PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

9 October 2014 – Week 41 report (up to week 40 data)

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

Report contents:

Summary

At the start of the 2014/15 influenza season, activity is at low levels in week 40 (ending 5 October).

- Community influenza surveillance
  - In week 40, syndromic surveillance indicators for influenza remained low.
  - Two new acute respiratory outbreaks have been reported in the past seven days across the UK, one in a care home (influenza A(H3)) and one in a school (not tested).
- Overall weekly influenza GP consultation rates across the UK
  - In week 40, overall weekly influenza GP consultations remained low in Wales (1.1 per 100,000), Scotland (3.4 per 100,000) and Northern Ireland (11.5 per 100,000)).
  - There is no RCGP weekly data available this week because of continuing data quality issues. Work is being done to resolve these problems and it is hoped a normal service will resume in the coming week.
- Influenza-confirmed hospitalisations
  - Two new admissions to ICU/HDU with confirmed influenza (one A unknown subtype and one A(H3)) were reported through the USISS mandatory ICU surveillance scheme across the UK (118 Trusts in England) in week 40.
  - Two new hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network across England (20 Trusts).
- All-cause mortality data
  - In week 40 2014, no excess all-cause mortality by week of death was seen across the UK through the EuroMOMO algorithm.
- Microbiological surveillance
  - No samples were positive for influenza through the English GP sentinel swabbing schemes.
  - In week 40 2014, two influenza positive detections were recorded through the DataMart scheme (two A(H3), a positivity of 0.3%).
- Vaccination
  - Up to week 40 2014 in 82.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows: 10.1% in under 65 years in a clinical risk group, 9.2% in pregnant women, 19.2% in 65+ year olds, 0.7% in all 2 year olds, 0.9% in all 3 year olds and 0.7% in all 4 year olds.
- International situation
  - Globally, the southern hemisphere influenza season seems to be coming to an end, although high activity continued to be reported in Oceania associated with A(H1N1)pdm09 and A(H3N2) viruses.
  - Elsewhere influenza activity remained low, except for some tropical countries in the Americas.

Community surveillance

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In week 40 influenza syndromic indicators remained low and two new acute respiratory outbreaks have been reported in the last seven days.

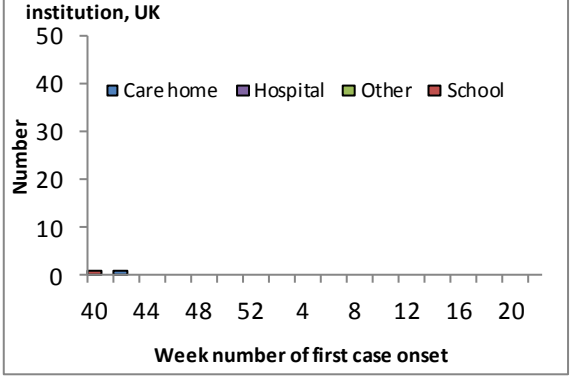
- PHE Real-time Syndromic Surveillance

-In week 40 syndromic surveillance indicators for influenza remained low. There are continued increases for a number of respiratory indicators across all syndromic surveillance systems in line with seasonally expected levels.
-For further information, please see the syndromic surveillance webpage.

- Acute respiratory disease outbreaks

-Two new acute respiratory outbreaks were reported in the last seven days (Figure 1); one in a care home in the Midlands and East of England PHE Region (influenza A(H3)) and one from a school in London PHE Regoin (not tested).
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscidsc@phe.gov.uk.

Figure 1: Number of acute respiratory outbreaks by institution, UK



Weekly consultation rates in national sentinel schemes

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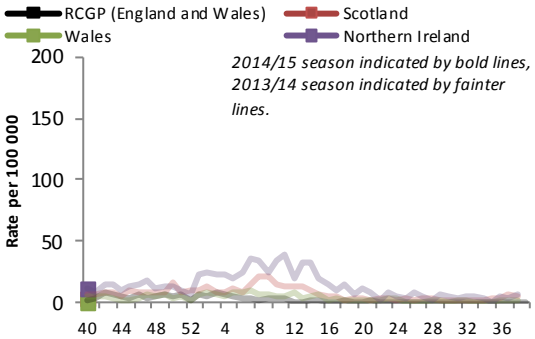
In week 40 overall weekly influenza GP consultations remained low in England, Wales, Scotland and Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)

Figure 2: GP ILI/influenza consultation rates in the UK



Northern Ireland

-The Northern Ireland influenza rate was low at 11.5 per 100,000 in week 40 (Figure 2).

-The highest rates were seen in 15-44 year olds (20.5 per 100,000) and 75+ year olds (15.7 per 100,000).

Wales

-The Welsh influenza rate was low at 1.1 per 100,000 in week 40 (Figure 2).

-ILI consultations were reported in 15-44 year olds (2.0 per 100,000) and 45-64 year olds (1.4 per 100,000).

Scotland

-The Scottish ILI rate was low at 3.4 per 100,000 in week 40 (Figure 2).

-The highest rates were seen in 15-44 year olds (4.1 per 100,000), 45-64 olds (4.0 per 100,000) and 75+ year olds (3.8 per 100,000).

RCGP (England and Wales)

-There is no RCGP weekly data available this week because of continuing data quality issues. Work is being done to resolve these problems and it is hoped a normal service will resume in the coming week.

Influenza confirmed hospitalisations

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In week 40, two new admissions of confirmed influenza cases to ICU/HDU (one A unknown subtype and one A(H3)) were reported through the national USISS mandatory ICU scheme across the UK (118 Trusts in England). Two new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England (20 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 40)

-In week 40, two new admissions to ICU/HDU with confirmed influenza infection (one A unknown subtype and one A(H3)) were reported across the UK (118/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 3 and 4). No new confirmed influenza deaths were reported in week 40 2014.

Figure 3: Weekly ICU influenza admissions and deaths (USISS mandatory) by week of admission/death, UK, since week 40 2014

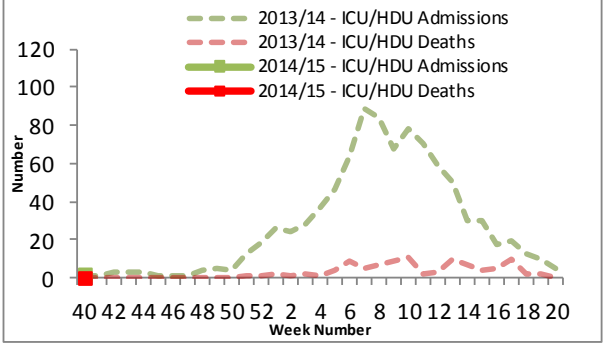
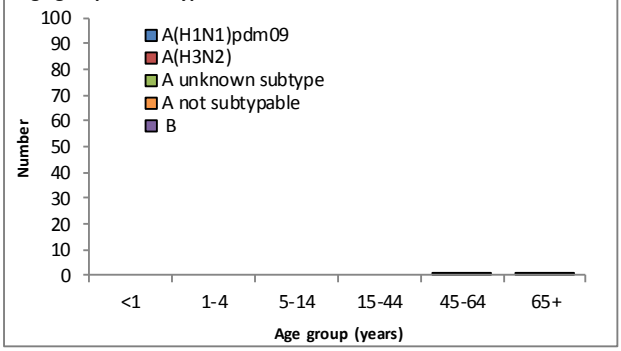


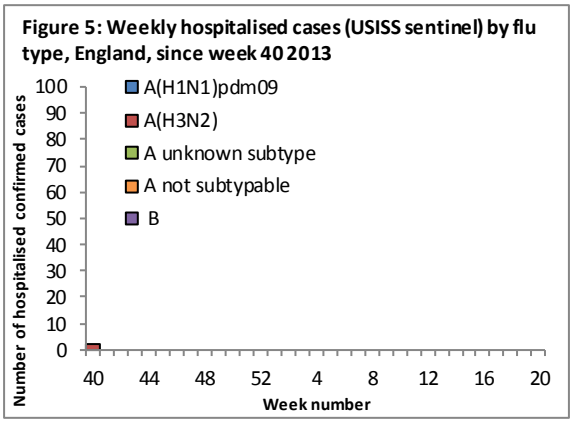
Figure 4: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2013



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 40)

-In week 40, two new hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network from 20 NHS Trusts across England (Figure 5).

Figure 5: Weekly hospitalised cases (USISS sentinel) by flu type, England, since week 40 2013



All-cause mortality data

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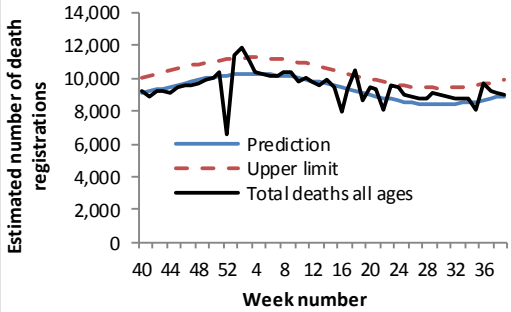
In week 40 2014, no excess all-cause mortality by week of death was seen in England through the EuroMOMO algorithm.

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 39 2014, an estimated 9,048 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is slightly less than the 9,107 estimated death registrations in week 38 and is below the 95% upper limit of expected death registrations for this time of year as calculated by PHE (Figure 6). 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.

Figure 6: Observed & predicted all-cause death registrations, E&W



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

-In week 40 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 reporting delay with the standardised EuroMOMO algorithm (Figure 7, Table 1), 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 standardised algorithm was seen across Wales, Scotland or Northern Ireland in week 40 (Table 2).

Table 1: Excess mortality by age group,England*

Age group (years)	Excess detected in week 40 2014?	Weeks with excess in 2013/14
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	×	NA

** Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold*

Figure 7: Excess mortality in 65+ year olds by week of death, EuroMOMO, England

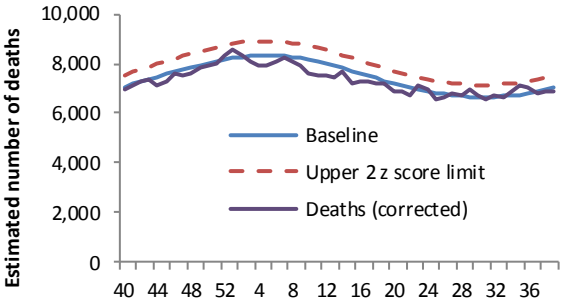


Table 2: Excess mortality by UK country*

Country	Excess detected in week 40 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

Microbiological surveillance

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No samples were positive for influenza through the English GP sentinel schemes. In week 40 2014, two influenza positive detections were recorded through the DataMart scheme (two A(H3)).

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

-In week 40, no samples from England were positive for influenza. No samples from Scotland, Northern Ireland and the Welsh schemes were positive for influenza (Table 3).

Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
40	0/5 (-)	0/6 (-)	0/0 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 40 2014, out of the 600 respiratory specimens reported through the Respiratory Datamart System, two (0.3%) were positive for influenza A(H3) (Figure 8*). The overall positivity for RSV was 1.5% in week 40 with the highest positivity reported in <5 year olds of 2.5% in week 40. (Figure 9). Positivity for rhinovirus remained at a high level in week 40 at 23.0%, although it has decreased from 28.2% the previous week. Other respiratory viruses remained at low levels: adenovirus 4.7%, parainfluenza 3.1% and hMPV 0.4% in week 40 2014% (Figure 10).

Figure 8: DataMart samples positive for influenza, England

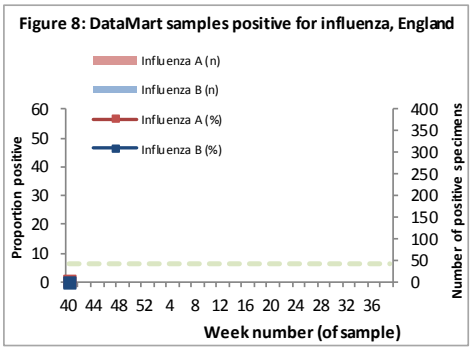


Figure 9: Datamart % RSV positive by age, England

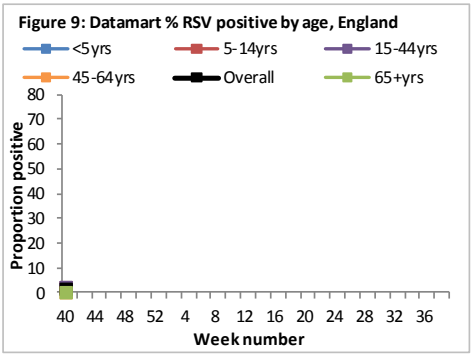
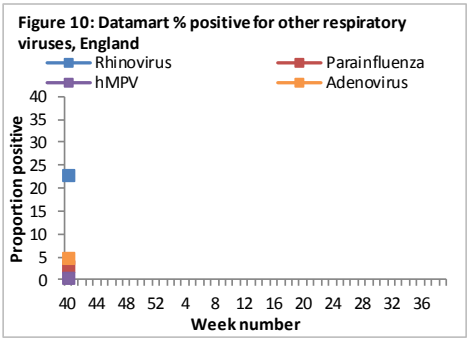


Figure 10: Datamart % positive for other respiratory viruses, England



**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 for the start of influenza activity for Datamart % positive as calculated through the Moving Epidemic Method is 6%.*

- Virus characterisation

In week 40 2014, no influenza viruses were isolated or antigenically characterised by PHE Respiratory Virus Unit (RVU).

- Antiviral susceptibility

In week 40 2014, no influenza viruses were tested for antiviral susceptibility in the UK.

- Antimicrobial susceptibility

-In the 12 weeks up to 28 September 2014, 81% 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 4). There have been no significant changes in susceptibility in recent years.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 23 weeks up to 28 Sept 2014, E&W

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
S. aureus	2,851	93	144	93
S. pneumoniae	1,497	81	1593*	90*
H. influenzae	7,199	98	6,950	93

** 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 beta-lactams such as co-amoxiclav.

Vaccination

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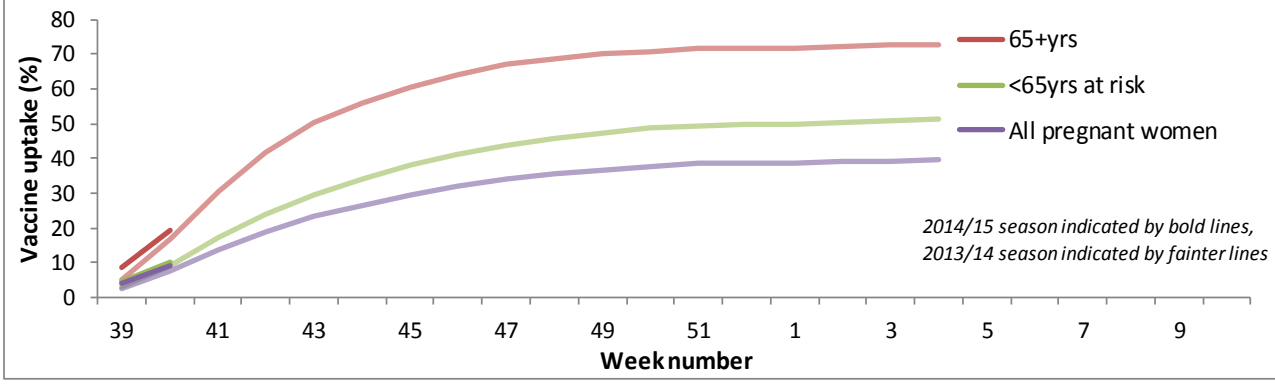
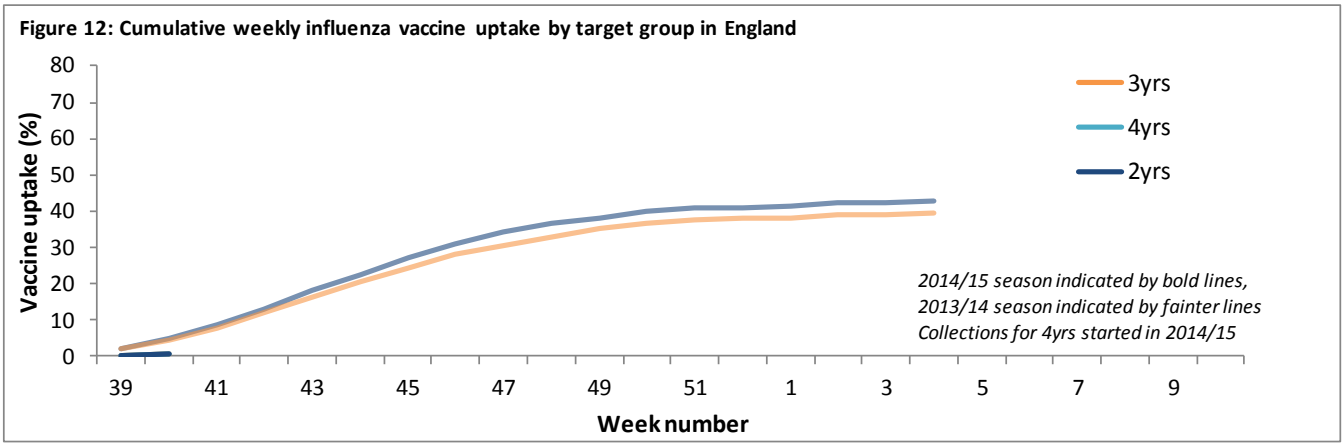
- Up to week 40 2014 in 82.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows (Figure 11)
    - 10.1% in under 65 years in a clinical risk group
    - 9.2% in pregnant women
    - 19.2% in 65+ year olds

Figure 11: Cumulative weekly influenza vaccine uptake by target group in England



- The childhood universal influenza vaccination programme has extended from 2-3 year olds in 2013/14 to 2-4 year olds in 2014/15. Up to week 40 2014 in 82.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2012/13 influenza vaccine in targeted groups was as follows (Figure 12)
    - 0.7% in all 2 year olds
    - 0.9% in all 3 year olds
    - 0.7% in all 4 year olds

Figure 12: Cumulative weekly influenza vaccine uptake by target group in England



International Situation

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Globally, the southern hemisphere influenza season seems to be coming to an end, although high activity continued to be reported in Oceania associated with A(H1N1)pdm09 and A(H3N2) viruses. Elsewhere influenza activity remained low, except for some tropical countries in the Americas.

- Europe 5 September 2014 (European Centre for Disease Prevention and Control report)

Overall, influenza activity and circulation of influenza viruses in reporting countries was low.

For weeks 21-35/2014, low intensity was reported by all countries submitting reports (15 to 19 depending on the week). Local or sporadic activity was reported by eight countries.

Of 330 sentinel specimens tested across 14 countries, 10 were positive for influenza virus. Eight were influenza A viruses and two were type B.

Nine hospitalised, laboratory-confirmed influenza cases were reported by two countries; six of these cases were admitted to intensive care units.

- United States of America 3 October 2014 (Centre for Disease Control report)

Nationwide during week 39, 1.1% 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 39, 5.7% of all deaths reported through the 122-Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.0% for week 39.

No new influenza-associated pediatric deaths were reported to CDC during week 39. A total of 108 influenza-associated pediatric deaths have been reported during the 2013-2014 season.

- Canada 26 September 2014 (Public Health Agency report)

Several influenza indicators (activity levels, influenza detections, ILI and hospitalizations) increased in weeks 37 and 38 compared to recent weeks.

In weeks 37 and 38, the number of regions in Canada reporting influenza/ILI activity increased, with one region in Alberta reporting localized activity and 11 regions reporting sporadic activity in week 38. The national influenza-like-illness (ILI) consultation rate has been increasing steadily during the first four weeks of the 2014-15 season; and was 17.7 and 20.1 per 1,000 in weeks 37 and 38, respectively. The rates since mid-June have been above the expected range for this time of year.

In weeks 37 and 38, four laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network (Figure 8a). These are the first hospitalizations reported through IMPACT this season. Three of the four were cases of influenza A and two were admitted to the ICU. The age distribution of cases ranged from <6 months to 16 years.

- Global influenza update 6 October 2014 (WHO website)

Globally, the southern hemisphere influenza season seems to be coming to an end, with still high activity in Oceania. Elsewhere influenza activity remained low, except for some tropical countries in the Americas.

In Europe and North America, influenza activity remained at inter-seasonal levels.

In tropical countries of the Americas, influenza B co-circulated with respiratory syncytial virus (RSV).

In Africa and western Asia, influenza activity was low.

In eastern Asia, influenza activity in most countries remained low or decreased following influenza A(H3N2) activity in August and September

In the southern hemisphere, influenza activity decreased in most countries. In the temperate zone of South America, influenza-like illness (ILI) decreased and was still mainly associated with RSV. Influenza A(H3N2) virus was the most detected influenza virus. In Australia and New Caledonia, the influenza season continued with high activity associated with A(H1N1)pdm09 and A(H3N2) viruses. ILI activity increased in several of the Pacific Islands.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 21,796 specimens. 1,540 were positive for influenza viruses, of which 1,049 (68.1%) were typed as influenza A and 491 (31.9%) as influenza B. Of the sub-typed influenza A viruses, 289 (38.9%) were influenza A(H1N1)pdm09 and 454 (61.1%) were influenza A(H3N2). Of the characterized B viruses, 52 (96.3%) belonged to the B-Yamagata lineage and 2 (3.7%) to the B-Victoria lineage.

- Avian Influenza 8 October 2014 (WHO website)

Influenza A(H7N9)

The most recent human infections with influenza A(H7N9) were reported by WHO on 2 September 2014 (two cases). 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.

For further updates please see the WHO website and for advice on clinical management please see information available online.

Influenza A(H5N1)

From 2003 through to 27 July 2014, 667 human cases of H5N1 avian influenza have been officially reported to WHO from 16 countries, of which 393 (59%) died.

- Novel coronavirus 8 October 2014

Up to 9 October 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 199 suspect cases in the UK that have been investigated for MERS-CoV and tested negative. A further 849 confirmed cases have been reported internationally. This results in a current global total of 853 cases, with cases recently reported in Saudi Arabia and Austria. Further information on management and guidance of possible cases is available online.

Acknowledgements

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Related links

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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 (Health Protection Scotland)
- Wales surveillance (Public Health Wales)
- Real time syndromic surveillance
- MEM threshold methodology paper and UK pilot paper

Community surveillance

- Outbreak reporting
- FluSurvey
- MOSA

Disease severity and mortality data

- USISS system
- EuroMOMO mortality project

Vaccination

- Seasonal influenza vaccine programme (Department of Health Book)
- Childhood flu programme information for healthcare practitioners (Public Health England)
- 2014/15 Northern Hemisphere seasonal influenza vaccine recommendations (WHO)