45-64	930	218	58	7	0.52%
65-74	592	76	26	4	1.95%
75+	123	4	5	0	4%
Unknown	97	2	13	1	1%
Total	4124	851	243	50	0.72%

NB. Figures may fluctuate due to de-duplication and correction of database.

Of these 4,975 viruses, 293 have been fully tested for susceptibility; 3 of the 36 viruses carrying the H275Y mutation have been confirmed to be phenotypically resistant to oseltamivir whilst retaining sensitivity to zanamivir. Information on medical history was available for 26 cases, 24 of whom had an underlying medical condition: 18 were immunosuppressed and six had another underlying illness. Probable person to person transmission occurred in an outbreak in a hospital ward in November 2009. Pandemic influenza samples have been tested for resistance from all regions and age groups in the UK (tables 6 and 7).

Table 7: Pandemic influenza samples tested for antiviral susceptibility at RVU, by test method, source and region

Region	Samples tested for Resistance				Proportion resistant
	Screened for H275Y mutation		Fully tested		
	Hospital	Community	Hospital	Community	
East of England	96	73	21	3	1%
East Midlands	520	59	11	4	0.86%
London	376	297	47	19	0.59%
North East	102	27	7	1	1%
North West	510	42	17	1	0.72%
South East	161	112	54	10	0%
South West	534	65	6	1	1%
West Midlands	136	120	42	7	0.39%
Yorkshire and Humber	623	33	15	1	0%
Ireland	8	0	7	0	0%
Northern Ireland	61	0	0	0	0%
Scotland	837	18	14	1	0.94%
Wales	45	0	0	0	18%
Unknown Region	115	5	2	2	0%
Total	4124	851	243	50	0.72%

NB. Figures may fluctuate due to de-duplication and correction of the database.

Antimicrobial susceptibility

Bacterial susceptibility to antimicrobial agents is monitored by the HPA for lower respiratory tract isolates of *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Haemophilus influenzae*. Guidelines for clinical management of patients with an influenza-like illness during an influenza pandemic (W S Lim, Thorax 2007;62;1-46, section 8.1.3) recommend co-amoxiclav or a tetracycline for treating bacterial pneumonia in a primary care setting. There have been no significant changes to susceptibility trends for these two antibiotics in recent years and no appreciable changes in resistant patterns in the twelve weeks before 17 January 2009. Over 89% of all isolates of the three organisms are susceptible to tetracyclines (table 8).

Table 8: Bacterial specimens tested for susceptibility to tetracyclines and co-amoxiclav in HPA/NHS labs in England, Wales and Northern Ireland for 12 weeks up to 17 January 2009

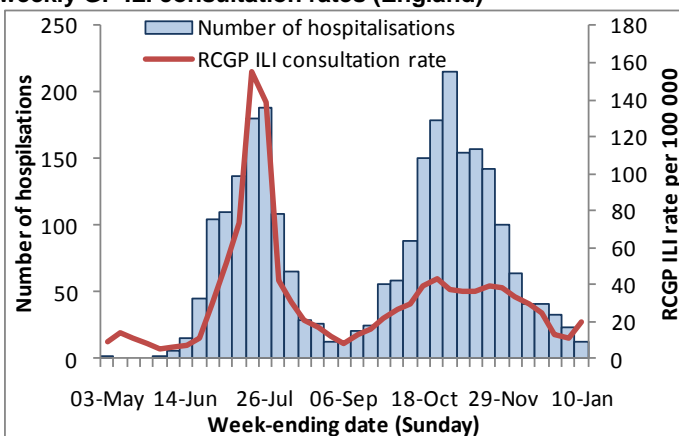
Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	2,140	94	378	83
<i>S. pneumoniae</i>	1,806	89	1690*	94*
<i>H. influenzae</i>	5,935	99	5,561	93

* *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 β -lactams such as co-amoxiclav.

Disease severity and mortality data

A web-based surveillance system for confirmed cases of pandemic (H1N1) 2009 influenza in England was established by HPA/DH after the end of the first wave in August 2009 to collect data prospectively on all cases hospitalised with confirmed pandemic influenza. All cases reported during the first wave were also retrospectively added to the database. As this is a voluntary scheme, ascertainment of cases may not be complete. Data are also provided by the relevant bodies in Scotland, Wales and Northern Ireland.

Figure 10: Hospitalised cases with confirmed pandemic (H1N1) 2009 influenza infection by week of admission* and weekly GP ILI consultation rates (England)



* Most recent weeks omitted due to reporting lag

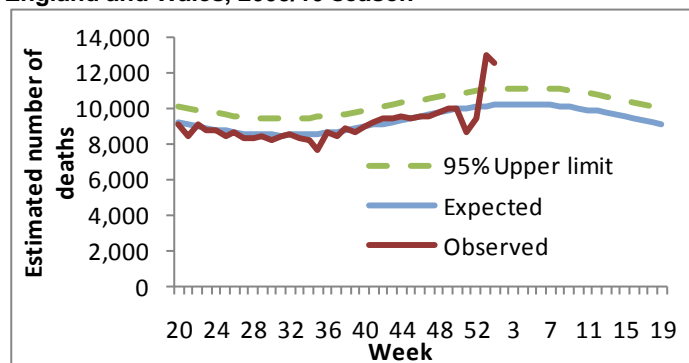
A total of 2,613 laboratory confirmed cases have been reported as hospitalised in England to 20 January 2010 (figure 10). The majority (60%) of cases were aged 5 to 44 years and 52% of cases were female.

In Scotland there have been 1,531 cumulative hospitalisations of patients with confirmed pandemic influenza, 446 in Wales and 574 in Northern Ireland.

Three hundred and ninety-one deaths (279 in England (to 21 Jan), 67 in Scotland, 17 in Northern Ireland and 28 in Wales) have been reported in the UK in people with pandemic (H1N1) 2009 infection.

HPA receives weekly death registrations from the Office for National Statistics. In week 02, an estimated 12,541 all-cause deaths were registered, which has decreased from 12,968 in week 01 but remains above the expected range for this time of year (figure 11). These deaths are due to all causes, and influenza infections are unlikely to have played a role in this excess as indicators have been showing decreasing and low influenza activity recently. The recent decrease in death registrations, followed by a sharp increase is likely to be due to closures of registry offices over the bank holidays along with the unusually cold weather and/or other winter-related disease or events. HPA is further investigating this observed excess.

Figure 11: Estimated weekly all-cause death registrations in England and Wales, 2009/10 season

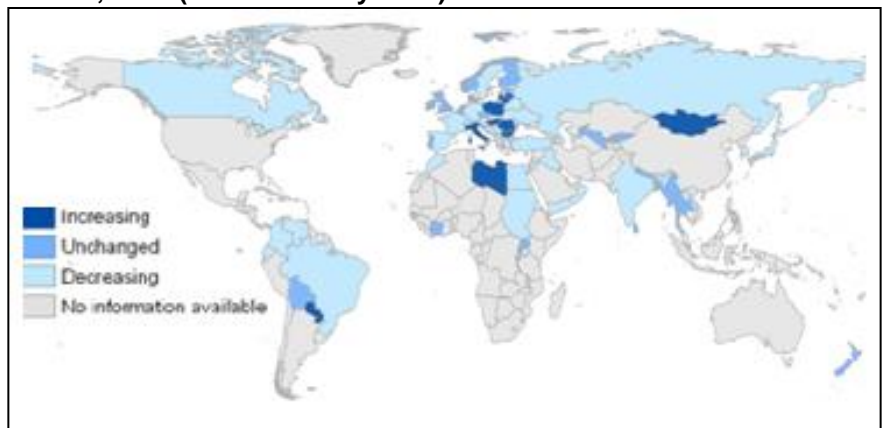


International Situation

WHO reported on 22 January:

- The overall situation is similar to last week. The most intense areas of pandemic influenza virus transmission continue to be in parts of North Africa, South Asia, and limited areas of Eastern Europe.
- **North Africa:** limited data suggest pandemic influenza transmission remains active throughout the region, but is likely to have recently peaked in most places. Only Libya reported an increasing trend in respiratory diseases activity.
- **South Asia:** northern and western parts continue to experience active transmission, but overall activity has recently peaked. Transmission persists in Nepal, though following continuous increases since late October 2009, activity was unchanged compared to last week.
- **West Asia:** limited data suggest that the pandemic virus continues to circulate widely, however overall activity is declining in most places.
- **East Asia:** although widespread, activity continues to decline in most places. Rates of ILI in Mongolia remain elevated above seasonal levels. In Japan, overall influenza activity continues to decline, although regional increases were observed in late December. Activity remains widespread but continues to decline in China, Hong Kong SAR (China) and Chinese Taipei.
- **Americas:** overall pandemic influenza activity continued to decline or remained low in tropical and northern temperate zones.
- **Temperate southern hemisphere region:** sporadic cases of pandemic influenza continue to be reported without evidence of sustained community transmission.

**Figure 12: Trend of respiratory diseases activity compared with the previous week:
Week 1, 2010 (4 – 10 January 2010)**



Europe: As of week 2 (11 – 17 January 2010), clinical respiratory disease activity had been declining over the previous three weeks in 11 countries in the WHO European Region. All six countries with established baselines reported ILI/ARI rates below their baseline level. Five countries (Croatia, Georgia, Greece, Israel and the Republic of Moldova) reported widespread activity, but of low or medium intensity. Albania, Kyrgyzstan, Malta, the Republic of Moldova and Romania reported the impact of influenza on health services to be moderate. Reports of respiratory hospitalizations and deaths generally indicate a declining trend. The number of hospitalisations for severe acute respiratory infection (SARI) is decreasing in Albania, Kyrgyzstan, the Republic of Moldova, Slovakia and Ukraine. Romania and Uzbekistan reported more variable numbers of SARI hospitalizations, with a peak for Uzbekistan in the previous week. In the period 14–21 January, there were 330 deaths associated with laboratory-confirmed pandemic (H1N1) 2009 in 22 countries in Europe, raising the total from 3100 to 3430.

Source: EuroFlu Weekly Electronic Bulletin, week 53 http://www.euroflu.org/cgi-files/bulletin_v2.cgi

VIROLOGY

Circulating strains: Pandemic influenza A(H1N1) 2009 virus continues to be the predominant circulating influenza virus in all countries where influenza is reported, accounting for 73% of all influenza detections worldwide in the week 3 – 9 January 2010 (compared to 82% reported in the previous week). Sporadic detections of seasonal A (H1N1), A (H3N2) and influenza B viruses were reported from a few countries. Of other influenza viruses detected worldwide during this week 18.3% were Influenza B, and increase from last week (10.9%). The majority of global seasonal influenza detections were reported by China where increased influenza B detections were observed relative to previous weeks. In Europe, pandemic (H1N1) influenza virus accounted for 96% of all influenza A detections in week 2 (11 – 17 January 2010), compared to 98% reported in the previous week.

Resistance: Worldwide, more than 15,000 clinical specimens (samples and isolates) of the pandemic H1N1 virus have been tested and found to be sensitive to oseltamivir. Two hundred and six isolates of oseltamivir resistant influenza virus have been reported to the WHO, all of which carry the same H275Y mutation that

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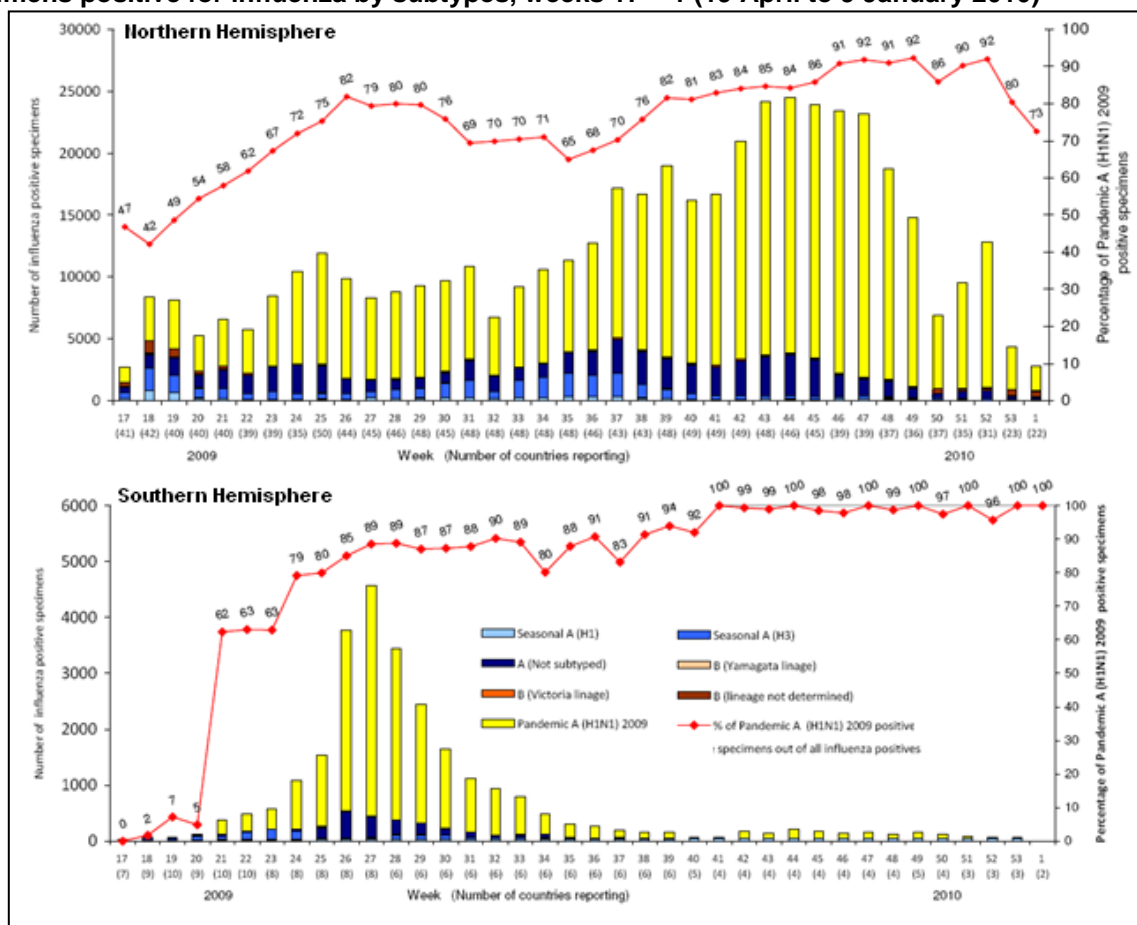
confers resistance to the antiviral oseltamivir but not to the antiviral zanamivir. In Europe, 40 of a total of 1974 cases tested have been resistant to oseltamivir.

Viral characterisation: All pandemic A (H1N1) 2009 influenza viruses analysed by WHO collaborating centres to date appear to be antigenically and genetically closely related to the vaccine virus A/California/7/2009. The pandemic (H1N1) 2009 viruses with D222G substitution have also been found to be antigenically indistinguishable from the A/California/7/2009 (H1N1) vaccine virus.

Most of seasonal A (H1N1) viruses tested have been antigenically and genetically closely related to the A/Brisbane/59/2007 vaccine virus. Seasonal A (H3N2) viruses have mostly been antigenically and genetically closely related to A/Perth/16/2009 -like viruses (WHO recommended virus for 2010 Southern Hemisphere vaccine). Influenza B viruses have predominantly been of the B/Victoria-lineage with the majority antigenically and genetically closely related to the vaccine virus B/Brisbane/60/2008. (WHO recommended virus for 2010 Southern Hemisphere vaccine).

Source: WHO http://www.who.int/csr/disease/swineflu/laboratory22_01_2010/en/index.html

Figure 12: Circulation of influenza viruses in the northern and southern hemispheres: number of specimens positive for influenza by subtypes, weeks 17 – 1 (19 April to 9 January 2010)



Confirmed global deaths

As of 17 January 2010, worldwide more than 209 countries and overseas territories or communities have reported laboratory confirmed cases of pandemic influenza H1N1 2009, including at least 14,142 deaths. This is an increase of 4% compared to the previous week (13,554 deaths reported as of 10 January 2010).

Source WHO http://www.who.int/csr/don/2010_01_22/en/index.html

Acknowledgements

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