

Dominic's summer placement

As a third year medical student, Dominic was delighted to get a summer observership placement with UNICEF. He was surprised to find himself sent to Nigeria to work on a polio vaccination programme, as before this he had believed that polio had been eradicated globally. He was shocked to see the effects of polio first hand, particularly as the patients were usually children and he worked hard at his duties supporting the team, determined to do his bit to make a difference.

When he returned to London at the end of his placement Dominic made sure that he visited the Science Museum to learn all he could about the cause, transmission and management of the disease as well as the methods used to eradicate it from most of the world. He was also fascinated to talk to his aunt who, as a child, had been one of the first to be vaccinated in the UK. Her best friend had contracted polio and had spent the rest of her life in an iron lung because her parents had declined vaccination for their daughter – Dominic was interested to explore the reasons that led people to decline vaccination and to compare them to reasons given by a few of the people he had met in Nigeria. He found it difficult to believe that some people would neglect to take protection against such a serious medical condition.

About 10 days after getting back to the UK, Dominic started to experience flu-like symptoms and he realised, with some dismay that he'd been so busy and so engrossed in his work that he'd completely forgotten to take his doxycycline tablets. He suspected that he had contracted another disease endemic in Nigeria and through large parts of the world - a suspicion which was subsequently confirmed by a blood test.

Mentor notes

Because there are no prompt questions within the actual text, here are some questions on different aspects of the case which students might like to explore. You might like to take them to the Science Museum to do a bit of research there.

Prompt Questions

1. In what countries does polio remain a risk to public health? How common is polio in these countries? Are the incidence and prevalence likely to be consistent throughout each of these countries?
2. What is the cause of polio? How can it be prevented? Have the students or any of their friends and family been vaccinated against polio? How was the vaccine administered? Have they observed differences in the methods of administration?
3. Have the students ever met anyone who has had polio? If so, where? How old was the patient? Have they met anyone from the UK who has had polio?
4. What are the symptoms of polio? Are they the same in every patient? What is the range of effects and what is known about why they are more serious in some patients than others? Can polio be cured? How are patients with polio treated?
5. Why do you think people might decline protection against polio for themselves? For their children?
6. What condition do you think the student contracted whilst in Nigeria? Why do you think this? What are the causes of the condition? How does doxycycline work against the condition? In what other ways can the condition be prevented? Treated?
7. Assuming the students are clear which diseases we are talking about, why has it been possible to eradicate one but not the other? What is the significance of the way the disease is transmitted?

UNICEF

You can find out more about the work of UNICEF to eliminate polio, including factsheets on each of the countries where it remains a significant risk at <http://www.unicef.org/immunization/polio/>

Polio

Polio is a viral infection which, although highly contagious, has been largely eradicated as a result of effective vaccination programmes. However, it remains endemic in Nigeria, Pakistan and Afghanistan. The consequences of catching polio may be mild, but can be disastrous since both motor and sensory neurones can be attacked. You can find out more about the disease at <http://www.medicalnewstoday.com/articles/155580.php> One of the most feared effects of the

disease is paralysis of breathing leaving the patient dependent on a machine (a tank respirator, better known as the iron lung) to breath for them. Find out more at <http://www.medicalnewstoday.com/articles/155580.php>

There is a mass of information about the history of polio in the UK in the Science Museum if any of the students are inspired to go and look at it.

The reasons that polio remains endemic in just a few countries are social and political.

Malaria

Malaria is caused by a blood-born parasite contracted from the bite of an infected mosquito, you can find details of the cycle of infection at <http://www.niaid.nih.gov/topics/malaria/pages/lifecycle.aspx>

The disease is widespread throughout the much of world; the reason it cannot be eradicated by vaccination is because, unlike polio, it has an animal vector. Preventative measures tend to focus on controlling the mosquitoes and preventing bites for example using insecticide-impregnated mosquito nets. Details of the methods used to diagnose malaria can be found at http://www.cdc.gov/malaria/diagnosis_treatment/diagnosis.html