Public Health England

Health Protection Report
weekly report

Volume 10 Number 14 Published on: **8 April 2016**

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News

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Group A streptococcal infections: third update on seasonal activity, 2015/16

Public Health England continues to monitor notifications of scarlet fever cases in England following the high levels recorded last spring. According to the third update on group A streptococcus activity for the current season published in this issue of *HPR* [1,2]. Scarlet fever notifications continue to increase in line with the usual seasonal pattern, with current weekly totals exceeding the levels seen at this point last season. A possible tapering to a peak and the start of the seasonal downturn is, however, indicated.

Laboratory notifications of invasive group A streptococcal (iGAS) disease indicate elevated incidence particularly in children (under five years of age) and young adults (15-44 years).

References

1. Group A streptococcal infections: third update on seasonal activity, 2015/2016. HPR 10(14): infection report
2. 'Update on rising scarlet fever across England'. PHE website news story, 8 April 2016.

PHE launches new AMR Local Indicators Profile

Public Health England has launched a new online data resource – AMR Local Indicators Profile – available on the PHE Fingertips web portal [1,2]. The indicators are intended to raise awareness of antimicrobial resistance (AMR) and to facilitate the development of local action plans. These data may be used in reference to policy documents such as the 2016/17 CQUIN [3] and the 2016/17 Quality Premium [4]. A user guide can be downloaded from the AMR local indicators landing page [2]

Data are available in five domains (antimicrobial resistance, antibiotic prescribing, healthcare associated infections, infection prevention and control, and antibiotic stewardship). The profile comprises a set of interactive tables, charts and maps, illustrating trends and regional variations in a number of AMR-related indicators for each of the domains. Data can be viewed a several geographical levels including acute trust, clinical commissioning group and GP practice.

Data for further indicators will be made available over the course of the year.

References

1. Public Health Profiles home page: http://fingertips.phe.org.uk/.
2. AMR Local Indicators landing page.
3. NHS England 2016/17 CQUIN.
4. NHS England. 2016/17 Quality Premium Guidance.

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Infection reports

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Infection Reports

Bacteraemia / HCAI

- **Group A streptococcal infections: third update on seasonal activity, 2015/16**

Respiratory

- **Laboratory reports of respiratory infections (England and Wales), March 2016**

Infection reports / bacteraemia-HCAI

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Group A streptococcal infections: third update on seasonal activity, 2015/16

Statutory notifications made to Public Health England (PHE) over recent weeks indicate increasing levels of scarlet fever in line with the usual seasonal pattern. Current weekly totals exceed the levels seen at this point last season with early suggestions of a possible tapering to the peak and start of the seasonal downturn [1].

Laboratory notifications of invasive group A streptococcal (iGAS) disease are indicating elevated incidence particularly in young children (<5 years) and young adults (15-44 years). The influenza season has been relatively late this year and dominated by A/H1N1pdm09 circulation. Invasive GAS infection concurrent with A/H1N1pdm09 have been previously described with marked morbidity and mortality [2, 3]. Alerts have been sent to health services highlighting the increase in iGAS infection and the potential for influenza co-infection given the protracted influenza season coinciding with the GAS season this year.

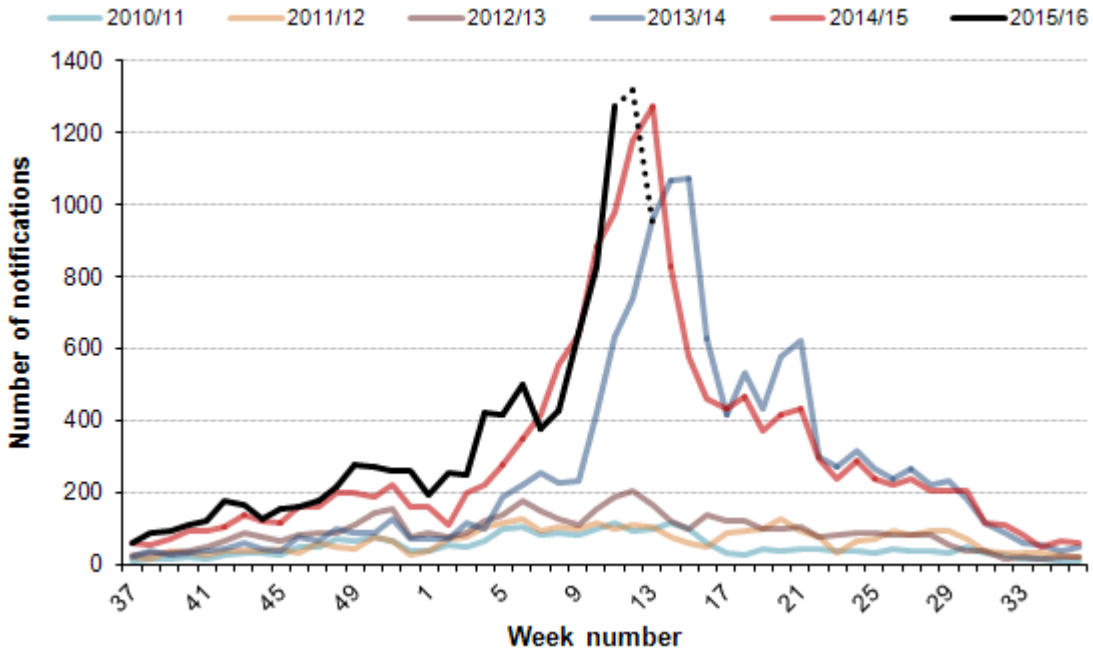
Scarlet fever

Routine monitoring showed continued increases in scarlet fever up to week 12 of 2016, when 1319 notifications were made for patients in England (figure 1). In the first half of March the average week-on-week increases in notifications exceeded 20%. This rate of increase subsequently slowed to 3% (weeks 11-12) and notifications received to date for week 13 are showing a decrease (944; 28% decrease). This deceleration, in conjunction with a decrease in GP consultations for scarlet fever may be an indication that we have reached the height of the season [4].

In total, 7799 notifications of scarlet fever have been made to PHE so far this year (weeks 1 to 13 2016), higher than those reported at this point in the last two years (7239 and 4220 in 2015 and 2014, respectively). Notifications remain high across all parts of England in 2016, the five areas with the highest incidence being Cheshire & Merseyside (19.1/100,000), North East (17.2), East Midlands (16.6), Yorkshire & the Humber (16.0), and Wessex (15.7; table 1; weeks 1 to 12). There is some similarity between areas with high (or low) incidence in 2015 being similarly ranked within England in 2016.

The age distribution of scarlet fever cases notified this season remains similar to previous years, with 89% of cases reported in children under 10 years of age (median four years; range <1 year to 91 years). The incidence of scarlet fever in children ranged from 12.9 per 100,000 population in 10 to 14 year olds to 146.3 per 100,000 population in 1 to 4 year olds this season.

Figure 1. Weekly scarlet fever notifications in England, 2010/11 onwards*



* Dashed line indicates that numbers may increase as further notifications expected.

Invasive group A *Streptococcus* infection

A total of 593 reports of iGAS disease have been notified through routine laboratory surveillance in England so far this year (week 1 to 12); this is 35% higher than the average for the same period in the previous five years (440 reports; figure 2) or last year (513). Following an early spike in notifications of iGAS infection (week 7; 68 notifications) a second slightly higher spike occurred in weeks 11 and 12 (73 and 74 notifications respectively).

Geographical variation in iGAS infection notification rates were seen across England, with a weak association to scarlet fever notification rates (table 1). Twelve of 15 English regions have reported higher than average iGAS cases so far this year, with the highest population rates in Yorkshire & Humber at 1.8 per 100,000 population, and Devon, Cornwall & Somerset (1.6).

The rate of iGAS infection so far this year (weeks 1 to 12 2016) has been higher in all age groups except for those aged between 10-14 years and 65 to 74 years compared with the same period last year (figure 3). Notable increases have been seen in those aged <1 year (78% increase, 1.4/100,000 to 2.4), 1 to 4 years (47% increase, 1.4 to 2.0) and 15 to 44 years (71% increase, 0.4 to 0.6).

The highest rates were in the elderly (>75 years) at 3.5/100,000, and the lowest in 10 and 14 year olds (0.3/100,000; figure 3) in 2016, with rates generally higher in males than females. Overall, 16% of infections reported so far this year are in children under 10y, within the range for the previous 5 seasons (mean 17%; range 12% to 20%).

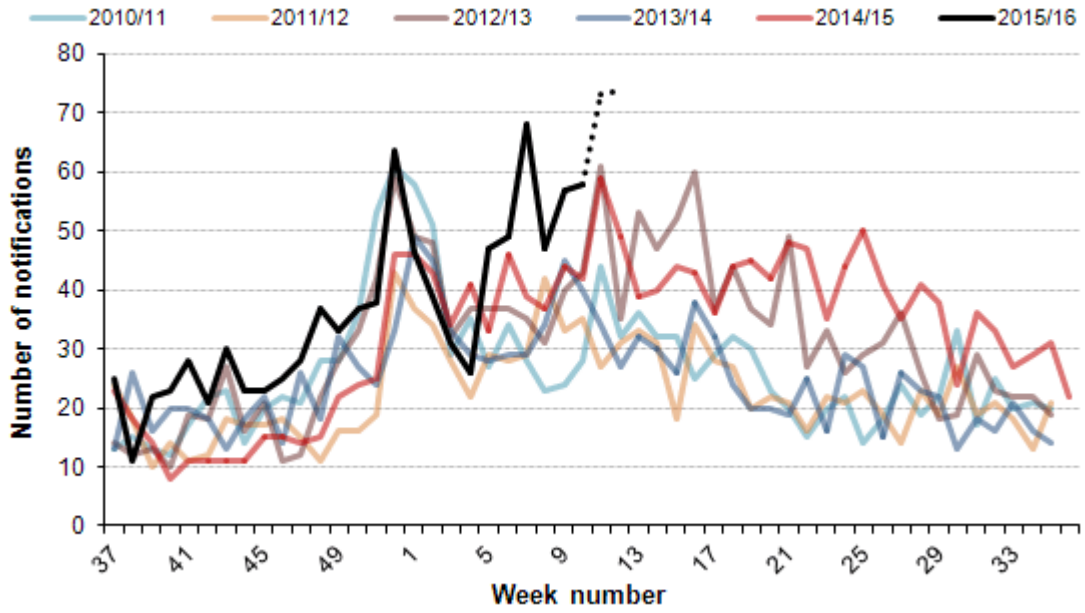
Table 1. Number and rate per 100,000 population of scarlet fever and iGAS infection notifications rate by English region in weeks 1 to 12 of 2015 and 2016

	Scarlet Fever No. (rate)				iGAS No. (rate)			
Area Name	**2015 (weeks 1-12)**		**2016 (weeks 1-12)**		**2015 (weeks 1-12)**		**2016 (weeks 1-12)**	
Anglia and Essex	296	(7.0)	475	(11.3)	43	(1.0)	57	(1.4)
Avon, Gloucestershire and Wiltshire	265	(11.0)	360	(14.9)	24	(1.0)	31	(1.3)
Cheshire and Merseyside	294	(12.1)	463	(19.1)	25	(1.0)	22	(0.9)
Cumbria and Lancashire	308	(15.6)	270	(13.7)	17	(0.9)	26	(1.3)
Devon, Cornwall and Somerset	195	(8.7)	267	(11.9)	29	(1.3)	36	(1.6)
East Midlands	756	(19.3)	651	(16.6)	48	(1.2)	53	(1.4)
Greater Manchester	287	(10.5)	221	(8.1)	31	(1.1)	15	(0.5)
Kent, Surrey and Sussex	453	(9.9)	569	(12.4)	42	(0.9)	46	(1.0)
London	594	(7.0)	638	(7.5)	66	(0.8)	62	(0.7)
North East	333	(12.7)	450	(17.2)	27	(1.0)	35	(1.3)
South Midlands and Hertfordshire	176	(6.3)	234	(8.4)	15	(0.5)	27	(1.0)
Thames Valley	224	(10.8)	298	(14.3)	23	(1.1)	18	(0.9)
Wessex	371	(13.7)	424	(15.7)	15	(0.6)	16	(0.6)
West Midlands	481	(8.4)	675	(11.8)	64	(1.1)	54	(0.9)
Yorkshire and the Humber	933	(17.4)	860	(16.0)	44	(0.8)	95	(1.8)
England	**5966**	**(11.0)**	**6855**	**(12.6)**	**513**	**(0.9)**	**593**	**(1.1)**

Analysis of referred sterile site isolates indicate a slight difference in circulating strains compared with the same period last year (January to March), with a reduction in *emm* st3 strains (4% vs 14%). The most commonly reported strains this season were *emm* st1 (39% in 2016, vs 31% in 2015), *emm* st12 (13% vs 10%), *emm* st28 (4% vs 7%) and *emm* st89 (9% vs 8%). No novel strains or unusual increases in specific strain types have been seen so far this season.

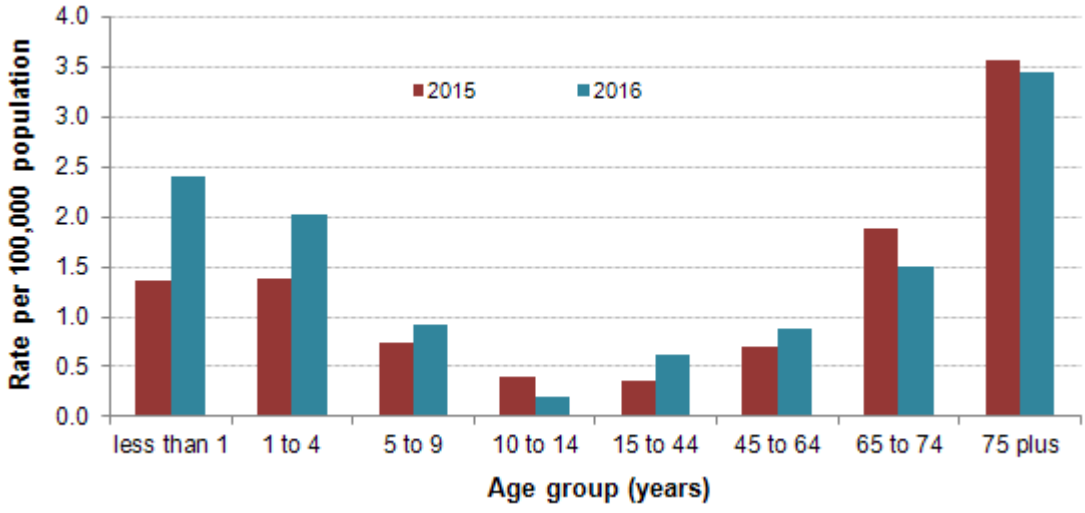
Antimicrobial susceptibility results at this point 2016 are within normal levels, with non-susceptibility to erythromycin and clindamycin seen in 4% of GAS sterile site isolates (normal range 3-8%) and non-susceptibility to tetracycline seen in 10%. All isolates remain susceptible to penicillin.

Figure 2. Weekly count of iGAS laboratory notifications, England, 2010/11 onwards*



* Dashed line indicates that numbers may increase as further isolates expected

Figure 3. Rate of iGAS notifications per 100,000 population by age, England, weeks 1 to 12 of 2015 and 2016



Discussion

Whilst both the notifications and GP consultation rates suggest that we may be at or approaching a seasonal peak for scarlet fever, the Easter break and subsequent school holidays may be affecting timeliness of notification and GP consultation rates, as well as facilitating a reduction in transmission. As such, close monitoring of scarlet fever should continue over the coming weeks. Prompt notification, early treatment and rapid and decisive response to potential outbreaks of scarlet fever remains essential.

Recent scarlet fever activity confirms this season as the third in a row with exceptionally high incidence. The number of cases of scarlet fever notified in England and Wales rose dramatically between 2013 (4642) and 2014 (15,637) making this the highest seen since 1969 with the further elevation in 2015 (17,590) making this the highest since 1967.

The elevation in iGAS infection rates is of concern. Whilst this could relate to the elevation in scarlet fever, the weak geographical correlation between rates of scarlet fever and iGAS infection suggests that other factors may be contributing to the rise. As a known risk factor for iGAS infection, the protracted influenza season may be contributing to the rise in iGAS infection, further supported by age groups affected. GPs and other frontline healthcare professionals should be alert to this potential when assessing patients with influenza and maintain a high degree of suspicion in such patients. 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/outbreaks should be submitted to the Respiratory and Vaccine Preventable Bacteria Reference Unit at Public Health England, 61 Colindale Avenue, London NW9 5HT. Relevant guidelines/FAQs are available on the PHE website, as follows:

- Guidelines on infection control in schools and other childcare settings, including recommended exclusion periods for scarlet fever and guidelines on management of scarlet fever outbreaks, can be found at:
  https://www.gov.uk/government/publications/scarlet-fever-managing-outbreaks-in-schools-and-nurseries
  https://www.gov.uk/government/publications/infection-control-in-schools-poster
- FAQs on scarlet fever can be found at: https://www.gov.uk/government/collections/scarlet-fever-guidance-and-data
- Guidelines for the management of close community contacts of invasive GAS cases and the prevention and control of GAS transmission in acute healthcare and maternity settings are also available here: https://www.gov.uk/government/collections/group-a-streptococcal-infections-guidance-and-data

References

1. PHE (2016). Group A streptococcal infections: second update on activity during the 2015/16 season. *Health Protection Report* **10**(10): infection report.
2. PHE (2016). National flu report: 7 April (week 14)
3. Jean C, Louie JK, Glaser CA, Harriman K, Hacker JK, Aranki F, *et al* (2010). Invasive group A streptococcal infection concurrent with 2009 H1N1 influenza. *Clin Infect Dis*. 15 May; **50**(10): e59-62.
4. PHE (2016). GP in-hours consultations bulletin: 7 April (week 13).

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Respiratory

Laboratory reports of respiratory infections made to PHE from PHE and NHS laboratories in England and Wales: weeks 9 to 13, 2016

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

Table 1. Reports of influenza infection made to CIDSC, by week of report

Week	Week 9	Week 10	Week 11	Week 12	Week 13	Total
Week ending	**6/3/2016**	**13/3/2016**	**20/3/2016**	**27/3/2016**	**3/4/2016**	
Influenza A	**722**	**809**	**782**	**529**	**503**	**3345**
Isolation	60	31	37	72	28	**228**
DIF *	27	21	84	64	45	**241**
PCR	575	706	605	357	393	**2636**
Other †	60	51	56	36	37	**240**
Influenza B	**147**	**225**	**324**	**370**	**427**	**1493**
Isolation	11	15	31	49	44	**150**
DIF *	8	11	47	45	33	**144**
PCR	121	187	229	262	319	**1118**
Other †	7	12	17	14	31	**81**

* 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 9	Week 10	Week 11	Week 12	Week 13	Total
Week ending	**6/3/2016**	**13/3/2016**	**20/3/2016**	**27/3/2016**	**3/4/2016**	
Adenovirus *	106	95	113	100	122	**536**
Coronavirus	138	125	142	119	75	**599**
Parainfluenza†	72	77	54	83	84	**370**
Rhinovirus	253	206	257	225	223	**1164**
RSV	164	132	158	125	130	**709**

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

Table 3. Respiratory viral detections by age group: weeks 9-13/2016

Age group (years)	<1 year	1-4 years	5-14 years	15-44 years	45-64 years	≥65 years	Un-known	Total
Adenovirus *	101	166	46	135	57	31	–	**536**
Coronavirus	89	84	35	95	104	192	–	**599**
Influenza A	210	457	186	1077	1213	1047	1	**4191**
Influenza B	92	199	318	843	250	359	1	**2062**
Parainfluenza †	86	87	16	40	63	78	–	**370**
Respiratory syncytial virus	162	102	54	144	126	120	1	**709**
Rhinovirus	321	232	109	178	152	171	1	**1164**

* 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 9	Week 10	Week 11	Week 12	Week 13	Total
Week ending	**6/3/2016**	**13/3/2016**	**20/3/2016**	**27/3/2016**	**3/4/2016**	
Coxiella burnettii	–	1	–	–	–	**1**
Respiratory *Chlamydia* sp. *	2	2	2	1	–	**7**
Mycoplasma pneumoniae	16	23	21	9	8	**77**
Legionella sp.	5	4	1	–	5	**15**

* 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 9	Week 10	Week 11	Week 12	Week 13	Total
Week ending	**6/3/2016**	**13/3/2016**	**20/3/2016**	**27/3/2016**	**3/4/2016**	
Nosocomial	–	–	–	–	–	0
Community	5	3	1	–	3	12
Travel Abroad	–	–	–	–	2	2
Travel UK	–	1	–	–	–	1
Total	**5**	**4**	**1**	**0**	**5**	**15**
Male	4	–	1	–	4	9
Female	1	4	–	–	1	6

Fifteen cases were reported with pneumonia: one male aged between 43 and 78 years and six females aged 31-81 years. Twelve cases had community-acquired infection. One death was reported in a 74 year-old female.

Three cases were reported with travel association: Cambodia/Thailand (1), United Kingdom (1) and the United States of America (1).

Table 6. Reports of Legionnaires Disease cases in England and Wales, by PHE Centre: weeks 9-13/2016

Region/Country	Nosocomial	Community	Travel Abroad	Travel UK	Total
North of England					
North East	–	–	1	–	**1**
Cheshire & Merseyside	–	1	–	–	**1**
Greater Manchester	–	1	–	–	**1**
Cumbria & Lancashire	–	–	–	–	**0**
Yorkshire & the Humber	–	1	–	–	**1**
South of England					
Devon, Cornwall & Somerset	–	1	1	–	**1**
Avon, Gloucestershire & Wiltshire	–	1	–	–	**1**
Wessex	–	–	–	–	**0**
Thames Valley	–	1	–	–	**1**
Sussex, Surrey & Kent	–	–	–	–	**0**
Midlands & East of England					
East Midlands	–	1	–	–	**1**
South Midlands & Hertfordshire	–	1	–	1	**2**
Anglia & Essex	–	–	–	–	**0**
West Midlands	–	2	–	–	**2**
London Integrated Region					
London	–	2	–	–	**2**
Public Health Wales					
Mid & West Wales	–	–	–	–	**0**
North Wales	–	–	–	–	**0**
South East Wales	–	–	–	–	**0**
Miscellaneous					
Other	–	–	–	–	**0**
Not known	–	–	–	–	**0**
Total	0	12	2	1	**15**