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Current News

- ▶ Avian influenza H7N2 in Wales and the Northwest of England
- ▶ An national outbreak of Salmonella Senftenberg in England and Wales: April to May 2007
- ▶ Malaria cases in São Paulo area of Brazil, South America

Infection reports

Respiratory

- ▶ Laboratory reports of respiratory infections made to the Health Protection Agency Centre for Infections from HPA and NHS laboratories in England and Wales: weeks 18-21/2007

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Avian influenza H7N2 in Wales and the Northwest of England

The National Public Health Service for Wales (NPHS) was notified on 23 May by Animal Health (formerly the State Veterinary Service) of confirmed H7 avian influenza virus infection in chickens that had died on a smallholding in North Wales. The chickens had been bought at a market in Chelford in Cheshire on 7 May. Cases in poultry and people in the North West of England were also associated with the market in Chelford.

The NPHS began investigating on 23 May and on detailed questioning, identified all people who had a primary or secondary contact with avian flu:

- ▶ Primary contact being an individual who has been in contact with affected premises or to known infected poultry (handling/within one metre) or close contact with another human case
- ▶ Secondary contact being an individual not in contact with affected premises or to known infected poultry, but who has been in contact with a case, either definite or suspected.

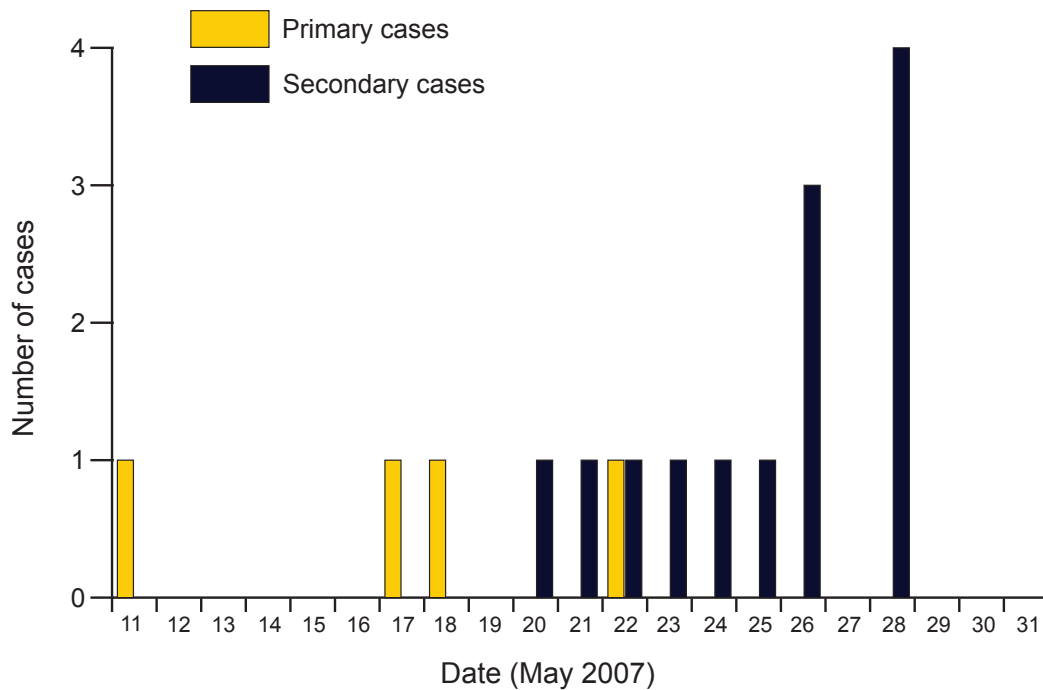
Of the 256 people fitting these criteria, 17 were symptomatic with flu-like symptoms or conjunctivitis. The age and sex data summary is shown in table 1 and the epidemic curve is shown in figure 1.

Table 1 Age and sex of cases and contacts

	Number	Sex			Age group (years)			
		Male	Female	Unknown	0-18	19-59	≥60	unknown
Total number of Cases / Contacts to date	183	94	84	5	25	59	10	89
Number symptomatic	17	7	10	–	3	14	–	–

Data summary produced on 1 June 2007, 15:00 hrs.

Figure 1 Epidemic curve of primary and secondary H7 contacts



The public health response was to follow United Kingdom guidelines in identifying all potential contacts. Some contacts were offered prophylaxis or treatment with oseltamivir, depending on the presence of relevant symptoms and the timeline of possible exposure. To date, no one has been seriously ill and symptoms have been very mild, especially in secondary contacts. This included veterinary staff dealing with the infected poultry and medical staff assessing people with symptoms who had contact with the virus. It also included staff and patients at a hospital, where a healthcare worker worked during a time when she had symptoms, and a second hospital where another possible case was admitted as a patient. Also, there were children and staff in a school with close contact with a child who was a presumed case. All laboratory results to date on these individuals have been negative, with the exception of the two confirmed cases.

There have been two confirmed human cases of influenza like illness in the North West of England associated with this outbreak. These cases have had laboratory confirmation of influenza A virus infection. Both had contact with diseased poultry, had symptoms compatible with H7 and were hospitalised but have now been discharged. Two other symptomatic cases have tested negative for influenza A. Antiviral medication was given to three of the cases; one was not treated because of other clinical considerations. An investigation in the north west of England, running in parallel to that in Wales, identified 106 individuals associated with the incident. All laboratory results to date on these individuals have also been negative, with the exception of the two confirmed cases.

Large outbreaks of influenza have occurred in poultry since 1982, nearly all caused by H5 and H7 strains. Since January 2004, outbreaks caused by the H5N1 subtype of influenza A virus have caused concern in South East Asia and some other countries, which have been related to severe illness and deaths in human contacts of infected poultry.

H5 and H7 viruses of low pathogenicity can, after circulation for sometimes short periods in a poultry population, mutate into highly pathogenic viruses. Despite the infection of tens of millions of poultry over large geographical areas since mid-2003, fewer than 200 human cases have been laboratory confirmed. Person-to-person transmission, if it occurred, would be highly unusual, although three household contacts of poultry workers tested positive on convalescent PCR serology for H7N7 in the outbreak in the Netherlands in 2003, affecting 86 poultry workers.

Human cases of avian influenza infection with viruses other than H5N1 since 1998 are shown in table 2

Table 2 Outbreaks of non-H5N1 avian influenza involving human cases

	Outbreak			
H9N2	China 1998 6 cases	Hong Kong 1999 2 cases	Hong Kong 2003 1 case	Hong Kong 2007 1 case
H7N2	USA 2002-3 2 cases			
H7N7	Netherlands 89 cases (1 death)			
H7N3	Canada 2004 2 cases	UK 2006 1 case		
H10N7	Egypt 2 cases			

source: Dr. Arnaud Tarantola, Département International et Tropical, Institut de Veille Sanitaire, Paris, France 30/5/07, personal communication.

The main issue of concern has been to investigate the possibility of person-to-person spread in this incident. Preliminary virological testing has been negative but further serological work is awaited. Two steps, however, would need to occur, for this avian influenza to become a major public health threat. The virus would need to:

1. Develop the ability to spread easily from person-to-person, perhaps by combining with a human Influenza A virus in one person who is co-infected
2. Mutate into a strain that is highly pathogenic in humans

If these steps occur, a new virus could become the trigger for a pandemic as few people in the population will have any degree of cross-immunity to a novel virus. This is thought to have been a possible mechanism for the pandemics in 1918, 1957, 1968, and 1977.

Sources

WHO websites

<http://www.euro.who.int/flu>

http://www.who.int/topics/avian_influenza/en/

Eurosurveillance

<http://www.eurosurveillance.org/em/v10n12/1012-222.asp>

An national outbreak of *Salmonella* Senftenberg in England and Wales: April to May 2007

Since the beginning of 2007, the HPA's Laboratory of Enteric Pathogens (LEP) has received 45 isolates of *Salmonella* Senftenberg from cases of infection not reporting foreign travel. This compares to ten in the same time period in 2006. A total of 34 (76%) of these isolates have been received since week 15 (8 April 2007).

A case was defined as a resident of England and Wales infected with a confirmed or provisionally confirmed isolate of fully sensitive *S. Senftenberg* received by LEP on or after the 8 April 2007. Cases reporting foreign travel or close contact with a person with gastrointestinal disease symptoms in the five days prior to the onset were excluded from this definition. Twenty-seven cases fulfilled the case definition. Onset dates are available for 14 cases and ranged between 27 March and 12 May 2007. Females (63%) were overrepresented compared to males (37%). Most of the cases are adults and have been reported from laboratories in all HPA regions and Wales.

A UK study of the microbiological quality of retail fresh herbs carried out by the Health Protection Agency (HPA Centre for Infections [CfI] and Regional Microbiology Network [RMN]) and the Local Authorities Coordinators of Regulatory Services (LACORS) commenced in May 2007. To date, seven samples of pre-packed fresh basil, grown and packed in Israel, have tested positive for *Salmonella* spp by HPA RMN Food, Water and Environmental Laboratories in Newcastle, London, Bristol, and the NPHS-Wales Microbiology Carmarthen. Results are available for four of the seven isolates which have been confirmed as *S. Senftenberg*.

Pulsed-field gel electrophoresis (PFGE) was carried out on two of the basil isolates which was given the PFGE profile SSFTXB.0014 [1]. Fourteen (50%) of the human isolates tested so far and received after week 15 are SSFTXB.0014.

The Food Standards Agency (FSA) issued a food alert on 25 May 2007 warning consumers not to eat basil from the same batches that were found to be contaminated at the time [1].

References

1. Gatto AJ, Peters TM, Green J, *et al.* Distribution of molecular subtypes within *Salmonella enterica* serotype Enteritidis phage type 4 and *S. Typhimurium* definitive phage type 104 in nine European countries, 2000-2004: results of an international multi-centre study. *Epidemiol Infect* 2006; **134**(4):729-36.
2. Food Standards Agency (FSA) [online]. *Agency issues warning on salmonella in basil*. London: FSA, 25 May 2007. Available at: <http://www.food.gov.uk/news/newsarchive/2007/may/warningbasil>.

Malaria cases in São Paulo area of Brazil, South America

The Advisory Committee on Malaria Prevention (ACMP) has received information that 67 cases of *Plasmodium vivax* malaria have been reported in the city of São Paulo, Brazil, in the last six months. Local reporting also indicates that five other cities in the São Paulo state have each recorded single cases this year. This number is higher than usual, although there have been no deaths or serious disease. The city of São Paulo has around 11 million inhabitants and there are usually around 15 to 30 reports of malaria a year from the area [1]. Local specialists suspect that recent occupation of forested areas in a range of hills known as Serra do Mar, to the south of the city, may have led to increased contact with mosquitoes. Recent improvements in surveillance may also have led to increased numbers of reports.

Also, the Malaria Reference Laboratory has received a report of a case of *P. vivax* in a traveller from the United Kingdom who was on a 15 day holiday to Brazil. This individual had visited Cachoeiras Do Macacu about 80 to 100 km Northeast of Rio de Janeiro. This is in the neighbouring state to São Paulo and is also in a low risk malaria area of Brazil where the ACMP does not advise taking malaria tablets [2].

P. vivax malaria is widely distributed in tropical South America, though the distribution is patchy and usually sparse [3]. Therefore, the ACMP does not recommend prophylaxis in the states of Brazil outside the Amazon basin area since, for visitors to these low-risk areas, the risk of prophylaxis-related problems is thought to be significantly greater than the risk of malaria. Travellers, however, should be aware of the low risk and should remember to use adequate bite prevention measures.

Advice to travellers

Travellers are reminded that vivax malaria occasionally occurs in regions outside the Amazon Basin area of Brazil. They should take special care to avoid being bitten (see NaTHNaC insect bite avoidance http://www.nathnac.org/travel/misc/travellers_mos.htm). They should also be aware of the signs of malaria (Chapter 2 of Guidelines for malaria prevention in travellers from the United Kingdom available at http://www.hpa.org.uk/publications/2006/Malaria/Chap_2.pdf), and should seek advice from a doctor immediately if they develop a feverish illness after visiting Brazil, even up to a year after travel.

The ACMP will keep the situation under review.

References

1. Malaria cases by municipality: (1990 to 2003) http://www.sucen.sp.gov.br/base_dados/tab_mal/texto_tab_mal_ca_aut7.htm#sr1.
2. Chiodini P, Hill D, Lalloo D, Lea G, Walker E, Whitty C, Bannister B on behalf of the Advisory Committee for Malaria Prevention in UK Travellers (ACMP). *Guidelines for malaria prevention in travellers from the United Kingdom*. Health Protection Agency: London, 2007. Available at http://www.hpa.org.uk/infections/topics_az/malaria/guidelines.htm.
3. Cerutti C Jr, Boulos M, Coutinho AF, *et al.* Epidemiologic aspects of the malaria transmission cycle in an area of very low incidence in Brazil. *Malar J* 2007; **6**:33.

Respiratory

Last updated: 1 June 2007, Volume 1, No 22

Next update: 6 July 2007

Laboratory reports of respiratory infections made to the Health Protection Agency Centre for Infections from HPA and NHS laboratories in England and Wales: weeks 18-21/2007

Table 1 Reports of influenza infection made to HPA Centre for Infections, by week of report: weeks 18-21/2007

Week	Week 18	Week 19	Week 20	Week 21	Total
Week ending	06/05/07	13/05/07	20/05/07	27/05/07	
Influenza A	6	9	4	3	22
Isolation	–	–	–	1	1
DIF*	2	3	1	–	6
Four-fold rise in paired sera	–	–	–	–	–
PCR	–	–	–	–	–
Other†	4	6	3	2	15
Influenza B	–	2	–	2	4
Isolation	–	1	–	–	1
DIF*	–	–	–	–	–
Four-fold rise in paired sera	–	–	–	–	–
PCR	–	–	–	–	–
Other†	–	1	–	2	3
Influenza (untyped)	–	–	–	–	–
Isolation	–	–	–	–	–
DIF*	–	–	–	–	–
Four-fold rise in paired sera	–	–	–	–	–
PCR	–	–	–	–	–
Other†	–	–	–	–	–

*DIF = Direct Immunofluorescence.

†'Other' = 'Antibody detection - Single high titre' or 'method not specified'.

Table 2 Respiratory viral detections by any method (culture, direct immunofluorescence, PCR, four-fold rise in paired sera, single high serology titre, genomic, electron microscopy, other method, other method unknown), by week of report: weeks 18-21/2007

Week	Week 18	Week 19	Week 20	Week 21	Total
Week ending	06/05/07	13/05/07	20/05/07	27/05/07	
Adenovirus*	56	38	33	52	179
Coronavirus	–	–	–	6	6
Parainfluenza†	23	17	9	17	66
Rhinovirus	10	1	2	28	41
Respiratory syncytial virus (RSV)	48	12	10	7	77

*Respiratory samples only. Excludes diagnoses made by electron microscopy (EM)

†includes parainfluenza types 1, 2, 3, 4 and untyped.

Table 3 Respiratory viral detections by age group: weeks 18-21/2007

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Unknown	Total
Adenovirus*	21	29	13	76	26	13	1	179
Coronavirus	2	1	–	2	–	1	–	6
Influenza A	2	1	1	8	3	7	–	22
Influenza B	–	–	–	3	–	1	–	4
Parainfluenza†	29	15	6	5	6	5	–	66
Rhinovirus	19	11	2	5	2	1	1	41
Respiratory syncytial virus (RSV)	47	6	6	1	8	9	–	77

*Respiratory samples only.

†includes parainfluenza types 1, 2, 3, 4, and untyped.

Table 4 Laboratory reports of infections associated with atypical pneumonia, by week of report: weeks 18-21/2007

Week	Week 18	Week 19	Week 20	Week 21	Total
Week ending	06/05/07	13/05/07	20/05/07	27/05/07	
<i>Coxiella burnettii</i>	1	–	–	–	1
Respiratory <i>Chlamydia</i> sp*	4	3	4	2	13
<i>Mycoplasma pneumoniae</i>	26	10	6	9	51
<i>Legionella</i> sp	–	–	–	–	–

*Includes *Chlamydia psittaci*, *Chlamydia pneumoniae*, and *Chlamydia* sp detected from blood, serum, and respiratory specimens.

Table 5a Reports of legionnaires' disease cases in England and Wales, by week of report: weeks 18-21/2007

Week	Week 18	Week 19	Week 20	Week 21	Total
Week ending	06/05/07	13/05/07	20/05/07	27/05/07	
Nosocomial	–	–	–	–	–
Community	6(1*)	2	1	1	10
Travel abroad	2	2	4	5(2†)	13
Travel UK	1	1	–	–	2
Total	9	5	5	6	25
Male	6	4	4	4	18
Female	3	1	1	2	7

*2006 case(s).

† Non-pneumonic case(s).

Twenty-three cases of legionnaires' disease were reported with pneumonia in addition to two non-pneumonic cases; 18 males aged between 32 and 73 years and seven females aged between 41 and 67 years. Ten cases had community-acquired infection. Three deaths were reported in M 64y, M 69y, and F 51y.

Fifteen cases were travel associated: United States (3), United Kingdom (2), and one each from a cruise, Cyprus, Germany, India, Italy, Montenegro, South Africa, Spain, Switzerland, and United Arab Emirates.

Table 5b Reports of legionnaires' disease cases by region of report in England and Wales: weeks 18-21/2007

Region	Nosocomial	Community	Travel (Abroad)	Travel (UK)	Total
North East	–	–	–	–	–
Yorkshire & Humber	–	4	3	–	7
East Midlands	–	2	1	1	4
East of England	–	–	1(1*)	–	1
London	–	–	–	–	–
South East	–	1	3	–	4
South West	–	–	1	–	1
West Midlands	–	2(1†)	–	–	2
North West	–	1	3(1*)	–	4
Wales	–	–	1	1	2
Total	–	10	13	2	25

* Non-pneumonic case(s).

†2006 cases.