

Background

- Meningococcal disease is caused by invasive infection with bacterium *Neisseria meningitidis*. Meningococcal B accounts for approximately 80% of invasive meningococcal disease and the highest rates of disease are in children under two years of age. (PHE, 2016)
- Vaccination against Meningococcal group B (Men B) was introduced routinely into the infant schedule in the UK in September 2015 for infants born after 30 June 2015 (PHE, 2016). There was also a catch up programme for infants born on or after 1 May 2015 and before 1 July 2015 (PHE, 2016)
- When Men B vaccine is administered alongside other routine infant immunisations fever had been reported in up to 61% of infants (Gossger et al, 2012)
- Evidence indicated that fever rates could be reduced with three doses of paracetamol, four to six hours apart, without affecting antibody responses (JCVI, 2014)
- Practice changed to recommend prophylactic paracetamol when Men B is given alongside other infant immunisations

Aims

- To review the nature of enquiries about Men B vaccination received to a specialist immunisation service within the Thames Valley comparing enquiry content over a three month period at the start of a vaccination programme 1 Sep 2015 – 30 Nov 2015 (quarter 2015) with a three month period one year into the programme 1 Sep 2016-30 Nov 2015 (quarter 2016)
- To review if the change of practice to routinely recommend prophylactic paracetamol with infant immunisations generated enquiries for health care professionals

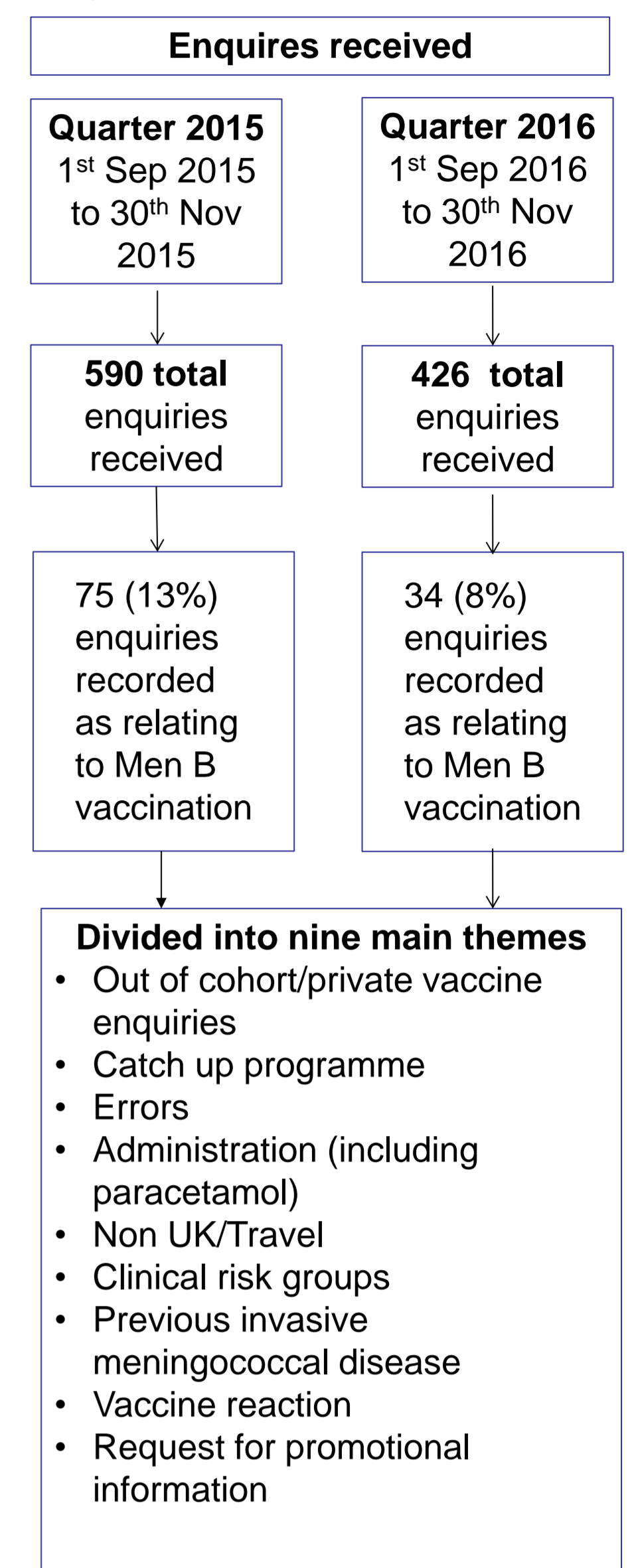
Methods

- All enquiries received to the advice service were captured on an existing database used by the immunisation advice service
- Enquiries received in quarter 2015 and quarter 2016 relating to Men B vaccination were analysed and grouped into categories. Nine main themes emerged (see figure 1)
- Examples of enquiries from each of the nine themes are given in table 1
- Enquiries that had paracetamol or Calpol® recorded in their description were reviewed as a subset to further investigate content. Five main theme emerged. (table 2)

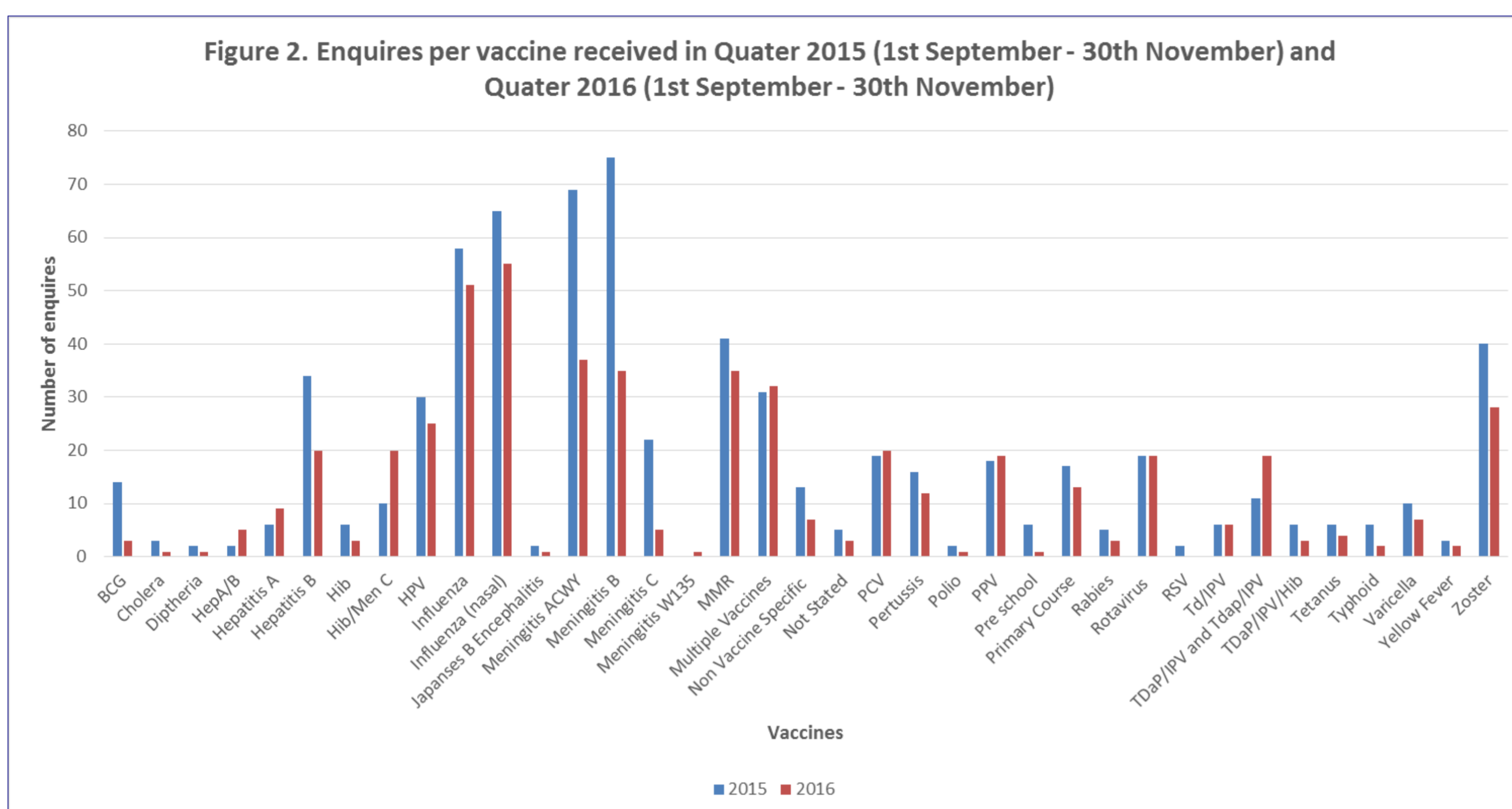
Table 1. Examples of enquiries from each of the nine themes

Category of enquiry	Example of enquiry
Out of cohort/private vaccine enquiries	"A child born on 17/08/2014 received Men B privately on 25/03/2015 and 28/05/2015 do they need to receive any more doses?"
Catch up programme	"When will we be giving the Men B routinely at 12 months? They had heard it was May 2016 is this correct?"
Errors	"The second Men B vaccine was given at 12 weeks instead of waiting till 16 weeks (there were no problems after the 1st at 8 weeks). Please can you advise on what we have to do?"
Administration (including paracetamol)	"A child in year 2 received Men B vaccination yesterday. Is it OK to give the nasal flu vaccine today?"
Clinical risk groups	"A 32 year old has had their spleen removed following a skiing accident. What vaccines should they receive? I think they need Hib/Men C, PPV and flu but do they also need other meningococcal vaccines?"
Non UK/Travel	"A baby born in October will be moving to Turkey for 6 months. The baby will have their 8, 12 and 16 week immunisations in Turkey. However they will not get Men B there. Will they be able to have it at their practice when they return?"
Previous invasive meningococcal disease	"18 year old first year university student recently had men B infection. Now fully recovered. Should he now have his Men ACWY and Men B vaccinations?"
Vaccine reaction	"Twin infants had their second primary vaccinations today. Parents report that one child had increased crying and a red area on L leg 3 days post first vaccinations. Can they have the men B again?"
Request for promotional information	"Would like some general information about the Men B vaccination"

Figure 1. Overview of enquires received



Results



- In 2015 the most common vaccine enquiries related to Men B (figure 2)
- In 2016 the most common vaccine enquiries related to nasal influenza
- The total number of Men B enquiries received in quarter 2016 was approximately half the number received in quarter 2015

Discussion

- As a change to vaccination programmes matures the nature of the enquiries that health professionals have about it change
- Prior to the implementation comprehensive training and information resources were made available nationally (see section national resources)
- Prior to implementation three face to face teaching sessions were held with approximately 80% of Thames Valley General Practice surgeries. This supplemented the national online resources and included an extensive question and answer session
- Educating health professionals about possible vaccine reactions and how to advise about prophylactic paracetamol prior to vaccine implementation resulted in a small number of enquiries which reduced in 2016
- Limitations:
 - The number of enquiries relating to Men B are small overall and were only captured over three months : 75 (13%) in 2015 and 34 (8%) in 2016
 - Analyses only represents enquiries received to one specialist immunisation advice service for health professionals in one geographical region of the UK

Conclusion

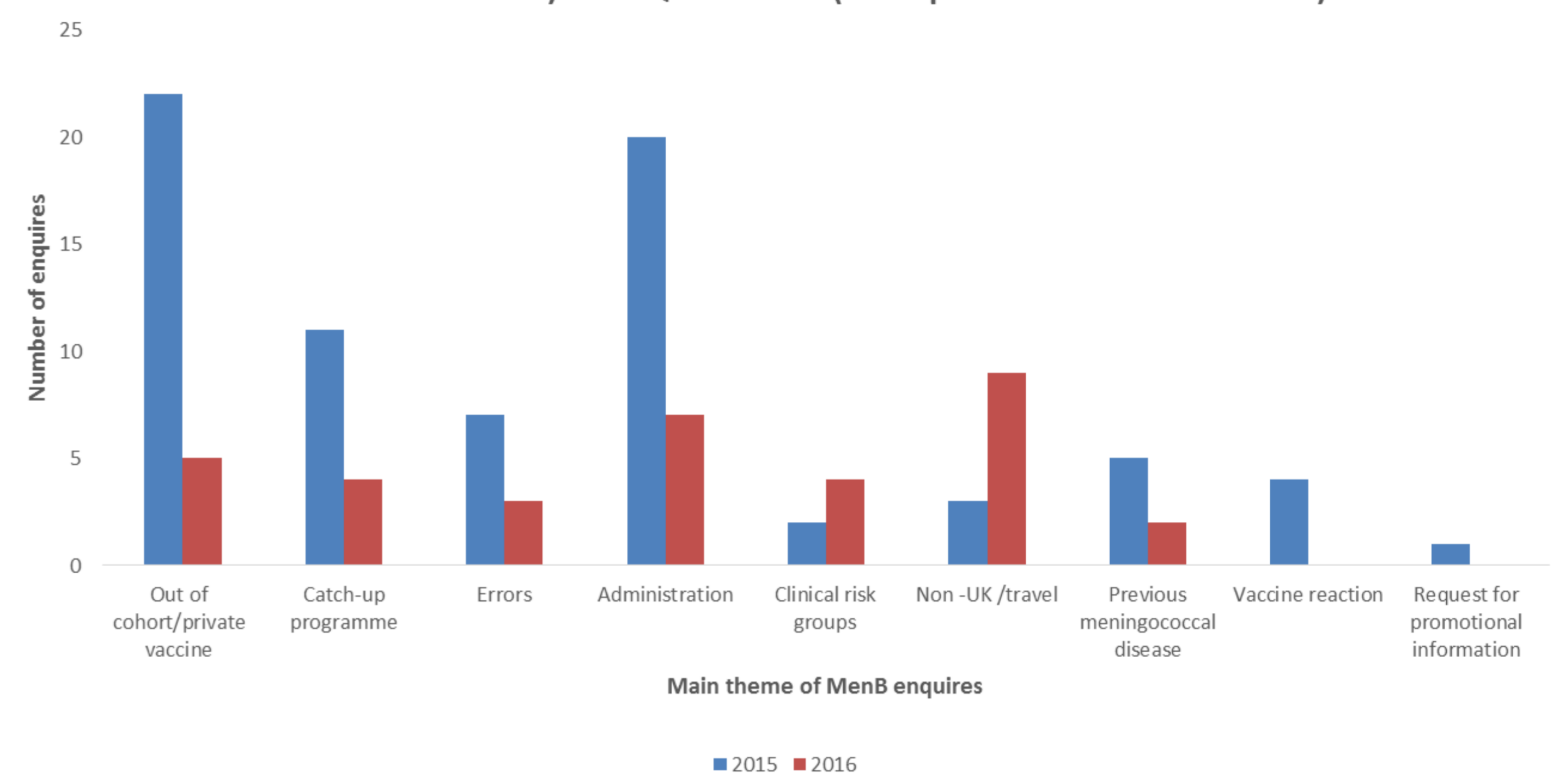
- Training and resources created to inform health professionals about a change to policy are vital to ensuring its effective implementation into practice

References

- Gossger N, Snape MD, Yu LM et al. (2012) Immunogenicity and tolerability of recombinant serogroup B meningococcal vaccine administered with or without routine infant vaccinations according to different immunization schedules: a randomized controlled trial. *JAMA* 307(6): 573-82. Accessed at: <https://www.ncbi.nlm.nih.gov/pubmed/22318278>
- JCVI (2014) Minutes of the meeting on Tuesday 11 and Wednesday 12 February 2014. Accessed at: <https://app.box.com/s/iddfb4ppwkmjusr2tc/1/2199012147/18992168807/1>
- Public Health England (2016) Immunisation against meningococcal B disease for infants aged from two months Information for healthcare professionals. Accessed at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/501588/PHE_MenB_informationforhealthprofessionals_FINAL_18022016.pdf

Acknowledgements: We would like to thank our colleagues at Oxford Vaccine Group and Thames Valley Health Protection Team, Public Health England South East who also answered the enquiries.

Figure 3. Main themes of MenB enquires received in Quarter 2015 (1st September - 30th November) and Quarter 2016 (1st September - 30th November)



- The Themes of Men B enquiries changed within the quarters. (Figure 3)
- No enquiries related to vaccine reactions in 2016 and only 4 (4/75) in 2015

Table 2. Examples of enquiries that had paracetamol or Calpol® recorded in their description

Category of enquiry	Number of enquiries per year		Example of enquiry
	2015	2016	
Premature babies or low birth weight and paracetamol	2	2	"A baby was born at 32 weeks gestation and is now 3.26kg in weight and 8 weeks 3 days old. Can he have paracetamol following MenB vaccine?"
Men B and paracetamol	1		"A baby in the catch up cohort is having their first Men B vaccine at 18wks old. Do they need paracetamol?"
Adverse reaction to Men B vaccine	1		"A 12 week old baby (in catch up cohort) had Men B vaccine last week. They developed a post vaccine reaction and was admitted to hospital. The baby had a very high temperature despite receiving paracetamol; became floppy and pale."
Paracetamol use if fever persists	1		"If a baby continues to have a fever after three doses of calpol and Men B can the parent give more doses? Trying to find leaflet but unsuccessful."
Men B - should it be given with the 2nd primaries today?	1		"Baby is 12 weeks old and has already had their first set of primary immunisations. Attending for their second set of primaries today. Practice nurse enquired about a) whether the Men B should be given and b) if paracetamol should be supplied to every child?"

- Six enquiries related to prophylactic paracetamol in 2015 and two in 2016
- Consistently the most frequent theme of enquiry regarding paracetamol related to how to advise prophylactic paracetamol administration for premature babies and babies weighing less than 4 kg (Table 2)

National resources developed for health professionals

Regarding the Men B programme

- Vaccine Knowledge Project Men B pages <http://vk.ovg.ox.ac.uk/menb-vaccine>
- Public Health England collection of resources which includes training slide sets for health care professionals, vaccine information for health care professionals, training and communication resources <https://www.gov.uk/government/collections/meningococcal-b-menb-vaccination-programme>

Regarding Men B vaccine and paracetamol

- <https://www.gov.uk/government/publications/menb-vaccine-and-paracetamol>
- A collection of Public Health England resources including: a mock video consultation between a practice nurse and patient about the use of paracetamol following Men B vaccination developed by Oxford Vaccine Group and Public Health England: MenB and paracetamol protocol for health care professionals; paracetamol patient information leaflets