

HPA Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

6 January 2011 – Week 1



A full report will be published weekly on the [HPA website](http://hpa.org.uk). An email alert is sent out once it is published. To receive this email, or if you have any queries about the report, please email Respcdsc@hpa.org.uk.

For further information on the surveillance schemes mentioned in this report, please see the [HPA website](http://hpa.org.uk). Figures (including all those found in this report) displaying data from these schemes are available to download in PowerPoint format from the [HPA website](http://hpa.org.uk).

Summary

GP and school closures over the Christmas period will have affected surveillance indicators so all data should be interpreted with caution. Indeed, several influenza indicators have apparently plateaued. GP consultation rates remain above baseline levels in all four countries. Influenza A H1N1 (2009) and B are the predominant circulating viruses with few, sporadic A (H3N2) viruses detected. The H1N1 (2009) virus strain is virologically and epidemiologically similar to that seen during the pandemic. The virus strains circulating are overall well matched to the current influenza vaccine.

- In week 52 (ending 26 December), the weekly influenza/influenza-like illness (ILI) consultation rates decreased in England (98.4 per 100,000) and Scotland (52.0 per 100,000), were stable in Wales (89.2 per 100,000) and increased in Northern Ireland (179.5 per 100,000).
- The weekly national proportions of NHS Direct calls for cold/flu and fever have decreased in week 52.
- Thirteen acute respiratory disease outbreaks were reported in UK in week 52, three in primary schools, seven in prisons and two in care homes. This brings the total reported this season so far to 135. It should be noted that most schools across the UK were on holiday in week 52.
- One-hundred and fourteen of 161 (70.8%) specimens from patients with ILI presenting to sentinel GPs in England in week 52, were reported as positive for influenza. The proportion of specimens reported to DataMart (England) as positive for influenza was 41.4% (2,047 of 4,941). The proportion of samples positive for RSV increased slightly and for rhinovirus continued to decrease.
- Currently the main circulating influenza strains are influenza A (H1N1) and influenza B.
- From week 36, 50 deaths associated with influenza infection have been reported. The majority of fatal cases reported were unimmunised.
- By week 52, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 70.0%. For those in a risk group aged under 65 it was 45.4%.
- In Europe several countries are starting to report influenza activity, primarily associated with influenza A H1N1 (2009). In the USA and Canada overall influenza activity has increased, associated primarily with influenza A (H3N2) and B viruses.

Weekly consultation rates in national sentinel schemes

Influenza/influenza-like illness (ILI)

A series of sentinel schemes operate across the UK, for further information please see the [HPA website](http://hpa.org.uk).

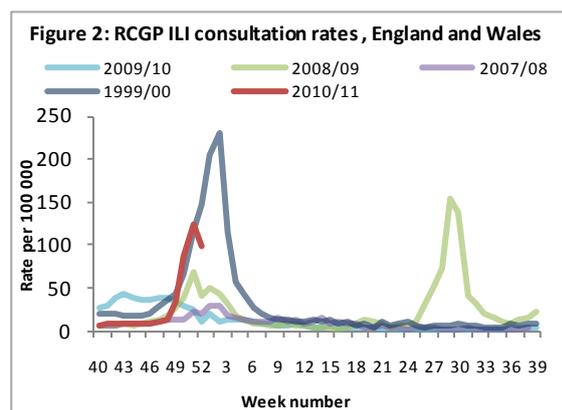
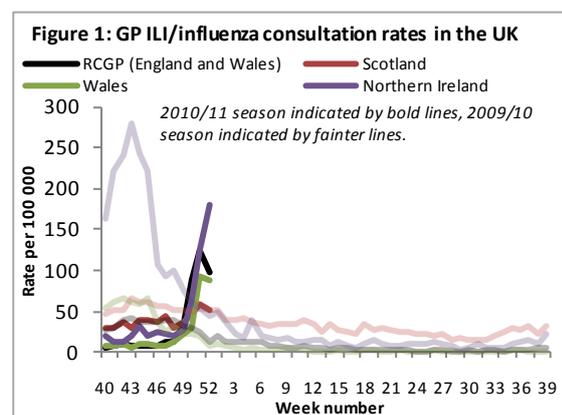
Due to bank holidays in week 52 (ending 2 January) GP surgeries were only open for three days, which will have impacted GP consultation rates so data should be interpreted cautiously. The weekly ILI consultation rate decreased in England and Scotland, was stable in Wales and increased in Northern Ireland (figure 1).

The overall ILI consultation rate from RCGP for England and Wales decreased from 124.4 to 98.4 per 100,000. This rate remains above baseline activity levels (figures 1 and 2). The ILI rate decreased in all regions: with the largest decrease from 136.2 to 94.4 per 100,000 in the southern region.

By age group, decreases were observed in all groups aged under 45 years; the largest decrease from 211.2 to 88.6 per 100,000 in the 1-4 year group. Increases were observed in older age groups over 45 years (figure 3).

For further information and data from this scheme please see the [RCGP website](http://rcgp.org.uk).

The combined influenza/ILI rate in Northern Ireland has increased from 123.4 (updated rate) to 179.5 per 100,000. This remains above the threshold of 70 per 100,000 (figure 1). The rates increased in most age groups and continued to be highest in the 15-44 year age group at 235 per 100,000.



For further information and data from Northern Ireland please see the [Public Health Agency website](#).

The Scottish ILI rate decreased from 58.5 to 52 per 100,000 but remains just above the baseline threshold of 50 per 100,000 (figure 1). The rates increased in young children under 5 years but decreased in children aged 5-14 years (from 92.4 to 64.5 per 100,000).

For further information and data from Scotland please see the [Health Protection Scotland website](#).

The Welsh influenza rate was stable at 89.2 per 100,000 (compared to 92.2 per 100,000 in week 51) and remains above the baseline threshold of 25 per 100,000 (figure 1). By age group, the highest rate continued to be in the 15-44 year group, though this has decreased from 125 to 111.2 per 100,000.

It should be noted that a change in the surveillance system used by Wales has led to an overall increase in reported rates since week 40 2010. For further information and data from Wales please see the [Public Health Wales website](#).

In the HPA/QSurveillance® scheme, the overall rate decreased from 80.2 to 73.6 per 100,000 in week 52, which is equivalent to 'above average influenza activity'. The rates decreased in most younger age groups (under 45 years), with increases seen in older age groups. The highest rate was in the 15-44 year group (92.8 per 100,000).

The weekly ILI rate through QSurveillance® decreased in most regions. The highest rates were in Northern Ireland (increased from 63.5 to 94.2 per 100,000) and South West England (increased from 86.3 to 90.6 per 100,000) (figure 4).

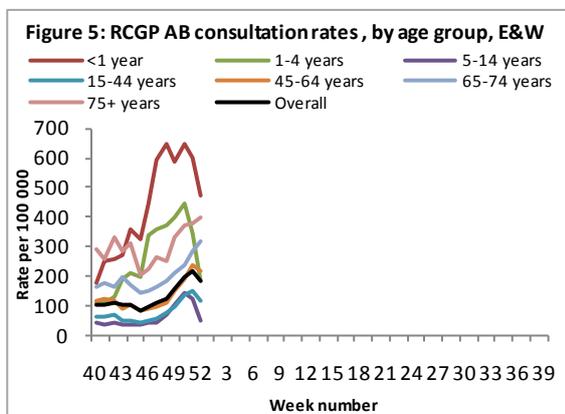
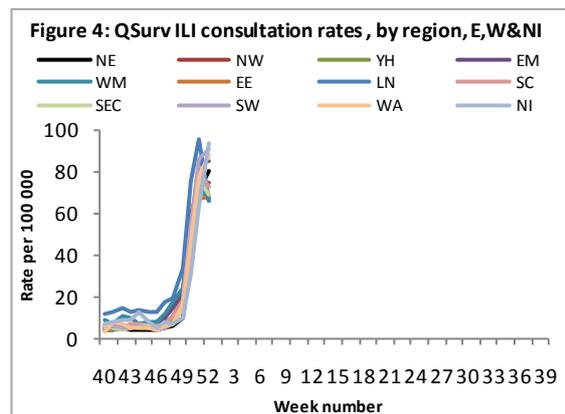
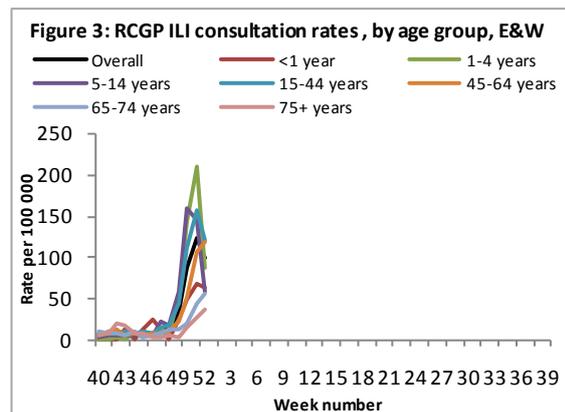
For further information and data from this scheme please see the Real-time Syndromic Surveillance page on the [HPA website](#).

Other respiratory indicators

The overall weekly consultation rate for acute bronchitis in England and Wales through the RCGP scheme decreased from 215.2 to 184.4 per 100,000 in week 52.

The acute bronchitis rates increased in adults aged over 65 years (from 284.6 to 319 per 100,000 in 65-74 year olds and from 378.1 to 398.7 per 100,000 in 75+ year olds) but decreases were observed in younger age groups. The highest rate was in the under one year group, though this had decreased from 600 to 471.8 per 100,000 (figure 5).

The overall weekly consultation rate for pneumonia from the RCGP scheme decreased from 2.8 to 1.9 per 100,000 in week 52.



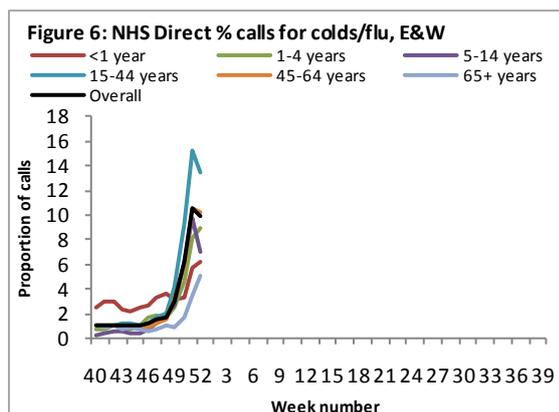
Community surveillance

The weekly national proportion of NHS Direct cold/flu calls for week 52 has decreased from 10.5% to 9.9%, this remains above the threshold level of 1.2%.

By age group, decreases were observed in most age groups with the highest proportion continuing to be in the 15-44 year group (13.5%) (figure 6).

The proportion of calls for fever in the 5-14 year age group continued to decrease from 16.8% to 10.7%, though this remains above the baseline level of 9%. This decrease may be due to school holidays.

For further information and data from this scheme please see the Real-time Syndromic Surveillance page on the [HPA website](#).



Internet-based surveillance of influenza continues this season through a project run by the London School of Hygiene and Tropical Medicine. UK residents can sign up at [FluSurvey](#).

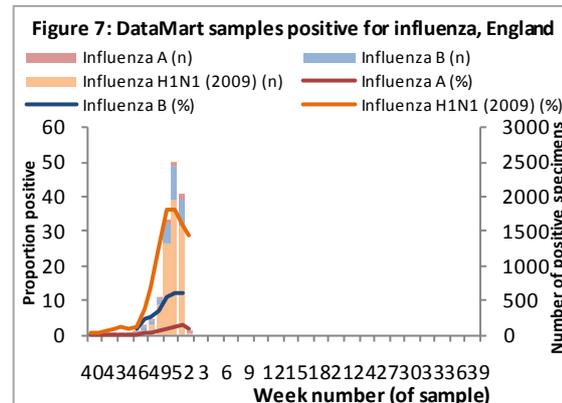
Thirteen acute respiratory disease outbreaks were reported in the UK in week 52. Three outbreaks were in primary schools (one influenza A H1N1 (2009)/influenza B and two influenza B), seven in prisons (two influenza A H1N1 (2009), one influenza A H1N1 (2009)/influenza B combined and four with unknown cause) and three care homes (one influenza A non-subtyped and two with unknown cause). This brings the total reported this season so far to 135; 115 (89%) from schools, seven from care homes, two from hospitals, one from a military base, one from a nursery and nine from prisons. Outbreaks should be reported to the local Health Protection Unit and Respcdsc@hpa.org.uk.

ILI rate from FluWatch, a community-based cohort surveillance system in England, are reported to be falling. The highest rates continue to be in the under sixteen year olds. Only a minority of ILI cases are reportedly consulting their GP. More information on FluWatch is available at <http://www.ucl.ac.uk/iph/research/cide/fluwatch>.

Microbiological surveillance

The majority of influenza viruses detected have been influenza A H1N1 (2009) and influenza B with few influenza A (H3N2) viruses.

Of 4,941 respiratory specimens reported to the English Data Mart virological surveillance system as taken in week 52, 2,047 (41.4%, slightly decreased from 46.2% in week 51) were positive for influenza (1,576 H1N1 (2009), 87 influenza A not subtyped and 384 influenza B) (figure 7). The highest age-specific positivity rate for H1N1 2009 decreased from 43.6% to 37.9% in 15-44 year olds, and for influenza B it increased from 30.7% to 32.2% in 5-14 year olds. The proportion positive for respiratory syncytial virus (RSV) increased slightly from 10.1% to 11.1% and for rhinovirus is decreased from 3.5% to 1.3%.



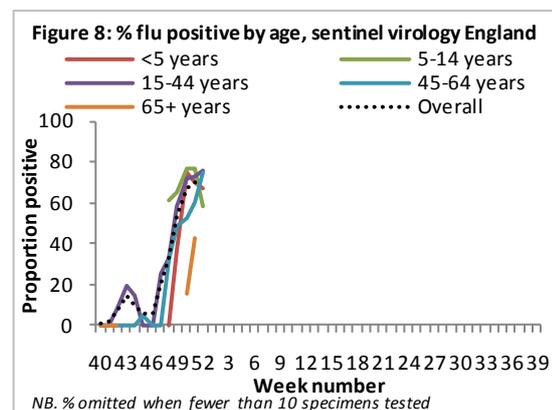
Of the 161 samples submitted via the two English GP-based sentinel schemes in week 52, 114 (70.8%) were positive for influenza (79 influenza H1N1 (2009) and 35 influenza B) (Table 1). By age group, the highest proportion positive was in adults aged 15-44 years at 75.6%. In children aged 5-14 years, the proportion positive decreased from 76.3% to 58.3% (figure 8). In week 52, 26 specimens were reported as positive for influenza (22 A unknown subtype, one A (H3) and 3 influenza B) through the sentinel GP scheme in Scotland, and two specimens were reported positive for influenza H1N1 (2009) in Northern Ireland (table 1).

Table 1: Sentinel virological surveillance in the UK

| Week | England | Scotland | Northern Ireland | Wales |
|------|-----------------|----------------|------------------|-----------|
| 48 | 53/161 (32.9%) | 7/36 (19.4%) | 0/8 (-) | 0/10 (0%) |
| 49 | 163/303 (53.8%) | 9/32 (28.1%) | 2/6 (-) | 0/29 (0%) |
| 50 | 369/550 (67.1%) | 29/75 (38.7%) | 16/26 (61.5%) | 0/34 (0%) |
| 51 | 353/507 (69.6%) | 36/145 (24.8%) | 15/33 (45.5%) | 0/30 (0%) |
| 52 | 114/161 (70.8%) | 26/41 (63.4%) | 2/3 (-) | 0/14 (0%) |

NB. Proportion positive omitted when fewer than 10 specimens tested.

The HPA Respiratory Virus Unit (RVU) has isolated and antigenically characterised 94 influenza A H1N1 (2009), two influenza A (H3N2) and 122 influenza B viruses from community and hospital samples since week 40. All the influenza A H1N1 (2009) viruses characterised to date from hospitalised and community cases, are similar to the A/California/07/2009 vaccine strain. Both influenza A (H3N2) viruses are similar to the A/Perth/16/2009 H3N2 vaccine strain. The majority of influenza B viruses characterised belong to the B-Victoria lineage, similar to the current vaccine strain B/Brisbane/60/2008. Four influenza B viruses from the B-Yamagata lineage have been detected, one from a fatal case and three from hospitalised cases. They are closely related antigenically with good reactivity to reference sera and are similar to other influenza B viruses from this lineage that have been sporadically identified in 2009 and 2010.



Of 636 influenza H1N1 (2009) viruses reported as tested for antiviral susceptibility at RVU and regional labs since week 40 2010, six have been found to carry the H275Y mutation which confers resistance to the antiviral drug oseltamivir. Fifty-one H1N1 (2009) viruses, three influenza A H3 viruses and fifty-seven influenza B viruses have been fully tested for susceptibility and found to be sensitive to oseltamivir and zanamivir.

In the 12 weeks up to 12 December 2010, over 80% of all 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, E&W

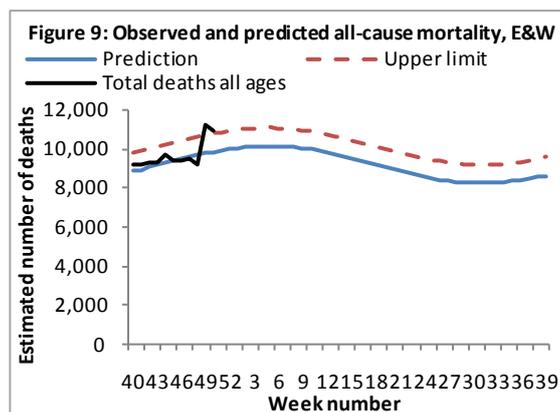
| Organism | Tetracyclines | | Co-amoxiclav | |
|----------------------|----------------------|---------------------------|----------------------|---------------------------|
| | Specimens tested (N) | Specimens susceptible (%) | Specimens tested (N) | Specimens susceptible (%) |
| <i>S. aureus</i> | 2,677 | 94 | 211 | 82 |
| <i>S. pneumoniae</i> | 1,959 | 88 | 2084* | 93* |
| <i>H. influenzae</i> | 6,156 | 98 | 5,918 | 92 |

* *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.

Disease severity and mortality data

There have been reports of influenza hospitalisations and ICU admissions across the UK. For further information see <http://winterwatch.dh.gov.uk/>.

HPA is receiving reports of fatal influenza cases from various sources (clinicians, laboratory reports and death certificates) across the United Kingdom. These reports have been reconciled and verified by clinicians. These cases will not represent all influenza-related deaths. Up to 5 January 2011, 50 fatal cases have been verified by HPA as related to influenza infection. Of these cases, 45 have been associated with H1N1 (2009) infection and five with influenza B infection. The deaths have been mainly in younger adults and children, with five cases less than 5 years of age; eight cases from 5 to 14 years; 33 cases from 15 to 64 years and four cases older than 64 years. Thirty-three of 48 fatal cases with available information (69%) were in one of the CMO-defined clinical risk groups for vaccination. The leading reported clinical risk factors were underlying neurological disease (n=11) and respiratory disease including asthma (n=13). Of cases with available information on immunisation history, 36 of 39 cases had not received 2010/11 trivalent influenza vaccine more than two weeks before illness onset. Thirty-three of 34 cases had not received monovalent pandemic influenza vaccination last season.



In week 50, an estimated 10,880 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is decreased from 11,193 in week 49 but remains just above the upper limit of expected levels for this time of year (figure 9). Potential factors for this excess include recent cold weather and circulating respiratory viruses.

Vaccine uptake

By week 52, the proportion of people in England aged over 65 years who had received the 2010/11 influenza vaccine was 70%, while in those aged under 65 in a risk group it was 45.4% (provisional data). For further information on the 2010/11 seasonal influenza vaccine programme see the [Department of Health Green Book](#) (an amended version of the influenza chapter was published in December 2010).

International Situation

[Europe \(European Centre for Disease Prevention and Control report\) 30 December 2010:](#)

Reporting of influenza is less complete over Weeks 51 and 52 due to the holiday period which reduces consulting rates, reporting to national centres and onto ECDC. In addition there is the effect of school closures which seems to reduce transmission of A(H1N1) 2009. Sixteen countries experienced influenza

activity of low intensity and four countries reported medium intensity. Three countries (Belgium, France and Portugal) reported widespread activity and six countries reported increasing trends. A total of 642 influenza viruses were detected during week 51/2010. Of these detections, 65% were type A and 35% were type B. The percentage of sentinel specimens testing positive for influenza virus (33.5%) was lower than in the previous week (39.4%), but this decline may reflect the discontinuity in reporting. Of the 312 sentinel influenza A viruses that were sub-typed, 302 (97%) were A(H1N1) 2009 and 10 (3%) were A(H3) viruses. The A(H1N1) 2009 virus was reported as dominant in Belgium, Hungary, Italy, Latvia, Malta, Spain and UK (Northern Ireland) while influenza B virus was dominant in Norway. Fifty-two SARI cases were reported by Belgium and Romania. Of eight cases in this latter country, two were related to influenza infection.

United States of America (Centre for Disease Control report) 30 December 2010:

During week 51 (December 19-25, 2010), influenza activity in the United States continued to increase. Of the 3,284 specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division, 689 (21.0%) were positive for influenza; 479 (69.3%) influenza A and 210 (30.5%) influenza B. Of the 479 influenza A viruses detected in week 51, 15 (3.1%) were A H1N1 (2009), 277 were not subtyped and 187 (39%) were H3N2. The proportion of deaths attributed to pneumonia and influenza (P&I) was at the epidemic threshold. One influenza-associated pediatric death was reported and was associated with influenza A (H3) virus infection. The proportion of outpatient visits for influenza-like illness (ILI) was 2.7%, which is above the national baseline of 2.5%. Two of the 10 regions reported ILI above region-specific baseline levels; three states and New York City experienced high ILI activity, six states experienced moderate ILI activity, five states experienced low ILI activity, 35 states experienced minimal ILI activity, and data were insufficient from the District of Columbia and two states. The geographic spread of influenza in five states was reported as widespread, Puerto Rico and 13 states reported regional activity; nine states reported local activity; the District of Columbia, the U.S. Virgin Islands, and 23 states reported sporadic activity, and Guam reported no activity.

Canada (Public Health Agency report) 30 December 2010:

In week 50, one region reported widespread influenza activity, seven regions reported localized activity, 14 regions reported sporadic activity and 34 regions presented no activity. Ten new ILI/influenza outbreaks were reported during week 50: 9 outbreaks of unsubtype influenza A (5 in long-term care facilities (LTCF), 4 in other facilities), and one outbreak of pandemic H1N1 2009 in a facility.

WHO influenza update 30 December 2010:

The winter influenza season is now under way in parts of the Northern Hemisphere. North America is seeing increases of influenza-like illness (ILI) now above baseline levels in parts of Canada and the United States of America (US) associated primarily with influenza viruses A(H3N2) and type B. The United Kingdom of Great Britain and Northern Ireland (UK) has been experiencing a surge in both mild and severe cases for the last three weeks which has not yet peaked and is primarily associated with influenza A(H1N1) 2009 virus and to a lesser extent influenza type B. The pattern of illness associated with H1N1 (2009) virus infection in the UK is similar to last season primarily affecting young adults, particularly those with underlying chronic illness or pregnancy although a number have had no known risk factors. On the European continent, the Middle East and in northern Asia rates of influenza-like illness are low but recent increases have been noted in some areas. In tropical regions, very little activity is noted in most of the world, however Sri Lanka has reported a marked increase in the number of both mild and severe cases related to H1N1 (2009) virus, including 22 deaths. As in the UK, the deaths in Sri Lanka have been predominantly in people under the age of 60 years and most have had preexisting medical conditions. No significant influenza transmission has been reported in Southern Hemisphere temperate regions. Notably, the large majority of viruses that have been characterized from North America and the UK have been antigenically similar to those contained in the current trivalent influenza vaccine. WHO continues to recommend vaccination for those at high risk of complications, where it is available, and early treatment of those at high risk or with severe or rapidly deteriorating disease.

Avian Influenza (WHO website): Since 2003, 512 human cases of H5N1 avian influenza have been reported to WHO from 15 countries. Of these, 304 (59%) have reportedly died (22 of 44, 51% in 2010). The latest cases are two unlinked cases from Egypt, a adult female who survived the infection and a child who died.

Acknowledgements

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