

PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

22 May 2014 - Week 21 report (up to week 20 data)

This report is published weekly on the <u>website</u>. For further information on the surveillance schemes mentioned in this report, please see the <u>website</u> and the <u>related links</u> at the end of this document.

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Summary

In week 20, influenza activity is at low levels.

This is the last weekly influenza report this 2013/14 season. During the 2014 summer months, a summary report will be published once a fortnight.

An annual report summarising activity from 2013/14 is due to be published Thursday 12 June 2014.

- Overall weekly influenza GP consultation rates across the UK
 - o In week 20 (ending 18 May 2014), overall weekly influenza GP consultations remained low in England (0.9 per 100,000), Wales (2.2 per 100,000), Scotland (2.9 per 100,000) and Northern Ireland (11.2 per 100,000)).
 - o In week 20, syndromic surveillance indicators for influenza remained low.
 - No new acute respiratory outbreaks have been reported in the past seven days across the UK.
- Virology
 - o In week 20 2014, 19 influenza positive detections were recorded through the DataMart scheme (five A(H1N1)pdm09, six A(H3), two A(not subtyped) and six B, a positivity of 3.2% compared to 3.3% in week 19), with the highest positivity reported in 65+ year olds (5.6%).
 - o One sample was positive for influenza A(H3) through the English GP sentinel schemes.
- Disease severity and mortality
 - Five new admissions to ICU/HDU with confirmed influenza (four A(H1N1)pdm09 and one A unknown) and no confirmed influenza deaths were reported through the USISS mandatory ICU surveillance scheme across the UK (137 Trusts in England) in week 20.
 - Five new hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network across England (21 Trusts). In week 20 2014, no excess all-cause mortality by week of death was seen across the UK through the EuroMOMO algorithm.
- Vaccination
 - In the final monthly collection up to 31 January 2014, provisional cumulative seasonal influenza vaccine uptake from 99.8% of GP practices was 73.2% in 65 years and over (73.4% in 2012/13), 52.3% in under 65 year olds at risk (51.3% in 2012/13), 39.8% in all pregnant women (40.3% in 2012/13), 42.6% in all 2 year olds and 39.6% in all 3 year olds. Finalised figures are due to be published 12 June 2014.
 - Provisional data from the final monthly collection of influenza vaccine uptake by frontline healthcare workers show 54.8% were vaccinated by 31 January 2014 from 99.3% of Trusts, compared to 45.9% in 2012/13. Finalised figures are due to be published 12 June 2014.
 - WHO has published recommendations for the <u>composition</u> of influenza virus vaccines for use in the 2014/15 northern hemisphere influenza season.
- International situation
 - Globally, the Northern Hemisphere influenza season is at inter-seasonal levels in most countries.
 - In the Southern Hemisphere, influenza activity is still low, although some countries are reporting a slow increase in ILI activity.

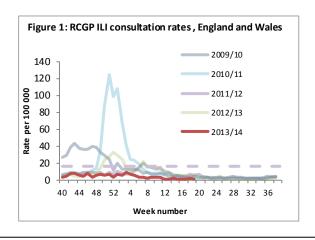
In week 20 (ending 18 May 2014), overall weekly influenza GP consultations remained low in England, Wales, Scotland and Northern Ireland.

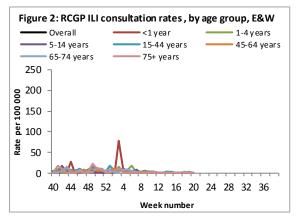
Influenza/Influenza-Like-Illness (ILI)

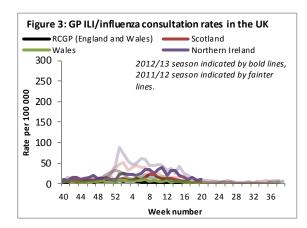
RCGP (England and Wales)

-The overall ILI consultation rate from RCGP for England and Wales remained stable at 0.9 per 100,000 in week 20 (Figure 1*). ILI rates remained stable in the North at 0.7 per 100,000, Central at 1.2 per 100,000 and South region at 0.8 per 100,000.

-In week 20 2014, ILI consultations rates were reported in 15-44 year olds (1.0 per 100,000) and 45-64 year olds (2.0 per 100,000).







Northern Ireland

- -The Northern Ireland influenza rate increased from 6.9 per 100,000 in week 19 to 11.2 per 100,000 in week 20 (Figure 3).
- -In week 20 2014, highest ILI consultations rates were seen in 75+ year olds (15.0 per 100,000) and 45-64 year olds (14.0 per 100.000).

Wales

- -The Welsh influenza rate remained stable at 2.2 per 100,000 in week 20 (Figure 3).
- -The highest rates were seen in 75+ year olds (7.0 per 100,000) and 65-74 year olds (5.8 per 100,000).

Scotland

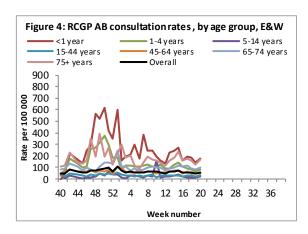
- -The Scottish ILI rate remained stable at 2.9 per 100,000 in week 20 (Figure 3).
- -The highest rates were seen in 5-14 year olds (5.5 per 100,000), 75+ olds (3.1 per 100,000) and 45-64 year olds (3.0 per 100,000).

^{*}The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold calculated for RCGP ILI consultation rates for 2013/14 is 15.6 per 100,000.

· Other respiratory indicators

Acute bronchitis (AB)

The overall weekly consultation rate for acute bronchitis (AB) in England and Wales through the RCGP scheme increased from 45.7 per 100,000 in week 19 to 58.6 per 100,000 in week 20 (Figure 4). The highest rates were seen in <1 year olds (175.8 per 100,000) and 75+ year olds (170.5 per 100,000).

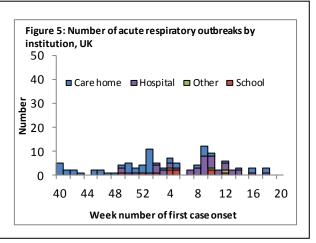


Community surveillance

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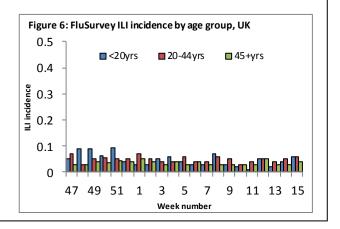
In week 20 influenza syndromic indicators remained low and no new acute respiratory outbreaks have been reported in the last seven days.

- PHE Real-time Syndromic Surveillance
- -In week 20 syndromic surveillance indicators for influenza remained low.
- -For further information, please see the syndromic surveillance webpage.
 - Acute respiratory disease outbreaks
- -No new acute respiratory outbreaks were reported in the last seven days. So far this season, 55 outbreaks have been reported in care homes, 44 in hospitals, 10 in schools and three in other settings (where tested, 26 influenza A(H1N1)pdm09, 21 influenza A (not subtyped), six influenza A(H3), one influenza B, nine RSV, 10 rhinovirus, three parainfluenza, and seven mixed infections of various pathogens.
- -Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respcidsc@phe.gov.uk.



FluSurvey

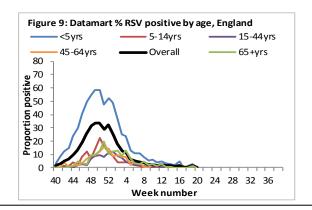
- -Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey project (http://flusurvey.org.uk) run by the London School of Hygiene and Tropical Medicine.
- -FluSurvey have finished reporting for the 2013/14 influenza season. In week 15, the last week of reporting, the incidence of ILI reports was low across age groups (Figure 6).

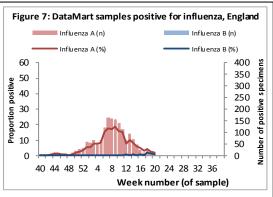


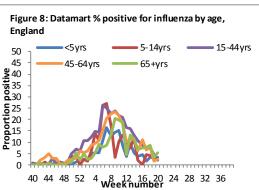
In week 20 2014, 19 influenza positive detections were recorded through the DataMart scheme (five A(H1N1)pdm09, six A(H3), two A(not subtyped) and six B), with the highest positivity reported in 65+ year olds. One sample was positive for influenza A(H3) through the English sentinel schemes.

Respiratory DataMart System (England)

In week 20 2014, out of the 599 respiratory specimens reported through the Respiratory Datamart System, five (0.8%) were positive for influenza A(H1N1)pdm09, six (1.0%) for influenza A(H3), two (0.3%) for influenza A (not subtyped) and six samples for influenza B (Figure 7), with the highest influenza positivity in 65+ year olds (5.6%, Figure 8). The overall positivity for RSV remained low (0.2%) in week 20. Positivity increased for rhinovirus (from 13.5% to 19.0%), decreased for parainfluenza (from 7.9% to 5.2% in week 20) and remained stable for adenovirus (3.9%) and hMPV (2.4%).







Sentinel swabbing schemes in England (RCGP/SMN) and the Devolved Administrations

-In week 20, one sample from England was positive for influenza A(H3). No samples from Scotland, Northern Ireland and the Welsh schemes were positive for influenza (Table 1).

Table 1: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
17	0/10 (-)	0/13 (-)	0/1 (-)	1/1 (-)
18	0/10 (-)	2/12 (16.7%)	0/4 (-)	0/0 (-)
19	0/9 (-)	1/7 (0%)	0/1 (-)	0/0 (-)
20	1/9 (-)	0/9 (-)	0/2 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

Virus characterisation

Since week 40 2013, the PHE Respiratory Virus Unit (RVU) has isolated and antigenically characterised 59 influenza A(H3N2) viruses, all similar to the A/Texas/50/2012 H3N2 2013/14 vaccine strain, and 193 influenza A(H1N1)pdm09 viruses similar to the A/California/07/2009 vaccine strain for 2013/14. Of the few influenza B viruses isolated and characterised, 4 belong to the B-Yamagata lineage as does the 2013/14 influenza B vaccine strain, whilst 6 belong to the B-Victoria lineage.

• Antiviral susceptibility
Since week 40 2013, 977 and 187
influenza viruses have been tested for
Osetamivir and Zanamivir susceptibilty,
respectively, in the UK. 23 (2.5%) of 908
flu A(H1N1)pdm09 and one (1.7%) of 59
flu A(H3) viruses have been found to be
resistant to Oseltamivir. No viruses were
found to be resistant to Zanamivir.

Antimicrobial susceptibility

-In the 12 weeks up to 11 May 2014, 85% or greater of all lower respiratory tract isolates of *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Haemophilus influenzae* reported as tested were susceptible to the antibiotics tetracycline and co-amoxiclav (Table 2). There have been no significant changes in susceptibility in recent years.

Table 2: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 23 weeks up to 11 May 2014, E&W

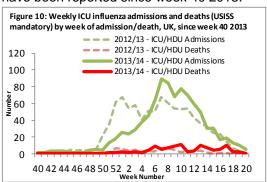
	Tetracyclines		Co-amoxiclav	
Organism	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
S. aureus	3,081	92	227	89
S. pneumoniae	2,407	85	2575*	92*
H. influenzae 10,713 99 10,218 94 *S. pneumoniae isolates are not routinely tested for susceptibility to co-amoxiclav, how ever				

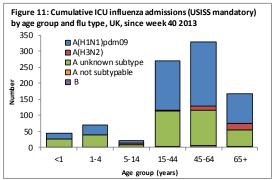
In week 20, five new admissions of confirmed influenza cases to ICU/HDU (four A(H1N1)pdm09 and one A unknown) and no confirmed influenza deaths in ICU/HDU have been reported through the national USISS mandatory ICU scheme across the UK (137 Trusts in England). Five new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England (21 Trusts).

A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the UK. A confirmed case is defined as an individual with a laboratory confirmed influenza infection admitted to ICU/HDU. In addition a sentinel network (USISS sentinel hospital network) of acute NHS trusts has been established in England to report weekly laboratory confirmed hospital admissions. Further information on these systems is available through the website. Please note data in previously reported weeks are updated and so may vary by week of reporting.

 Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 20)

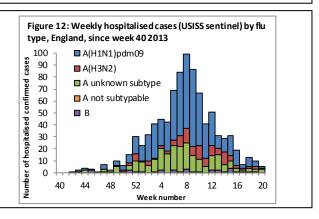
-In week 20, five new admissions to ICU/HDU with confirmed influenza infection (four A(H1N1)pdm09 and one A unknown) were reported across the UK (137/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 10 and 11) compared to 10 in week 20. No new confirmed influenza deaths were reported in week 20 2014. A total of 904 admissions (504 A(H1N1)pdm09, 344 A(unknown), 42 A(H3N2) and 14 B) and 98 confirmed influenza deaths have been reported since week 40 2013.





 USISS sentinel weekly hospitalised confirmed influenza cases, England (week 20)

-In week 20, five new hospitalised confirmed influenza case were reported through the USISS sentinel hospital network from 21 NHS Trusts across England (Figure 12) compared to 10 in week 19. A total of 906 hospitalised confirmed influenza admissions (540 A(H1N1)pdm09, 224 A unknown, 110 A(H3N2) and 32 B) have been reported since week 40 2013.



All-cause mortality data

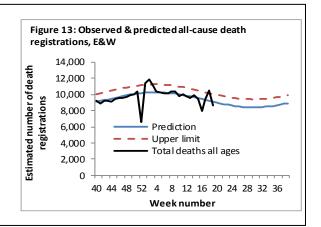
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In week 20 2014, no excess all-cause mortality by week of death was seen in England through the EuroMOMO algorithm and none has been reported since week 40 2013.

Seasonal mortality is seen each year in the UK, with a higher number of deaths in winter months compared to the summer. Additionally, peaks of mortality above this expected higher level typically occur in winter, most commonly the result of factors such as cold snaps and increased circulation of respiratory viruses, in particular influenza. Weekly mortality surveillance presented here aims to detect and report acute significant weekly excess mortality above normal seasonal levels in a timely fashion. Excess mortality is defined as a significant number of deaths reported over that expected for a given point in the year, allowing for weekly variation in the number of deaths. The aim is not to assess general mortality trends or precisely estimate the excess attributable to different factors, although some end-of-winter estimates and more in-depth analyses (by age, geography etc.) are undertaken.

Excess overall all-cause mortality, England and Wales

-In week 19 2014, an estimated 8,613 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is less than the 10,527 estimated death registrations in week 19 and is below the 95% upper limit of expected death registrations for this time of year as calculated by PHE (Figure 13). The sharp drops in number of deaths correspond to weeks when there were bank holidays and fewer days when deaths were registered, and so are likely to be artificial and result in subsequent increases in following weeks.



Excess all-cause mortality by age group and PHE region, England, Wales, Scotland and Northern

-In week 20 2014, no excess mortality by date of death above the upper 2 z-score threshold was seen in 65+ year olds in England after correcting ONS disaggregate data for delay with the standardised EuroMOMO reporting algorithm (Figure 14, Table 3), in other age groups or subnationally. This data is provisional due to the time delay in registration; numbers may vary from week to week.

-No excess mortality above the threshold through the same *Excess mortality is calculated as the observed minus the standardised algorithm was seen across Wales, Scotland or expected number of deaths in weeks above threshold Northern Ireland in week 20 (Table 4).

Table 3: Excess mortality by age group, England*

Age group (years)	Excess detected in week 20 2014?	Weeks with excess in 2013/14
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	×	NA

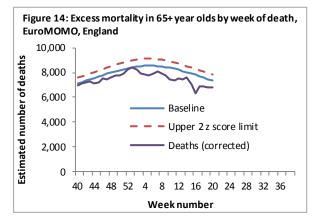


Table 4: Excess mortality by UK country*

Country	Excess detected in week 20 2014?	Weeks with excess in 2013/14	
England	*	NA	
Wales	×	NA	
Scotland	×	NA	
Northern Ireland	×	NA	
* Excess mortality is calculated as the observed minus the			

expected number of deaths in weeks above threshold

NB. Separate total and age-specific models are run for England which may lead to discrepancies between Tables 3 + 4

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- In the final monthly collection up to 31 January 2014, provisional cumulative seasonal influenza vaccine uptake from 99.8% of GP practices was 73.2% in 65 years and over (73.4% in 2012/13), 52.3% in under 65 year olds at risk (51.3% in 2012/13), 39.8% in all pregnant women (40.3% in 2012/13), 42.6% in all 2 year olds and 39.6% in all 3 year olds. The report provides uptake to Area Team level, CCG level and in key targeted groups.
- Provisional data from the final monthly collection of influenza vaccine uptake by frontline healthcare workers show 54.8% were vaccinated by 31 January 2014 from 99.3% of Trusts, compared to 45.9% in 2012/13. The report provides uptake to Trust level.
- WHO has recommended the composition of influenza virus vaccines for use in the 2014/15 northern hemisphere influenza season. The same viruses are recommended as for the 2013-2014 northern hemisphere influenza season and 2014 southern hemisphere season (an A/California/7/2009 (H1N1)pdm09-like virus; an A/Texas/50/2012 (H3N2)-like virus; a B/Massachusetts/2/2012-like virus (Yamagata lineage) and for quadrivalent vaccines containing two influenza B viruses, to additionally

include a B/Brisbane/60/2008-like virus (Victoria lineage). For further information, please see the <u>full</u> report.

International Situation | Back to top |

Globally, the Northern Hemisphere influenza season is at inter-seasonal levels in most countries. In the Southern Hemisphere, influenza activity is still low, although some countries are reporting a slow increase in ILI activity.

Europe 16 May 2014 (European Centre for Disease Prevention and Control report)

For week 19/2014, clinical data were reported by 26 countries and all reported low intensity of influenza activity. Geographic patterns of influenza activity were reported as local by Finland and the UK (England) and sporadic by eight countries. The other sixteen countries reported no activity. Stable or decreasing trends were reported by 25 countries. Only Romania reported an increasing trend.

For week 19/2014, of 86 sentinel specimens tested across 13 countries, seven (8%) were positive for influenza virus. Of these, five were subtype A(H3) and two were type B viruses. Since week 40/2013, of 7 045 sentinel specimens testing positive for influenza virus, 6 872 (98%) were type A and 173 (2%) were type B. Of the 6 371 subtyped influenza A viruses, 3 405 (53%) were A(H1)pdm09 and 2 966 (47%) were A(H3).

Since week 40/2013, 1 178 A(H1N1)pdm09 viruses, 401 A(H3N2) and 72 influenza B viruses have been tested for susceptibility to neuraminidase inhibitors (NAIs) by genetic and/or phenotypic methods. Fifteen A(H1N1)pdm09 viruses carried the NA-H275Y amino acid substitution associated with highly reduced inhibition by oseltamivir. One of these viruses showed highly reduced inhibition by oseltamivir and normal inhibition by zanamivir. However, in 11 of the 15 cases, mixtures of wild-type NA-275H (showing normal inhibition by oseltamivir) and NA-H275Y substitution viruses were detected in the corresponding clinical specimens. The median proportion of NA-H275Y was 35% (range 18–80%). One A(H3N2) virus carrying the NA-E119V amino acid substitution showed reduced inhibition by oseltamivir in phenotypic testing and normal inhibition by zanamivir.For week 19/2014, seven countries reported 69 respiratory syncytial virus (RSV) detections, a level usually seen outside the RSV epidemic period.

For week 19/2014, ten hospitalised, laboratory-confirmed influenza cases were reported by two countries (Ireland, and the UK). Nine of the ten patients were infected by influenza A viruses and one by B virus. Seven patients were admitted to intensive care units (ICU).

Since week 40/2013, eight countries have reported 4 755 hospitalised, laboratory-confirmed influenza cases: 4 696 (99%) were related to influenza virus type A infection and 59 (1%) to type B virus infection (Table 5). Of 3 220 subtyped influenza A viruses, 2 385 (74%) were A(H1)pdm09 and 835 (26%) were A(H3). A higher proportion of A(H1N1)pdm09 viruses has been detected in patients in ICUs (1 403 (86%) of 1 640 subtyped) than in patients in regular wards (982 (62%) of 1 580 subtyped).

Of the 3 840 hospitalised cases with reported age, 1 428 (37%) were 40–64 years and 1 421 (37%) were over 64 years, proportions that have been seen throughout the season. Most affected by the A(H1N1)pdm09 subtype were the age groups 20–39 years (61%) and 40–64 years (60%).

Five countries reported a total of 402 fatal cases (Table 6): 398 (99%) were associated with influenza virus type A infection and four (1%) with type B infection. Of 290 influenza A viruses subtyped from fatal cases, 235 (81%) were A(H1N1)pdm09 and 55 (19%) were A(H3N2). Patient age was reported for 398 of the fatal cases: 212 (53%) were 65 years or older.

United States of America 16 May 2014 (Centre for Disease Control report)

During week 19 (May 4-10, 2014), influenza activity continued to decrease in the United States.

Nationwide during week 19, 1.3% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.0%.

During week 19, 6.2% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.9% for week 19.

Three influenza-associated pediatric deaths were reported to CDC during week 19. One death was associated with an influenza A (H3) virus and occurred during week 16 (week ending April 19, 2014) and one death was associated with an influenza A virus for which no subtyping was performed and occurred during week 17 (week ending April 26, 2014). One death was associated with influenza B virus and occurred during week 17 (week ending April 26, 2014).

A total of 94 influenza-associated pediatric deaths have been reported during the 2013-2014 season from Chicago [1], New York City [5] and 30 states (AR [4]; AZ [1]; CA [8]; FL [4]; GA [1]; IA [1]; IL [1]; KS [2]; KY [1]; LA [6]; MA [2]; MD [1]; ME [1]; MI [3]; MS [1]; NC [6]; NE [1]; NJ [2]; NV [1]; NY[1]; OK [2]; OR [1]; PA [3]; SC [2]; TN [4]; TX [18]; UT [2]; VA [4]; WI [2]; and WV [2]).

Of 3,381 specimens tested and reported during week 19 by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories, 342 (10.1%) were positive for influenza.

• Canada 16 May 2014 (Public Health Agency report)

In week 19, no region reported widespread activity and eight regions reported localized activity, including all seven regions in Ontario and one region in Quebec. Two provinces did not report data for week 19, but both have reported only sporadic or no activity since early February. The national influenza-like-illness (ILI) consultation rate was similar to the previous week at 20.2 consultations per 1,000 patient visits in week 19; which was slightly above the expected range for week 19. In week 19, seven new laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network, compared to six in week 18. Six cases reported in week 19 had influenza B. A greater proportion of cases with influenza B this season have been children between 2 and 10 years of age compared to A(H1N1)pdm09. Two ICU admissions were reported in week 19 both children 6-23 months of age with influenza B, and no deaths were reported.

Global influenza update 19 May 2014 (WHO website)

Globally the northern hemisphere influenza season was at inter-seasonal levels in most countries. Influenza B virus continued to be the majority of late season detections in most regions.

In North America, influenza levels were at inter-seasonal levels with some influenza B circulation still detected.

In Europe, influenza activity was at inter-seasonal levels in most countries.

In eastern Asia, influenza activity approached inter-seasonal levels in most countries with influenza B virus predominating.

In tropical Asia, influenza activity continued to decline in most countries. In northern Africa and western Asia, influenza activity remained low in most countries, with influenza B the predominant virus detected.

In the southern hemisphere, influenza activity is still low, although in some countries influenza-like illness (ILI) activity is slowly increasing. Influenza detections were still low.

Based on FluNet reporting (as of 15 May 2014, 09:00 UTC), during weeks 17 to 18 (20 April 2014 to 3 May 2014), National Influenza Centres (NICs) and other national influenza laboratories from 81 countries, areas or territories reported data. The WHO GISRS laboratories tested more than 40 300 specimens. 3739 were positive for influenza viruses, of which 1696 (45.4%) were typed as influenza A and 2043 (54.6%) as influenza B. Of the sub-typed influenza A viruses, 278 (31.2%) were influenza A(H1N1)pdm09 and 613 (68.8%) were influenza A(H3N2). Of the characterized B viruses, 49 (89.1%) belong to the B-Yamagata lineage and 6 (10.9%) to the B-Victoria lineage.

Avian Influenza 22 May 2014 (WHO website)

Influenza A(H7N9)

In the past week, no new hospitalised cases of human infection with influenza A(H7N9) in China have been reported by <u>WHO</u>. The source of infection is still under investigation. So far, there is no evidence of sustained human-to-human transmission. WHO does not advise special screening at points of entry with regard to this event, nor does it currently recommend any travel or trade restrictions.

Influenza A(H5N1)

From 2003 through to 20 December 2013, 649 human cases of H5N1 avian influenza have been officially reported to WHO from 15 countries, of which 385 (59%) died.

Novel coronavirus 22 May 2014

Up to 21 May 2014, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in England. On-going surveillance has identified 165 suspect cases in the UK that have been investigated for MERS-CoV and tested negative. A further 610 confirmed cases have been reported internationally. This results in a current global total of 614 cases. Further information on management and guidance of possible cases is available online.

Acknowledgements

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This report was prepared by the Influenza section, Respiratory Diseases Department, Centre for Infectious Disease Surveillance and Control, Public Health England. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the PHE Real-time Syndromic Surveillance team, the PHE Respiratory Virus Unit, the PHE Modelling and Statistics unit, the PHE Dept. of Healthcare Associated Infection & Antimicrobial Resistance, PHE regional microbiology laboratories, NHS Direct, Office for National Statistics, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern Ireland, the Northern Ireland Statistics and Research Agency, QSurveillance® and EMIS and EMIS practices contributing to the QSurveillance® database.

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Weekly consultation rates in national sentinel schemes

- Sentinel schemes operating across the UK
- RCGP scheme
- Northern Ireland surveillance (Public Health Agency)
- Scotland surveillance (<u>Health Protection Scotl</u>and)
- Wales surveillance (Public Health Wales)
- Real time syndromic surveillance
- MEM threshold paper

Community surveillance

- Outbreak reporting
- FluSurvey
- MOSA

Disease severity and mortality data

- USISS system
- EuroMOMO mortality project

Vaccination

- 2013/14 seasonal influenza vaccine programme (Department of Health Book)
- Childhood flu programme Q&A for healthcare professionals (Public Health England)
- 2013/14 Northern Hemisphere seasonal influenza vaccine recommendations (WHO)