Audit of the public health management of meningococcal disease in the South West

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Protecting and improving the nation's health

INTRODUCTION

Invasive meningococcal disease is caused by a gram negative bacteria called *Neisseria meningitidis*. It is a serious life threatening condition that disproportionately affects young children and teenagers. It is a notifiable disease.

The Health Protection (Notification) Regulations 2010 state the duty of medical practitioners and laboratories:

"to notify the proper officer where there is reasonable grounds for suspecting a patient has a notifiable disease… (and) if the case is considered to be urgent, notification must be provided orally as soon as reasonably practicable (within 24 hours)"

The role of public health in protecting the wider population centres around:

- Early notification
- Laboratory investigation
- Contact tracing and chemoprophylaxis
- Dissemination of information
- Media communication

AIM

To assess the public health management of meningococcal disease in the South West over a period of 12 months to identify areas for improvement across the wider healthcare system

METHODS

The audit criteria and standards were developed using national guidance and the Centre's local Standard Operating Procedure (SOP).

Any case of possible, probable or confirmed meningococcal disease notified between 1st May 2016 and 30th April 2017 was eligible for inclusion, independent of the final diagnosis. Custom query searches of the PHE HPZone database was used to identify cases. A total of 161 cases were included in the final analysis.

An electronic data collection tool was developed and piloted prior to use. The data was analysed using Excel.

Audit Criteria	Standard
Notification	100%
a) Notification to PHEC (Public Health England Centre) within 24 hours of clinical suspicion of meningococcal disease	
Documentation – of essential information in the appropriate field	100%
Investigations – completion of the following essential HP zone actions	100%
a) Check culture result b) Advise throat swab for culture and send to reference lab c) Ensure sample sent for lab investigations d) Check serogroup from reference lab	
Treatment – completion of the following essential HP zone actions	100%
a) Chemoprophylaxis arranged within 24hrs b) Vaccination discussed in relation to index case (if indicated) c) Vaccination discussed in relation to contacts (if indicated)	
Information / Communication – completion of the following HP zone actions	100%
a) Information sent to contacts b) Information sent to external stakeholders	

Figure 1. Audit criteria and standards

RESULTS

Notification
Early notification, i.e. within 24 hours, occurred in 61% of cases. 10% of cases were notified more than 3 days late, up to 10 days in a few cases. The audit identified specific hospitals where delayed notification was a concern.

Documentation
Incomplete documentation of HPZone records was also identified as a concern, particularly with regards to pre-admission antibiotics and vaccination status.

Investigation
Actions relating to laboratory investigation of cases were well completed. However challenges were noted in terms of understanding to what extent they are completed. For example an action to "advise throat swab for culture" may have been completed but there was limited evidence of nasopharyngeal swab results on HPZone records

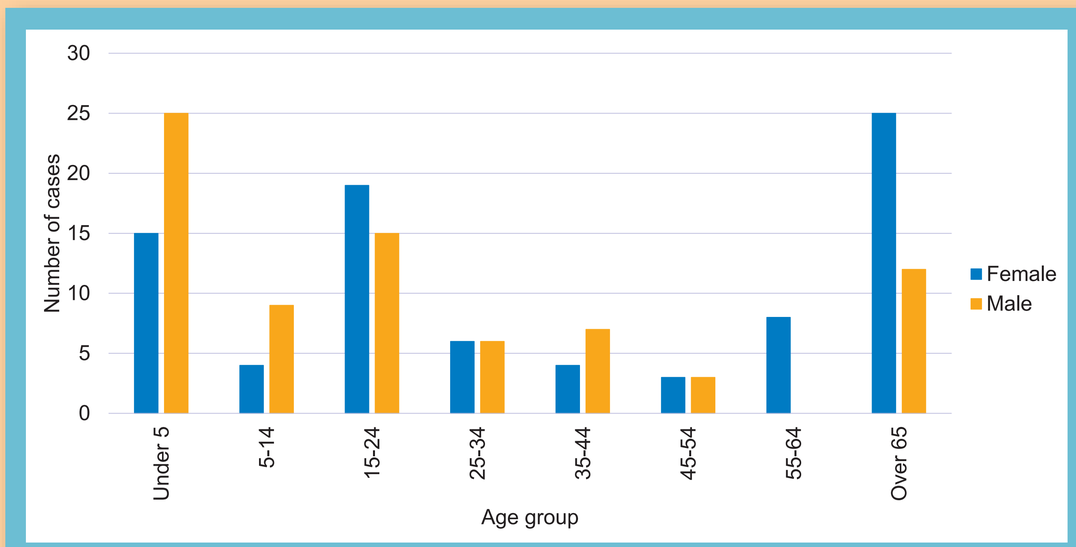

Figure 2. Number of cases of meningococcal disease by gender and age in the South West in 2016 – 2017

Treatment
Chemoprophylaxis was arranged for contacts within 24 hours in 89% of cases, along with information on signs and symptoms. The audit identified a small number of contacts who had not received vaccinations where indicated, and these were followed up.

Information / Communication
Information was shared with close contacts in almost 80% of cases. Information sharing with stakeholders was lower, however this has likely increased dramatically due to changes in the way the HPT alert stakeholders.

	All cases		Confirmed	Probable	Possible
	No.	%	No.	No.	No.
Within 24 hours	99	61%	36	39	24
Within 3 days	42	26%	31	4	7
Over 3 days	16	10%	5	6	5
Unknown	4	2%	3		1

Figure 3. Timing of notification by case classification

	All cases		<24 hours	>24 hours	Unknown
Notifier	No.	%	No.	No.	No.
Hospital clinician	83	52%	64	19	
Microbiologist	59	37%	29	28	2
Education setting	8	5%	3	5	
GP	2	1%	1	1	
Lab report	6	4%		4	2
Other	3	2%	2	1	
Total	**161**		**99**	**58**	**4**

Figure 4. Source of notification by timing of notification

DISCUSSION

The audit highlighted delays in notification and highlighted specific trusts to work with to improve early notification. It also identified areas for improvement within the Health Protection Team (HPT) processes to ensure accurate and consistent recording of information.

A total of 10 recommendations were made to ensure better collaborative working across the health system and improve quality of care for patients and the public.

Areas for action:

- Dissemination of results to stakeholders
- Engagement with acute trusts
- Teaching opportunities e.g. around notification responsibilities
- Raising awareness e.g. regarding unusual presentations
- Health Protection Team internal procedures e.g. use of the case record form, to establish a minimum dataset and how to record, updates to the SOP and provision of a diagnostic template
- Re-audit

CONCLUSIONS

The recommendations have led to a number of improvements and actions across the wider health system

- Electronic reminders regarding prompt notification and appropriate investigations have been implemented in various trusts laboratory systems in the South West region
- Clinical leads have committed to continuously raising awareness, particularly amongst junior medical staff, of the responsibility to notify promptly
- Importance of early notification and investigation and awareness of unusual presentations of meningococcal disease have been raised at a strategic level
- PHE Centre audit leads have been requested to provide information on any audits about delayed notifications by hospitals Trust or examples of good practice in their patch
- Internally, the Health Protection Team have implemented changes to improve and standardise documentation on HPZone case management system.

ACKNOWLEDGEMENTS

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