

Summary

- Pandemic influenza activity is variable across the UK.
- In week 47 (ending 22 November), the weekly influenza/ILI consultation rate increased slightly in England while it decreased or remained stable in Scotland, Wales and Northern Ireland.
- 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. The number of assessments and antiviral collections through this service have increased slightly over the past week.
- Interpretation of data to produce estimates on the number of new cases continues to be subject to a considerable amount of uncertainty with the move to the National Pandemic Flu Service (NPFS). HPA modelling gives an estimate of 46,000 (range 23,000 – 99,000) new cases in England in week 47. The estimated number of new cases has decreased in most regions and age groups.
- 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. Twenty-two of 3732 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. Possible person-person transmission of resistant virus has occurred in an outbreak on a hospital ward.
- The majority of pandemic influenza cases continue to be mild. The cumulative number of deaths reported due to pandemic (H1N1) 2009 in the UK is 240. There was a total of 1463 new patients hospitalised in England with suspected pandemic influenza in the week from 19 November to 25 November, a decrease from 1483 in the previous week. The hospitalisation rates have increased in the under 5-year age group, but have decreased in most other age groups recently.
- The UK pandemic influenza vaccination programme continues in people at high risk for severe disease and health-care workers. For further information see the [Department of Health website](#).
- According to the European Centre for Disease Prevention and Control, by 25 November, 7909 deaths due to pandemic influenza had been reported globally. According to the World Health Organisation (20 November), influenza activity continues to intensify across parts of North America and much of Europe, however there are signs that the disease may have peaked in some areas of the Northern hemisphere. Virus mutations have been detected in Norway in two fatal cases and one severe case but investigations suggest that the mutation is not widespread. Canada has withdrawn a batch of pandemic vaccine due to higher than expected adverse reactions

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 considered by NPFS and will always be referred to the health service. NPFS is currently not operational in Northern Ireland, Scotland and Wales.

In week 47, the weekly influenza/ILI consultation rate increased slightly in England while it decreased or remained stable in Scotland, Wales and Northern Ireland (table 1, figures 1 and 2).

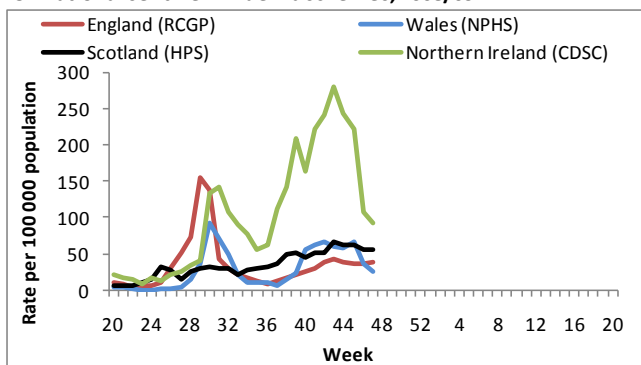
The overall RCGP (England and Wales) ILI consultation rate increased slightly to 39.2 per 100,000, which remains above the winter baseline activity threshold of 30 per 100,000. The rate has decreased in the north and central regions, but has increased in the south.

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

Week Number	Clinical rate per 100,000				
	Baseline	01-Nov	08-Nov	15-Nov	22-Nov
RCGP (E & W)	30	37.7	36	35.9	39.2
RCGP North	30	23.04	36.8	25.8	20.0
RCGP Central	30	43.39	43.7	48.0	45.5
RCGP South	30	39.35	29.3	31.4	42.4
Northern Ireland	70*	242.9	221	106.5	91.9
Scotland	50	62	61.6	56.1	55.4
Wales	25	59	65.8	37	25.2
QSurveillance® (UK**)	N/A	48.5	47.2	48.4	50.5

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

Figure 1: GP weekly consultation rates for influenza/ILI in the UK national sentinel influenza schemes, 2008/09.

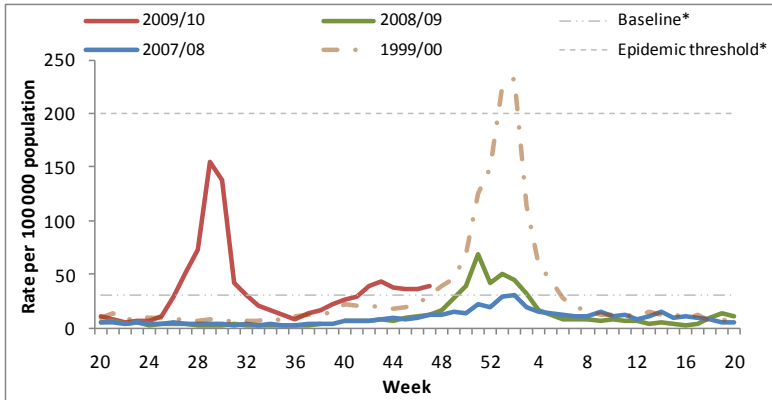


The combined influenza/ILI rate in Northern Ireland has decreased but is still above the newly defined provisional threshold of 70 per 100,000. The ILI rate in Scotland has decreased slightly but is still above the baseline threshold of 50 per 100,000. The Welsh influenza rate has decreased to 25 per 100,000 which is the baseline threshold. The weekly ILI QSurveillance rate increased slightly; thresholds have not yet been set.

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



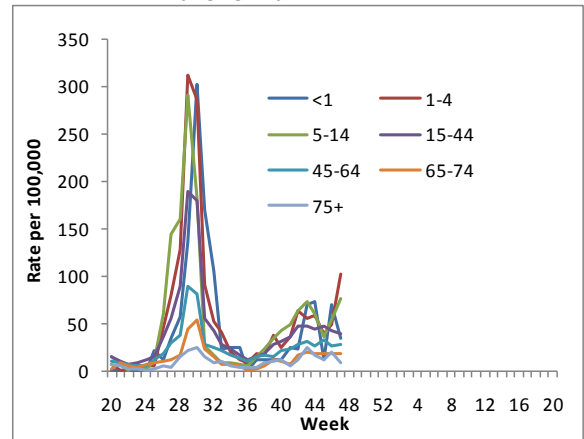
*Baseline threshold: under 30 per 100,000; Epidemic threshold: over 200 per 100,000

decreased in most age groups; the largest decrease in the 35-44 year-olds (from 55.1 to 31.8 per 100,000). The highest Welsh rates continue to be in children and young adults. In Northern Ireland the rates decreased in most age groups. The highest age-specific rate remained in the 1-4 year-olds (decreased from 196.7 to 192.1 per 100,000), followed by the <1 year group (136.3 per 100,000) and 5-14 year group (120.2 per 100,000). In Scotland, the rates decreased in many age groups. The highest rates were in children aged <1 year (257.7 per 100,000), 1-4 years (239.2 per 100,000) and 5-14 years (79.6 per 100,000).

For further information on the different schemes, including why differences are seen between the four countries, please see [Interpreting the HPA National Weekly report](#).

The consultation rates in the RCGP scheme have increased in most age groups; the largest increase, and highest rate was in the 1-4 year group (increasing from 47.9 to 101.9 per 100,000). Rates also increased in most age groups in the QSurveillance® scheme with the rate in the 1-4 year group increasing from 91 to 118.2 per 100,000, the <1 year group increasing from 75.7 to 94.7 per 100,000 and the 5-14 year group increasing from 72.4 to 79.8 per 100,000. In Wales, the rates

Figure 3: RCGP weekly consultation rate for influenza like illness 2008/09, by age group.



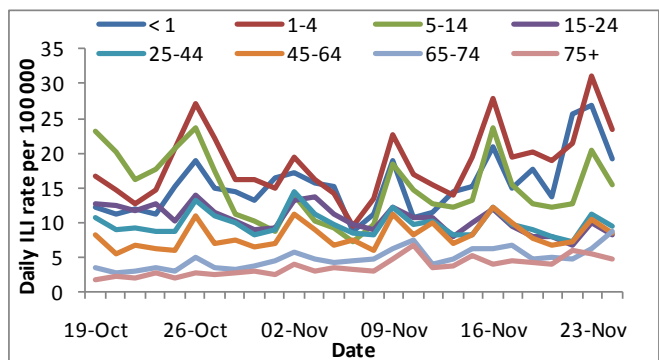
Enhanced Daily & Weekly Syndromic Surveillance (<http://www.hpa.org.uk/hpr/infections/primarycare.htm>)

QSurveillance®

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

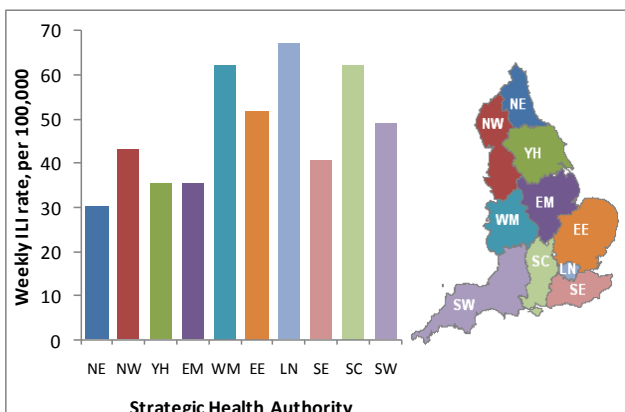
The daily GP ILI consultation rate on Tuesday 24 November was 9.9 per 100,000, which is slightly decreased from 10.1 seven days previously on 17 November. The highest rates are still in children; 1-4 year-olds (23.3 per 100,000), <1 year-olds (19.1 per 100,000) and 5-14 year-olds (15.3 per 100,000) (figure 4).

Figure 4: Daily consultation rates for influenza-like illness from QSurveillance®, October-November 2009, by age group



*based on data from 43% of England's populations, 10% of the population in Wales, 17% in Northern Ireland and 0% in Scotland; NB there was a technical problem with some data recorded on 11 November so it should be interpreted with caution.

Figure 5: Weekly consultation rates for influenza-like illness from QSurveillance®, Week 47 (ending 22 November 09) by Strategic Health Authority.



Daily rates in all English SHAs are at levels equivalent to estimated rates when 'normal seasonal influenza' is circulating. The highest weekly rates are now in the West Midlands, London and South Central SHAs (figure 5).

Daily consultation rates for pneumonia from QSurveillance® are at similar levels to previous weeks and are within expected levels for this time of year.

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National Pandemic Flu Service (NPFS)

[The National Pandemic Flu Service \(NPFS\)](#) became operational in England at 15.00 on 23 July 2009. In the last week, the number of collections of antivirals have increased slightly; a 5% increase was observed from week 46 to 47, compared to a 6% decrease the previous week (figure 6).

An increase was observed in the southern and central regions while decreases were observed in the north (figure 7). Children and young adults continue to have the highest rates of collection, and the rates in the 1-4 and 5-14 year-olds have increased (figure 8).

Figure 7: Weekly rate (per 100,000) of antivirals collected, through NPFS, by SHA

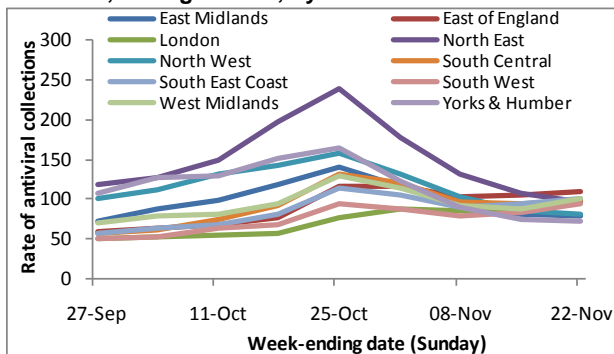


Figure 6: Weekly number of assessments and antivirals collected, through NPFS (England).

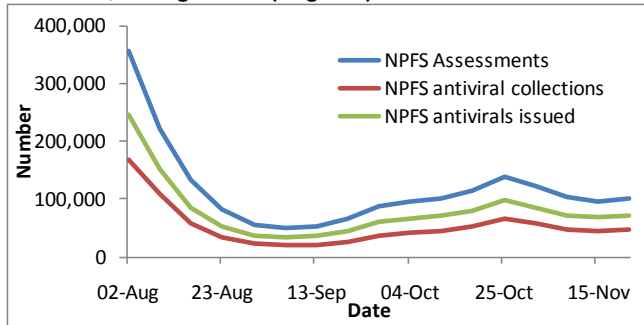
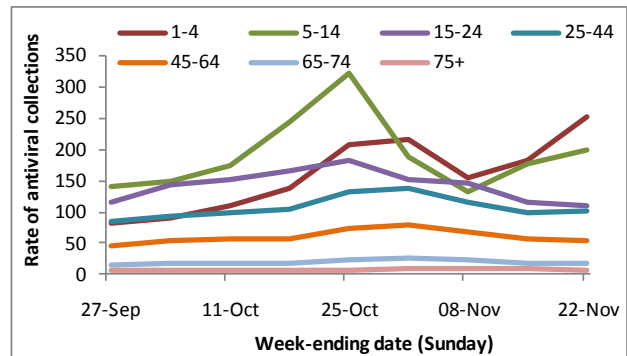


Figure 8: Weekly rate (per 100,000) of antivirals collected, through NPFS, by age group.



Modelling by the Health Protection Agency

The number of pandemic influenza (H1N1) 2009 cases is estimated using a statistical model. The model relies on data from various surveillance systems and studies. The key surveillance systems that are used consist of the primary care based Q Surveillance@ scheme, the RCGP and HPA Regional Microbiology Network sentinel surveillance scheme and latterly data from the NPFS. To provide an estimate of the number of pandemic cases that present to their GP the estimated number of primary care attendances with influenza like illness is multiplied by the positivity rates from testing within sentinel GP schemes. To estimate the number of pandemic (H1N1) 2009 that present to NPFS, the number of NPFS antiviral collections are multiplied by positivity rates from testing from people contacting NPFS. To provide an overall estimate of number of cases in the population, these two estimates are combined and scaled up to allow for a range of 30% to 70% of pandemic (H1N1) 2009 cases contacting either NPFS or a GP. Further details on the methodology used can be found on the [HPA website](#).

In week 47, 46,000 new cases are estimated to have occurred (range 23,000 – 99,000), a decrease from 53,000 (26,000 – 114,000) in week 46. The rates have decreased or remained stable in most regions and age groups, with the highest rate remaining in the 5-14 year-olds.

It should be noted that these estimates are subject to a considerable amount of uncertainty.

Outbreaks

In England, in week 47, 44 school outbreaks of influenza-like illness were reported; 39 day schools (24 primary, two middle, two secondary and eight special schools) and five boarding schools (one primary, one middle, two secondary, one two other school). This is an increase from 26 outbreaks reported in week 46.

Microbiological surveillance

The predominant influenza strain circulating is still the pandemic H1N1 2009. Other circulating respiratory pathogens such as RSV are at levels expected for the time of year (table 2). In the last two weeks, 14 other (non-influenza) viruses have been detected through the HPA/RMN GP-based sentinel surveillance scheme; four rhinovirus, one parainfluenza, three enterovirus, three adenovirus, two hMPV, one bocavirus.

Seven seasonal influenza A (H3) viruses received between 01 September and 11 October have been characterised at the Respiratory Virus Unit (RVU), 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).

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

Week	44	45	46	47
Week-ending	01-Nov	08-Nov	15-Nov	22-Nov
Adenovirus	46	46	39	34
Parainfluenza	55	35	39	35
Rhinovirus	207	102	122	184
RSV	106	115	198	311

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

Country	Number of lab-confirmed cases
England	17,584
Northern Ireland	1,303
Scotland	5,638
Wales	617
Total UK	25,142

There have now been 25,142 laboratory confirmed cases of pandemic (H1N1) 2009 in the UK since the beginning of the pandemic (table 3). There has been a decrease in the number of laboratory confirmed cases since the UK went to treatment only phase on 02 July.

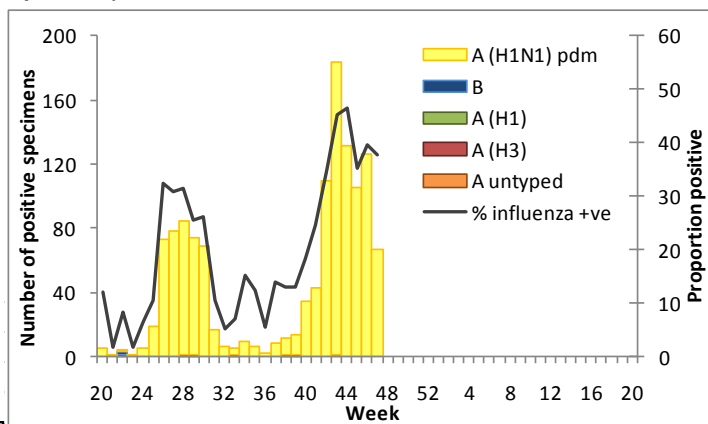
In addition, there have been 613 cumulative confirmed cases reported from the UK Overseas Territories and Crown Dependencies: Anguilla (14), Bermuda (10), British Virgin Islands (15), Cayman Islands (105 – and one death), The Falklands (7 – and one death), Gibraltar (35), Guernsey (17), Isle of Man (75), Jersey (234), Sovereign Base Area Cyprus (58), Turks and Caicos Islands (43).

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

The proportions positive for pandemic influenza through the English GP-based schemes decreased in week 47 (table 5, figure 9), though increased slightly in the NPFS scheme due to the inclusion of the younger age group (5-15 year-olds) from week 46 who have the highest rates (table 4).

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. Proportion positive omitted when fewer than 10 specimens reported; data for the most recent weeks are subject to change due to reporting lag.

Table 4: Total number of samples tested and positive for pandemic influenza A (H1N1) 2009 from English sentinel virological scheme for latest four weeks, by age group.

Age Group	England (GP)			England (NPFS)		
	Total tested	Pandemic n	%	Total tested	Pandemic n	%
<5	171	61	35.7	-	-	-
5-14	207	130	62.8	241	123	51.0
15-24	182	84	46.2	308	100	32.5
25-44	310	111	35.8	1002	300	29.9
45-56	153	39	25.5	588	128	21.8
65+	53	3	5.7	72	8	11.1

NB. Children aged under 5 are currently not sampled through the NPFS scheme; sampling of 5-15 year-olds started in week 46.

The positivity rates decreased in Wales and Northern Ireland, though have increased slightly in Scotland (table 5). 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'](#).

Table 5: Total number of samples tested and positive for pandemic influenza A (H1N1) 2009 from virological sentinel schemes in England (GP and NHS Direct/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	%
38	84	10	11.9	681	64	9.4	4	1	25.0	193	48	24.9	31	12	38.7
39	109	13	11.9	422	30	7.1	8	2	25.0	312	78	25.0	53	18	34.0
40	185	34	18.4	315	38	12.1	12	2	16.7	324	96	29.6	29	8	27.6
41	174	43	24.7	756	137	18.1	10	4	40.0	410	157	38.3	70	40	57.1
42	311	110	35.4	663	160	24.1	16	9	56.3	404	167	41.3	46	29	63.0
43	407	183	45.0	603	169	28.0	25	14	56.0	437	154	35.2	52	42	80.8
44	284	132	46.5	516	167	32.4	25	10	40.0	446	192	43.0	41	34	82.9
45	299	105	35.1	686	182	26.5	8	2	25.0	508	236	46.5	59	27	45.8
46	318	126	39.6	593	171	28.8	14	4	28.6	495	196	39.6	62	27	43.5
47	177	67	37.9	416	139	33.4	12	3	25.0	333	156	46.8	42	12	28.6

* All data are based on week of specimen, except for Northern Ireland which is by week of report; sampling of 5-15 year-olds through NPFS started in week 46, which will increase the positivity rate.

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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 3,732 pandemic influenza viruses have been analysed for the marker commonly associated with resistance to oseltamivir in seasonal influenza (H275Y); a total of 22 samples have been found to carry this mutation in the UK. Of these 3,732 viruses, 293 have been fully tested for susceptibility; 3 of the 22 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 17 cases, all of whom had an underlying medical condition: 14 were immunosuppressed and three had chronic respiratory or neurological illnesses. Testing of samples, taken before and after treatment with oseltamivir, show that the antiviral resistance in 14 of the cases was treatment-induced, four are probably acquired through person to person transmission, and in four cases the origin of the resistant virus is still under investigation. Six of the cases are linked to an outbreak on the same hospital ward, with four of the six cases acquiring the resistant virus probably through person-to-person transmission. All four cases, who had probable person to person transmission, were immunosuppressed inpatients. The incident is still under investigation. Pandemic influenza samples have been tested for resistance from all regions and age groups in the UK (tables 6 and 7).

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	147	3	8	1	0%
1-4	280	10	11	1	1.03%
5-14	820	127	62	27	0%
15-44	1394	273	118	16	0.30%
45-64	474	47	26	4	1.92%
65-74	59	2	3	0	4.92%
75+	25	1	2	0	4%
Unknown	65	6	13	1	0%
Total	3264	469	243	50	0.59%

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

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	87	28	21	3	1%
East Midlands	288	24	11	4	0.32%
London	239	204	47	19	0.45%
North East	100	16	7	1	1%
North West	478	17	17	1	0.81%
South East	150	46	54	10	0%
South West	444	22	6	1	0%
West Midlands	124	72	42	7	0.51%
Yorkshire and Humber	529	21	15	1	0%
Ireland	8	0	7	0	0%
Northern Ireland	39	0	0	0	0%
Scotland	643	8	14	1	0.61%
Wales	40	0	0	0	15%
Unknown Region	95	11	2	2	0%
Total	3264	469	243	50	0.59%

NB: figures may fluctuate due to de-duplication and correction of 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.

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 15 November 09.

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	2067	93	374	82
<i>S. pneumoniae</i>	1553	89	1524*	94*
<i>H. influenzae</i>	5012	98	4586	91

* *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.

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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 15 November 2009. Over 89% of all isolates of the three organisms are susceptible to tetracyclines (table 8).

Disease severity and mortality data

Disease severity continues to be monitored. HPA receives data on hospitalisation and deaths due to pandemic influenza in England from the Department of Health, and from the relevant bodies in Scotland, Wales and Northern Ireland.

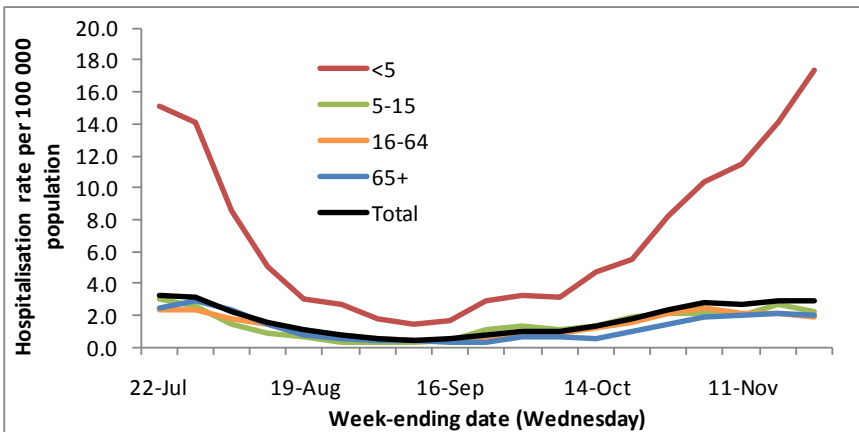
In England, on 18 November there were 753 hospitalised patients with suspected pandemic influenza, which is similar to 783 seven days previously. Of the 753, 154 (20%) were in intensive care and 231 were newly hospitalised in the 24

Table 9: Inpatients with suspected pandemic influenza in England, up to 25 November 2009.

Patients hospitalised	Number (rate per 100,000* population)				
	<5	5-15	16-64	65+	Total
Currently as at 8am 25 Nov	172 (5.8)	67 (1)	429 (1.3)	85 (1.1)	753 (1.5)
Currently in ICU (8am 25 Nov)	11 (0.4)	7 (0.1)	120 (0.4)	16 (0.2)	154 (0.3)
New in 24 hrs up to 8am 25 Nov	76 (2.6)	27 (0.4)	105 (0.3)	23 (0.3)	231 (0.5)
New in week 05 Nov - 11 Nov	341 (11.5)	133 (2.0)	720 (2.2)	161 (2.0)	1355 (2.7)
New in week 12 Nov - 18 Nov	415 (14.0)	180 (2.7)	719 (2.2)	169 (2.1)	1483 (2.9)
New in week 19 Nov - 25 Nov	513 (17.4)	152 (2.3)	634 (1.9)	164 (2)	1463 (2.9)

hours up to 8am. In the week from Thursday 19 November to Wednesday 25 November, 1463 new patients were hospitalised with suspected pandemic influenza corresponding to a rate of 2.9 per 100,000 population, which is no change from the previous week (table 9).

Figure 10: Weekly (up to 8am Wednesday) rates (per 100,000) of new admissions to hospital with suspected pandemic influenza in all English NHS trusts, by age group.



The highest hospitalisation rate has consistently been in those aged under 5 years; the weekly rate has increased in this age group recently while decreasing in other age groups (figure 10). It should be noted that the hospitalisations are current, not cumulative, and are for suspected pandemic influenza rather than virologically confirmed infection. Historical data for hospitalisation for influenza-like illness are not available for comparison.

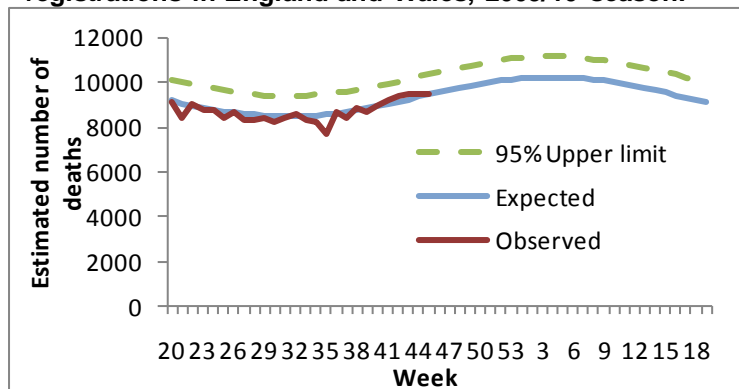
In Scotland there have been 1,104 cumulative hospitalisations of patients with confirmed pandemic influenza, 411 in Wales and 558 in Northern Ireland.

Two hundred forty deaths (163 in England, 41 in Scotland, 13 in Northern Ireland and 23 in Wales) have been reported across the UK in people with pandemic H1N1 infection.

HPA receives weekly death registrations from the Office for National Statistics. In week 46/09, an estimated 9451 all-cause deaths were registered, which is a slight decrease compared to 9491 in week 45/09 (figure 11).

The weekly number is in the expected range for this time of year and no excess all-cause death registrations have been observed since February 2009. It should be noted that these deaths are due to all causes, so any excess cannot necessarily be attributed to influenza.

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



International Situation

WHO reported on 20 November that for:

- **Temperate northern hemisphere regions:** The situation remains similar since the last update. The early arriving winter influenza season continues to intensify across parts of North America and much of Europe. However, there are early signs of a peak in disease activity in some areas of the northern hemisphere.
 - In the United States, influenza transmission remains active and geographically widespread, although disease activity appears to have recently peaked in most areas except in the north eastern states. In Canada, influenza transmission continues to intensify without a clear peak in activity; the influenza-like-illness (ILI) consultation rate, which has been highest among children aged 5-19, continues to significantly exceed mean rates observed over the past 12 influenza seasons.
 - In Europe, widespread and increasing transmission of pandemic influenza virus was observed across much of the continent but the most intense circulation of virus occurred in northern, eastern, and south-eastern Europe. Transmission appears to have peaked in a few countries of Western Europe including Iceland, Ireland, and Belgium after a period of sustained intense transmission. Further east, sharp increases in the rates of ILI were reported in Serbia, Moldova, Norway, Lithuania, and Georgia, and in acute respiratory illness (ARI) in Belarus, Bulgaria, Romania, and Ukraine. A moderate or greater impact on the healthcare system was reported in parts of northern and south-eastern Europe. Greater than 20% of all sentinel respiratory specimens tested positive for influenza in at least 20 countries, with $\geq 50\%$ of samples testing positive for influenza in Spain, Portugal, Estonia, Slovenia, Slovakia, Moldova, Bosnia and Herzegovina, Greece, Norway, Finland, Denmark, Belgium, Iceland, and Ireland. Over 99% of subtyped influenza A viruses in the European region were pandemic H1N1 2009.
- **Temperate southern hemisphere region:** very little pandemic activity reported
- **Central and western Asia:** increasing disease activity and pandemic influenza virus isolation continues to be reported in several countries. A high intensity of respiratory diseases with an increasing trend was reported in Kazakhstan. Recent increases in rates of ILI or ARI have been observed in Uzbekistan and in parts of Afghanistan (particularly in the capital region and in southern and north-eastern provinces). In Israel, sharp increases in rates of ILI and pandemic virus detections have been reported in recent weeks.
- **East Asia:** influenza transmission remains active. Intense influenza activity continues to be observed in Mongolia with a severe impact on the healthcare system; however, disease activity may have recently peaked in the past 1-2 weeks. In Japan, influenza activity remains elevated but stable nationally, and may be decreasing slightly in populated urban areas. A small number of seasonal H3N2 and H1N1 influenza viruses continue to be detected in China and South East Asia, though the proportion of seasonal viruses is declining in relation to the proportion of pandemic influenza H1N1.
- **Tropical regions:** the intensity of influenza transmission is variable in tropical regions of the Americas and Asia. Most countries of the tropical regions of Central and South America continue to report declining influenza activity, with the exception of Peru and Colombia. In the Caribbean Epidemiology Centre (CAREC) countries, after a recent peak of disease activity, rates of ARI have declined over the past 3-4 weeks. With the exception of Sri Lanka, overall transmission continues to decline in most parts of tropical South and South East Asia. In Hong Kong SAR, rates of ILI have returned to baseline after a recent wave of predominantly pandemic H1N1 influenza in September and October.

Virology

Pandemic (H1N1) influenza virus continues to be the predominant circulating influenza virus, accounting for 79.1% of all influenza detections worldwide in week 45 (1-7 November 09) (compared to 80% reported last week). Other influenza viruses detected worldwide included: influenza A H3 (0.1%), seasonal A H1 (0.3%), A not subtyped (20.1%), and B (0.5%). All pandemic H1N1 2009 influenza viruses analysed to date have been antigenically and genetically similar to A/California/7/2009-like pandemic H1N1 2009 virus. Worldwide, more than 10,000 clinical specimens (samples and isolates) of the pandemic H1N1 virus have been tested and found to be sensitive to oseltamivir. Fifty-seven isolates of oseltamivir resistant influenza virus have been reported to the WHO, all of which carry the same H275Y mutation that confers resistance to the antiviral oseltamivir but not to the antiviral zanamivir.

Source: WHO http://www.who.int/csr/don/2009_11_20a/en/index.html

Public health significance of virus mutation detected in Norway and other countries

On 20 November 2009, the Norwegian Institute of Public Health informed WHO of a mutation detected in three H1N1 viruses isolated from their first two fatal cases of pandemic influenza and one case with severe illness. Further investigation suggests that this mutation is not widespread in Norway, but it has also been

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observed in cases from several other countries: Brazil, China, Japan, Mexico, Ukraine, and the United States. Although information on all these cases is incomplete, several viruses showing the same mutation were detected in fatal cases, and the mutation has also been detected in some mild cases. Worldwide, viruses from numerous fatal cases have not shown the mutation. The public health significance of this finding is thus unclear. The mutations appear to occur sporadically and spontaneously. To date, no links between the small numbers of patients infected with the mutated virus have been found and the mutation does not appear to spread. The significance of the mutation is being assessed by scientists in the WHO network of influenza laboratories. Although further investigation is under way, no evidence currently suggests that these mutations are leading to an unusual increase in the number of H1N1 infections or a greater number of severe or fatal cases. Source: WHO Briefing Note 17:

http://www.who.int/csr/disease/swineflu/notes/briefing_20091120/en/index.html

Confirmed global deaths

The total number of deaths attributed to pandemic influenza has continued to increase. As of 25 November 2009, 7909 deaths have been reported globally, a 10% increase compared to last week (7167 reported on 18 November 2009). Source: ECDC update 25 November 2009:

http://ecdc.europa.eu/en/healthtopics/Documents/091125_Influenza_AH1N1_Situation_Report_0900hrs.pdf

USA

During week 45 (8-14 Nov 2009), influenza activity decreased slightly in the US for the second consecutive week with the decrease seen in all 10 surveillance regions. The proportion of outpatient visits for influenza-like illness (ILI) was 5.5%, a small decrease from last week (6.7%) but still above the national baseline of 2.3%. All 10 regions continued to report ILI above region-specific baseline levels. Forty-three states reported geographically widespread influenza activity, Puerto Rico and seven states reported regional influenza activity, the District of Columbia reported local influenza activity, and Guam and the U.S. Virgin Islands reported sporadic influenza activity.

The proportion of deaths attributed to pneumonia and influenza (7.5%) was above the epidemic threshold (6.9%).

Twenty-one influenza-associated paediatric deaths were reported in week 45, 15 associated with 2009 influenza A (H1N1) and six associated with influenza A with subtype undetermined.

Over 99% of subtyped influenza A viruses being reported to CDC in week 45 were 2009 influenza A (H1N1) viruses. Twenty-one cases of oseltamivir resistant 2009 influenza A(H1N1) have been detected in the US, all of which remained sensitive to zanamivir. Twelve were known to have had oseltamivir prophylaxis or treatment, one patient had no documented oseltamivir exposure, and eight cases are still under investigation.

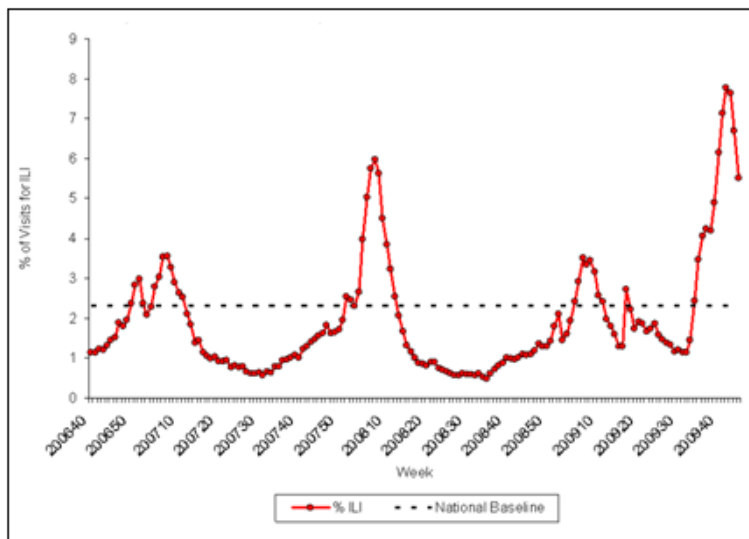
Source: CDC http://www.cdc.gov/flu/weekly/pdf/External_F0945.pdf

Canada

During week 45 (8-14 Nov 2009), the activity level remained similar to the previous week. While the number of hospitalisations and deaths still increased, the proportion of positive influenza tests was comparable and the national ILI consultation rate and the number of influenza outbreaks reported decreased. The national ILI consultation rate was 91 consultations per 1,000, still well above the expected range for the time of year. Seventeen regions reported widespread activity and 374 influenza outbreaks were reported. The number of hospitalisations (1674) and deaths (84) reported in week 45 were higher than the overall number of hospitalisations and deaths for the first wave. A two-fold increase was seen in the number of ICU admissions this week (261) compared to week 44 (163).

On 24 November 2009, GlaxoSmithKline issued a voluntary notice to put on hold a batch of H1N1 vaccine,

Figure 12: Percentage of visits for influenza-like illness (ILI) reported by the U.S. outpatient influenza-like illness surveillance network (ILINet), weekly national summary 1 October 2006 – 14 November 2009



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Arepanrix lot A80CA007A in Canada, following a higher than expected number of allergic reactions. The notice applies to the specified lot only.

Sources: Public Health Agency of Canada http://www.phac-aspc.gc.ca/fluwatch/09-10/w45_09/index-eng.php and GSK press release: http://www.gsk.com/media/GSK-statement-Arepanrix-Canada-Voluntary-Hold-24_11_09.pdf

Ireland

As of week 46 (9-15 Nov 2009), the GP consultation rate for ILI was 134.4 per 100,000 population; a slight decrease compared to the updated rate of 161.9 per 100,000 reported during week 45. The highest sentinel GP age-specific ILI consultation rates occurred in the 0-4 age group where a marked increase was observed. During week 46, the number of laboratory confirmed cases of pandemic influenza H1N1 (2009) decreased sharply, while the number of hospitalised cases decreased by 50% from the previous week.

Source: Health Protection Surveillance Centre:

<http://www.hpsc.ie/hpsc/A-Z/EmergencyPlanning/AvianPandemicInfluenza/SwineInfluenza/Surveillance%20Reports/File.3749.en.pdf>

Other Europe

The pandemic is affecting most countries in the Region, and the intensity is high in 18, especially in children up to the age of 15. During week 46 (13-20 Nov 2009), the intensity of clinical activity was described as very high in Italy (for the first time this season), Norway, the Republic of Moldova, the Russian Federation (Urals region), and Sweden. The impact on health services was described as severe in Albania and the Republic of Moldova.

As of week 46/2009, 17 countries had started vaccination campaigns against pandemic (H1N1) 2009 influenza. Reports of adverse events are fewer than for seasonal influenza vaccination, and most events are mild local or systemic reactions.

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

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