



# Health Protection Report

weekly report

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## Current News

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- ▶ Trends in MRSA bacteraemia and *C. difficile* infection data for England (July 2007 to September 2009)
- ▶ Fifth report on surgical site infection in orthopaedic surgery in NHS hospitals in England (April 2004 to March 2009)
- ▶ Annual report on tuberculosis surveillance
- ▶ Proposals for strengthening the HPA's Regional Microbiology Network
- ▶ Pandemic influenza: UK situation at 3 December 2009
- ▶ Confirmed measles cases in England and Wales – update to end-October 2009
- ▶ New guidance on prevention and control of hepatitis A infection

## Infection Reports

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### Respiratory

- ▶ Laboratory reports of respiratory infections made to CfI from HPA and NHS laboratories in England and Wales: weeks 45-48/2009

## Chemicals and Poisons

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- ▶ CRCE hosts first nanotoxicology centre collaborators' seminar

# News

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- ▶ Trends in MRSA bacteraemia and *C. difficile* infection data for England (July 2007 to September 2009)
  - ▶ Fifth report on surgical site infection in orthopaedic surgery in NHS hospitals in England (April 2004 to March 2009)
  - ▶ Annual report on tuberculosis surveillance
  - ▶ Proposals for strengthening the HPA's Regional Microbiology Network
  - ▶ Pandemic influenza: UK situation at 3 December 2009
  - ▶ Confirmed measles cases in England and Wales – update to end-October 2009
  - ▶ New guidance on prevention and control of hepatitis A infection
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## Trends in MRSA bacteraemia and *C. difficile* infection data for England (July 2007 to September 2009)

Following the move to monthly publication of reports of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia and *Clostridium difficile* infections (CDI) occurring in NHS acute trust hospitals in England, which took place in November 2009 [1,2], HPA has begun publication of a new series of quarterly epidemiological commentaries on longer-term trends in that data generated by the mandatory surveillance schemes [3,4].

The first commentary – of which this article is a summary – describes trends in the mandatory reports of these infections over a period of nine quarters – from July 2007 to September 2009 – aggregated over all English NHS acute trusts [5].

The full commentary, available on the HPA website [6], provides further information about the age and sex profiles of patients with these infections and the patterns of disease across various hospital demographics such as patient provenance and treatment specialties.

### MRSA bacteraemia

Overall, there was a 57% decrease in the number of episodes of MRSA reported during the surveillance period in England, from 1083 cases in July-September 2007, to 465 cases in July-September, 2009 (figure 1).

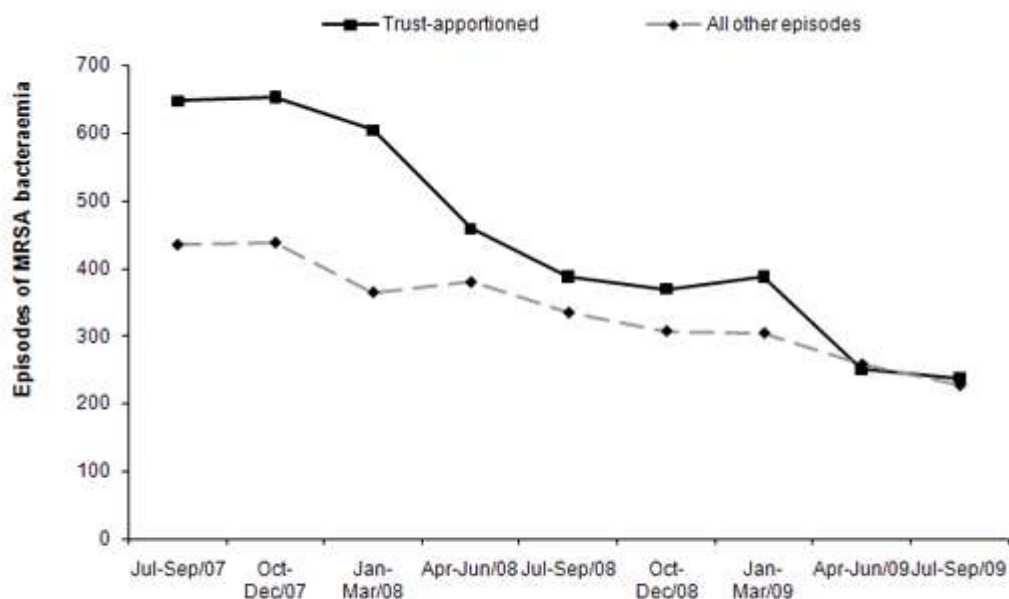
The purpose of apportioning episodes between trust and all other sources is to explore the changing epidemiology of MRSA bacteraemia. By distinguishing between trust-apportioned and all other cases, a more refined analysis of the disease in the relevant settings can be conducted.

Among trust-apportioned episodes\*, there was a 63% decrease during this surveillance period, from 648 to 237 episodes. (In comparison with the previous quarter (April-June, 2009) there was a 6% decrease, from 252 episodes.)

The number of episodes reported for all other patients during these nine quarters decreased 48% from 435 episodes to 228 episodes. (There was also a 12% decrease compared with the previous quarter (April-June, 2009) when 259 episodes were reported.)

For the most recent two quarters of data (April-June, 2009 and July-September, 2009), cases apportioned to acute trusts have steadily decreased and now account for approximately 50% of all episodes.

**Figure 1. Counts of trust-apportioned and all other episodes of MRSA bacteraemia, Q3/2007 to Q3/2009**

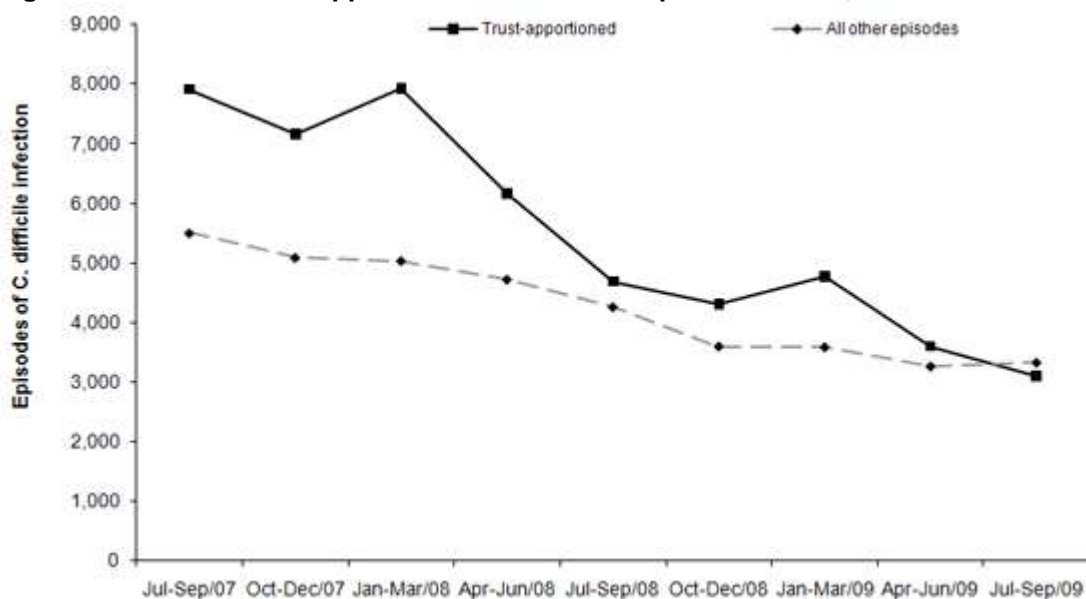


***Clostridium difficile* infections**

There was a 52% decrease (figure 2) in the number of episodes of *Clostridium difficile* infection reported between July-September, 2007 (13,419) and July-September, 2009 (6423). Among trust-apportioned episodes†, there was a 61% decrease over the same period, and a 40% decrease in episodes attributed to all other patients. July-September, 2009 was the first quarter in which the number of episodes apportioned to acute trusts (3100) was lower than all other episodes (3323).

Although there was an overall decline over the period of nine quarters, in two of the quarters – January-March 2008 and January-March 2009 – there was an increase of around 9.5% in the number of episodes compared to the previous quarter. The pattern of seasonality is absent in the downward trend in the non-trust-apportioned case rate. This observation supports the suggestion that a winter increase in CDI in acute trust hospitals is due in part to increased hospital admissions for patients hospitalised with respiratory infections. This is an area for further investigation.

**Figure 2. Counts of trust-apportioned and all other episodes of CDI, Q3/2007 to Q3/2009**



The next quarterly commentary (covering October, 2007 to December, 2009) will be published on 19 March, 2010.

## Notes

\* **MRSA bacteraemia trust-apportioned episodes** : Based on the National Quality Board's MRSA Objective stakeholder engagement document ([http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH\\_100641](http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH_100641) ) it is expected that the forthcoming MRSA Objective will apply to a wider broader range of organisations. The analysis of trust apportioned and all other reports is based on the model outlined by the National Quality Board. This includes patients who are (i) in-patients, day-patients, emergency assessment patients; AND (ii) have had a specimen taken at an acute trust; AND (iii) specimen is **2 or more days** after date of admission (admission date is considered day '0').

† **CDI trust-apportioned episodes** : include patients who are (i) in-patients, day-patients, emergency assessment patients; AND (ii) have had a specimen taken at an acute trust; AND (iii) specimen is **3 or more days** after date of admission (admission date is considered day '0').

## References

1. Revised publication schedule for mandatory surveillance data: an update, *Health Protection Report* 3(38), <http://www.hpa.org.uk/hpr/archives/2009/news3809.htm#schedule>.
2. Revised publication schedule for mandatory MRSA bacteraemia and *Clostridium difficile* surveillance, *Health Protection Report* 3(35), <http://www.hpa.org.uk/hpr/archives/2009/news3509.htm#schedule>.
3. Mandatory *Clostridium difficile* infection surveillance scheme <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1179745282408>.
4. Mandatory *Staphylococcus aureus* bacteraemia surveillance scheme <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1191942169773>.
5. "MRSA and *C. difficile* continue to fall", HPA press release, 3 December 2009, [http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb\\_C/1259152056320?p=1231252394302](http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1259152056320?p=1231252394302).
6. Quarterly analyses: Mandatory MRSA bacteraemia and *Clostridium difficile* infections in England (July 2007 to September 2009), [http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1259151891722](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1259151891722).

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## Fifth report on surgical site infection in orthopaedic surgery in NHS hospitals in England (April 2004 to March 2009)

Analysis of data collected by NHS Trusts in England during the five years since surveillance of surgical site infection following orthopaedic surgery became mandatory in 2004 has been published by the HPA Centre for Infections' Healthcare Associated Infection and Antimicrobial Resistance Department [1].

For the first time, the report contains data on SSIs detected in patients readmitted to hospital ("readmission SSIs") as well SSIs detected in patients still in hospital after an operation ("inpatient SSIs").

This change – and other changes to the scope of the SSI surveillance – has increased the total number of SSIs reported. In terms of interpreting trends, the authors therefore caution that the outcome measure for 2008/09 presented in the new report is now based on inpatient SSIs combined readmission SSIs which means that it cannot be directly compared with previous estimates that were based on inpatient SSIs. In previous years, the follow-up of patients during the inpatient stay has become less sensitive in detecting SSIs due to the decreasing length of hospital stay following surgery. The introduction of post-discharge surveillance in July 2008 has enabled hospitals to improve case finding sensitivity. These developments to the SSI surveillance system will enable more accurate reporting of trends in future reports.

## Background

The surveillance of surgical site infections (SSI) began in 1997 for 13 surgical categories, four of which are orthopaedic categories: hip prosthesis, knee prosthesis, open reduction of long bone fracture and hip

hemiarthroplasty. The surveillance of SSIs in orthopaedic categories became mandatory in England from 1 April 2004 [2]. This was in response to the action plan on healthcare associated infections in the Chief Medical Officer's strategy to combat infectious diseases, Getting ahead of the Curve [3].

From July 2008, new developments to the SSI system were introduced. Post-discharge surveillance was introduced nationally to allow the capture of infections detected at readmission following an operation. Furthermore, two new categories were formed: Reduction of long bone fracture (RLBF) and Repair of neck of femur (RNF), replacing open the previous categories Open reduction of long bone fracture (ORLBF) and Hip hemiarthroplasty (HH) respectively. The newly formed categories are largely similar to their predecessors. However RLBF now exclude dynamic hip screws as these differ from the other reduction procedures in terms of risk. The procedures for dynamic hip screws were included in HH and this category subsequently became RNF.

### **The fifth report**

The new report presents data from NHS Trusts participating in the SSI surveillance, the incidence of surgical site infection (SSI) for infections detected during the hospital stay (inpatient) and for infections detected in patients readmitted to hospital by each orthopaedic categories, trends in the infection rates, the incidence by risk groups and the most common causative micro-organisms recovered from surgical site infections. The report is accompanied by a separate document showing data at Trust level\* [1].

### **The key points of the report are:**

#### ***Trust participation***

- ▶ Data on 76,288 procedures were collected from 157 participating Trusts including six independent NHS treatment centres in the fifth year of mandatory surveillance of surgical site infection (2008/09).
- ▶ 48% of Trusts undertook continuous surveillance throughout the fifth year in at least one category of procedure.
- ▶ Five Trusts did not participate during 2008/09. Participation is mandatory for at least one three month surveillance period.

#### ***New developments***

- ▶ Since July 2008, Trusts have been required to undertake some post-discharge surveillance by identifying SSIs in patients readmitted to hospital after operation. This change has resulted in an increase in the number of SSIs detected by 40% overall and by 70% in knee prosthesis.
- ▶ The inclusion of SSIs detected at readmission in the surveillance in 2008/09 has increased detection of more serious SSIs affecting deep tissues and the joint itself.. Overall deep and joint infections account for 50% of all SSIS reported.

#### ***Key findings***

- ▶ Rates of SSI increase with the age of the patients and the number of risk factors present at the time of the operation
- ▶ Approximately 1 in 100 and 1 in 200 patients develop SSI following hip prosthesis and knee prosthesis surgery respectively; over 50% affect the deeper tissue or joint
- ▶ Approximately 1 in 100 patients undergoing RLBF develop SSI; of these 52% were deep or joint infections.
- ▶ The risk of SSI is higher in procedures to repair the neck of the femur – approximately two in 100 patients develop SSI; nearly 50% of these were deep of joint infections.
- ▶ Data on micro-organisms were available for 81% of SSIs in 2008/09. *Staphylococcus aureus* remains the most common causative pathogen accounting for 42% of SSIs. However the proportion of *S.aureus* resistant to methicillin (MRSA) declined in 2008/09, now accounting for 15% of SSIs rather than a quarter of SSIs in the preceding four years.

#### ***Variation between Trusts***

- ▶ Six Trusts had higher than expected rates of infection (i.e. inpatient combined readmission SSIs) in the fifth year. None were found to be a high outlier in more than one surgical category.

- ▶ A small number of Trusts have unusually low rates of SSI, which may reflect high standards of clinical practice. However, both short post-operative stays and the use of passive surveillance methods can result in rates of SSI being under-estimated.

### **Trends in SSI rates**

- ▶ Trends in rates of SSI following orthopaedic surgery have continued to decline since the mandatory surveillance commenced in 2004. However, the introduction of surveillance in SSIs in patients readmitted to hospital after surgery has increased the total number of SSIs reported to the surveillance system this year, giving a more accurate estimate of the rates. This change will enable a more robust evaluation of trends to be made in future reports.

### **Note**

\*The rates at Trust level should be interpreted with caution as some represent estimates based on small numbers of orthopaedic procedures and are therefore imprecise. The number of procedures on which Trust rates are based varies according to the volume of operations in a surgical procedure at the Trust and the number of surveillance periods they have chosen to participate in. In addition, the rates included in these tables have not been adjusted for underlying risk factors related to the patient or their operation that could affect the risk of developing an SSI, for example age, underlying illness, complexity of the operation.

### **References**

1. HPA. *Fifth report of the mandatory surveillance of surgical site infection in orthopaedic surgery: April 2004 to March 2009*, December 2009. Downloadable at: [http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1259151995697](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1259151995697) (1 MB PDF).
2. HPA. Mandatory surveillance of surgical site infections in orthopaedic surgery. *Commun Dis Rep CDR Weekly* [serial online] 2004 [cited 1 April 2004]; **14**(4):News. Available at: <http://www.hpa.org.uk/cdr/archives/2004/cdr0404.pdf>.
3. Department of Health (Chief Medical Officer). *Getting ahead of the curve: a strategy for combating infectious diseases (including other aspects of health protection)*. London: Department of Health, 2002. Available at: <http://www.dh.gov.uk/assetRoot/04/06/08/75/04060875.pdf>.

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### **Annual report on tuberculosis surveillance in the UK**

Epidemiological data on tuberculosis in the UK, covering surveillance of the disease from 2000 to 2008, is presented in the HPA's latest annual report [1].

Incidence in the UK increased by 2.2% in 2008, compared with 2007, the main burden of disease remaining concentrated in major urban areas. London accounted for 39% of all cases; the incidence rate in the capital was 44.3 cases per 100,000 population, compared with a rate of 14.1 per 100,000 in the UK as a whole.

Although the majority of cases continue to occur in the non-UK-born (72%), the rate of tuberculosis among the non-UK-born population has declined. Rates in the UK-born population, at around 4 per 100,000, are not declining, however. The rate of tuberculosis in children under five years of age remained stable, at around 5 per 100,000, suggesting recent transmission is occurring in the UK.

The 2009 report, the third to present data for the whole of the UK, provides information for the public and professionals, including chapters presenting the most recent data on drug resistance and treatment outcomes, and recommendations for improved control measures. It is the first report to benefit from a newly-introduced web-based national surveillance system that has allowed the timeliness and completeness of reporting to be improved and new information on social risk factors and treatment outcomes to be collected.

### **Reference**

1. HPA. *Tuberculosis in the UK: annual report on tuberculosis surveillance in the UK 2009*, December 2009. Downloadable at: [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1259152022594](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1259152022594) (3.7 MB PDF).

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## Proposals for strengthening the HPA's Regional Microbiology Network

A review group set up by the director of the HPA's Regional Microbiology Network (RMN) has published a consultation paper putting forward options for development of HPA public health microbiology services in England over the coming decade.

Having considered six options for future development, the review group has recommended that microbiology services in England should be subject to a phased reconfiguration involving a consolidation of resources in a smaller number of centres than at present (ie the existing eight regional laboratory centres and a smaller number of collaborating centres) through a degree of commissioning of services from other laboratory service providers.

The principal aims of the proposed changes would be to: guarantee equality of access to a high-quality, national health protection microbiology service with clear performance characteristics; provide an authoritative source of expert advice on health protection microbiology; provide local support for the NHS; and underpin both local and national surveillance activities involving a range of partners.

The consultation paper explains the necessity for change by describing changes in the NHS, within which the RMN operates, and noting that the "revolution in the availability of new molecular methodologies for detection and identification of infectious agents" is a development the benefits of which can only be realised through improved coordination of services.

Besides the chosen option (the concentration of scientific expertise and HPA funding in a smaller number of centres and commissioning of services from other laboratory service providers), the five other "options for change" considered by the review group were: to maintain existing arrangements; to focus all RMN resources in the eight existing regional laboratories; to establish a smaller number of "supra-regional" laboratories; to move to delivery of public health microbiology services from a single national centre; and to move to delivery entirely by external laboratory services.

The stakeholder consultation exercise extends until the 1 March 2010. The aim would be to publish a modified proposal by 31 March 2010, taking account of comments received, in anticipation of the implementation of the recommended option commencing from April 2010.

### References

1. Consultation on proposals for strengthening the Health Protection Agency Regional Microbiology Network Public Health Microbiology Services, HPA website:  
[http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1259151988603](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1259151988603).

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## Pandemic influenza: UK situation at 3 December 2009

The Health Protection Agency's Weekly National Influenza Report of 3 December (week 49) [1] described the UK (and international) situation as follows:

- ▶ Pandemic influenza activity was variable across the UK;
- ▶ In week 48 (ending 29 November), the weekly influenza/influenza-like illness (ILI) consultation rate increased slightly in England and Scotland while it increased slightly in Wales and Northern Ireland;
- ▶ The National Pandemic Flu Service (NPFs) continued to issue antiviral drugs to people in England with the number of assessments and antiviral collections The number of assessments and antiviral collections through this service decreasing slightly over the past week;
- ▶ Interpretation of data to produce estimates on the number of new cases continued to be subject to a considerable amount of uncertainty. HPA modelling gave an estimate of 22,000 (range 11,000 – 47,000) new cases in England in week 48. The estimated number of new cases decreased in all regions and age groups;
- ▶ An increase in respiratory syncytial virus detections has been observed in recent weeks, which may account for increases in some respiratory indicators for children aged less than five years.
- ▶ The main influenza virus circulating in the UK continued to be the pandemic (H1N1) 2009 strain, with few influenza H1 (non-pandemic), H3 and B viruses detected. Twenty-four of 4002 pandemic

viruses tested have been confirmed to carry a mutation which confers resistance to the antiviral drug oseltamivir; three are phenotypically resistant to the drug but retain sensitivity to zanamivir;

- ▶ The majority of pandemic influenza cases continued to be mild. The cumulative number of deaths reported due to pandemic (H1N1) 2009 in the UK was 265. There was a total of 1384 new patients hospitalised in England with suspected pandemic influenza in the week from 26 November to 2 December, a decrease from 1463 in the previous week. The hospitalisation rates have increased slightly in the under-5-year age group but have decreased in most other age groups recently;
- ▶ The UK pandemic influenza vaccination programme continues in people at high risk for severe disease and in health-care workers. For further information see the Department of Health website;
- ▶ According to the European Centre for Disease Prevention and Control (ECDC), by 2 December, 8749 deaths due to pandemic influenza had been reported globally; according to the World Health Organisation (27 November), pandemic influenza activity continues to intensify across parts of North America and much of Europe, however, there are signs that the disease may have peaked in some areas of the northern hemisphere.
- ▶ Increasing activity continues to be reported from Asia and most tropical countries are reporting declining activity levels.

## Reference

1. HPA. [Weekly National Influenza Report: week 49](http://www.hpa.org.uk/swineflu/surveillance&epidemiology) (3 December 2009, PDF 413 KB), HPA website: [www.hpa.org.uk/swineflu/surveillance&epidemiology](http://www.hpa.org.uk/swineflu/surveillance&epidemiology).

## Confirmed measles cases in England and Wales – update to end-October 2009

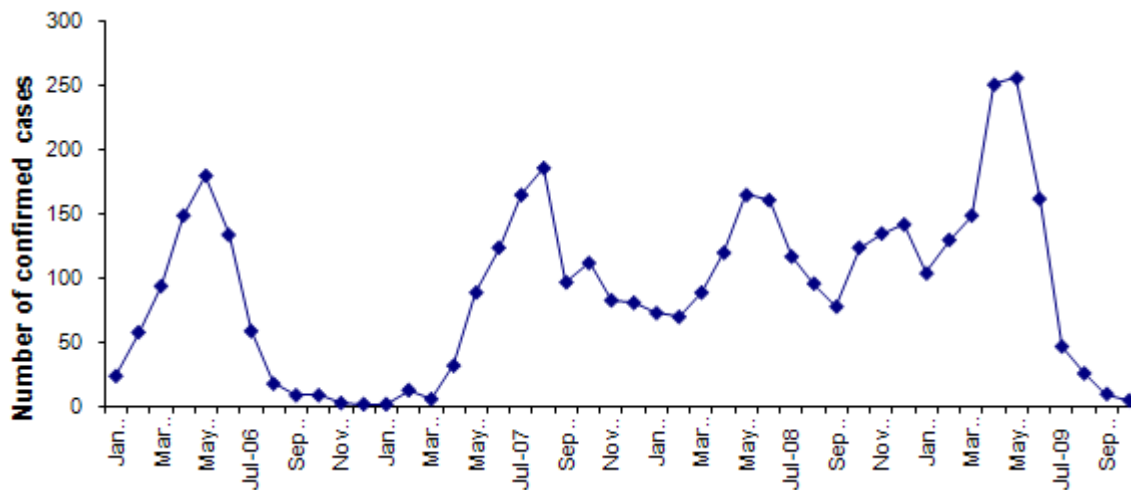
The number of laboratory confirmed measles cases has fallen for fifth consecutive month (figure) with only 5 new cases reported in October from South West, Wales and West Midlands (see table). For the first time since January 2007, no cases were reported in London. To the end of October 2009 a total of 1,140 have been reported from all regions and age-groups.

Despite this low level, it is still important to continuing monitoring measles activity and prompt notification and testing of cases is paramount.

### Confirmed cases of measles by region and month of onset, England and Wales : January to October 2009

Month	Lond-on	East Mids	East of Engl'd	North East	North West	South East	South West	West Mids	Wales	York & Humb	Total
Jan 09	38	8	6	1	8	20	3	13	–	7	104
Feb 09	41	–	3	–	3	55	1	22	–	5	130
Mar 09	20	3	7	2	28	49	3	13	21	3	149
Apr 09	22	7	11	50	23	61	12	24	40	1	251
May 09	26	13	24	43	11	49	10	18	47	15	256
Jun 09	30	10	20	16	4	35	10	4	29	4	162
July 09	15	6	–	3	–	5	–	–	13	5	47
Aug 09	4	–	2	6	1	–	1	–	5	7	26
Sept 09	2	–	–	1	1	1	1	–	1	3	10
Oct 09	–	–	–	–	–	–	2	1	2	–	5
<b>Total 2009</b>	<b>198</b>	<b>47</b>	<b>73</b>	<b>122</b>	<b>79</b>	<b>275</b>	<b>43</b>	<b>95</b>	<b>158</b>	<b>50</b>	<b>1140</b>

## Number of laboratory confirmed cases in England and Wales by month of onset: January 2006 to October 2009



All five cases with onset dates in October were in children and teenagers aged between one and 14 years of age.

An age breakdown of cases by region is available at

[http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/1223019390211](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1223019390211).

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### New guidance on prevention and control of hepatitis A infection

The HPA has published new guidance on public health management of hepatitis A infection following reviews of current epidemiology in England and Wales and of the literature on the efficacy of human normal immunoglobulin (HNIG) and hepatitis A vaccine for post-exposure prophylaxis [1].

The guidance comprises recommendations aimed at reducing occurrence of secondary infections and prevention and control of outbreaks under three main headings: management of the index case (advice on good hygiene practices; exclusion from work, school, etc); management of household and sexual contacts; and management of contacts beyond the household.

### Reference

1. HPA. Guidance for the prevention and control of hepatitis A infection, December 2009. Downloadable at: [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1259152095231](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1259152095231) (767 KB PDF).

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## Infection reports

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### Respiratory

#### Laboratory reports of respiratory infections made to Cfl from HPA and NHS laboratories in England and Wales: weeks 45-48/2009

Data are recorded by week of report, but include only specimens taken in the last eight weeks (ie recent specimens).

**Table 1. Reports of influenza infection made to Cfl, by week of report: weeks 45-48/2009**

Week	Week 45	Week 46	Week 47	Week 48	Total
Week ending	8/11/09	15/11/09	22/11/09	29/11/09	
<b>Influenza A</b>	<b>354</b>	<b>500</b>	<b>509</b>	<b>354</b>	<b>1717</b>
Isolation	24	12	20	41	97
DIF	141	96	42	34	313
PCR	173	378	424	250	1225
†Other	16	14	23	29	82
<b>Influenza B</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>8</b>
Isolation	–	–	–	–	–
DIF	–	1	–	–	1
PCR	1	–	1	3	5
Other	–	1	1	–	2
<b>Influenza (untyped)</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
Isolation	–	–	–	–	–
DIF	–	–	–	–	–
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 microscope, other method, other method unknown), by week of report: weeks 45-48/2009**

Week	Week 45	Week 46	Week 47	Week 48	Total
Week ending	8/11/09	15/11/09	22/11/09	29/11/09	
Adenovirus <sup>*</sup>	46	39	34	44	<b>163</b>
Coronavirus	–	1	–	–	<b>1</b>
Parainfluenza <sup>†</sup>	36	39	35	24	<b>134</b>
Rhinovirus	102	122	184	185	<b>593</b>
Respiratory Syncytial Virus (RSV)	115	198	311	566	<b>1190</b>

\* 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: data for weeks 45-48/2009**

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Un-known	Total
Adenovirus	43	54	19	29	13	5	–	163
Coronavirus	–	1	–	–	–	–	–	1
Influenza A	128	235	329	691	261	64	9	1717
Influenza B	1	–	1	3	2	1	–	8
Parainfluenza <sup>†</sup>	33	34	19	13	16	18	1	134
Rhinovirus	189	128	45	117	68	41	5	593
Respiratory syncytial virus (RSV)	726	353	25	28	18	34	6	1190

\* 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 45-48/2009**

Week	Week 45	Week 46	Week 47	Week 48	Total
Week ending	8/11/09	15/11/09	22/11/09	29/11/09	
<i>Coxiella burnetii</i>	–	1	1	–	2
Respiratory <i>Chlamydia</i> sp.	4	1	4	–	9
<i>Mycoplasma pneumoniae</i>	13	11	13	24	61
Legionella sp.	6	9	12	6	33

\* 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 45-48/2009**

Week	Week 45	Week 46	Week 47	Week 48	Total
Week ending	8/11/09	15/11/09	22/11/09	29/11/09	
Nosocomial	–	–	–	–	–
Community	4 (2*)	3	5	5	17
Travel abroad	2	4	6	1	13
Travel UK	–	2	1	–	3
<b>Total</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>6</b>	<b>33</b>
Male	5	7	12	6	30
Female	1	2	–	–	3

(\*) Case with onset of symptoms in 2008.

Thirty three cases were reported with pneumonia; 30 males aged 19-85yrs and three females aged 49-76yrs. Seventeen cases had community-acquired infection. Five deaths were reported in four males aged between 42-85yrs and one female aged 49yrs.

Sixteen cases were travel-associated: Cruise/United States of America (1), Cyprus (1), Italy (2), Italy/United Kingdom (1), Spain (5), Turkey (2), United Arab Emirates (1) and United Kingdom (3).

**Table 5b Reports of Legionnaires' disease cases by region of report in England and Wales: weeks 45-48/2009**

Region/country	Nosocomial	Community	Travel abroad	Travel UK	Total
North East	–	–	1	–	1
Yorks & Humber	–	2	2	1	5
East Midlands	–	3	2	–	5
East of England	–	2	3	–	5
London	–	3	–	–	3
South East	–	3	1	–	4
South West	–	–	–	–	–
West Midlands	–	3 (2*)	2	–	5
North West	–	1	2	2	5
Wales	–	–	–	–	–
Other	–	–	–	–	–
<b>Total</b>	<b>–</b>	<b>17</b>	<b>13</b>	<b>3</b>	<b>33</b>

(\*) Case with onset of symptoms in 2008.

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## Chemicals and Poisons

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### CRCE hosts first nanotoxicology centre collaborators' seminar

Scientists from collaborating institutions, including the universities of Birmingham, Cardiff and Edinburgh, and Imperial College and King's College London, were among delegates at a first HPA nanotoxicology symposium organised in November by the Centre for Radiation, Chemical and Environmental Hazards (CRCE), Chilton, Oxfordshire.

Opening the meeting, CRCE director John Cooper said that nanotoxicology research generally, and the study of the behaviour of aerosols formed of nanoparticles in particular, was one of a number of research areas where it is hoped that synergies between the Radiological Protection Division (previously NRPB) and the Chemical Hazards and Poisons Division (CHaPD) at CRCE can be exploited to study and assess new environmental hazards.

The facilities of the CRCE's newly-established National Nanotoxicology Research Centre [1] will initially be used for the generation and characterisation of nanoparticles (including characterisation of their size distribution, surface area and behaviour when inhaled or absorbed through the skin or gut) prior to any toxicity studies being carried out. This "basic biophysics" of nanoparticles is an important preliminary to any direct toxicological research or any work on assessment of risk arising from exposure of humans to nanomaterials, CRCE senior medical officer Dr Robert Maynard told the meeting.

Initially, four/five full-time scientists will be involved in using the NNRC facility's refurbished inhalation toxicology chambers (previously used by NRPB to study the behaviour of radioactive aerosols) to study the behaviour of an Iridium isotope in rats, applying techniques developed by Professor Wolfgang Kreyling of the Helmholtz Centre, Institute of Inhalation Biology, München, who was among those making presentations at the Chilton seminar.

#### Reference

1. Nanotoxicology research centre to be established at Chilton, <http://www.hpa.org.uk/hpr/archives/2008/news3008.htm#nnrc>.