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Patients exposed to chickenpox by infected healthcare workers

The importance of susceptible healthcare workers being vaccinated against chicken pox has been underlined by an incident, in the north-west of England, that required screening of patients to identify whether any had been put at risk.

Two members of staff working in a genito-urinary clinic were found to have been infected (in one case as a result of contact with a family member with herpes zoster; the aetiology of the other case being unknown). The two staff members had reported rashes before being diagnosed with chickenpox on the 15 August. The Trust implemented action to identify all patient contacts within the period of 48 hours prior to the onset of the rashes, up until the staff member were excluded from work.

A risk assessment carried out by infection control staff revealed that there had been 97 patient contacts during the period of potential infectivity. Of these 97 patients, 15 were potentially vulnerable (pregnant or HIV positive). Serological testing, carried out with the participation of the local microbiology laboratory, and patient contact and questioning excluded all but three of these patients from further follow up. These patients were seen in a specially organised clinic to further evaluate their requirement for VZIG (Varicella Zoster Immunoglobulin).

Although in this case further testing and assessment did not result in any patients meeting the criteria for VZIG administration [1], the incident illustrates the importance of protecting staff and patients, particularly in areas where vulnerable patients are treated. The Chief Medical Officer recommended [2] in December 2003 that employers should test all health care staff employed in healthcare settings with direct patient contact who have a negative history of chickenpox, and vaccinate those found to be susceptible.

Adherence to this guidance is particularly important for staff engaged in the care of immuno-compromised patients and for those working in maternity, neonatal or paediatric areas.

Staff working in infectious disease units who are susceptible to chickenpox form a group in whom risk of passing on infection is high. About 10% of adults in this country remain vulnerable to chickenpox and chickenpox is highly infectious.

As a result of this incident the Trust involved in this incident is reviewing its staff screening policy and is considering serological testing of all staff who work in areas with vulnerable patients.

The local Health Protection Unit recommends that Trusts review their occupational health policies to ensure compliance with the 2003 recommendation and consider the need for additional measures where high risk patients are managed.

The NHS Occupational Health Clinical Effectiveness Unit [3] is developing a national guideline on the management of chicken pox and shingles in the workplace, scheduled for completion early in 2009. This will comprise evidence-based background information and guidance leaflets for healthcare professionals, employers and employees.

References

1. Department of Health (2006). *Immunisation against infectious disease - the Green Book*, p. 421-442. Available at: http://www.dh.gov.uk/en/Publichealth/Healthprotection/Immunisation/Greenbook/DH_4097254
 2. Department of Health. Chickenpox (varicella) immunisation for health care workers, PL-CMO (2003)8. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefmedicalofficerletters/DH_4065215.
 3. Varicella Zoster Virus in the workplace: occupational aspects of management - a national guideline (in preparation). NHS Occupational Health Clinical Effectiveness Unit, <http://www.nhsplus.nhs.uk/web/public/default.aspx?PageID=333>.
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S. Agona PT39: increase in new salmonella strain in UK and Ireland (update 2)

Investigation of an outbreak of *Salmonella* Agona PT 39 infections – that has so far affected England and Wales, Scotland, Northern Ireland, the Republic of Ireland, Finland, France and Sweden – is continuing [1,2,3].

As of 21 August, 141 individuals have been notified as *S. Agona* PT 39 cases. These occurred in: England (80 cases), Scotland (31 cases), Ireland (11 cases), Wales (10 cases), Northern Ireland (one case), Finland (one case), France (one case) and Sweden (two cases). Testing is underway to identify whether other individuals, also infected with salmonella species, have the outbreak strain (Pulse Field Gel Electrophoresis (PFGE) profile designated as SAGOXB.0066). Of the 141 cases, 127 are confirmed as the outbreak strain with the remaining 14 awaiting definitive analysis.

The international outbreak control team, led by the Republic of Ireland, includes the Health Protection Agency and other public health agencies in the UK and Europe. The investigation is looking at the consumption of sandwiches and other food stuffs containing meat products produced by Dawn Farm Foods in the Republic of Ireland. Dawn Farm Foods has an extensive product distribution list that covers distribution to the UK, Republic of Ireland and many European countries. Production has stopped at the implicated part of the factory and product re-calls of selected batches of cooked meats have also taken place. Identified products will have been supplied to intermediary distributors and subsequently used by the catering sector. Some of these were known to have been distributed to the UK. A full list of products withdrawn by Dawn Farm Foods has been published on the website of the Food Safety Authority of Ireland (www.fsai.ie).

References

1. HPA. *Salmonella* Agona PT39: increase in new salmonella strain in UK and Ireland. *Health Protection Report* [serial online] 2008; **2**(31): news. Available at: <http://www.hpa.org.uk/hpr/archives/2008/hpr3108.pdf>.
 2. O'Flanagan D, Cormican M, McKeown P, Nicolay N, et al. A multi-country outbreak of *Salmonella* Agona, February-August 2008. *Euro Surveill.* 2008; **13**(33):pii=18956. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=18956>.
 3. HPA. *Salmonella* Agona PT39: increase in new salmonella strain in UK and Ireland – an update. *Health Protection Report* [serial online] 2008; 15 August 2008, **2**(33): news. Available at: <http://www.hpa.org.uk/hpr/archives/2008/hpr3308.pdf>.
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Consultation on application of ICRP Recommendations in the UK

The Board of the Health Protection Agency is consulting stakeholders on its response to the latest recommendations on ionising radiation protection from the International Commission on Radiological Protection (ICRP).

In 2007, ICRP published new recommendations taking account of the conclusions of an extensive review of developing knowledge on biological and physical effects of ionising radiation and of trends in the setting of radiation safety standards. The 2007 Recommendations also aim to improve and streamline the presentation of ICRP Recommendations, last published in 1991.

The HPA consultation document [1], containing the Agency's proposed response to the recommendations, is directed principally towards radiological protection professionals and to those, in Government and in non-government bodies, with specific responsibility in this area.

Key elements of the HPA response are recommendations that:

- the linear, no-threshold model should remain the basis for setting radiological protection standards and criteria;
- no changes should be made to current dose limits in the UK;
- a maximum "dose constraint" (exposure limit) for the public should remain at 0.15 millisieverts per year for new nuclear power stations while comments are invited as to whether this constraint should be extended to the design of all new ionising radiation sources.

Following consideration of the comments received during three-month consultation period, the Agency will issue formal advice and recommendations for the UK.

Reference

1. HPA Advice on the Application of ICRP's 2007 Recommendations to the UK. Available at: http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1205741916373.
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Infection reports

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Immunisation

- ▶ Laboratory reports of *Haemophilus influenzae* by age group and serotype, England and Wales: April to June 2008

- ▶ Laboratory confirmed cases of pertussis reported to the enhanced pertussis surveillance programme during January to March 2008

- ▶ Laboratory confirmed cases of measles, mumps and rubella, England and Wales: April to June 2008

- ▶ Laboratory reports of hepatitis A infection in England and Wales: 2007

- ▶ Laboratory reports of hepatitis C Infection in England and Wales: 2007

Laboratory reports of *Haemophilus influenzae* by age group and serotype, England and Wales: April to June 2008 (2007)

Type	Age					Total
	<1y	1-5y	5-14y	15+	nk	
b	2 (1)	2 (7)	1 (2)	7 (8)	– (–)	12 (18)
nc	12 (10)	3 (2)	2 (2)	59 (46)	– (–)	76 (60)
a,e,f	– (–)	– (1)	2 (–)	7 (6)	– (–)	9 (7)
not typed	5 (1)	1 (2)	1 (–)	47 (42)	– (1)	54 (46)
Total	19(12)	6(12)	6 (4)	120 (102)	– (1)	151 (131)

Laboratory confirmed cases of pertussis reported to the enhanced pertussis surveillance programme during January to March 2008

There were 177 laboratory confirmed cases of pertussis (culture, PCR, serology) reported to the pertussis enhanced surveillance programme in the first quarter of 2008 (table 1). This is the same number of cases reported during the previous quarter (October to December 2007) but represents a two-fold increase on the number of cases reported during January to March in 2007 (93 cases) [1], 2006 (54 cases) [2] and 2005 (80 cases) [3].

Table 1. Age distribution and method of laboratory confirmation of pertussis cases in England and Wales, January to March 2008*

Age group	Culture	PCR only	Serology only	Total
<3 months	24	10	–	34
3-5 months	5	2	–	7
6-11 months	2	–	–	2
1-4 years	1	–	6	7
5-9 years	–	–	5	5
10-14 years	1	–	33	34
≥15 years	4	–	83	87
Not known	–	–	1	1
Total	37	12	128	177

* Data are provisional.

Notes: Five of the <3 month-old, culture-confirmed cases were also confirmed by PCR but are listed in the “culture” column only. Two of the ≥15 year-old, culture-confirmed cases were also confirmed by serology but are listed in the “culture” column only.

Explanations for the increase in laboratory confirmed cases, particularly in the older age groups are provided in the previous HPR article [1].

Bordetella pertussis PCR (for hospitalised cases less than 1 year old) and serological investigation by estimation of anti-pertussis toxin (PT) IgG antibody levels for older children and adults are provided by the Centre for Infection's Respiratory and Systemic Infection Laboratory (RSIL). The laboratory also encourages submission of all *Bordetella pertussis* isolates for confirmation and national surveillance purposes. . Further information is available on the HPA website at <http://www.hpa.org.uk/cfi/rsil/bordetella.htm>

References

1. HPA. Laboratory confirmed cases of pertussis reported to the enhanced pertussis surveillance programme in 2007. *Health Protection Report* [serial online] 2007; **2**(26): immunisation. Available at <http://www.hpa.org.uk/hpr/archives/2008/hpr2608.pdf>
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3. HPA. Laboratory confirmed pertussis reported to the enhanced pertussis surveillance in the fourth quarter of 2005 and annual totals. *Communicable Disease Report Weekly* [serial online] 2006; **16**(34): immunisation. Available at <http://www.hpa.org.uk/cdr/archives/2006/cdr3406.pdf>

Laboratory confirmed cases of measles, mumps and rubella, England and Wales: April to June 2008

Data presented here is for the second quarter of 2008 (ie April to June 2008). Cases include those confirmed by oral fluid IgM antibody tests, PCR, 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).

Quarterly figures for cases confirmed by oral fluid antibody detection only from 1995 and annual total numbers of confirmed cases by health region and age are available from:

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172799?p=1191942172799>

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172913?p=1191942172913>

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1191942172140?p=1191942172140>

Table 1. Total confirmed cases of measles, mumps and rubella, and oral fluid IgM antibody tests in notified cases: weeks 14-26/2008

	Cases			Oral fluid IgM antibody results		Confirmed cases		
	Notified	Tested	%	Total positive	Recently vaccinated	Oral fluid	Other test	Total
Measles	1382	1303	94	338	21	317	110	427
Mumps	2041	1513	74	522	7	515	240	755
Rubella	359	304	85	2	1	1	3	4

Measles

Four hundred and twenty-seven cases of confirmed measles with onset dates in the second quarter of 2008 were reported, almost twice the number (221) reported in the first quarter of 2008 [1]. The overall proportion of confirmed measles amongst oral fluid samples tested is above 25%, an increase compared to the last quarter where around 20% of samples tested were confirmed. However, this is mainly due to the high proportion confirmed in London, currently close to 50%, whereas elsewhere the rate is nearer 10%. The majority of the cases (281, 66%) were reported in London. More than half (161) of the infections were observed in south east London where a school outbreak reported in the previous quarter [1] spread rapidly to other schools and nurseries in the area. Outbreaks in schools were also observed in the South West (Cornwall) [2], West Midlands (Birmingham) and North West (Blackpool and Manchester) regions. A hospital-associated outbreak was reported from south west London, while small clusters of cases in travellers were seen in north west and south west London. In the light of the increased measles cases the Chief Medical Officer has advised urgent MMR catch up campaign targeting individuals between 13 months and 18 years to reduce the risk of epidemic [3].

Three hundred and thirty-one cases (78%) were in children aged less than 15 years (33 less than one year; 107 aged one to four years; 113 aged five to nine years; and 78 aged 10 to 14 years); the remaining 96 cases were aged over 15 years (15-54 years). Twelve cases this quarter reported receiving measles-containing vaccines: 11 reported having received one MMR vaccine and one reported receiving two doses of MMR.

Cases were reported from all English regions (London 281, North West 45, South West 25, East of England 24, Yorkshire and the Humber 21, South East 16, West Midlands 10, North East 4, and East Midlands 1); no cases were reported from Wales. The predominant measles genotype continues to be a D4 strain (MVs/Enfield.GBR/14.07). Fifty five cases in this quarter were confirmed by PCR alone and a further two epidemiologically linked cases (not included in table 1) were identified.

Only three reports had a history of recent travel abroad; one had travelled to India (D8 genotype) and another to Thailand (D9 genotype). The third case had recently returned from Dublin, but no viral genotype was identified.

In this quarter the first death due to measles since 2006 was also reported [2]. This was in a child with congenital immunodeficiency whose condition did not require treatment with immunoglobulin.

Mumps

Seven hundred and fifty-five cases of mumps with onset dates in the second quarter of 2008 were confirmed compared to 422 in the previous quarter [1]. South East region had the greatest number of cases due to a large outbreak in the Portsmouth area, although an increased number of cases was also observed in south west London and north Cheshire. Cases continue to be confirmed predominantly in those aged between 17 and 28 years (70%), the cohort 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).

Table 2. Confirmed cases of mumps by age group and region, England and Wales: weeks 14-26/2008

Region	Age group (years)								Total
	<1	1-4	5-9	10-14	15-19	20-24	≥25	NK	
North East	–	1	–	2	15	15	8	–	41
North West	–	4	2	2	31	39	28	1	107
Yorkshire & Humber	–	1	2	–	8	8	3	–	22
East Midlands	–	1	2	–	7	5	9	–	24
West Midlands	–	3	–	1	6	13	11	–	34
East of England	–	–	1	–	9	8	16	–	34
London	–	4	3	5	42	55	46	1	156
South East	–	1	–	9	76	112	81	1	280
South West	–	1	–	–	3	8	9	1	22
Wales	–	–	–	–	10	6	3	–	19
Not known	–	–	–	1	4	6	6	–	16
Total	–	16	10	20	211	275	219	7	755

Rubella

Four cases of rubella were confirmed in the second quarter of 2008 in comparison to seven in the last quarter [1]. Two males and two females were reported with age ranging between two and 30 years.

References

1. HPA. Laboratory confirmed cases of measles, mumps and rubella, England and Wales: January to March 2008. *Health Protection Report HPR* [serial online] 2008 [cited 19 August 2008]; 2(21): immunisation. Available at: <http://www.hpa.org.uk/hpr/archives/2008/hpr2108.pdf>
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3. MMR catch-up programme announced. *Health Protection Report HPR* [serial online] 2008 [cited 8 August 2008]; 2(32): news. Available at: <http://www.hpa.org.uk/hpr/archives/2008/news3208.htm#mmr>

Laboratory reports of hepatitis A infection in England and Wales: 2007

In 2007, 346 (table 1) laboratory cases of confirmed hepatitis A virus infection in England and Wales were reported to the Health Protection Agency compared to 396 in 2006 and 460 in 2005.

This reported annual downward trend continues in all age groups and is most notable in men aged between 15 to 44 years.

Table 1. Quarterly laboratory reports of hepatitis A infection in England and Wales, by age group and gender.

Age group (years)	Q1 Jan-Mar			Q2 Apr-Jun			Q3 Jul-Sept			Q4 Oct-Dec			Total
	M	F	NK	M	F	NK	M	F	NK	M	F	NK	
<1	2	–	–	–	–	–	–	–	–	–	–	–	2
1-4	2	2	–	5	–	–	3	1	1	2	1	–	17
5-9	–	7	–	–	1	–	3	5	–	4	3	–	23
10-14	1	2	–	2	1	–	–	4	–	1	–	–	11
15-24	9	6	1	4	6	–	7	7	–	8	5	–	53
25-34	12	8	1	6	6	1	10	10	–	11	4	–	69
35-44	6	3	–	9	5	–	5	11	–	5	4	–	48
45-54	3	9	–	4	5	–	3	5	1	2	3	1	36
55-64	4	7	–	3	2	–	3	2	1	2	6	–	30
≥65	5	5	–	5	13	–	7	9	1	5	6	1	57
nk	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	44	49	2	38	39	1	41	54	4	40	32	2	346

In 2007, 49% of cases of hepatitis A were in those aged between 15-44 years compared to 46% in 2006 and 49% in 2005. The ratio of male to female cases of HAV infection in 2007 was 0.9:1, falling below one for the first time since the early 1990s (figure 1). As in 2006 the North West region and the West Midlands region accounted for the majority of reports, 17% and 19% of the total respectively (table 2).

Figure 1. Ratio of male to female cases of hepatitis A in England and Wales: 1992 to 2007

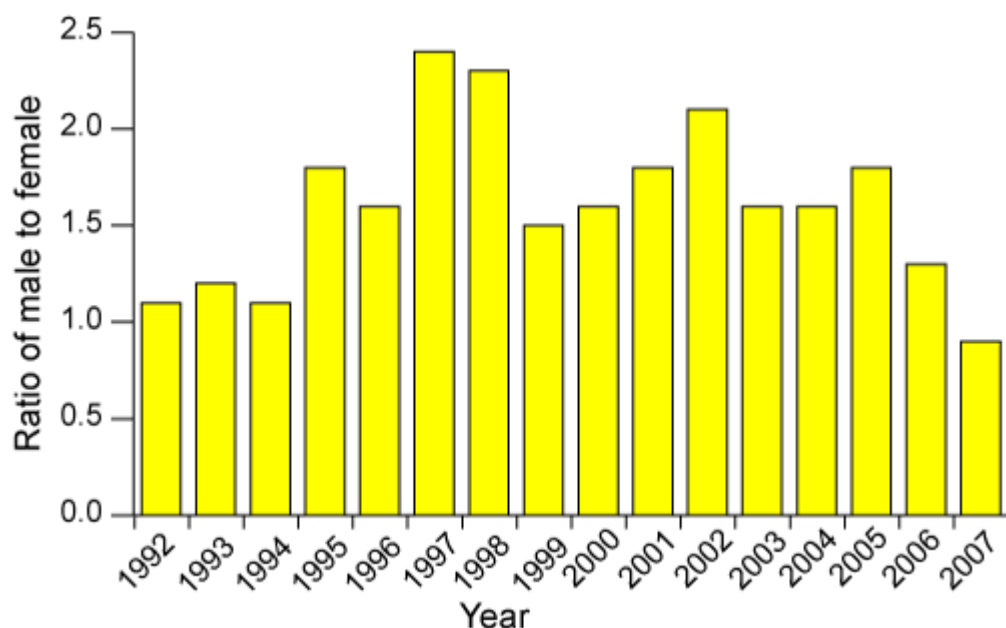


Table 2. Laboratory reports of hepatitis A infection: 2003 to 2007, by region

Country/region	Laboratory reports (year)					Total
	2003	2004	2005	2006	2007	
East Midlands	216	71	23	13	12	335
Eastern	23	46	34	39	26	168
London	52	64	25	46	48	235
North East	17	28	33	12	13	103
North West	100	102	133	71	60	466
South East	114	68	28	32	36	278
South West	95	65	51	39	32	282
West Midlands	127	71	52	65	67	382
WALES	12	22	15	24	18	91
Yorkshire & Humberside	272	134	66	55	34	561
Total	1028	671	460	396	346	2901

Over the years, there has been an increasing proportion of hepatitis A reports containing no information on risk factors. This is reflected in the fact that in 2007 and 2006 only 1% and 0.8% of reports, respectively, had information on a recent history of travelling abroad being associated with hepatitis A acquisition. In the early part of the decade there had been a number of outbreaks of hepatitis A that were associated with injecting drug use and homelessness.

Improved reporting of risk factor information is required as it is not possible to draw any major conclusions with respect to acquisition risk when the majority of reports lack this specific information.

Laboratory reports of hepatitis C Infection in England and Wales: 2007

There were 8712 reports of hepatitis C infection in 2007 in England and Wales to the Health Protection Agency (table 3). The data for 2007 is provisional data as hepatitis C laboratory reports are subject to late reporting. Further hepatitis C confirmed laboratory cases for 2007 are expected to be reported throughout the remainder of the year. Of those reported, the majority of cases (73%) were in individuals aged between 25 and 44 years in 2007 compared to 64% in 2006. The number of cases reported in males exceeded those reported in females in each quarter of 2007 and the annual male to female ratio was 2.3:1. Laboratory reports confirm that most infections were in young adult males. Laboratory reports are not reliable in differentiating acute from long-standing infections however laboratory reports reflect current hepatitis C laboratory testing patterns.

Table 1. Quarterly laboratory reports of hepatitis C infection in England and Wales, by age group and gender.

Age group (years)	Q1 Jan-Mar			Q2 Apr-Jun			Q3 Jul-Sept			Q4 Oct-Dec			Total
	M	F	NK	M	F	NK	M	F	NK	M	F	NK	
1-4	3	10	1	4	3	0	1	2	0	4	2	0	30
5-9	0	2	0	1	0	1	0	2	0	2	0	1	9
10-14	0	1	0	2	1	0	71	68	2	3	0	0	148
15-24	73	74	3	91	66	4	411	219	11	69	62	5	1088
25-34	450	200	17	456	222	16	501	166	9	424	182	24	2667
35-44	505	183	13	534	199	16	318	101	5	497	172	19	2562
45-54	296	92	8	309	131	7	117	41	3	259	104	14	1381
55-64	95	51	3	97	48	2	1	1	0	92	43	3	436
≥65	41	35	4	33	33	4	49	37	2	38	32	1	309
nk	12	5	11	12	3	10	5	2	16	3	1	2	82
Total	1475	653	60	1539	706	60	1474	639	48	1391	598	69	8712