Public Health England

Protecting and improving the nation's health

Group A streptococcal infections: seasonal activity, 2017/18: second report

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Group A streptococcal infections: second report on seasonal activity in England, 2017/18

On-going surveillance of scarlet fever in England indicates weekly notifications are higher than those reported at this point in the last four seasons (weeks 37 to 9, 2013/14 to 2016/17) with the current trajectory indicating the potential for further increases over the coming weeks [1].

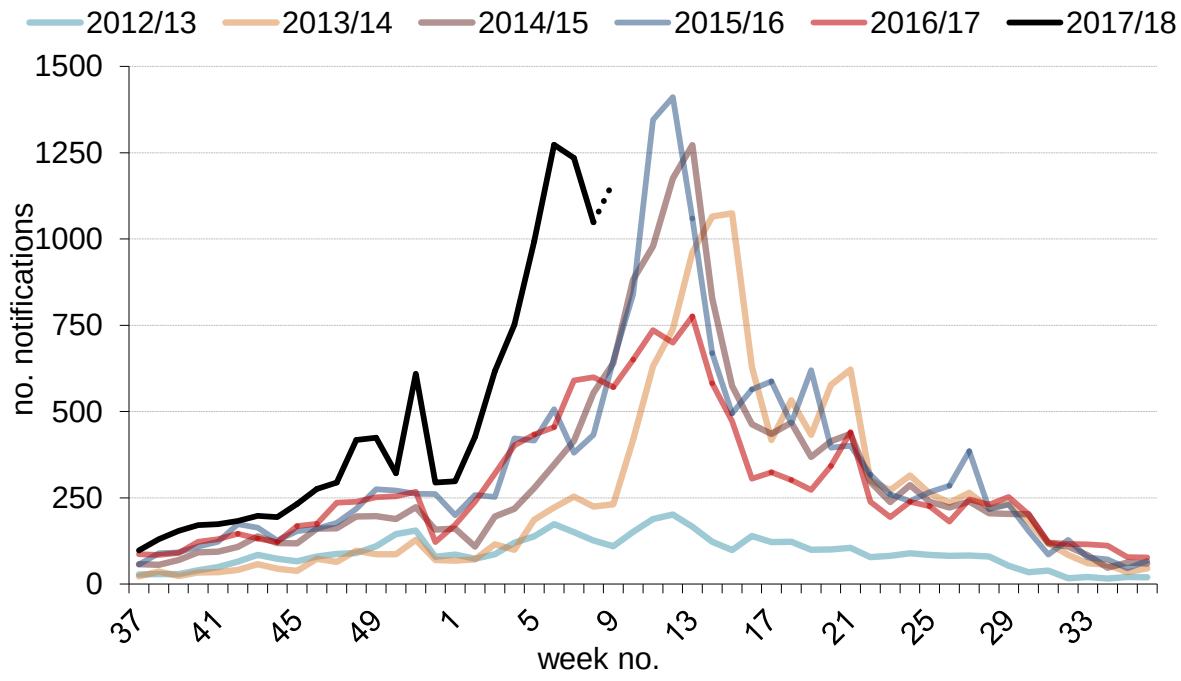
Alerts have been sent to GPs, microbiologists and local authorities raising awareness of the national increase in scarlet fever, highlighting actions to be taken for every case, including: prompt notification to local Public Health England (PHE) Health Protection Teams (HPTs); obtaining throat swabs (prior to commencing antibiotics) when there is uncertainty about a diagnosis or when a case is part of an outbreak; and reinforcing the need for excluding cases or possible cases from school/work until 24 hours of antibiotic treatment has been received [2].

The number of laboratory notifications of invasive group A streptococcal (iGAS) disease are also elevated compared to this point last season. Due to rare but potentially severe complications associated with GAS infections, clinicians and HPTs should continue to be mindful of potential increases in invasive disease and maintain a high degree of clinical suspicion when assessing patients.

Scarlet Fever

Routine monitoring of surveillance data identified widespread increases in scarlet fever notifications in January 2018 compared to recent years (figure 1). These increases continued into February and numbers of notifications are approaching levels seen in the last peak year (2015/16). A total of 11,981 notifications of scarlet fever have been received so far this season in England (weeks 37, 2017 to 9, 2018) compared to an average of 4480 (range: 2281 to 6413) for this same period in the previous five years. Weekly notification totals of 1273 and 1235 were seen this year (weeks 6 and 7), with early evidence of increases subsequent to the half-term academic break in line with usual seasonal patterns.

Figure 1. Weekly scarlet fever notifications in England, 2012/13 onwards*



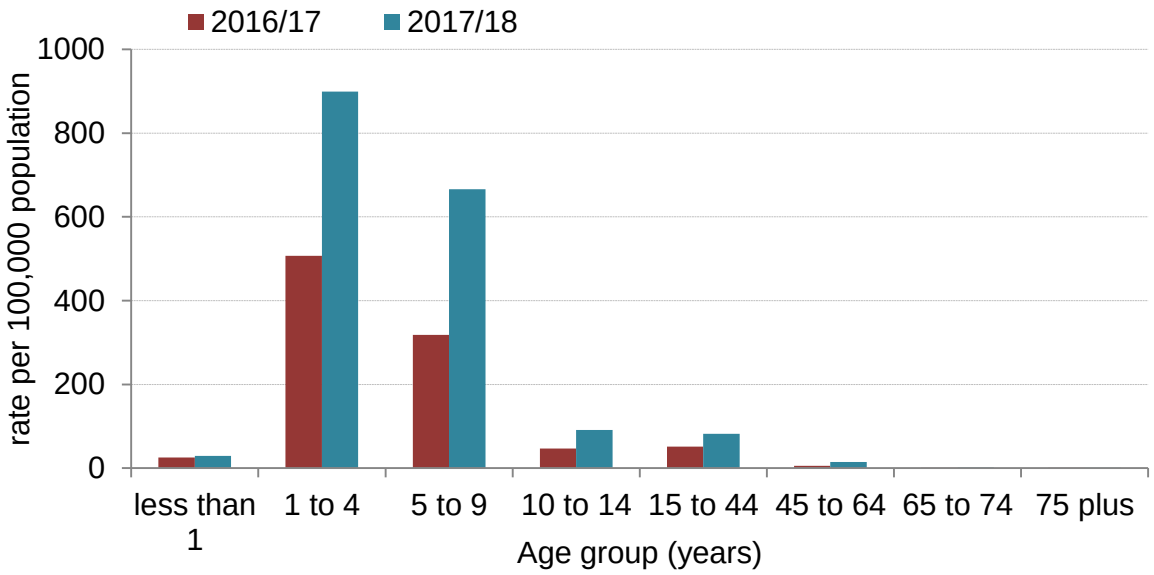
* Dashed line indicates that numbers may increase as further notifications expected.

The age distribution of cases for this season remains similar to previous years, 89% are children under 10y (median 4y). All age groups have higher rates of scarlet fever notification compared with the same point last season (weeks 37 to 9 2016/17; figure 2). The rate of infection remains highest in the 1 to 4 years age group (899 per 100,000 population) followed by the 5 to 9 years age group (666/100,000). Amongst adults, rates of

infection decline with age from 82/ 100,000 in 15 to 44 year olds to 1/100,000 in the over 75s.

Rates of notified scarlet fever cases so far this season are highest in the North East at 31.4 per 100,000 population, followed by the North West (31.2), East Midlands (29.5) and Yorkshire & Humber (26.7) regions. The East of England had the lowest rate at 10.7/100,000. All regions reported higher rates of scarlet fever notification compared to the same point last season, with the North East, South East, South West and North West regions reporting rates more than twice as high.

Figure 2. Rate per 100,000 population scarlet fever notifications in England by age group; weeks 37 to 9, 2016/17 and 2017/18



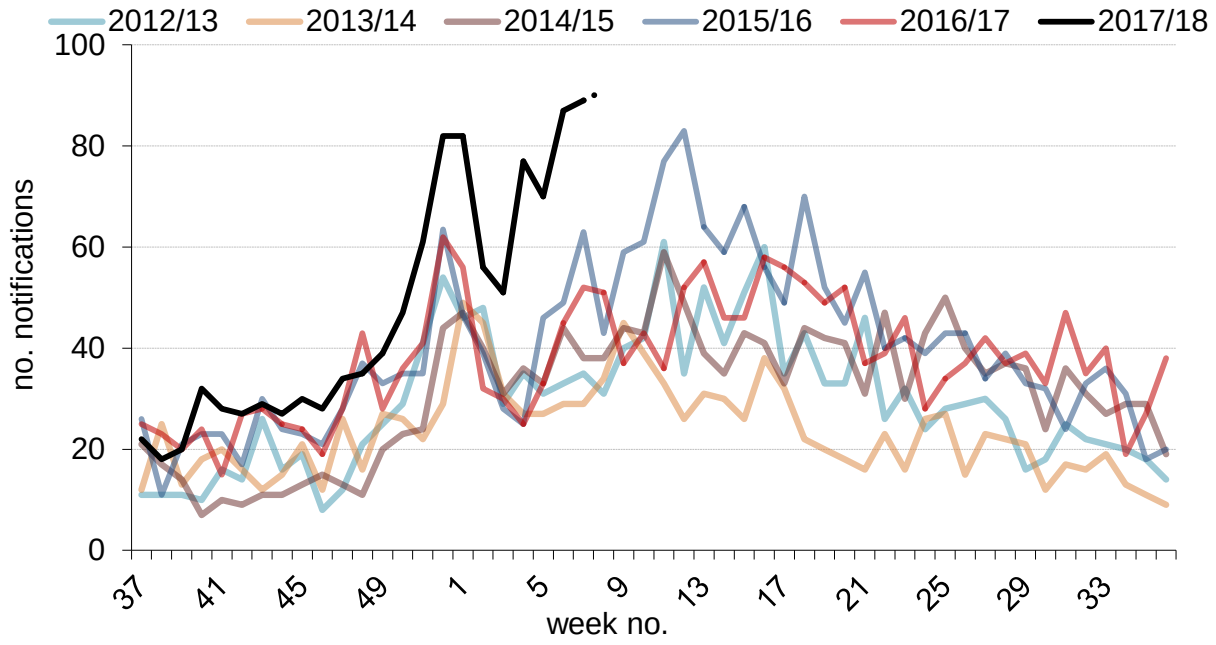
A total of 16,333 GAS positive throat swabs have been reported through routine laboratory surveillance in England this season (weeks 37 to 8). Antimicrobial susceptibility tests on these isolates indicated that 8%, 5%, 8% and 0% were non-susceptible to erythromycin, clindamycin, tetracycline and penicillin respectively.

Invasive Group A streptococcal infection

So far this season (week 37 to 08 2017/18), there have been 1162 laboratory notifications of iGAS disease reported through routine laboratory surveillance in England, this is higher than the average for the previous five years (669 notifications) and above the range seen since 2012 (570 to 792; figure 3). All nine English regions have higher rates of iGAS infection compared with the same point last season. The highest rates were reported in the

North East region (2.8 per 100,000 population), followed by the East Midlands (2.7/100,000), and North West and Yorkshire and Humber regions (both 2.5/100,000).

Figure 3. Weekly laboratory notifications of invasive GAS infection, England, 2012/13 onwards*



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

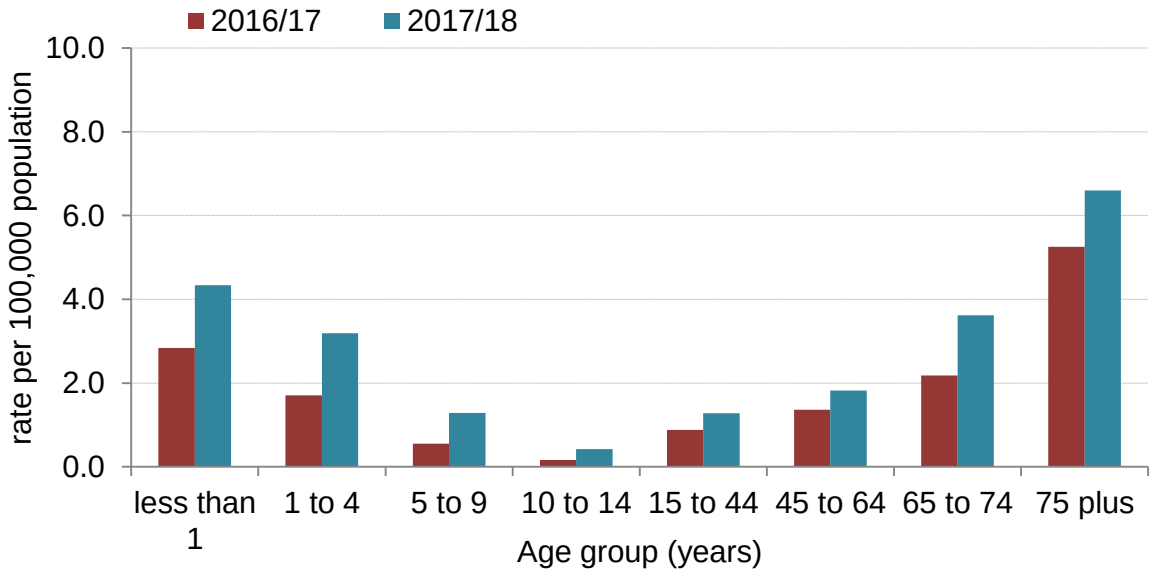
The median age of patients with iGAS infection so far this season is 55 years (range <1y to 104y), which is lower than the same point last season (59y) but within the range seen at this point in the preceding five seasons (52y to 63y). Thirteen per cent of infections reported so far this season are in children (<10y), slightly higher than reported at this point last season (10%), but within the boundaries of what is normally seen (range 10% to 17%). All age groups are seeing an increase in rates of iGAS infection, with the highest rates in the elderly at 6.6 per 100,000 population (figure 4).

Characterisation of iGAS isolates referred to the Respiratory and Vaccine Preventable Bacteria Reference Unit from laboratories in England shows a diverse range of *emm* types so far this year (January and February 2018) with a continued dominance of *emm* 1 (28% of referred isolates) as per last season. Other common types this season are *emm* 3 (13%), emm 5 (10%) and *emm* 89 (7%).

Antimicrobial susceptibility results from routine laboratory surveillance indicate erythromycin non-susceptibility in 7% of GAS sterile site isolates, which is slightly higher

than at the same point in the last few seasons (4-6%). The susceptibility testing of iGAS isolates against other key antimicrobials (tetracycline, 14%; clindamycin, 6%; and penicillin, 0%) indicates no change in resistance patterns. There are no validated reports of penicillin resistance in invasive or non-invasive GAS isolates.

Figure 4. Rate per 100,000 population iGAS notifications in England by age group; weeks 37 to 8, seasons 2016/17 and 2017/18



Discussion

There has been a steep increase in scarlet fever notification in the first part of the 2017/18 season. Since the peak reported in the 2013/14 season, levels of scarlet fever have remained elevated. Whilst the rate of increase in both notifications and GP consultation rates for scarlet fever reduced during February [3], both are showing slight increases as we move into March suggesting a temporary suppression of transmission over the school half-term, as seen in previous years. Continued increases over the coming weeks are likely with peak activity typically occurring between weeks 11 and 13.

Close monitoring, rapid and decisive response to potential outbreaks and early treatment of scarlet fever is vital, especially given the potential complications associated with GAS infections.

The number of cases of iGAS disease notified through routine laboratory surveillance in England at the start of 2018 is of concern, with more than 40 per cent more iGAS cases being notified at this point in the season compared with levels seen in recent seasons.

Whether this increase is related to the heightened scarlet fever activity, or influenza activity, a known predisposing factor, is unknown. Clinicians, microbiologists and HPTs should continue to 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/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
- 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
- Weekly notifiable disease reports are published each week for a more timely but less detailed update, these can be found at: https://www.gov.uk/government/collections/notifications-of-infectious-diseases-noids

References

1. PHE (February 2018). Group A streptococcal infections: first report on seasonal activity in England, 2017/18. *Health Protection Report* **12**(5).
2. PHE. Guidelines for the public health management of scarlet fever outbreaks in schools, nurseries and other childcare settings.
3. PHE. GP in-hours consultations bulletin: 06 March 2018 week 9

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Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and are a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

About *Health Protection Report*

Health Protection Report is a national public health bulletin for England and Wales, published by Public Health England. It is PHE's principal channel for the dissemination of laboratory data relating to pathogens and infections/communicable diseases of public health significance and of reports on outbreaks, incidents and ongoing investigations.

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