Public Health England

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Current News

Guidance for acute trust staff on managing carbapenemase-producing *Enterobacteriaceae*

Group A streptococcal infections: seasonal activity, 2013/14

Infection Reports

Laboratory reports of respiratory infections made to CIDSC from PHE and NHS laboratories in England and Wales: weeks 6-9, 2014

News

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Guidance for acute trust staff on managing carbapenemase-producing *Enterobacteriaceae*

Public Health England (PHE) is planning a series of regional launch events across England for the recently-published *Acute Trust toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae* [1,2].

Carbapenemase-producing *Enterobacteriaceae* (CPE) represent one of the most serious emerging global infectious disease threats. In recent years the UK has seen a rapid increase in the incidence of infection and colonisation by these multi-drug resistant organisms. Identification of CPE in England by the PHE national reference laboratory has risen from fewer than five patients reported in 2006 to over 600 in 2013. These figures include patients with infections and also those where they have tested positive for the presence of the bacteria in the gut. This increase has not been as great, however, as the escalating situation seen in some other countries; and a small window of opportunity therefore exists to learn from experiences elsewhere to prevent widespread problems in the UK.

In England, approximately two thirds of trusts have had between one and 20 patients identified with CPE carriage or infection over the past five years, including two Trusts in Manchester that have had more than 100 patients identified with CPE during the same period [2]. The acute trust toolkit has been written to provide expert advice on the management of carbapenemase-producing *Enterobacteriaceae* in England, to prevent or reduce spread of these bacteria into (and within) health care settings, and between health and residential care settings. It provides practical advice for clinicians and staff at the frontline and information intended for use at executive level to help trusts plan and prepare. Additionally, it provides some basic public health risk assessment tools, and advice and information for the patient.

As professional mobilisation in disseminating and implementing the toolkit is crucial, to support this, PHE is developing an education and training programme together with a suite of resources for infection prevention and control teams and frontline staff. The programme will be best delivered through launch events, hosted by PHE Centres, that will provide an opportunity for multi-disciplinary learning. A pilot event is scheduled for 31 March 2014 in the East Midlands, which will inform national roll-out of the programme.

Last week PHE also wrote to every Acute Trust Chief Executive Officer to draw their attention to the risks posed to their organisation by carbapenemase-producing *Enterobacteriaceae* (and other resistant Gram-negative organisms) and the need to effectively implement the toolkit to mitigate against those risks. A joint Stage 2 Patient Safety Alert has also been issued, with NHS England, for immediate action by trusts [3].

For more information please contact HCAI@phe.gov.uk.

References

1. *Acute trust toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae* , PHE health protection website: Publications › Infectious diseases › Antimicrobial and healthcare associated infections.

2. Public Health England press release, "PHE launches toolkit to manage hospital infections caused by antibiotic-resistant bacteria", 6 March 2014.

3. NHS England Patient Safety Alert, "*Patient safety alert on addressing rising trends and outbreaks in carbapenemase-producing Enterobacteriaceae*", 6 March 2014.

Note: An earlier version of this news report was published as an Advance Access Infection Report on 4 March.

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Infection (news) report

Volume 8 Number 9 Advance Access report published on**: 4 March 2014**

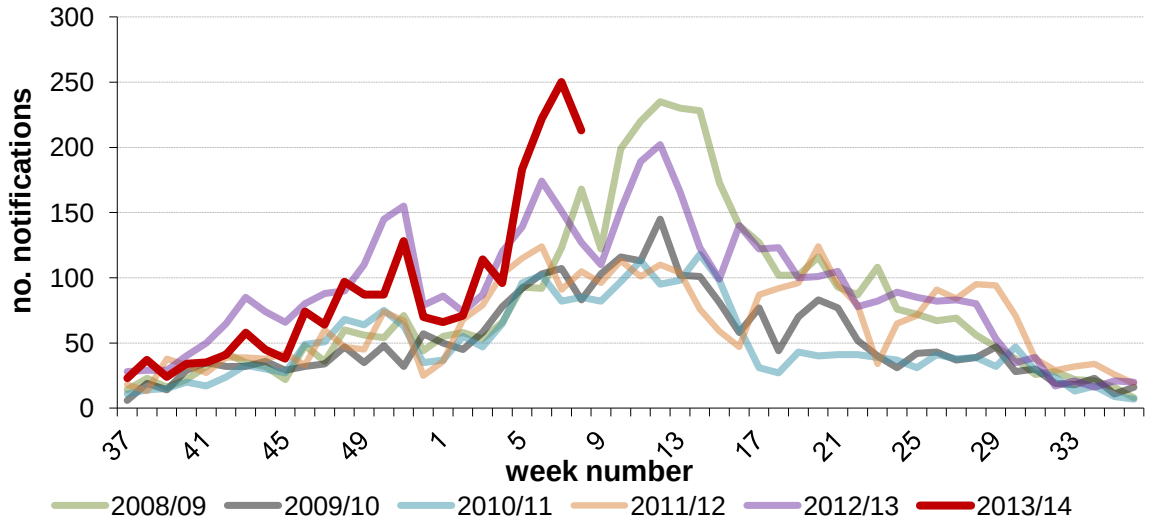
Group A streptococcal infections: seasonal activity, 2013/14

Surveillance data for group A streptococcal (*Streptococcus pyogenes*; GAS) infections are indicating higher levels of scarlet fever incidence so far this season (2013/14) than seen in recent years. Increased levels of invasive and non-invasive GAS infection typically occur between December and April, with peak season usually in March/April. An update on the current seasonal activity for group A streptococcal infections is given below.

Scarlet fever

Routine monitoring of surveillance data has identified widespread increases in scarlet fever notifications in February 2014, beyond those seasonally expected. A total of 868 notifications of scarlet fever with onset dates during weeks 5 to 8 of 2014 were made to Public Health England (PHE) compared to an average of 444 for the same period over the past four years (range: 365 to 591; figure 1). These are the highest notification totals for this time of year since 1990. The increase has been seen across England with regional totals for weeks 5 to 8 of 2014 (compared to 2013) as follows: 99 in the East of England (81 for same period in 2013), 74 in East Midlands (30), 92 in London (45), 67 in the North East (53), 179 in the South East (101), 109 in the South West (46), 62 in the West Midlands (32) and 108 in Yorkshire and Humber (95). The only region where fewer notifications have been made in weeks 5 to 8 in 2014 is the North West region with 78 notifications compared with 108 in weeks 5 to 8 of 2013.

Figure 1. Weekly scarlet fever notifications in England, 2008/09 onwards



The age distribution of cases notified so far for 2014 is similar to previous years, with 90% being children under 10y (median 4y).

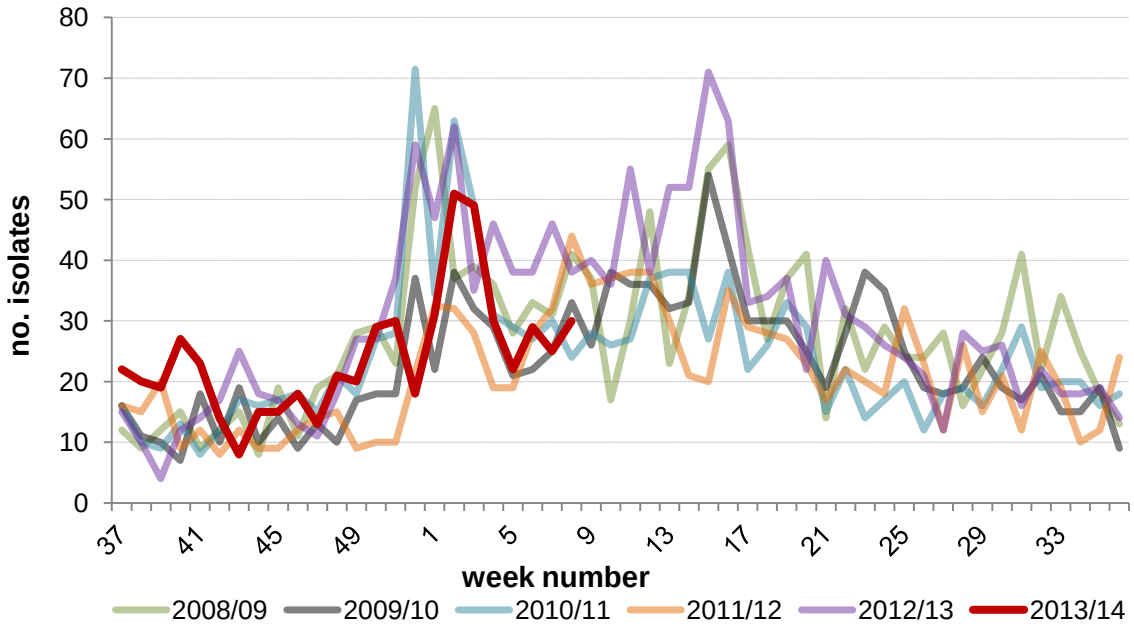
Invasive Group A streptococcus

A total of 106 invasive GAS (iGAS) isolates, defined as isolation of GAS from a normally sterile site, were referred to the Respiratory and Vaccine Preventable Bacteria Reference Unit at Colindale PHE from laboratories in England, Wales and Northern Ireland for specimens taken between weeks 5 and 8 2014, a slight reduction on the average (125 reports) but with the range (101-160 reports) for the same period in the previous five years (figure 2).

Three English regions have referred slightly higher than average (2009 to 2013) iGAS isolates for February 2014, North East (12 isolates), London (18 isolates) and the North West (21 isolates). All other regions in England are referring lower numbers of isolates than normal for this time of year.

Antimicrobial susceptibility results from routine iGAS laboratory reports for January indicate erythromycin non-susceptibility is at 5%, which is within the usual range. The susceptibility testing of iGAS isolates against other key antimicrobials (tetracycline, clindamycin and penicillin) indicate no changes in resistance being observed. There have been no reports of penicillin resistance in iGAS isolates in England to date.

Figure 2. Weekly count of sterile site GAS isolates referred to the national reference laboratory



Characterisation of iGAS isolates referred to the Respiratory and Vaccine Preventable Bacteria Reference Unit from laboratories in England is identifying a slight shift in the emm/M-type distribution, with an increase in emm3 in February, with 24% of referrals being emm3 (compared with 15% in January). Given the increased severity of disease associated with emm3 strains, this warrants increased monitoring.

Analysis of scarlet fever notifications over the last century suggest cyclical patterns of incidence, with resurgences occurring on average every four years [1]. The last peak year for scarlet fever was 2008/09, with superficial manifestations of GAS infection tending to mirror those of invasive disease although not evident so far this season [2]. The current increases being seen may be

attributable to a natural cycle in disease incidence, although the potential for changes in virulence of circulating strains or increased incidence in particular risk groups remain possible and as such continued vigilance remains essential.

Clinicians, microbiologists and HPTs should be mindful of potential increases in invasive disease and maintain a high index of suspicion in relevant patients as early recognition and prompt initiation of specific and supportive therapy for patients with iGAS infection can be life-saving. Invasive disease isolates and those from suspected clusters or outbreaks should be submitted to the Respiratory and Vaccine Preventable Bacteria Reference Unit at Public Health England, 61 Colindale Avenue, London NW9 5HT. Guidelines on infection control in schools and other childcare settings, including recommended exclusion periods for scarlet fever, can be found on the following on:
http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SchoolsGuidanceOnInfectionControl/

Guidelines for the management of close community contacts of invasive GAS cases [3] and the prevention and control of GAS transmission in acute healthcare and maternity settings [4] are also available on the web:
http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/StreptococcalInfections/Guidelines.

References

1. Lamagni T, Dennis J, George R, Efstratiou A. Analysis of epidemiological patterns during a century of scarlet fever. *European Scientific Conference on Applied Infectious Disease Epidemiology*; 18 November 2008; Berlin, Germany; 2008.

2. Dennis JN, Lamagni TL, Smith GE, Elliot AJ, Loveridge P, George RC et al. Use of primary care syndromic data to forecast rises in invasive group A streptococcal disease. *Health Protection Conference*; 15 September 2008; Warwick; 2008.

3. Health Protection Agency Group A Streptococcus Working Group. Interim UK guidelines for management of close community contacts of invasive group A streptococcal disease. *Commun Dis Public Health* 2004; **7**(4):354-361.

4.Steer JA, Lamagni TL, Healy B, Morgan M, Dryden M, Rao B et al. Guidelines for prevention and control of group A streptococcal infection in acute healthcare and maternity settings in the UK. *J Infect* 2012 Jan; **64**(1): 1-18.

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Infection report

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Respiratory

Laboratory reports of respiratory infections made to CIDSC from PHE and NHS laboratories in England and Wales: weeks 6-9, 2014

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 PHE Colindale, by age group

Week	Week 6	Week 7	Week 8	Week 9	Total
Week ending	**9/2/14**	**16/2/14**	**23/2/14**	**2/03/14**	
Influenza A	**147**	**147**	**164**	**229**	**687**
Isolation	8	15	29	16	**68**
DIF *	24	22	20	29	**95**
PCR	102	97	96	169	**464**
Other †	13	13	19	15	**60**
Influenza B	**5**	**3**	**6**	**6**	**20**
Isolation	–	–	1	–	**1**
DIF *	–	2	–	–	**2**
PCR	4	1	1	5	**11**
Other †	1	–	4	1	**6**

* 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

Week	Week 6	Week 7	Week 8	Week 9	
Week ending	**9/2/14**	**16/2/14**	**23/2/14**	**2/03/14**	**Total**
Adenovirus*	35	48	44	45	**172**
Coronavirus	45	49	35	31	**160**
Parainfluenza†	25	30	33	22	**110**
Rhinovirus	182	184	161	178	**705**
RSV	179	150	94	106	**529**

* Respiratory samples only.
† Includes parainfluenza types 1, 2, 3, 4 and untyped.

Table 3. Respiratory viral detections by age group: weeks 6-9/2014

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Un-known	Total
Adenovirus *	45	66	14	28	11	8	–	**172**
Coronavirus	40	26	12	31	20	31	–	**160**
Influenza A	51	99	36	259	143	91	1	**680**
Influenza B	–	3	3	7	4	3	–	**20**
Parainfluenza †	28	23	6	16	20	17	–	**110**
Rhinovirus	269	125	52	121	77	60	1	**705**
Respiratory syncytial virus	327	52	11	20	46	71	2	**529**

* 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

Week	Week 6	Week 7	Week 8	Week 9	
Week ending	**9/2/14**	**16/2/14**	**23/2/14**	**2/03/14**	**Total**
Coxiella burnettii	1	2	–	–	**3**
Respiratory *Chlamydia* sp.*	1	1	–	4	**6**
Mycoplasma pneumoniae	18	9	7	15	**49**
Legionella sp.	7	6	4	–	**17**

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

Table 5 Reports of Legionnaires Disease cases in England and Wales, by week of report

Week	Week 6	Week 7	Week 8	Week 9	Total
Week ending	**9/2/14**	**16/2/14**	**23/2/14**	**2/03/14**	
Nosocomial	–	–	–	–	**–**
Community	5(1†*)	4	4(1†)	–	**13**
Travel Abroad	1	2	–	–	**3**
Travel UK	1	–	–	–	**1**
Total	**7**	**6**	**4**	**–**	**17**
Male	6	6	2	–	**14**
Female	1	–	2	–	**3**

* Non-pneumonic case(s).
† Case with onset of symptoms in 2013.

Sixteen cases were reported with pneumonia and one case was reported with non-pneumonic infection. Fourteen males aged 44 - 89yrs and three females aged 40 - 70yrs. Thirteen cases had community-acquired infection. Two deaths were reported in a 62yr old female and a 74yr old male.

Four cases were reported with travel association: Antigua/ Monserrat (1), Greece (1), India/ United Arab Emirates (1) and United Kingdom (1).

Table 6. Reports of Legionnaires Disease cases in England and Wales, by PHE Centre: weeks 6-9/2014

Region/Country	Noso-comial	Community	Travel Abroad	Travel UK	Total
North of England					
North East	–	–	–	–	**–**
Cheshire & Merseyside	–	–	–	–	**–**
Greater Manchester	–	2	–	–	**2**
Cumbria & Lancashire	–	–	–	–	**–**
Yorkshire & the Humber	–	1	–	–	**1**
South of England					
Devon, Cornwall & Somerset	–	–	–	–	**–**
Avon, Gloucestershire & Wiltshire	–	–	–	–	**–**
Wessex	–	–	–	–	**–**
Thames Valley	–	–	–	–	**–**
Sussex, Surrey & Kent	–	1	2	–	**3**
Midlands & East of England					
East Midlands	–	2(1†)	–	–	**2**
South Midlands & Hertfordshire	–	1	–	–	**1**
Anglia & Essex	–	–	–	–	**–**
West Midlands	–	3(1†*)	–	–	**3**
London Integrated Region					
London	–	3	1	–	**4**
Public Health Wales					
Mid & West Wales	–	–	–	–	**–**
North Wales	–	–	–	–	**–**
South East Wales	–	–	–	–	**–**
Miscellaneous					
Other	–	–	–	1	**1**
Not known	–	–	–	–	**–**
Total	**–**	**13**	**3**	**1**	**17**

* Non-pneumonic case(s).
† Case with onset of symptoms in 2013.