

Summary

- Pandemic influenza activity is variable across the UK.
- In week 45 (ending 08 November), the weekly influenza/ILI consultation rates decreased, though remained above the winter baseline thresholds, in England, Scotland 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 decreased 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 64,000 (range 32,000 – 140,000) new cases in England in week 45. The estimated number of new cases has decreased in most regions and age groups.
- Week 44 (26 October to 01 November) was the half-term holiday for most UK schools; this may have continued to affect some of the indicators in this report, although it is unclear to what extent.
- 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. Six of 2834 pandemic viruses tested have been confirmed to carry a mutation which confers resistance to the antiviral drug oseltamivir; all three are phenotypically resistant to the drug but retain sensitivity to zanamivir.
- 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 180. There was a total of 1355 new patients hospitalised in England with suspected pandemic influenza in the week from 05 November to 11 November, a decrease from 1431 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 11 November, 6592 deaths due to pandemic influenza had been reported globally. According to the World Health Organisation (23 October), influenza activity is low in temperate southern hemisphere regions, is increasing in the temperate northern hemisphere regions and is variable in tropical areas.

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 45, the weekly influenza/ILI consultation rate decreased in all UK schemes, except in Wales (table 1, figures 1 and 2).

The overall RCGP (England and Wales) ILI consultation rate has decreased slightly to 36 per 100,000, which remains above the winter baseline activity threshold of 30 per 100,000. The rate has decreased in the south, remains stable in the central region and has increased in the north.

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

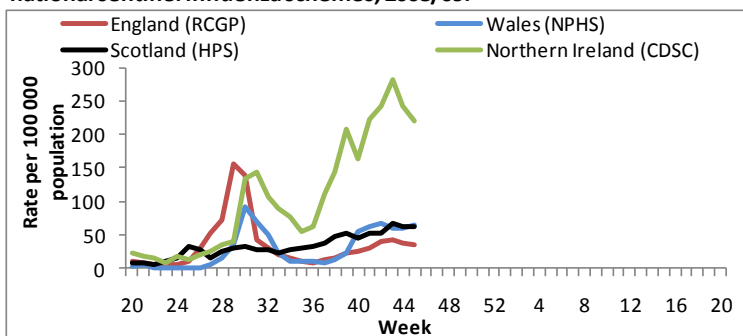


Table 1: GP weekly consultation rates for influenza/ILI in the UK

| Week Number | Week-ending date | Clinical rate per 100,000 | | | | |
|-----------------------|------------------|---------------------------|-------|-------|-------|-------|
| | | Baseline | 42 | 43 | 44 | 45 |
| RCGP (E & W) | | 30 | 39.1 | 42.8 | 37.7 | 36.0 |
| RCGP North | | 30 | 40 | 33.1 | 23.0 | 36.8 |
| RCGP Central | | 30 | 45.7 | 46.4 | 43.4 | 43.7 |
| RCGP South | | 30 | 33.2 | 43.9 | 39.4 | 29.3 |
| Northern Ireland | | 70* | 241.1 | 280.6 | 242.9 | 221.0 |
| Scotland | | 50 | 51.4 | 66.1 | 62 | 61.6 |
| Wales | | 25 | 66.2 | 60.18 | 59 | 65.8 |
| QSurveillance® (UK**) | | N/A | 37.4 | 49.2 | 48.5 | 47.2 |

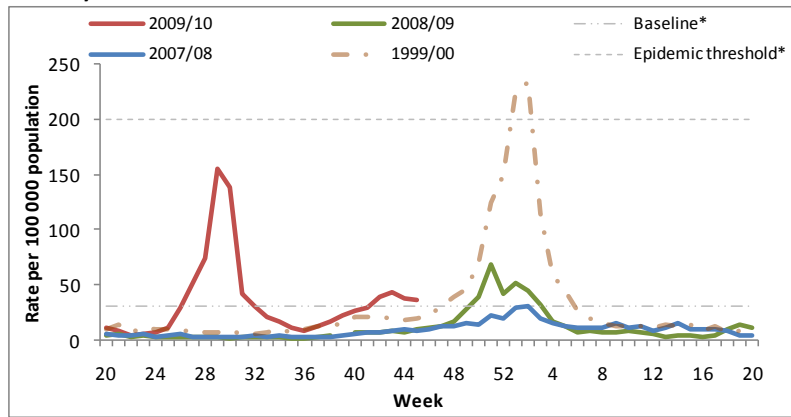
* Provisional threshold, defined in September 2009; ** based on data from 43% of England's populations, 10% of the population in Wales, 17% in Northern Ireland and 0% in Scotland

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 also remained stable and above the baseline threshold of 50 per 100,000. The Welsh influenza rate has increased slightly and remains above the baseline threshold of 25 per 100,000. The weekly ILI QSurveillance rate decreased 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.



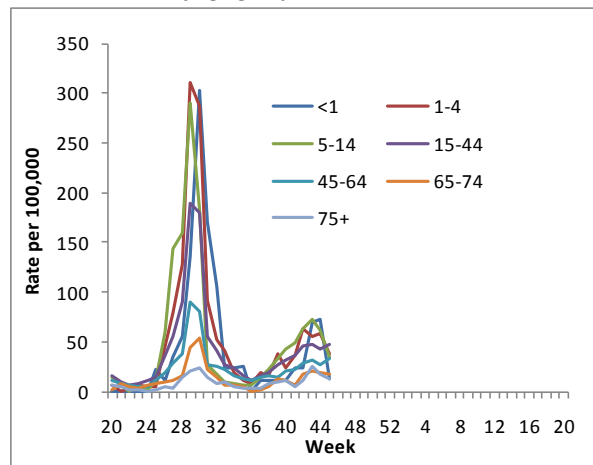
*Baseline threshold: under 30 per 100,000; Epidemic threshold: over 200 per 100,000

The consultation rates in the RCGP scheme have decreased slightly in most age groups; the largest decrease in children aged under 15 (the rate decreased from 60.7 to 35.0 per 100,000 in the 5-15 year-olds). The highest rate is now in the 15-44 year-olds at 46.8 per 100,000. Rates also decreased in children in the QSurveillance® scheme though the highest rate remained in the <1 (71.9 per 100,000) and the 1-4 (76.6 per 100,000) year groups. In Wales, the rates increased in most age groups; the largest increase in the 35-44

year-olds (from 48.2 to 72.4 per 100,000). The highest Welsh rate remains in the 0-4 year group at 266.4 per 100,000 though this rate has been recently heavily influenced by the recruitment of a new GP practice in week 40. In Northern Ireland the greatest decrease was again in the 5-14 year group (from 445 to 337.9 per 100,000), and the highest age-specific rate was in the 1-4 year-olds (increased from 352.6 to 388.6 per 100,000). In Scotland, the rates increased in children aged 1-4 (215.5 to 239.8 per 100,000) and 5-14 (83.5 to 94.7 per 100,000), but decreased in most of the older age groups.

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

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 10 November was 9.9 per 100,000, which was the same as seven days previously on 03 November. The highest rates are still in children; 1-4 year-olds (17 per 100,000) and 1-4 year-olds (14.8 per 100,000) (figure 4). Rates

Figure 5: Weekly consultation rates for influenza-like illness from QSurveillance®, Week 45 (ending 08 November 09) by Strategic Health Authority.

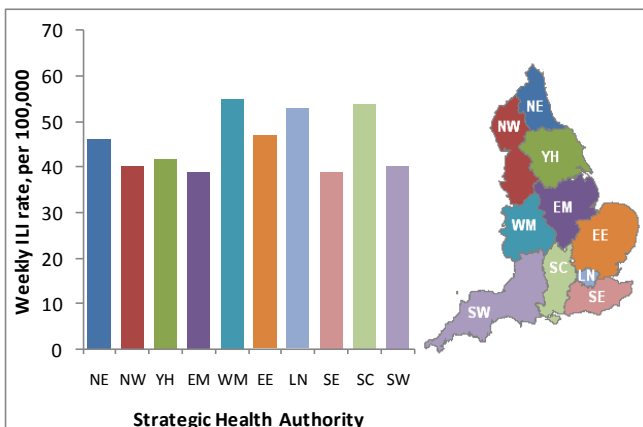
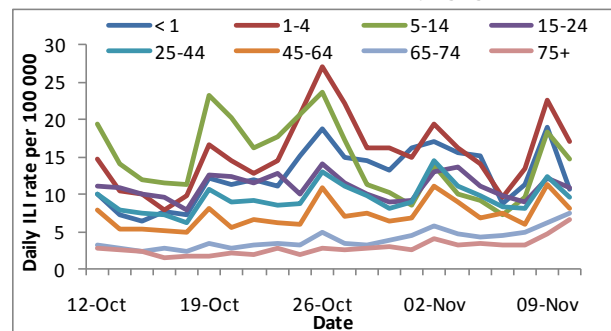


Figure 4: Daily consultation rates for influenza-like illness from QSurveillance®, October-November 2009, by age group



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

in all English SHAs are at levels equivalent to estimated rates when 'normal seasonal influenza' is circulating, except in the West Midlands where rates indicate 'above average influenza activity'. 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 decreased slightly; a 17% decrease was observed from week 44 to 45 (figure 6).

The decrease was observed in most regions and age groups. The highest rate of collections (per 100,000 population) remains in the North East (figure 7). Children and young adults continue to have the highest rates of collection, though the rates in the 1-4, 5-14 and 15-24 year-olds have decreased (figure 8).

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

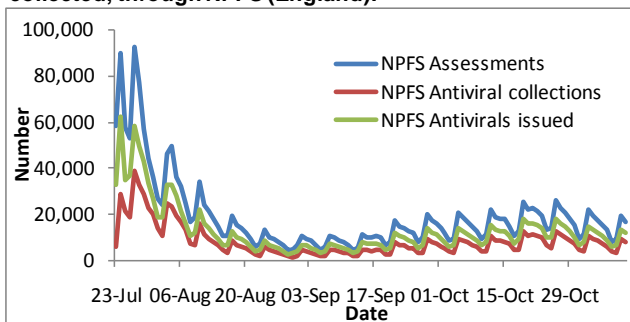


Figure 7: Weekly rate (per 100,000) of antivirals collected, through NPFS, by SHA

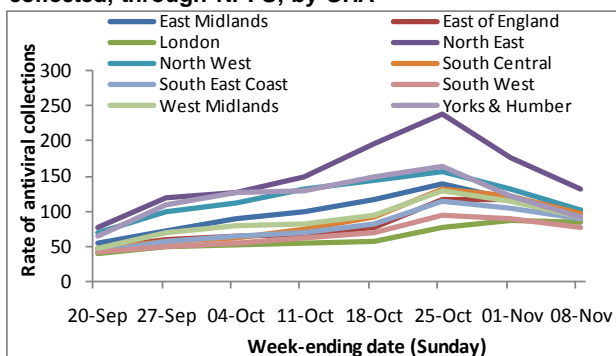
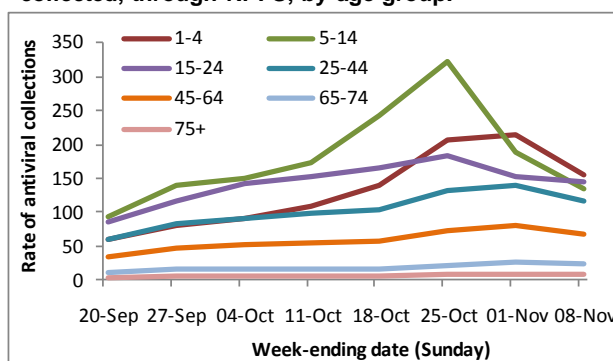


Figure 8: Weekly rate (per 100,000) of antivirals collected, through NPFS, by age group.



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 45, 64,000 new cases are estimated to have occurred (range 32,000 – 140,000), a decrease from 84,000 (42,000 – 181,000) in week 44. The rates have decreased in all regions, except London. The highest rate remains in the 5-14 year-olds, though the rates have decreased in almost all age groups.

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

Outbreaks

In England, in week 45, thirteen school outbreaks of influenza-like illness were reported; six day schools (one primary and five special schools) and seven boarding schools (one middle and six secondary). This is a decrease from 42 outbreaks reported in week 43 (week 44 was half-term). One school outbreak was reported in Scotland in week 45.

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, 11 other (non-influenza) viruses have been detected through the HPA/RMN GP-based sentinel surveillance scheme; four rhinovirus, four parainfluenza, and three adenovirus.

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

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

| | Week 42 | Week 43 | Week 44 | Week 45 |
|---------------|---------|---------|---------|---------|
| Week-ending | 18-Oct | 25-Oct | 01-Nov | 08-Nov |
| Adenovirus | 25 | 15 | 46 | 46 |
| Parainfluenza | 33 | 25 | 55 | 35 |
| Rhinovirus | 160 | 111 | 207 | 102 |
| RSV | 28 | 44 | 106 | 115 |

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is not one of the northern hemisphere 2009/10 seasonal influenza vaccination strains (it is a component of the 2010 southern hemisphere influenza vaccine).

There have now been 22,340 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 589 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 (55), Jersey (234), Sovereign Base Area Cyprus (58), Turks and Caicos Islands (39).

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

| Country | Number of lab-confirmed cases |
|------------------|-------------------------------|
| England | 15,894 |
| Northern Ireland | 1,220 |
| Scotland | 4,674 |
| Wales | 552 |
| Total UK | 22,340 |

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

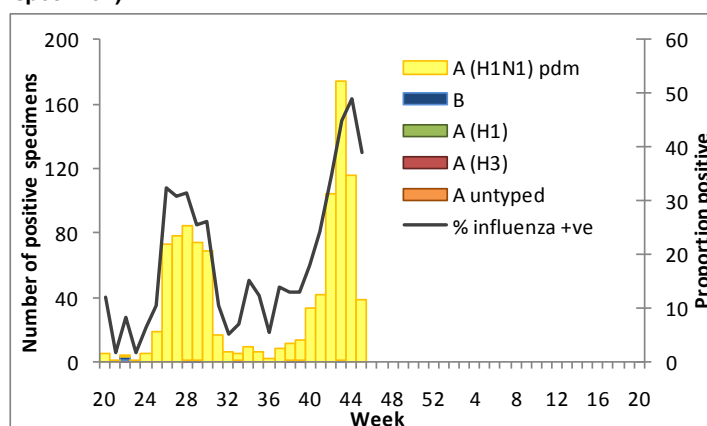
The proportions positive for pandemic influenza through the English schemes decreased in week 45, though remain at higher levels than seen over the summer period (table 5, figure 9). The highest age-specific positivity rates are in children aged 5-14, and young adults aged 15-24 years (table 4).

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 | 117 | 52 | 44.4 | - | - | - |
| 5-14 | 215 | 144 | 67.0 | - | - | - |
| 15-24 | 183 | 93 | 50.8 | 320 | 121 | 37.8 |
| 25-44 | 303 | 105 | 34.7 | 930 | 274 | 29.5 |
| 45-56 | 154 | 32 | 20.8 | 574 | 135 | 23.5 |
| 65+ | 43 | 3 | 7.0 | 66 | 6 | 9.1 |

NB. Children aged under 16 are currently 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. Proportion positive omitted when fewer than 10 specimens reported; data for the most recent weeks are subject to change due to reporting lag.

The positivity rates have also decreased in Wales and Northern Ireland, though have increased slightly in Scotland (table 6). 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 | % |
| 36 | 36 | 2 | 5.6 | 293 | 31 | 10.6 | 1 | 1 | — | 90 | 19 | 21.1 | 14 | 3 | 21.4 |
| 37 | 57 | 8 | 14.0 | 627 | 68 | 10.8 | 0 | 0 | 0.0 | 94 | 14 | 14.9 | 21 | 3 | 14.3 |
| 38 | 84 | 10 | 11.9 | 679 | 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 | 183 | 33 | 18.0 | 314 | 38 | 12.1 | 12 | 2 | 16.7 | 324 | 96 | 29.6 | 29 | 8 | 27.6 |
| 41 | 172 | 42 | 24.4 | 756 | 137 | 18.1 | 10 | 4 | 40.0 | 410 | 157 | 38.3 | 70 | 40 | 57.1 |
| 42 | 299 | 104 | 34.8 | 661 | 159 | 24.1 | 16 | 9 | 56.3 | 404 | 167 | 41.3 | 46 | 29 | 63.0 |
| 43 | 387 | 173 | 44.7 | 578 | 165 | 28.5 | 24 | 14 | 58.3 | 437 | 154 | 35.2 | 52 | 42 | 80.8 |
| 44 | 237 | 116 | 48.9 | 425 | 151 | 35.5 | 25 | 10 | 40.0 | 439 | 187 | 42.6 | 41 | 34 | 82.9 |
| 45 | 100 | 39 | 39.0 | 226 | 61 | 27.0 | 8 | 2 | 25.0 | 287 | 131 | 45.6 | 59 | 27 | 45.8 |

* All data are based on week of specimen, except for Northern Ireland which is by week of report

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Antiviral susceptibility

Testing for antiviral susceptibility is carried out at the Respiratory Virus Unit (RVU), Centre for Infections, Colindale. A total of 2834 pandemic influenza viruses have been analysed for the marker commonly associated with resistance to oseltamivir in seasonal influenza (H275Y); six samples were found to carry this mutation. Of these 2437 viruses, 293 have been fully tested for susceptibility; three of the six viruses carrying the H275Y mutation have been confirmed to be phenotypically resistant to oseltamivir whilst retaining sensitivity to zanamivir, the remaining three are currently undergoing testing. One seasonal influenza A (H1) virus has been tested and found to be resistant to oseltamivir but sensitive to zanamivir and amantadine, as is expected following circulation of oseltamivir-resistant seasonal influenza A (H1) in the last two winters. 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 | 111 | 3 | 8 | 1 | 0% |
| 1-4 | 191 | 10 | 11 | 1 | 0.50% |
| 5-14 | 624 | 125 | 62 | 27 | 0% |
| 15-44 | 1085 | 214 | 118 | 16 | 0.08% |
| 45-64 | 323 | 34 | 26 | 4 | 0.56% |
| 65-74 | 41 | 0 | 3 | 0 | 2.44% |
| 75+ | 12 | 1 | 2 | 0 | 8% |
| Unknown | 54 | 6 | 13 | 1 | 0% |
| Total | 2441 | 393 | 243 | 50 | 0.21% |

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 | 85 | 20 | 21 | 3 | 0% |
| East Midlands | 223 | 16 | 11 | 4 | 0.42% |
| London | 202 | 194 | 47 | 19 | 0.25% |
| North East | 95 | 12 | 7 | 1 | 0% |
| North West | 450 | 14 | 17 | 1 | 0.43% |
| South East | 143 | 35 | 54 | 10 | 0% |
| South West | 231 | 14 | 6 | 1 | 0% |
| West Midlands | 122 | 67 | 42 | 7 | 0.53% |
| Yorkshire and Humber | 419 | 11 | 15 | 1 | 0% |
| Ireland | 8 | 0 | 7 | 0 | 0% |
| Northern Ireland | 28 | 0 | 0 | 0 | 0% |
| Scotland | 388 | 5 | 14 | 1 | 0.25% |
| Wales | 13 | 0 | 0 | 0 | 0% |
| Unknown Region | 34 | 5 | 2 | 2 | 0% |
| Total | 2441 | 393 | 243 | 50 | 0.21% |

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. 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 01 November 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 01 November 09.

| Organism | Tetracyclines | | Co-amoxiclav | |
|----------------------|----------------------|---------------------------|----------------------|---------------------------|
| | Specimens tested (N) | Specimens susceptible (%) | Specimens tested (N) | Specimens susceptible (%) |
| <i>S. aureus</i> | 2035 | 94 | 356 | 81 |
| <i>S. pneumoniae</i> | 1436 | 89 | 1410* | 93* |
| <i>H. influenzae</i> | 4834 | 98 | 4427 | 90 |

* *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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Disease severity and mortality data

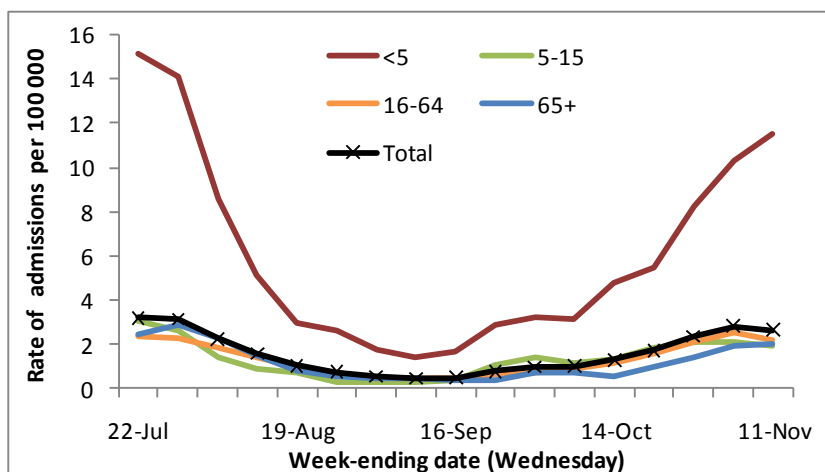
Disease severity continues to be monitored. HPA receives data on hospitalisation and deaths due to pandemic influenza in England from the Department of Health, and from the relevant bodies in Scotland, Wales and Northern Ireland.

In England, on 11 November there were 785 hospitalised patients with suspected pandemic influenza, which is a decrease from 848 seven days previously. Of the 785, 173 (22%) were in intensive care and 233 were newly hospitalised in the 24 hours up to 8am. In the week from Thursday 05 November to Wednesday 11 November, 1355 new patients were

Table 9: Inpatients with suspected pandemic influenza in England, up to 11 November 2009.

| Patients hospitalised | Number (rate per 100,000* population) | | | | |
|--------------------------------|---------------------------------------|-----------|-----------|-----------|------------|
| | <5 | 5-15 | 16-64 | 65+ | Total |
| Currently as at 8am 11 Nov | 121 (4.1) | 71 (1.1) | 499 (1.5) | 94 (1.2) | 785 (1.5) |
| Currently in ICU (8am 11 Nov) | 11 (1.6) | 8 (0.4) | 138 (0.7) | 16 (0.7) | 173 (0.3) |
| New in 24 hrs up to 8am 11 Nov | 55 (0.4) | 27 (0.3) | 126 (0.1) | 25 (0.2) | 233 (0.5) |
| New in week 22 Oct - 28 Oct | 244 (8.3) | 144 (2.1) | 697 (2.1) | 115 (1.4) | 1200 (2.4) |
| New in week 29 Oct - 04 Nov | 305 (10.3) | 141 (2.1) | 831 (2.5) | 154 (1.9) | 1431 (2.8) |
| New in week 05 Nov - 11 Nov | 341 (11.5) | 133 (2.0) | 720 (2.2) | 161 (2.0) | 1355 (2.7) |

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.



hospitalised with suspected pandemic influenza corresponding to a rate of 2.7 per 100,000 population, which is a slight decrease from the previous week's rate of 2.8 per 100,000 (table 9).

The highest hospitalisation rate has consistently been in those aged under 5 years though the weekly rates have increased in all age groups in the past week (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.

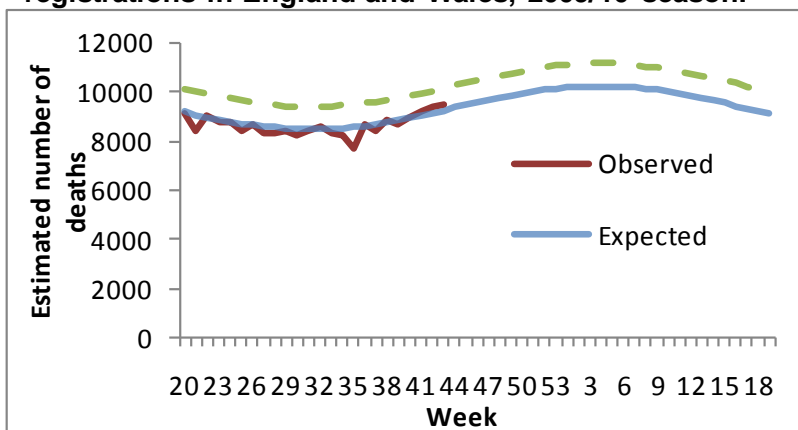
In Scotland there have been 841 cumulative hospitalisations of patients with confirmed pandemic influenza, 327 in Wales and 527 in Northern Ireland.

One hundred eighty deaths (124 in England, 32 in Scotland, ten in Northern Ireland and 14 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 44/09, an estimated 9452 all-cause deaths were registered, which is a slight increase compared to 9412 in week 43/09 (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.



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International Situation

WHO global summary (as of 06 November):

- **Tropical regions:** active influenza transmission and increasing levels of respiratory disease continue to be reported in parts of the Caribbean, with most other countries in the tropical region of Central and South America reporting declining activity. Transmission continues to decline in most parts of tropical South and Southeast Asia. Unconfirmed media reports suggest increased disease activity in sub-Saharan Africa.
- **Temperate northern hemisphere regions:** intense and persistent influenza activity continues to be reported in North America without evidence of a peak in activity. Rates of ILI, proportions of samples positive for influenza, and numbers of outbreaks in educational settings continue to increase in Canada with activity spreading eastward. Significantly more cases of pandemic H1N1 have been reported in Mexico since September than were observed during the initial springtime epidemic. In Europe and Central and Western Asia, influenza activity continues to increase signalling an unusually early start to the winter influenza season. Active circulation of the pandemic virus was reported in Belgium, Ireland, the Netherlands, Norway, Spain, Sweden and Germany. Increasing transmission was also reported across Northern and Eastern Europe, and Eastern Russia. In Western Asia and the Eastern Mediterranean Region increasing activity has been reported in Oman and Afghanistan. In East Asia, intense and increasing influenza activity continues to be reported in Mongolia. Sharp increases in pandemic influenza activity continue to be reported throughout Japan.

Virology

Pandemic (H1N1) influenza virus continues to be the predominant circulating influenza virus, accounting for 72% of all influenza detections worldwide (compared with 74% reported last week). Other influenza viruses detected worldwide included: influenza A H3 (1.6%), seasonal A H1 (0.5%), A not subtyped (24.9%), and B (1%). In Europe, based on 37 countries reporting to EuroFlu and FluNet, 84.2% were pandemic H1N1, 0.9% were seasonal A (H1), 0.3% were A (H3), 14.4% were A (not subtyped), and 0.2% were influenza B. In North America, 100% of subtyped influenza A viruses were pandemic H1N1. Influenza isolates from sub-Saharan Africa were predominantly pandemic H1N1 virus, but some seasonal H3N2 as been detected in recent weeks. In China, after an earlier wave of mixed influenza activity (seasonal H3N2 and pandemic H1N1), pandemic H1N1 influenza activity now predominates and is increasing.

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, over 10,000 isolates of the pandemic (H1N1) 2009 virus have been tested for antiviral resistance and found to be sensitive to oseltamivir. Forty-two isolates of oseltamivir resistant influenza virus have so far been reported to the WHO from around the world, all of which carry the same H275Y mutation that confers resistance to the antiviral oseltamivir but not to the antiviral zanamivir.

Animal H1N1 infections

Since the new pandemic H1N1 2009 virus emerged, infections in different species of susceptible animals (pig, turkey, ferret, and cat) have been reported. Limited evidence suggests these infections occurred following direct transmission of the virus from infected humans. These isolated events have had no impact on the dynamics of the pandemic, which is spreading readily via human-to-human transmission. As human infections become increasingly widespread, transmission of the virus from humans to other animals is likely to occur with greater frequency. Unless the epidemiology of the pandemic changes, these will continue to pose no special risks to human health.

Source: WHO, http://www.who.int/csr/don/2009_11_06/en/index.html

Confirmed global deaths

A total of 6,592 deaths due to pandemic influenza have been reported. In the last seven days, the number of deaths reported globally has increased by 5%, the same increase as reported last week. **Source:** http://ecdc.europa.eu/en/healthtopics/Documents/091111_Influenza_AH1N1_Situation_Report_0900hrs.pdf (update 11 November 2009).

Countries reporting their first confirmed deaths from pandemic influenza this week include: Afghanistan, Croatia, Mongolia, Tanzania and Ukraine. **Source:** WHO and MoH websites.

Country Updates

USA

During week 43 (25-31 Oct 2009), influenza activity remained elevated in the US. The proportion of outpatient visits for influenza-like illness (ILI) was 7.7%, a small decrease from last week (8.0%) but still above the national baseline of 2.3%. Regionally this varied from 5.0% to 10.7%, and was above the region-specific baseline in all ten surveillance regions. Forty-eight states reported geographically widespread

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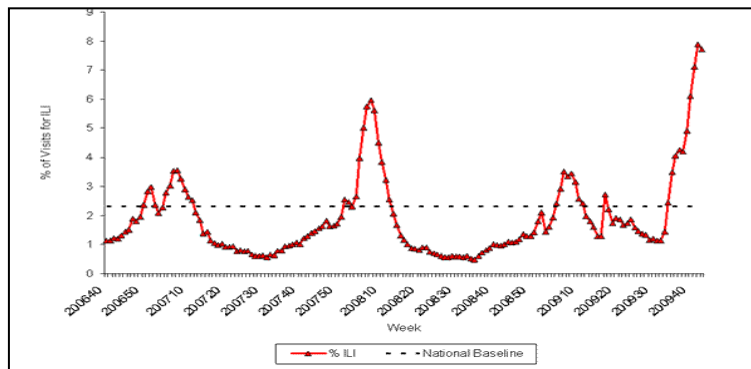
influenza activity, Hawaii, and Mississippi reported regional influenza activity, the District of Columbia reported local influenza activity and Puerto Rico and Guam reported sporadic activity.

The proportion of deaths attributed to pneumonia and influenza (7.4%) was above the epidemic threshold (6.7%). Eighteen influenza-associated paediatric deaths were reported in week 43, fifteen associated with 2009 influenza A (H1N1), and three associated with influenza A with subtype undetermined.

Over 99% of subtyped influenza A viruses being reported to CDC in week 43 were 2009 influenza A (H1N1) viruses. Fourteen cases of oseltamivir resistant 2009 influenza A(H1N1) have been detected in the US (none in the past week), 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 one case is still under investigation.

Source: CDC, <http://www.cdc.gov/flu/weekly/>.

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 - 31 October 2009



Canada

During week 43 (25-31 Oct 09), overall influenza activity increased sharply in almost all provinces and territories. The national ILI consultation rate was 111 consultations per 1,000, well above the expected range for the time of year. ILI rates were highest in those under 5 years of age (293 per 1,000) and those between 5 and 19 years of age (239 per 1,000). 737 influenza outbreaks were reported, 710 in schools, and numbers of new hospitalisations were more than three times higher than last week. **Source:** Public Health Agency of Canada, http://www.phac-aspc.gc.ca/fluwatch/09-10/w43_09/index-eng.php

Ireland

As of week 44 (26 Oct – 1 Nov 2009), the GP consultation rate for ILI was 178.5 per 100,000 population, compared to the updated rate of 201.2 per 100,000 reported during week 43. The highest sentinel GP age-specific ILI consultation rates occurred in the 0-4 age groups. The number of laboratory confirmed cases of pandemic influenza H1N1 (2009) fell by 13.4%, while the number of hospitalised cases increased by over 6% from week 43. Reports of outbreaks decreased, but schools were on mid-term break during this week.

Source: Health Protection Surveillance Centre,

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

Other Europe

WHO Europe reported very high pandemic activity during 27 Oct – 4 Nov in Iceland, Ireland and the Russian Federation (Urals region), and high activity in Belarus, Bulgaria, the Netherlands, Norway, Italy, the Russian Federation (far eastern, Siberian, north-western and central regions), Sweden and the UK (Northern Ireland only). Increases in ILI and/or ARI consultations have been particularly notable in the group aged 5-14 years. Influenza detections far exceed historical peaks, and indicate a surge in laboratory activity in several countries. Ukraine has reported a severe impact of influenza on health services (no update since WHO report last week http://www.who.int/csr/don/2009_11_03/en/index.html).

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

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