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- ▶ New enhanced surveillance test for pertussis
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New enhanced surveillance test for pertussis

A new enhanced surveillance test for pertussis has been launched. The test is used to estimate IgG antibody levels in oral fluid directed against *Bordetella pertussis* pertussis toxin (PT). Since 2002 the HPA has been providing a realtime polymerase chain reaction (PCR) service for infants admitted to hospital (now available for infants aged under 1 year) with suspected pertussis; and sero-diagnosis by detection of raised serum IgG antibodies to pertussis toxin (PT) for patients who have been coughing for two weeks or more [1]. Clinicians who are aware of these methods may still be reluctant to take blood in this patient group, so they may content themselves with notifying the infection but not confirming it by laboratory testing. To address this last group, HPA Centre for Infections Respiratory and Systemic Infection Laboratory is now providing oral fluid testing (for anti-PT IgG) to diagnose **those who have been coughing for more than two weeks**.

The test is particularly suitable for the investigation of all notified cases of pertussis **which have not already been confirmed by other methods** (culture, PCR or serology) by oral fluid methods.

The method of taking the specimen is the same as that used for diagnosis and surveillance of measles, mumps, and rubella (*ie*, brushing along the gumline with the ORACOL saliva collection device (Malvern Medical Developments Ltd). It is suitable for parents to use at home, and to post to the Centre for Infections Respiratory and Systemic Infection Laboratory. It is, however, essential that all specimens are labelled. **Unlabelled specimens will not be processed.**

Smooth running of this extension to surveillance will rely on good communication between requesting authorities and the HPA Cfl Immunisation Department, to avoid cases already confirmed by other methods being followed up again. HPA Cfl will inform Health Protection Units of cases they are aware have already been confirmed by culture, PCR, or serological methods.

For further information about the laboratory methods please contact Norman Fry, HPA Centre for Infections, Respiratory and Systemic Infection Laboratory (tel:020 8327 6776), or see the HPA website at <http://www.hpa.org.uk/cfi/rsil/bordetella.htm>

For further information about the oral fluid kits (which include a brief laboratory request form) please contact the Immunisation Department on 020 8327 7914. Clinicians will also be asked to complete the enhanced surveillance form as is currently done for cases confirmed by other methods. The information requested for national surveillance matches closely that already collected by HPU for local purposes.

References

1. Crowcroft NS, Fry NK, Litt DJ, Harrison TG, George RC, Abid M, *et al.* Whooping cough – better methods of diagnosis are now available. *BMJ Rapid Responses* [online] 2007 [accessed 21 June 2007]. Available at <<http://www.bmj.com/cgi/eletters/334/7592/532#164273>>

Confirmed measles cases in the United Kingdom – an update

The outbreak of measles in the travelling community that started at the end of March is still on-going [1, 2] and there is evidence of limited spread to the wider community. As of 15 June, 79 cases are known to be linked to the travelling community, 68 in travellers and eleven in contacts of travellers. The majority are from the London (21), South East (11) and East of England (32) regions, although cases have also been reported from five other regions (six from the East Midlands, three from West Midlands, two from South West, three from Yorkshire and Humber, and one from North West). Thirty-four of the travellers were identified as having the same D4 measles strain sequence (MVs/Enfield.GBR/14.07/[D4] - EF600554). An additional 15 cases have an identical D4 strain, although only nine of these are known to have had contact with travelling communities suggesting the strain is now circulating more widely.

To date, 133 cases of laboratory confirmed measles in England with onset dates from 1 January to 10 June 2007 have been reported to the HPA Centre for Infections. During the same period, three cases have been reported in Scotland; two are imported infections in travellers from a Romanian community, both of whom had a D4 strain identified that is distinctly different from the MVs/Enfield.GBR/14.07/ strain associated with the travelling community cases in England, but similar to the sequences currently being identified in Romania (MVs/Glasgow.GBR/20/07/[D4] – EF653361. No measles cases have been confirmed in Wales or Northern Ireland.

In addition to the traveller outbreak, there have been several other small clusters in England associated with a healthcare worker, a nursery/primary school setting, and a hospital setting (genotype B3) (see current quarterly measles report). Eight cases are known to have acquired their infection while overseas; four in India (three had D8 strains), and one each in Poland (D8), Holland (D8), Denmark (D4), and Pakistan. A further case, who had a D5 strain identified, had contact with someone who returned from Thailand with clinical measles.

Only six of the 133 cases reported a history of receiving a measles-containing vaccine. Ninety per cent (122) were aged under 20 years (15 aged under one year, including four aged under 7 months; 35 aged 1 to 4 years; 41 aged 5 to 9 years; 19 aged 10 to 14 years, and 14 aged 15 to 19 years). The eleven adult cases were aged between 20 and 43 years.

References

1. HPA. Measles outbreak in the traveller community. *Health Protection Report* [serial online] 2007 [cited 18 June 2007]; **1** (21):News. Available at <<http://www.hpa.org.uk/hpr/archives/2007/hpr2107.pdf>>.

2. Cohuet S, Morgan O, Bukasa A, Heathcock R, White J, Brown K, *et al.* Outbreak of measles among Irish Travellers in England, March to May 2007. *Eurosurveillance* 2007;**12**(6):E070614.1. Available at <<http://www.eurosurveillance.org/ew/2007/070614.asp#1>>

New moth causes health problems

The Forestry Commission working with Defra, the Health Protection Agency London, and local authorities have launched a joint plan to try to eradicate from London a recently arrived moth that threatens the United Kingdom's (UK's) oak trees and human health [1]. The oak processionary moth (*Thaumetopoea processionea*), native to southern and central Europe, derives its common name from the habit of its caterpillars forming long 'processional' lines, was seen on trees in west and south-west London last summer, and has begun breeding in oak trees in a number of locations there, including Kew Gardens. South West London Health Protection Unit first reported the moth problem in 2006, the first time it had been identified in the UK. It has been identified in Europe for over a decade, with Belgium and the Netherlands having significant problems

The caterpillars are covered in tiny hairs that are sharp and barbed, and contain a toxin that can cause skin and eye irritation and rarely allergic reactions in people. The hairs are shed by the caterpillars and people are mostly exposed when these are blown in the wind from a nearby infested tree. More rarely contact is from handling the caterpillars, which is strongly discouraged. Contact with the toxin most commonly causes intensely itchy skin rashes, but can also cause sore throats, eye problems (conjunctivitis) and less commonly breathing difficulties.

People with a severe reaction, or who have an itching rash of uncertain origin, have been advised to consult their GP or NHS Direct

Further information about the species, including pictures and a *tree pest advisory note*, is available on Forest Research's website, www.forestresearch.gov.uk/oakprocessionarymoth, and the Forestry Commission's website at www.forestry.gov.uk/planthealth.

References

1. Forestry Commission. *Action plan launched to eradicate moth*. News release No: 9714. Edinburgh:Forestry Commission, 2007. Available at <http://www.forestry.gov.uk/newsrele.nsf/AllByUNID/3F377652F9C256B9802572F70036CD11>.

Immunisation

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- ▶ Invasive meningococcal infections, England and Wales, laboratory reports: weeks 21-25/2007
 - ▶ *Erratum:* Invasive meningococcal infections, England and Wales, laboratory reports: weeks 01-20/2007 corrected data
 - ▶ Laboratory confirmed cases of measles, mumps and rubella, England and Wales: January to March 2007
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Invasive meningococcal infections, England and Wales, laboratory reports: weeks 21-25/2007

	Method of diagnosis			Total reports	Cumulative*
	CSF and blood Culture	Non-culture	Other sites	21-25/2007	Total to week 25/2007
Group A	–	–	–	–	–
B	–	2	1	3	525
C	–	–	–	–	18
W135	–	–	–	–	12
X	–	–	–	–	1
Y	–	–	–	–	21
Z/29E	–	–	–	–	–
Ungroupable	–	–	–	–	1
Ungrouped	–	1	–	1	31
Total	–	3	1	4	609

*Latex antigen, microscopy, polymerase chain reaction combined Health Protection Agency Centre for Infections data and Meningococcal Reference Unit data.

Erratum: Invasive meningococcal infections, England and Wales, laboratory reports: weeks 01-20/2007 corrected data

The last four monthly Invasive meningococcal infections data tables published in the Health Protection Report contained errors and have now been corrected. These tables cover the period: week 1 to 20, 2007. The new corrected tables have been produced and are published below:

Invasive meningococcal infections, England and Wales, laboratory reports: weeks 01-05/2007

	Method of diagnosis			Total reports	Cumulative*
	CSF and blood Culture	Non-culture	Other sites	01-05/2007	Total to week 05/2007
Group A	–	–	–	–	–
B	59	91	4	154	154
C	3	–	–	3	3
W135	3	1	–	4	4
X	–	–	–	–	–
Y	5	–	–	5	5
Z/29E	–	–	–	–	–
Ungroupable	–	–	–	–	–
Ungrouped	–	11	–	11	11
Total	70	103	4	177	177

*Latex antigen, microscopy, polymerase chain reaction combined Health Protection Agency Centre for Infections data and Meningococcal Reference Unit data.

Invasive meningococcal infections, England and Wales, laboratory reports: weeks 06-10/2007

	Method of diagnosis			Total reports	Cumulative*
	CSF and blood Culture	Non-culture	Other sites	06-10/2007	Total to week 10/2007
Group A	–	–	–	–	–
B	60	91	8	159	313
C	6	3	–	9	12
W135	3	1	2	6	10
X	–	–	–	–	–
Y	2	3	–	5	10
Z/29E	–	–	–	–	–
Ungroupable	1	–	–	1	1
Ungrouped	–	8	–	8	19
Total	72	106	10	188	365

*Latex antigen, microscopy, polymerase chain reaction combined Health Protection Agency Centre for Infections data and Meningococcal Reference Unit data.

Invasive meningococcal infections, England and Wales, laboratory reports: weeks 11-15/2007

	Method of diagnosis			Total reports	Cumulative*
	CSF and blood Culture	Non-culture	Other sites	11-15/2007	Total to week 15/2007
Group A	–	–	–	–	–
B	47	67	6	120	433
C	2	3	–	5	17
W135	–	2	–	2	12
X	–	–	–	–	–
Y	5	–	–	5	15
Z/29E	–	–	–	–	–
Ungroupable	–	–	–	–	1
Ungrouped	–	4	–	4	23
Total	54	76	6	136	501

*Latex antigen, microscopy, polymerase chain reaction combined Health Protection Agency Centre for Infections data and Meningococcal Reference Unit data.

Invasive meningococcal infections, England and Wales, laboratory reports: weeks 16-20/2007

	Method of diagnosis			Total reports	Cumulative*
	CSF and blood Culture	Non-culture	Other sites	16-20/2007	Total to week 20/2007
Group A	–	–	–	–	–
B	39	45	5	89	522
C	1	–	–	1	18
W135	–	–	–	–	12
X	1	–	–	1	1
Y	4	2	–	6	21
Z/29E	–	–	–	–	–
Ungroupable	–	–	–	–	1
Ungrouped	–	7	–	7	30
Total	45	54	5	104	605

*Latex antigen, microscopy, polymerase chain reaction combined Health Protection Agency Centre for Infections data and Meningococcal Reference Unit data.

Laboratory confirmed cases of measles, mumps, and rubella, England and Wales: January to March 2007

Data presented here is for the first quarter of 2007 (ie, January to March 2007). Cases include those confirmed by oral fluid IgM antibody tests and routine laboratory reports (table 1). Analyses are by date of onset. Regional breakdown figures relate to Government Office Regions rather than regional health authorities (pre-April 2002 definitions) as used previously in this section. Quarterly figures for cases confirmed by oral fluid antibody detection only from 1995 are available from:

<http://www.hpa.org.uk/infections/topics_az/measles/data_not_confirmed.htm>

<http://www.hpa.org.uk/infections/topics_az/mumps/data_quarter.htm>

<http://www.hpa.org.uk/infections/topics_az/rubella/data_rub_not.htm>

and annual total numbers of confirmed cases by health region and age from:

<http://www.hpa.org.uk/infections/topics_az/measles/data_reg_age.htm>

<http://www.hpa.org.uk/infections/topics_az/mumps/data_reg_age.htm>

<http://www.hpa.org.uk/infections/topics_az/rubella/data_reg_age.htm>

Table 1 Total confirmed cases of measles, mumps, and rubella, and oral fluid IgM antibody tests in notified cases: weeks 01-13/2007

	Cases			Oral fluid IgM antibody results		Results		
	Notified	Tested	%	Total Positive	Recently vaccinated	Oral fluid IgM confirmed	Other lab confirmed	Total Confirmed cases
Measles	589	590	100*	20	6	14	7	21
Mumps	2064	1375	67	327	2	325	101	426
Rubella	317	243	77	5	2	3	10	13

*Some oral fluid specimens were submitted early from suspected cases and may not have been subsequently notified, thus the proportion tested may be artificially high for this quarter.

Measles

Only twenty-one cases of confirmed measles with onset dates in the first quarter of 2007 were reported, a similar number to that reported in the previous quarter [1]. One case in the on-going outbreak of measles associated with traveller communities in England became ill in late March and is thought to be the index case for this outbreak [2, 3]. An update on the outbreak including cases with onset dates to the end of May is published in the news section of this issue of the *Health Protection Report*. Thirteen other cases were part of three clusters in London and the South East. One cluster of two cases was associated with a healthcare worker (the second case was not confirmed but only epidemiologically linked). Another cluster of seven cases was associated with a nursery/primary school setting, and the third cluster of four cases was in a hospital setting. Sixteen (including one confirmed by PCR) cases were in children aged under 15 years (three aged under 1 year; four aged between 1 and 4 years; seven aged between 5 and 9 years; and two aged between 10 and 14 years), and six (including one confirmed by PCR) were adults aged between 25 and 43 years. Two cases reported a history of receiving one dose of MMR vaccine.

In the first quarter of 2007, cases were reported from the following regions: London 8, South East 7, Yorkshire and the Humber 3, and one from each of East of England, East Midlands, North West, and West Midlands. No cases were reported from North East, South West, and Wales. Four cases had a history of recent travel to India (three had a D8 strain identified). Two B3 genotypes were identified in the hospital cluster in London, and four cases from the nursery/school cluster in the South East region had D4 identified.

Mumps

Four hundred and twenty-six cases of mumps with onset dates in the first quarter of 2007 were laboratory confirmed compared to 284 in the previous quarter [1]. Cases continue to be confirmed predominantly in those aged between 15 and 24 years (67%), known to be at highest risk due either to not having been routinely offered MMR vaccination in childhood, or having only received one dose (table 2). The East Midlands and North West regions reported the largest number of cases (79 and 86 respectively) and cases were clustered around universities in all regions.

Table 2 Confirmed cases of mumps by age group and region, England and Wales: weeks 01-13/2007

Region	Age Group (years)							Not known	Total
	<1	1-4	5-9	10-14	15-19	20-24	≥25		
North East	–	2	–	–	11	12	5	–	30
North West	–	1	3	10	29	30	13	–	86
Yorkshire & Humber	–	1	–	–	11	14	6	–	32
East Midlands	–	1	1	2	31	31	12	1	79
West Midlands	–	2	2	2	7	10	11	–	34
East of England	–	–	–	2	12	20	10	3	47
London	–	2	–	–	–	11	18	–	31
South East	–	2	1	2	15	18	14	1	53
South West	–	–	–	–	3	4	3	–	10
Wales	–	–	–	–	1	1	3	–	5
Not known	–	–	–	1	7	8	2	1	19
Total	–	11	7	19	127	159	97	6	426

Rubella

Thirteen cases of rubella were confirmed in the first quarter of 2007 in comparison to thirty-two cases for the whole 2006 [1]. Two cases were detected in pregnant women, one of whom had an intra-uterine death. The remaining 11 cases were males, including one child aged 12 years, and ten adults aged 18 to 33 years.

References

1. HPA. Laboratory confirmed cases of measles, mumps and rubella, England and Wales: October to December 2006. *Health Protection Report* [serial online] 2007 [cited 14 June 2007]; **1**(12): Immunisation. Available at <<http://www.hpa.org.uk/hpr/archives/2007/hpr1207.pdf>>.
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3. Cohuet S, Morgan O, Bukasa A, Heathcock R, White J, Ramsay M. Outbreak of measles among Irish Travellers in England, March to May 2007. *Eurosurveillance* 2007;**12**(6):E070614.1. Available at <<http://www.eurosurveillance.org/ew/2007/070614.asp#1>>.

Laboratory confirmed cases of pertussis reported to the enhanced pertussis surveillance programme: January to March 2007

There were 104 laboratory confirmed cases of pertussis reported to the pertussis enhanced surveillance programme during January to March 2007 (table 1). This is a slight decrease when compared to the number of reports received during the previous quarter (109).

There were 167 whooping cough notifications received during January to March 2007 as statutory notifications of infectious diseases (NOIDs) [1]. Most of these notifications are not laboratory confirmed, but some of the laboratory confirmations in table 1 will have resulted from follow-up of these notifications. The age distributions of both laboratory-confirmed and notified cases are given in table 1 for comparison. Forty-five per cent of pertussis notifications concern children aged under ten years, although this age group makes up only 19% of laboratory confirmations.

Table 1 Laboratory confirmed and notified cases of pertussis in England and Wales by age group: January to March 2007*

Age group	Culture only	PCR only	Serology only	Culture and Serology	Serology and Oral	Oral only	Total	% in each age group	Pertussis NOIDs	% in each age group
<3 months	10	1	–	–	–	–	11	10.6	9	5.4
3-5 months	1	–	–	–	–	–	1	1.0	9	5.4
6-11 months	–	–	–	–	–	–	0	0	5	3.0
1-4 years	–	–	2	–	–	–	2	1.9	26	15.6
5-9 years	1	–	3	–	–	2	6	5.8	26	15.6
10-14 years	5	–	25	–	–	2	32	30.8	37	22.2
≥15 years	1	–	42	1	1	6	51	49.0	55	32.9
Not known	–	–	1	–	–	–	1	1.0	–	–
Total	18	1	73	1	1	10	104		167	

*Data are provisional

As mentioned in the previous pertussis HPR routine report [2], serology is generally used to obtain retrospective evidence of pertussis infection; hence many of the cases reported in this quarter are likely to have had onset in the previous quarter. In contrast, culture and PCR diagnostic methods are used during the acute stage of the illness and therefore the date of laboratory confirmation is closer to the date of onset.

A new oral fluid diagnostic service for pertussis is being launched this month (article in this issue's News section). This service is being provided by the HPA Centre for Infections Respiratory and Systemic Infection Laboratory (RSIL) to seek laboratory confirmation of the diagnosis in those who have been coughing for more than two weeks. An increase in both the number of cases confirmed, and the proportion confirmed by oral fluid, is therefore expected in future reports.

PCR, serology, and oral fluid diagnostic facilities are provided by RSIL. The HPA Pertussis Research and Reference facility was established in 2002. Further information is available on the HPA website at <http://www.hpa.org.uk/cfi/rsil/bordetella.htm>.

References

- 1.HPA. *NOIDs Weekly Report, Statutory Notifications Of Infectious Diseases in England and Wales: Week 2007/13, week ending 30/3/2007*. HPA Website [online] 2007 [accessed 21 June 2007]. Available at <http://www.hpa.org.uk/infections/topics_az/noids/2007/WN0713.pdf>.
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