

Summary

- The [National Pandemic Flu Service](#) (NPFS) was launched in England on Thursday 23 July. Antiviral drugs are authorised to people with an influenza-like illness who call or log onto the internet site. In the first week, significant numbers of antivirals were authorised; HPA is working with the Department of Health to analyse this data.
- In week 30 (week ending 26 July), rates decreased slightly in England, though remained high and above baseline thresholds. This is coincident with the introduction of NPFS and the start of the school summer holidays. In Wales and Northern Ireland the rates increased sharply, remaining above the baseline threshold in Wales (thresholds not yet set in NI). The rate in Scotland increased slightly but is still below baseline levels.
- It has been estimated that the overall number of cases in England is still rising, though the rate of increase is slowing; HPA modelling gives an estimate of 110,000 new cases in England in week 30 (range 60,000 – 160,000), compared to an estimated 100,000 in the previous week. A different pattern may be occurring regionally, with the number of cases continuing to increase in the north, while slowing in the south.
- Increases were estimated in the number of cases in all age groups except in the 5-14 year olds. Children and young adults remain those predominately affected.
- 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 through sentinel and non-sentinel surveillance. No antiviral-resistant strains have been detected in the UK.
- 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 31. At 8am on 28 July there were 793 inpatients in hospitals in England with suspected pandemic influenza, of which 268 were newly hospitalised in the previous 24 hours. The highest hospitalisation rate has consistently been in the under 5-year group. Hospitalisation rates have remained stable over the past two weeks.
- According to the European Centre for Disease Prevention and Control (ECDC), by 29 July, 175,785 laboratory confirmed cases of pandemic influenza (H1N1) had been reported globally with 1012 deaths. In week 29, levels of influenza activity were low in most other European countries.

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 under 1, pregnant or with high-risk underlying medical condition). NPFS is likely to have an impact on the proportion of cases that visit their GP, affecting 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 their GP. HPA is working with the Department of Health to analyse this data. NPFS is currently not operational in Northern Ireland, Scotland and Wales.

In week 30 the weekly consultation rates have increased in all GP sentinel schemes across the UK, except the RCGP (England and Wales) scheme (Table 1, Figures 1 and 2).

The overall RCGP consultation rate remains above the threshold of 30 per 100,000, but has decreased from 155.3 per 100,000 to 138.2 per 100,000. The rates have decreased in all three English regions; the highest rate is still in the central region (148.3 per 100,000). The combined influenza/ILI rate in Northern Ireland has increased greatly, from 40.1 per 100,000 to 134 per 100,000 but is lower than peak levels seen in the 2008/09 winter. The ILI rate in Scotland has increased slightly and is higher than normally seen at this time of year but remains below threshold levels. The influenza rate in Wales has almost doubled from week 29 (36 per 100,000) to week 30 (67.5 per 100,000) and remains above the baseline threshold (25 per 100,000). The weekly QSurveillance rate has remained relatively stable at 225.7 per 100,000 in week 30; thresholds have not yet been set.

The highest age-specific consultation rates in the RCGP scheme were in the <1 year group which had increased from 136.3 per 100,000 to 302.6 per 100,000 and in the 1-4 year group which had decreased from 311.1 per 100,000 to 286.7 per 100,000 (figure 3). The largest decrease was seen in the 5-14 year age group (from 290.3 per 100,000 to 182.3 per 100,000). A similar pattern was seen in the QSurveillance scheme. In Wales the highest rate was still in the 15-24 year group (93.7 per 100,000), followed by the 0-4 year age group (91.4 per 100,000). Consistent to what has been seen in England, the lowest Welsh rates were in the older age groups (over 65 year-olds the lowest at 32.3 per 100,000). In Northern Ireland a different pattern was seen, with the highest rates in the 15-44 year-olds (206.6 per 100,000) and the 45-64 year olds (123.1 per 100,000); lower rates were seen in the under 15s and over 65s. Age-specific rates were not available for Scotland.

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

HPA Weekly National Influenza Report

30 July 2009 (Week 31)

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

Scheme / Country	Baseline Threshold (per 100,000)	Clinical rate per 100,000				
		Week 26	Week 27	Week 28	Week 29	Week 30
RCGP (England & Wales)	30	29.6	51.9	73.4	155.3	138.2
RCGP North	30	6.8	6.8	37.2	126.1	117.3
RCGP Central	30	27.7	40.9	93.9	171.9	148.3
RCGP South	30	39.4	77.6	74.9	155.3	138.7
Northern Ireland	N/A	20.5	25.4	34.9	40.1	134
Scotland	50	27	15	25	29.9	33
Wales	25	1.43	5.1	15.8	36	67.5
QSurveillance® (UK*)	N/A	17.4	30.4	86.8	221.4	225.7

* 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.

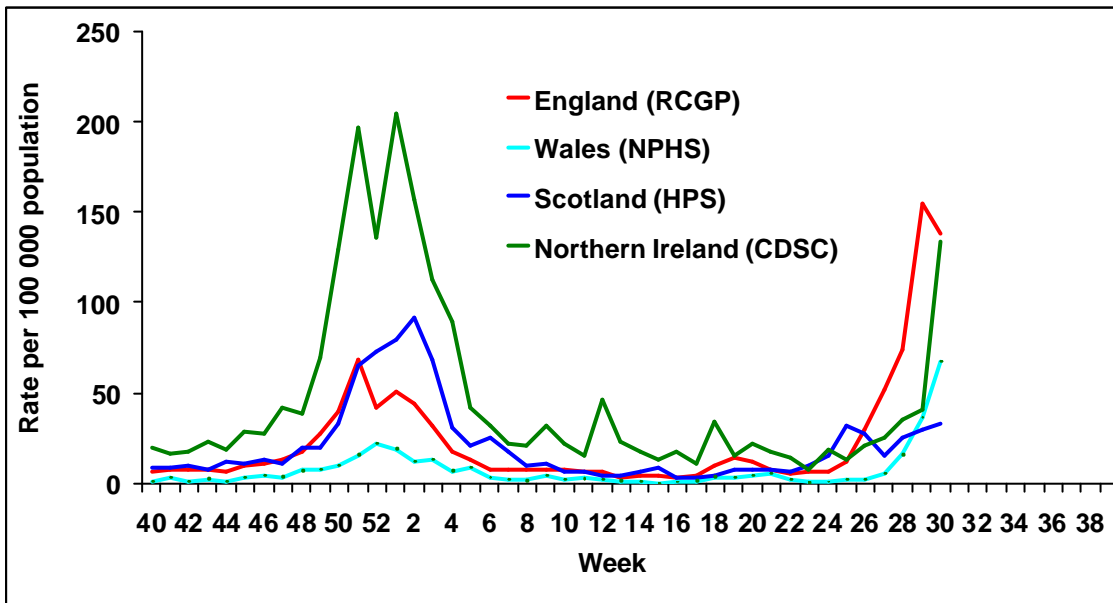
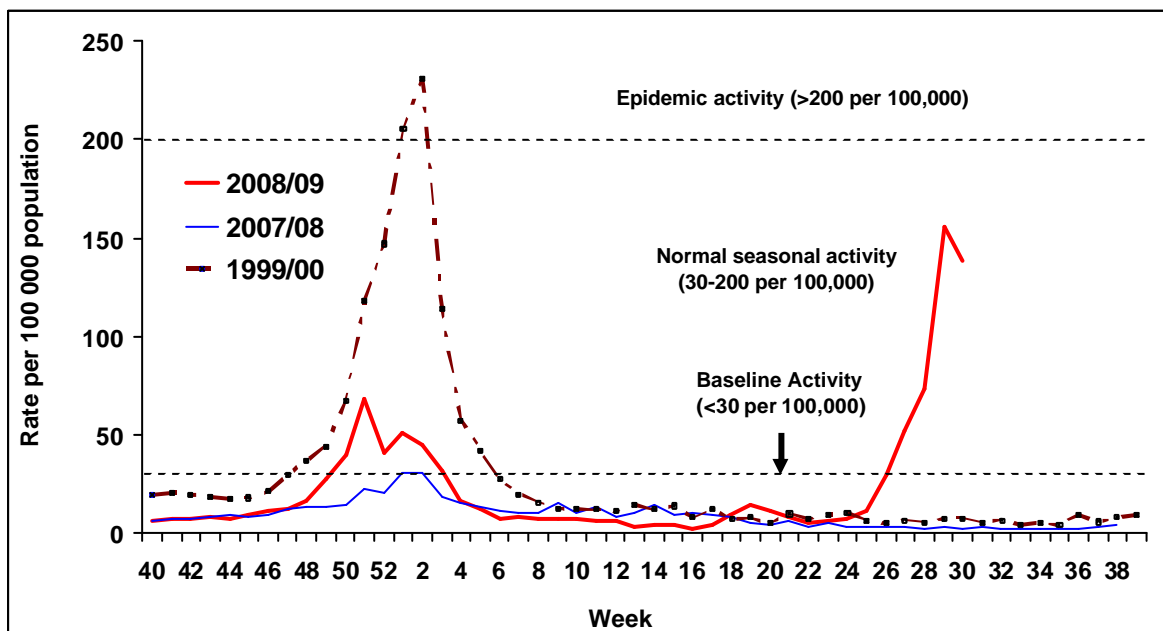


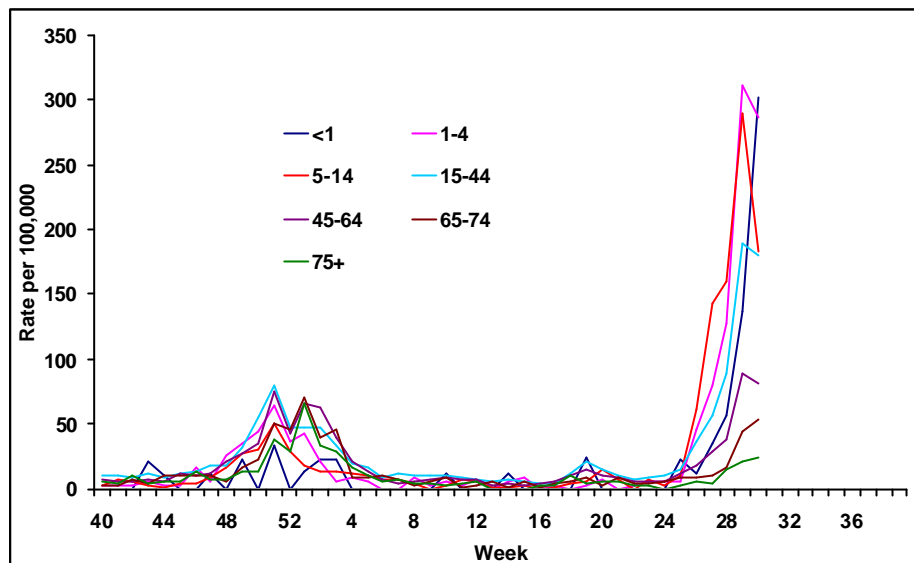
Figure 2: RCGP weekly consultation rate for influenza like illness 2008/09 and recent years.



HPA Weekly National Influenza Report

30 July 2009 (Week 31)

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



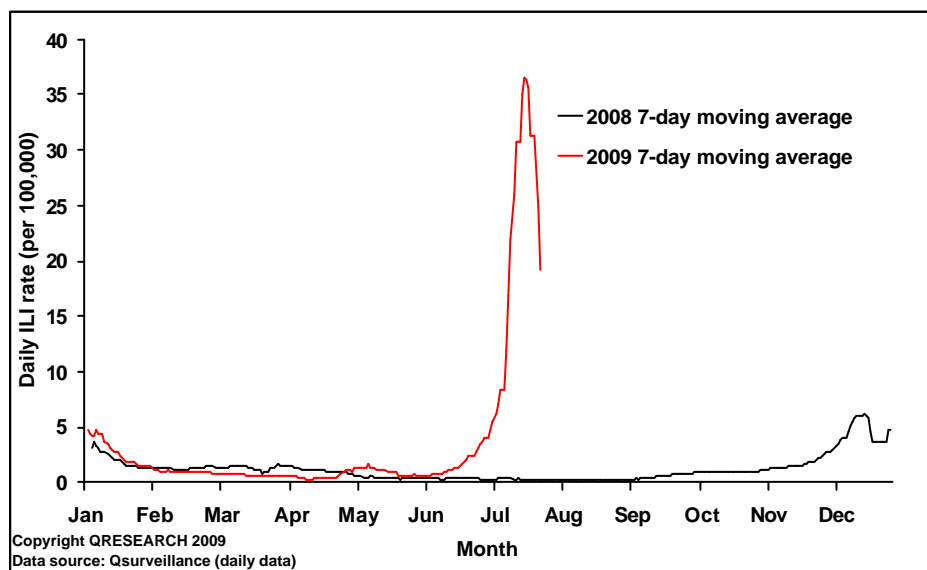
Enhanced Daily Syndromic Surveillance (<http://www.hpa.org.uk/hpr/infections/primarycare.htm>)

QSurveillance®

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

The highest daily GP ILI consultation rate since the start of the outbreak (67 per 100,000) was observed on Monday 20 July, the following Monday the rate was 21.3 per 100,000 and decreased to 15.1 per 100,000 on Tuesday 28 July (figure 4). Rates have correspondingly decreased in all English SHAs; rates in North East, North West, Yorkshire and Humber, London and South Central remain at levels equivalent to estimated weekly rates when there is 'above average seasonal influenza' activity. Daily rates have also decreased in all age groups; the highest rates still in the under-one year (46.5 per 100,000 on 28 July) and 1-4 year (32.1 per 100,000 on 28 July) groups.

Figure 4. QSurveillance® – 7-day moving average daily consultation rate for influenza-like illness in the UK* (all ages) in 2008 and 2009.



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

NHS Direct/HPA Syndromic Surveillance System

The implementation of NPFS on 23 July has affected the number of calls related to cold/flu to NHS Direct. This has made interpretation of this data difficult and it will not be presented here.

HPA Weekly National Influenza Report

30 July 2009 (Week 31)

Modelling by Health Protection Agency

Estimates of number of new cases of pandemic influenza are calculated using a statistical model. This takes into account data from GP consultations, virological positivity rates from GP-based sentinel schemes and a number of assumptions about the proportion of people with an influenza-like illness who will actually visit their GP. Since the launch of the National Pandemic Flu Service additional adjustments had to be made to account for fewer people visiting the GP than in previous weeks. As babies aged under one year are the only age group not considered by NPFS and will always be referred to their GP, comparing changes in consultation rates for under-one year olds from week 29 to 30 to those observed in other age groups enabled a revised assumption for the number of people visiting their GPs to be used.

In week 30, 110,000 new cases are estimated to have occurred (range 60,000 – 160,000). This is an increase from the figure of 100,000 estimated in the previous week (figure 5). The highest number of estimated cases is still in London, though a decrease in the number of new cases in this region was estimated in week 30. Overall, the number of new cases may be continuing to increase in the north, but may be slowing in the south of the country.

The estimated number of cases, along with the corresponding rate per 100,000 population, increased in all age groups except the 5-14 year olds (figure 7). This may be due to the start of the school holidays in recent weeks. The highest estimated rate is in the under one year group, and the lowest in those aged over 65 years.

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

Figure 5: Estimated number of new cases of pandemic influenza in England, by week and SHA, assuming that approximately 30% (range 20-50%) of clinical cases visit their GP.

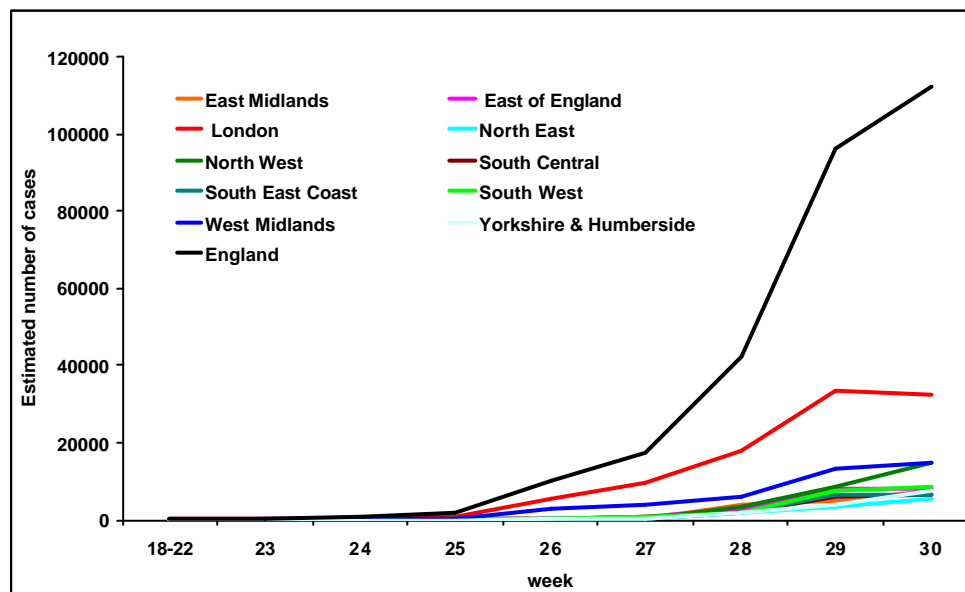
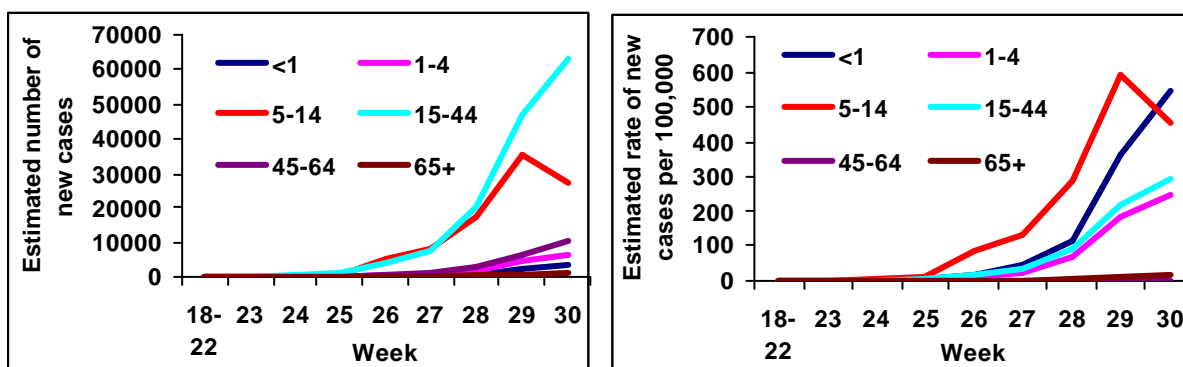


Figure 6: Estimated number and rate per 100,000* of new cases of pandemic influenza in England by age group, assuming approximately 30% (range 20-50%) of clinical cases visit their GP.



* Based on mid-2007 estimates of England population from ONS.

HPA Weekly National Influenza Report

30 July 2009 (Week 31)

Microbiological surveillance

There have now been 11,864 laboratory confirmed cases of pandemic (H1N1) 2009 in the UK since the beginning of the pandemic (Table 2). There has been a decrease in the number of laboratory confirmed cases since the UK went to treatment only phase on 02 July.

Table 2: Cumulative number of laboratory confirmed cases, as of 29 July

Region / Country	Cumulative number of laboratory confirmed cases
England	10,146
Northern Ireland	71
Scotland	1560
Wales	87
Total UK	11,864

In addition, there have been 175 cumulative confirmed cases reported from the UK Overseas Territories and Crown Dependencies: Anguilla (1), Bermuda (1), British Virgin Islands (5), Cayman Islands (60 – and one death), The Falklands (5), Guernsey (17), Isle of Man (6), Jersey (38), Sovereign Base Area Cyprus (30), Turks and Caicos Islands (12).

The main circulating influenza virus remains the pandemic (H1N1) 2009. At the HPA respiratory virus unit (RVU) at the Centre for Infections in week 30, 68 pandemic (H1N1) 2009 influenza viruses were detected along with one influenza A (H3). [Other circulating respiratory pathogens](#) such as RSV are at levels expected for the time of year, with slight elevations in detections likely due to increased testing.

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 NHS Direct; the proportion positive from the two GP schemes combined has increased 39% in week 30 (table 3, figure 8). The proportion positive from the NHS Direct scheme peaked at 19% in week 26 but has been decreasing since (table 3). Overall, the highest positivity rate has been seen in London (table 4). Schemes through primary care are also used in Wales, Scotland and Northern Ireland though few viruses have been detected (table 3). 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 3. Total number of samples tested and positive for pandemic influenza A (H1N1) 2009 from virological sentinel schemes in England (GP-based and NHS Direct), Wales, Scotland and Northern Ireland by week*.

Week	England (GP)			England (NHS D)			Wales (GP)			Scotland (GP)			Northern Ireland** (GP)		
	Total tested	Pandemic n	%	Total tested	Pandemic n	%	Total tested	Pandemic n	%	Total tested	Pandemic n	%	Total tested	Pandemic n	%
18-23	321	9	2.8	207	1	0.5	14	0	0	89	0	0	13	0	0
24	77	6	7.8	342	8	2.3	2	0	0	35	0	0	2	0	0
25	177	22	12.4	384	19	4.9	0	0	0	20	0	0	7	0	0
26	193	67	34.7	242	46	19.0	3	0	0	8	0	0	7	0	0
27	241	75	31.1	413	56	13.6	4	1	25	2	0	0	4	0	0
28	225	74	32.9	204	20	9.8	10	0	0	64	2	3.1	4	1	25.0
29	230	69	30.0	144	9	6.3	12	1	8.3	99	6	6.1	13	1	7.7
30	98	38	38.8	?	?	?	1	0	0.0	21	3	14.3	22	5	22.7

* All data are based on week of specimen, except for Northern Ireland which is by week of report; ** Until week 28 it has not been possible to differentiate between sentinel and non-sentinel pandemic (H1N1) 2009 positive specimens in Northern Ireland.

HPA Weekly National Influenza Report

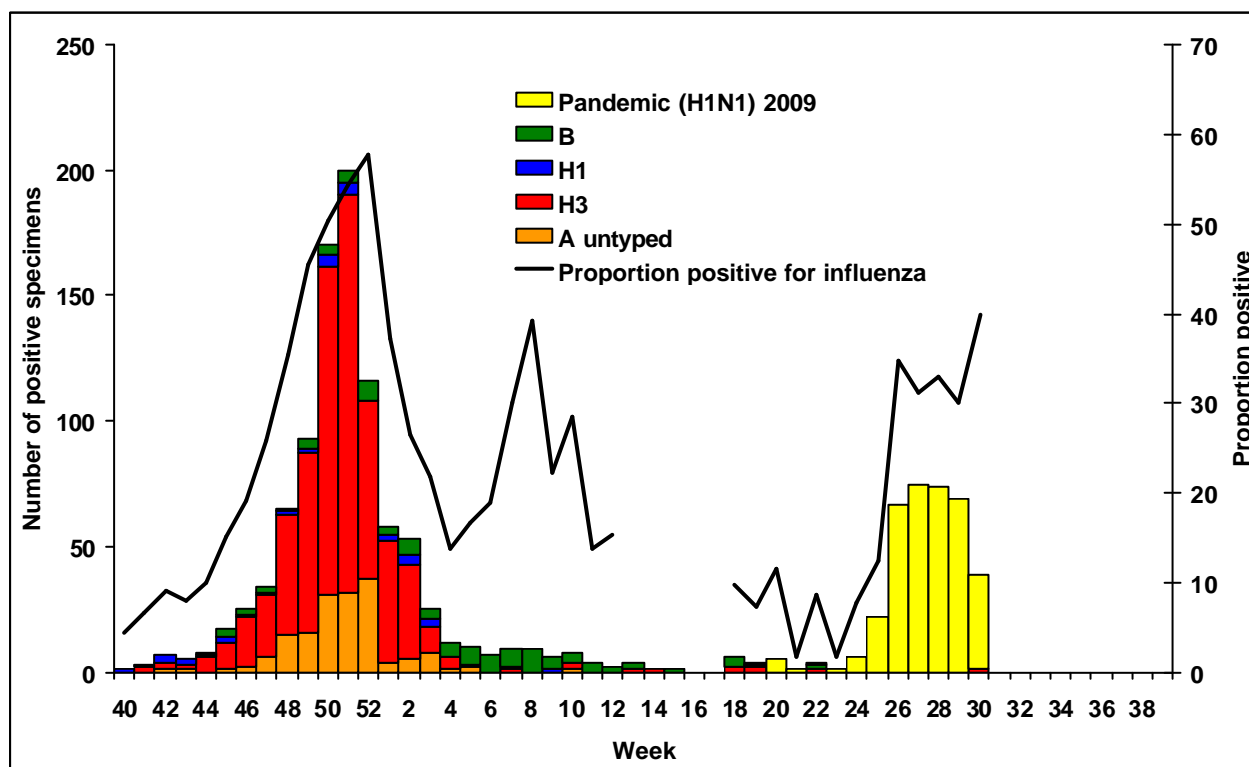
30 July 2009 (Week 31)

Table 4: Sample tested and positive for influenza from three English virological sentinel schemes (two GP schemes combined) by region (cumulative week 18 to 30*).

Region	RCGP/RMN GP schemes					NHS Direct*				
	B	A (H3)	Pandemic N	%	Total tested	B	A (H3)	Pandemic N	%	Total tested
East	0	0	9	6.3	142	0	0	12	5.11	235
East Midlands	1	0	9	9.8	92	1	0	5	3.21	156
London	2	4	252	35.5	710	1	2	56	13.1	427
North East	0	0	2	11.1	18	0	1	3	3.26	92
North West	2	1	12	9.5	126	0	0	4	8.33	48
South East	1	0	19	12.3	155	0	0	23	6.63	347
South West	0	0	8	9.2	87	0	0	6	9.09	66
West Midlands	1	0	47	24.6	191	0	5	45	9.2	489
Yorkshire and Humberside	0	1	2	4.9	41	0	0	5	8.06	62
Unknown region	0	0	0	0.0	0	0	1	0	0	14
Total	7	6	360	23.0	1562	2	9	159	8.21	1936

* Sampling in the NHS Direct scheme from the North West, South West and Yorkshire and Humber commenced in week 27 (week 23 in all other areas).

Figure 8: 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.

Antiviral susceptibility

Testing for antiviral susceptibility is carried out at the Respiratory Virus Unit, Centre for Infections, Colindale (RVU). Five hundred and seventeen viruses have been analysed for the marker commonly associated with resistance to oseltamivir in seasonal influenza (H274Y); none were found to carry this marker. In addition, eighty of these have been fully tested for susceptibility; all 80 were found to be sensitive to oseltamivir and zanamivir (table 5).

HPA Weekly National Influenza Report

30 July 2009 (Week 31)

Table 5: Samples* tested for antiviral susceptibility at RVU, by test method, source and region.

Region	Samples tested for Resistance			Proportion resistant
	Screened for H274Y mutation Hospital	Community**	Fully tested (hospital samples)	
East	20	4	3	0%
East Midlands	5	3	3	0%
London	71	105	19	0%
North East	4	1	2	0%
North West	11	1	0	0%
South East	36	13	16	0%
South West	5	4	3	0%
West Midlands	64	45	6	0%
Yorkshire and Humber	1	1	0	0%
Ireland	7	0	5	0%
Northern Ireland	1	0	0	0%
Scotland	18	5	3	0%
Wales	2	0	0	0%
Total	245	182	60	0%

* Latest data not incorporated – table will be updated when data becomes available.

** Community samples from RCGP and NHS Direct sampling schemes

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*. According to guidelines for clinical management of patients with an influenza-like illness during an influenza pandemic (W S Lim, Thorax 2007;62;1-46) the antibiotics recommended for treating bacterial pneumonia in a primary care setting are co-amoxiclav or a tetracycline (Section 8.1.3 of the guidelines). There have been no significant changes to susceptibility trends for these two antibiotics in recent years and the results of a twelve week analysis (Table 6) show that over 90% of all isolates of the three organisms were susceptible to tetracyclines. There were no appreciable changes in resistant patterns for either tetracyclines or co-amoxiclav in the twelve weeks before 19 July 2009.

Table 6: 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 19 July 09.

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	2144	95	364	76
<i>S. pneumoniae</i>	1571	91	1560*	93*
<i>H. influenzae</i>	5616	99	5242	92

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

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 body in Scotland, Wales and Northern Ireland.

In England, on 28 July there were 793 hospitalised patients with suspected pandemic influenza, of which 76 were in intensive care and 268 were newly hospitalised in the 24 hours up to 8am. In week 30 (the 7 days up to 8am Monday 27 July), 1665 new patients were hospitalised with suspected pandemic influenza (table 7). The highest hospitalisation rate has consistently been in those aged under 5 years, and there has been little change in rates in all age groups over the past two weeks. It should be noted that the hospitalisations are current, not cumulative, and are for suspected pandemic influenza rather than virologically confirmed. Historical data for hospitalisation for influenza-like illness are not available for comparison.

In Scotland there have been 65 cumulative hospitalisations, 23 in Wales and ten in Northern Ireland.

HPA Weekly National Influenza Report

30 July 2009 (Week 31)

Table 7: Current inpatients with suspected pandemic influenza in England, 29 July 2009.

	Number (rate per 100,000* population)				
	<5	5-15	16-64	65+	Total
Patients currently hospitalised (as of 8am 28 July)	127 (4.3)	89 (1.3)	425 (1.3)	152 (1.9)	793 (1.6)
Patients currently in ICU (as of 8am 28 July)	4 (0.1)	3 (0.0)	55 (0.2)	14 (0.2)	76 (0.1)
New patients hospitalised in 24 hours up to 8am 28 July	63 (2.1)	31 (0.5)	133 (0.4)	41 (0.5)	268 (0.5)
New patients hospitalised in week 30 (7 days up to 8am Monday 27 July)	442 (15.0)	195 (2.9)	799 (2.4)	229 (2.8)	1665 (3.3)

Thirty-one deaths (27 in England and four in Scotland) have been reported across the UK in people with suspected pandemic H1N1 infection.

HPA receives weekly death registrations from the Office for National Statistics. In week 29/09, an estimated 8327 all-cause deaths were registered, which is a slight increase compared to 8296 in week 28/09. It should be noted that these deaths are due to all causes and cannot be attributed to influenza. The weekly number is in the expected range for this time of year and no excess deaths have been observed since week 05/09 in February.

International Situation

Global/European update from [ECDC](#) and [WHO](#)

According to ECDC report of 17.00 CEST 29 July 30 of 31 EU/EFTA countries had reported 22,817 cases of laboratory confirmed pandemic (H1N1) 2009 and 37 deaths (UK (30 - not including latest data), Spain (6) and Hungary (1)). Globally 175,785 cases and 1116 deaths were reported. Twenty-two countries (including the UK) have reported over 1000 cases. Globally, four antiviral resistant strains have been confirmed so far (Denmark (1), Japan (2) and Hong Kong (1)).

[United States of America](#)

During week 28 (July 12 - 18 2009), influenza activity decreased in the United States, however, there were still higher levels of influenza-like illness than is normal for this time of year. The proportions of out-patient visits for ILI are below baseline levels. The majority (99%) of all influenza viruses subtypes were pandemic (H1N1) 2009.

[Canada](#)

During week ending July 18 2009 the overall influenza activity level remained high for this time of the year, and increased slightly in the past week. The proportion of influenza positive tested decreased for the fifth consecutive week. The majority of influenza-positive samples are positive for pandemic influenza (98.7%).

[New Zealand](#)

There was a slight decrease in consultations for influenza-like illness through sentinel surveillance in week 30, though the rate remains much higher than in previous years. So far, the highest ILI consultation rates have been reported among children and teenagers aged 0 to 19 years. The pandemic (H1N1) 2009 virus was the predominant strain detected through sentinel (73%) and non-sentinel (77%) surveillance.

Acknowledgements

This report was prepared by Estelle McLean, Joy Field, Hongxin Zhao 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 laboratory at the Centre for Infections, regional microbiology laboratories, QSurveillance, NHS Direct, ONS, the Department of Health, Health Protection Scotland, National Public Health Service (Wales) and CDSC Northern Ireland.

Any queries relating to this report should be directed to respcdsc@hpa.org.uk.

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