

Summary

- Pandemic influenza activity appears to be decreasing across most of the UK, though remains at levels higher than expected at this time of year.
- In week 31 (week ending 02 August), GP consultation rates decreased in England, though remained above baseline thresholds. This is coincident with the introduction of [National Pandemic Flu Service](#) (NPFS) and the start of the school summer holidays. In Wales the rate decreased though was still above the baseline thresholds. In Northern Ireland the rates increased, though not as sharply as in the previous week (thresholds not yet set in NI). The rate in Scotland decreased slightly but is still below baseline levels.
- The NPFS was launched in England on Thursday 23 July. Antiviral drugs are issued to people with an influenza-like illness who call or log onto the internet site. There appears to have been a general decrease in number of assessments over the past week.
- HPA modelling gives an estimate of 30,000 (range 15,000 – 85,000) new cases in England in week 31 compared to an estimated 110,000 cases in the previous week. The estimated number of new cases has decreased in all 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 through sentinel and non-sentinel surveillance. No antiviral-resistant strains have been detected in the UK to date.
- 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 40. There was a total of 1299 new patients hospitalised with suspected pandemic influenza in week 31 (up to 8am Monday 03 August), which is decreased from 1665 in the previous week. The highest hospitalisation rates have consistently been in the under 5-year age group. Hospitalisation rates have decreased over the past week in all age groups.
- According to the European Centre for Disease Prevention and Control (ECDC), by 05 August, 199,034 laboratory confirmed cases of pandemic influenza (H1N1) had been reported globally with 1444 deaths. In week 30, levels of influenza activity were reported to be 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 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 31 the weekly consultation rates have decreased in all GP sentinel schemes across the UK, except in Northern Ireland (Table 1, Figures 1 and 2).

The overall RCGP (England and Wales) consultation rate remains above the threshold of 30 per 100,000, but has decreased from 138.2 per 100,000 to 42.0 per 100,000. The rates have decreased in all three RCGP regions; the highest rate is still in the central region (49.0 per 100,000). The combined influenza/ILI rate in Northern Ireland has increased, though not as sharply as in the previous week and is lower than peak levels seen in the 2008/09 winter. The ILI rate in Scotland has decreased slightly and is higher than normally seen at this time of year but remains below threshold levels. The influenza rate in Wales decreased but remains above the thresholds of 25 per 100,000. The weekly QSurveillance rate decreased dramatically from 225.7 per 100,000 in week 30, to 72.2 per 100,000; thresholds have not yet been set.

The highest age-specific consultation rates in the RCGP scheme were in the <1 year group though it decreased from 302.6 per 100,000 to 170 per 100,000 and in the 1-4 year group which had decreased from 286.7 per 100,000 to 90.9 per 100,000 (figure 3). The largest decrease was seen in the 1-4 year age group. A similar pattern was seen in the QSurveillance scheme. In Wales the highest rate was in the 25-34 (106.9 per 100,000) and 15-24 (100.2 per 100,000) year groups. 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 24.7 per 100,000). In Northern Ireland the highest rates were still in the 15-44 year-olds (199.9 per 100,000) and the 45-64 year olds (138.0 per 100,000). 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](#).

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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 27	Week 28	Week 29	Week 30	Week 31
RCGP (England & Wales)	30	51.9	73.4	155.3	138.2	42
RCGP North	30	6.8	37.2	126.1	117.3	36
RCGP Central	30	40.9	93.9	171.9	148.3	49
RCGP South	30	77.6	74.9	155.3	138.7	39.2
Northern Ireland	N/A	25.4	34.9	40.1	130.4	142.5
Scotland	50	15	25	29.9	33	29
Wales	25	5.1	15.8	36	92.8	69.9
QSurveillance® (UK*)	N/A	30.4	86.8	221.4	225.7	72.2

* 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.

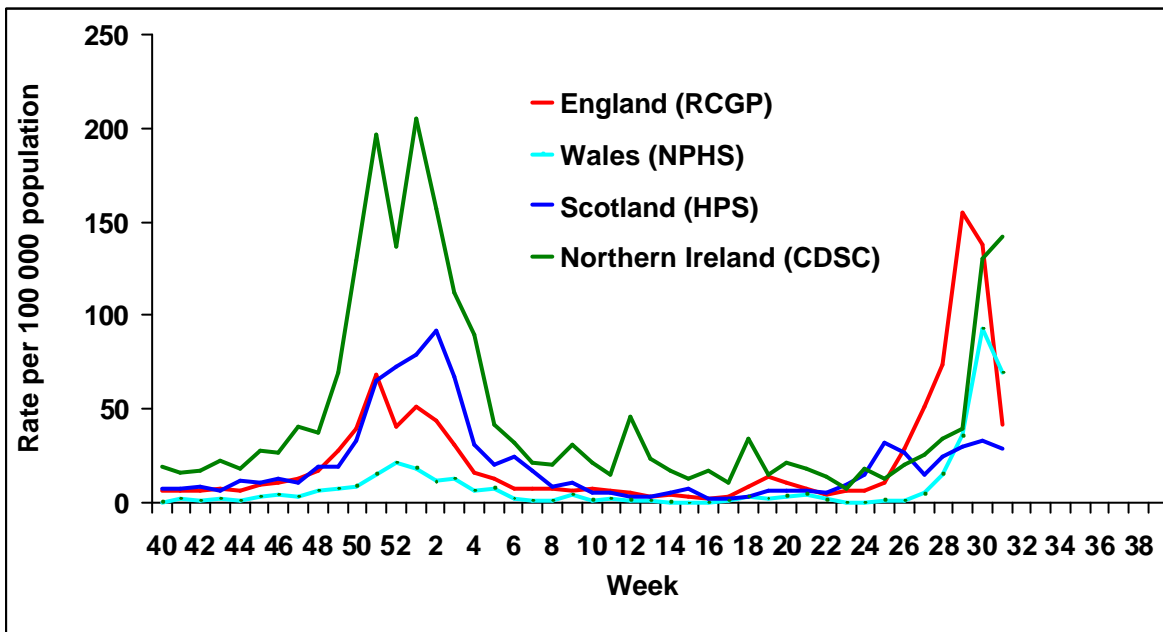
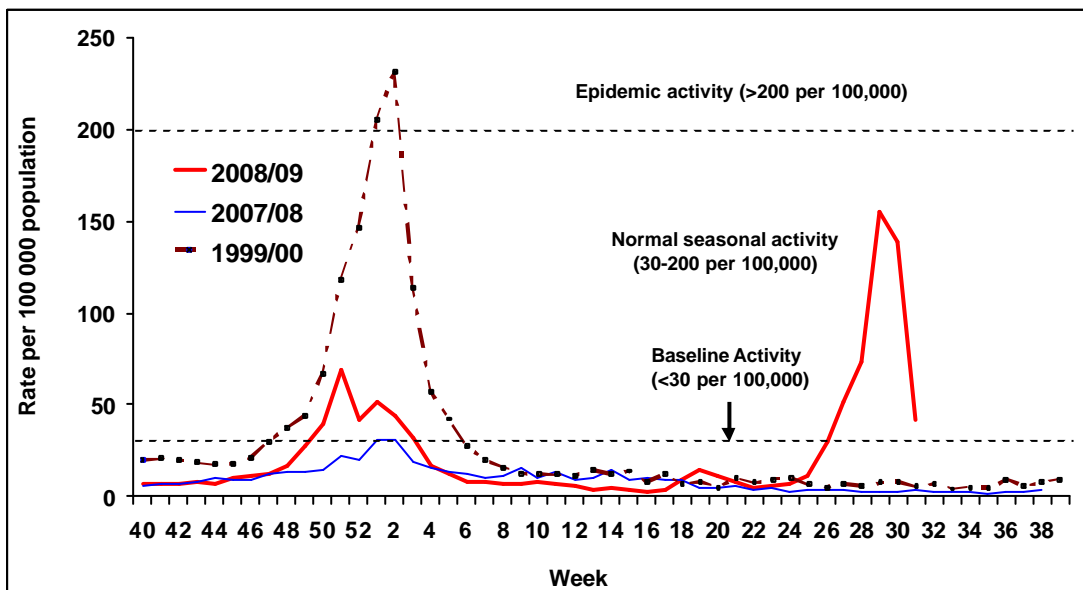


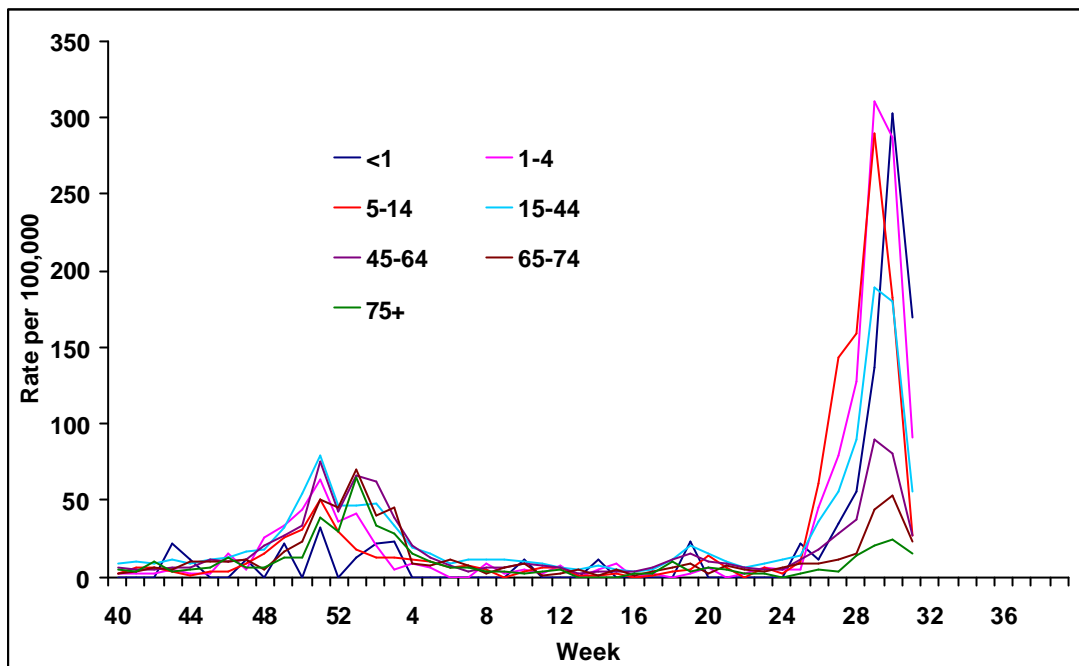
Figure 2: RCGP weekly consultation rate for influenza like illness 2008/09 and recent years.



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



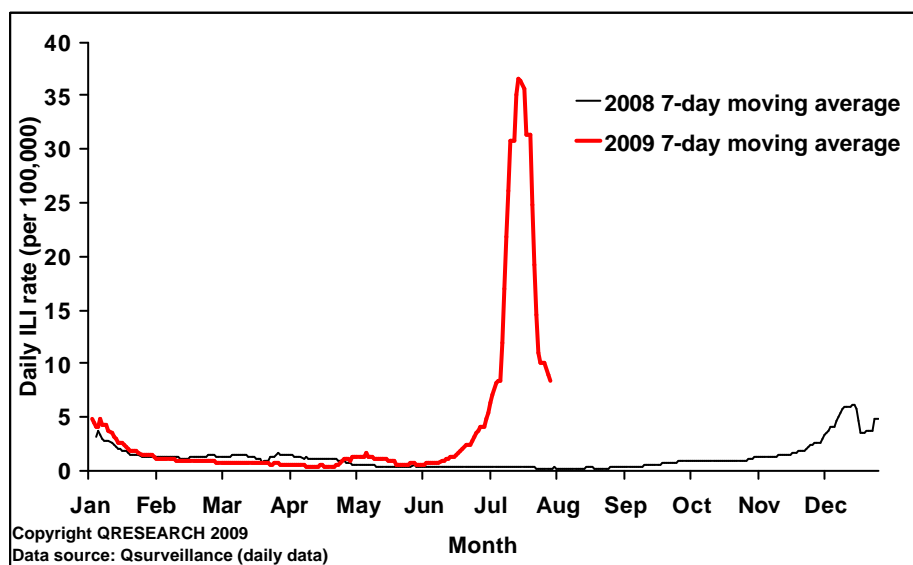
Enhanced Daily Syndromic Surveillance (<http://www.hpa.org.uk/hpr/infections/primarycare.htm>)

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 daily GP ILI consultation rate on Tuesday 04 August was 10.5 per 100,000 which is two thirds of the highest Tuesday rate seen on Tuesday 28 July (figure 4). Rates have correspondingly decreased in all English SHAs though all remain at levels higher than expected for this time of year. Daily rates have also decreased in all age groups; the highest rates still in the under-one year and 1-4 year 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.

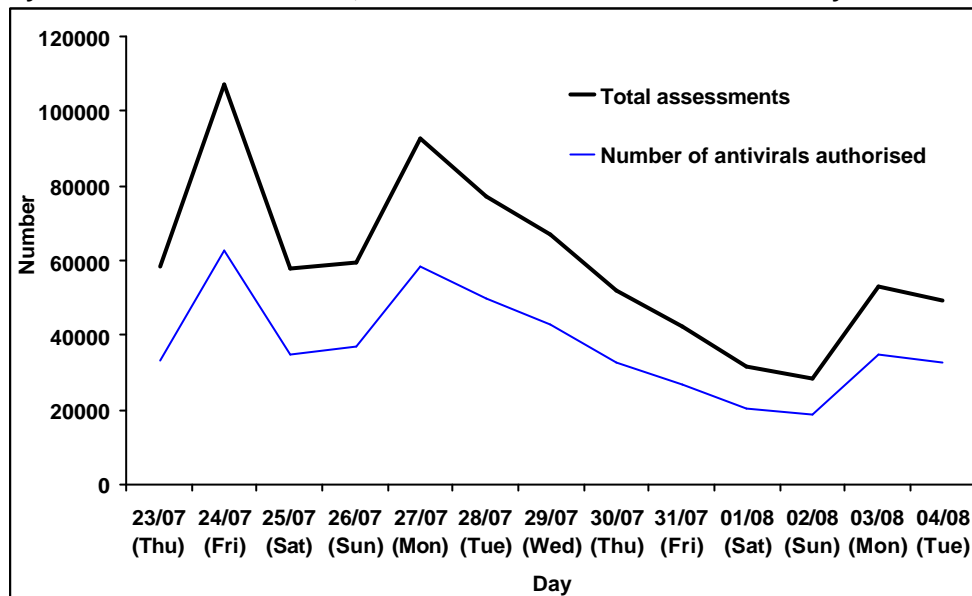
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National Pandemic Flu Service (NPFS)

The National Pandemic Flu Service (NPFS) became operational in England at 15:00 on 23 July 2009. There were a high number of assessments (107,414) on the second day of operation; the lowest number of assessments observed so far was 28,487 on Sunday 02 August. The range for the number of antivirals authorised (18,491 – 62,685) was similarly variable (figure 5).

Figure 5: Daily number of assessments, antivirals authorised and collected by NPFS.



Modelling by the Health Protection Agency

This week a new method has been used to estimate the number of pandemic cases which incorporates data from National Pandemic Flu Service (NPFS) and GP consultations. This method has been compared to, and found to be consistent with, an alternative method that uses GP consultations alone with a correction for the impact of NPFS on GP consultation rates.

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 authorisations are multiplied a range of positivity rates up to that seen in the RCGP/RMN schemes. 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.

This estimate was compared to one obtained using only GP consultations where an additional adjustment is applied to allow for the reduction in the proportion of cases contacting GPs due to the start of NPFS. This reduction due to NPFS is estimated by comparing changes in consultation rates before to after the start of NPFS in each age group to under ones year olds who should be unaffected by NPFS as NPFS does not cover this age-group.

Further details on the methodology used can be found in the [Health Protection Report](#) due to be published on Friday 07 August.

In week 31, 30,000 new cases are estimated to have occurred (range 15,000 – 85,000), a decrease from 110,000 estimated new cases (range 60,000 – 160,000) in the previous week. Decreases are estimated in all regions, particularly in London (figure 6).

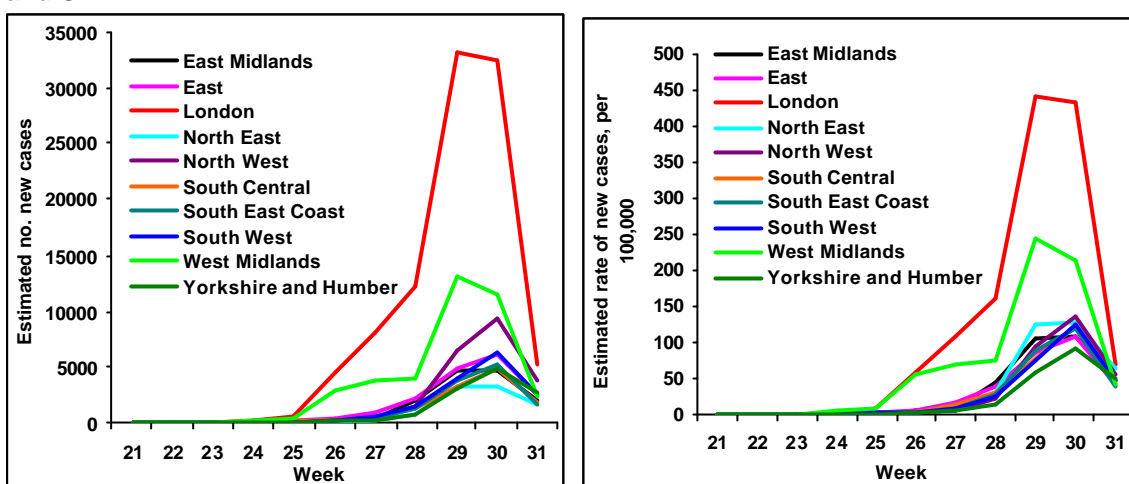
The estimated number of cases, along with the corresponding rate per 100,000 population, decreased in all age groups, particularly in the 5-14 year olds (figure 7).

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

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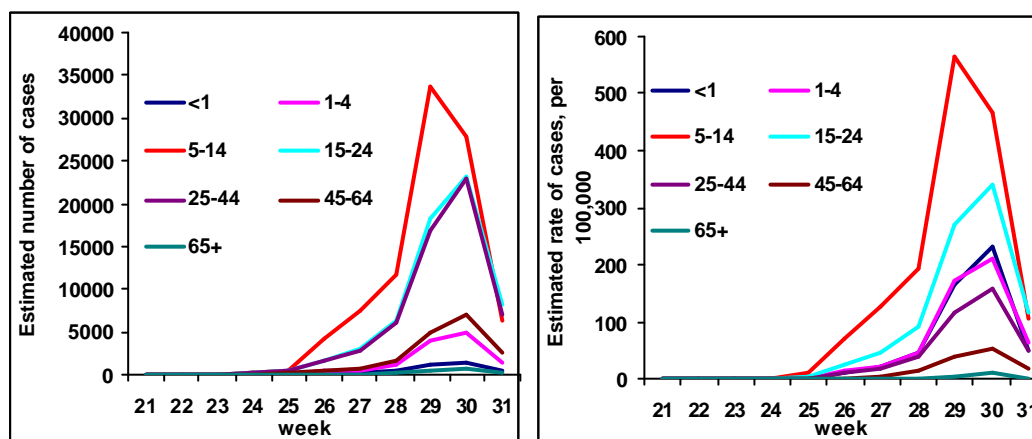
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Figure 6: Estimated number and rate per 100,000* of new cases of pandemic influenza in England, by week and SHA.



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

Figure 7: Estimated number and rate per 100,000* of new cases of pandemic influenza in England by age group.



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

Microbiological surveillance

There have now been 12,261 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 04 August

Region / Country	Cumulative number of laboratory confirmed cases
England	10,470
Northern Ireland	83
Scotland	1614
Wales	94
Total UK	12,261

In addition, there have been 209 cumulative confirmed cases reported from the UK Overseas Territories and Crown Dependencies: Anguilla (1), Bermuda (1), British Virgin Islands (5), Cayman Islands (85 – and one death), The Falklands (5), Guernsey (17), Isle of Man (6), Jersey (38), Sovereign Base Area Cyprus (34), Turks and Caicos Islands (17).

The main circulating influenza virus remains the pandemic (H1N1) 2009. [Other circulating respiratory pathogens](#) such as RSV are at levels expected for the time of year.

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 decreased to 9% in week 31 (table 3, figure 8). Overall, the highest positivity rate has been

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seen in London (34%) (table 4). Schemes through primary care are also used in Wales, Scotland and Northern Ireland though fewer 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)			N. Ireland** (GP)		
	Total tested	Pandemic		Total tested	Pandemic		Total tested	Pandemic		Total tested	Pandemic		Total tested	Pandemic	
		n	%		n	%		n	%		n	%		n	%
18-23	335	9	2.7	208	1	0.5	14	0	0	89	0	0	13	0	0
24	77	6	7.8	343	8	2.3	2	0	0	35	0	0	2	0	0
25	178	22	12.4	391	20	5.1	0	0	0	20	0	0	7	0	0
26	193	67	34.7	306	51	16.7	3	0	0	8	0	0	7	0	0
27	251	77	30.7	418	56	13.4	4	1	25	2	0	0	4	0	0
28	249	79	31.7	293	24	8.2	10	0	0	64	2	3.1	4	1	25.0
29	263	75	28.5	313	22	7.0	13	1	7.7	99	6	6.1	13	1	7.7
30	221	62	28.1	74	4	5.4	4	0	0.0	69	11	15.9	22	5	22.7
31	104	9	8.7				9	1	0.0	47	0	0.0	41	7	17.1

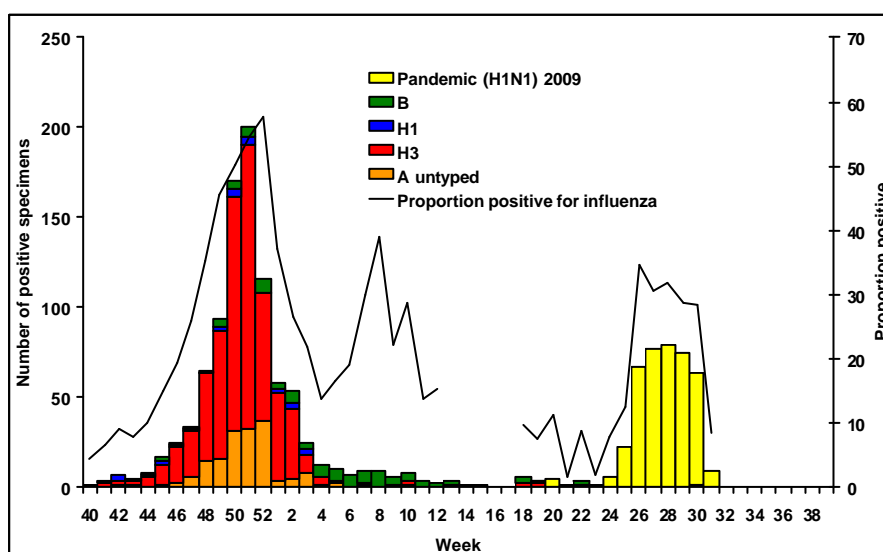
* All data are based on week of specimen, except for Northern Ireland which is by week of report; ** Until week 28 it has not been possible to differentiate between sentinel and non-sentinel pandemic (H1N1) 2009 positive specimens in Northern Ireland.

Table 4: Sample tested and positive for influenza from three English virological sentinel schemes (two GP schemes combined) by region (cumulative week 18 to 31*).

Region	RCGP/RMN GP schemes					NHS Direct*				
	B	A (H3)	Pandemic		Total tested	B	A (H3)	Pandemic		Total tested
			N	%				N	%	
East	0	0	9	6.0	151	0	0	17	7.23	235
East Midlands	1	0	18	12.7	142	1	0	6	2.86	210
London	2	4	275	34.4	799	1	2	61	12.5	488
North East	0	0	5	15.2	33	0	1	4	3.6	111
North West	2	1	13	7.7	169	0	0	6	6.9	87
South East	1	0	22	12.1	182	0	0	25	6.28	398
South West	0	0	9	8.0	112	0	0	7	7.37	95
West Midlands	1	0	53	23.1	229	0	5	54	10.6	508
Yorkshire and Humberside	0	1	2	4.3	46	0	0	8	6.78	118
Unknown region	0	0	0	0.0	0	0	1	0	0	101
Total	7	6	406	21.8	1863	2	9	188	8	2351

* 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.

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Antiviral susceptibility

Testing for antiviral susceptibility is carried out at the Respiratory Virus Unit, Centre for Infections, Colindale (RVU). Six hundred and seven 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, 110 of these have been fully tested for susceptibility; all 110 were found to be sensitive to oseltamivir and zanamivir (table 5).

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

Region	Samples tested for Resistance		Proportion resistant
	Screened for H274Y mutation	Fully tested	
East	31	3	0%
East Midlands	10	4	0%
London	193	12	0%
North East	6	0	0%
North West	20	2	0%
South East	57	14	0%
South West	11	3	0%
West Midlands	125	7	0%
Yorkshire and Humber	6	0	0%
Northern Ireland	1	0	0%
Scotland	21	1	0%
Wales	2	0	0%
Unknown region	124	64	0%
Total	607	110	0%

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*. 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 26 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 26 July 09.

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	2134	94	373	75
<i>S. pneumoniae</i>	1534	91	1560*	93*
<i>H. influenzae</i>	5497	99	5119	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.

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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.

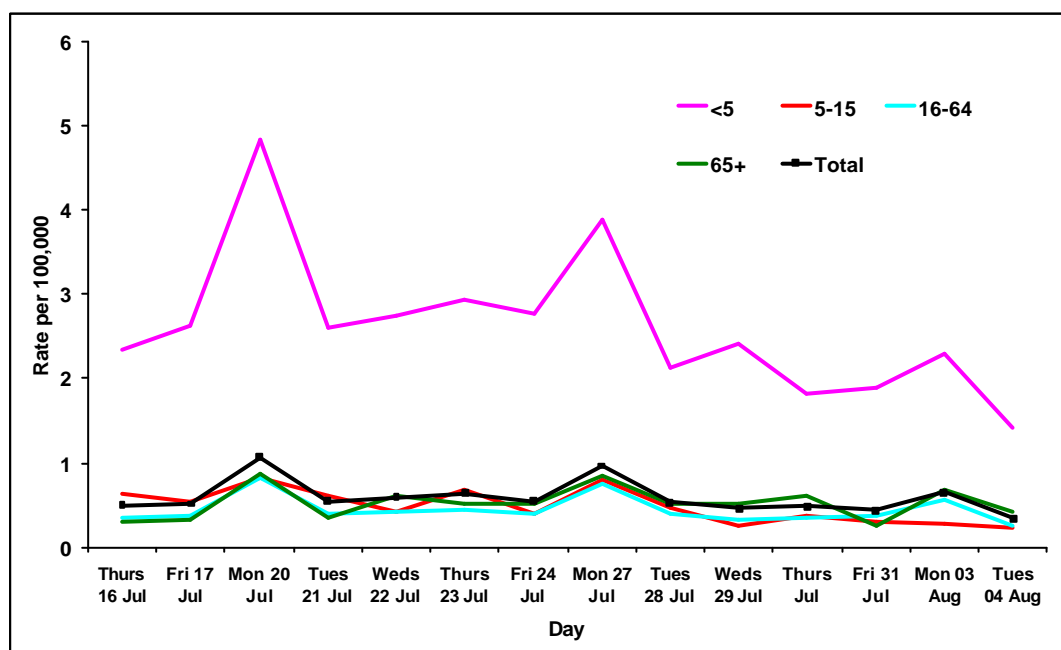
In England, on 04 August there were 576 hospitalised patients with suspected pandemic influenza, a decrease from 793 seven days previously. Of the 576, 55 were in intensive care and 173 were newly hospitalised in the 24 hours up to 8am. In week 31 (the 7 days up to 8am Monday 03 August), 1299 new patients were hospitalised with suspected pandemic influenza corresponding to a rate of 2.6 per 100,000, a decrease from 3.3 per 100,000 in week 30 (table 7). The highest hospitalisation rate has consistently been in those aged under 5 years, and there has been a general decreasing trend in hospitalisation rates in all age groups over the past week (figure 9). 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 80 cumulative hospitalisations, 28 in Wales and 14 in Northern Ireland.

Table 7: Current inpatients with suspected pandemic influenza in England, up to 04 August 2009.

	Number (rate per 100,000* population)				
	<5	5-15	16-64	65+	Total
Patients currently hospitalised (as of 8am 04 August)	106 (3.6)	40 (0.6)	304 (0.9)	126 (1.6)	576 (1.1)
Patients currently in ICU (as of 8am 04 August)	8 (0.3)	3 (0.0)	35 (0.1)	9 (0.1)	55 (0.1)
New patients hospitalised in 24 hours up to 8am 04 August	42 (1.4)	16 (0.2)	82 (0.2)	33 (0.4)	173 (0.3)
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)
New patients hospitalised in week 31 (7 days up to 8am Monday 03 August)	312 (10.6)	112 (1.7)	667 (2.0)	208 (2.6)	1299 (2.6)

Figure 9: Daily rate (per 100,000) of new admissions to hospital with suspected pandemic influenza in 24 hours up to 8am*, by age group, up to Tuesday 04 August, England.



* Weekend data were incorporated into Monday's data

Forty deaths (36 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 30/09, an estimated 8399 all-cause deaths were registered, which is a slight increase compared to 8327 in week 29/09. 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.

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International Situation

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

According to ECDC report of 17.00 CEST 05 August, 30 of 31 EU/EFTA countries had reported 28,908 cases of laboratory confirmed pandemic (H1N1) 2009 and 42 deaths (UK (30 - not including latest data), Spain (8), Belgium (1), France (1), Hungary (1) and the Netherlands (1)). Globally 199,034 cases and 1444 deaths were reported. Twenty-two countries (including the UK) have reported over 1000 cases. Globally, six antiviral resistant strains have been confirmed so far (Denmark, Japan, Canada and Hong Kong). All resistant viruses had the characteristic mutation at position 274/275 associated with resistance.

[United States of America](#)

Reporting period: July 19 - 25 2009, influenza activity decreased; 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 (98%) of all influenza viruses subtypes were pandemic (H1N1) 2009.

[Canada](#)

Reporting period: week ending July 25 2009. The overall influenza activity decreased slightly this week; the national ILI consultation rate (19 consultations per 1,000 visits vs. 27) and the number of influenza outbreaks in long-term care facilities (0 vs. 2) are lower compared to the last week. In addition, the proportion of influenza positive tests decreased for the sixth consecutive week.

[Australia](#)

Reporting period: 18 July 2009 – 24 July 2009. Nationally, rates of influenza-like illness (ILI) presentations to GPs are slightly above levels seen at the same time in 2007 (the highest influenza season in recent years). Presentations in 2009 to the sentinel GP network have decreased in Victoria this reporting period but have increased in other states and territories. Available information indicates about one third of cases of ILI are not due to influenza.

[New Zealand](#)

Reporting period: 27 July – 02 August. There has been a continuing decline in consultations for influenza-like illness through sentinel surveillance in week 31 (27 July – 2 August 2009). However, the weekly ILI consultation rate is still higher than previous years for the same week. 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 (62%) and non-sentinel (67%) surveillance.

Acknowledgements

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

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