

Annex A to Information Letter 10/2006

1 Summary

Disease

- 1.1 Cryptosporidiosis is a diarrhoeal disease that is commonest in young children, can infect people of all ages and is severe in people with an immune deficiency.
- 1.2 Surveillance has shown a predominantly spring and autumn distribution of cases over the period 1989 to 2000.
- 1.3 There has been an overall reduction in cryptosporidiosis in the first half of the year since 2001, but no similar reduction has occurred in the autumn.
- 1.4 The evidence suggests that the decrease in the first half of the year is related to improved drinking water quality, particularly in the North West where substantial new water treatment, including filtration has been installed to treat supplies that were previously unfiltered.
- 1.5 National infectious disease surveillance provides further evidence, on top of investigations of *Cryptosporidium* outbreaks and analytical studies of sporadic cryptosporidiosis, that some drinking water supplies have been responsible for a substantial burden of this diarrhoeal disease over the last few years.
- 1.6 Changes in human infectious disease surveillance indicate that the 1999 *Cryptosporidium* regulations have had a significant beneficial impact on waterborne disease in England and Wales. However, there may still be a burden of disease associated with drinking water and the epidemiological evidence is far from clear about the remaining causes of cases.
- 1.7 The routes by which of *Cryptosporidium* cases in the second half of the year are infected is unclear, although swimming and travel both appear to play an important part in the epidemiology of cryptosporidiosis in this part of the year.

- 1.8 There is evidence that swimming pools within England and Wales are contributing to an increase in cryptosporidiosis within local communities in the autumn period. There have been regular examples of people falling ill on holiday and, this may account for the autumn incidence of cases and the increased risk of spread of disease.
- 1.9 While travel related cryptosporidiosis has been recognised for years, two large outbreaks in the UK in different years (2000, 2003) associated with hotel pools in Majorca appear to have caused cases across England and Wales. This highlights the potential for sporadic cases across England and Wales to be related to a common holiday destination either within England and Wales or further afield.
- 1.10 Outbreaks related to drinking water have declined in recent years but there are still outbreaks linked to swimming pools and farm visits. Good up-to-date advice on how to conduct an outbreak investigation associated with these main routes of infection is desirable.

Water

- 1.11 Monitoring data from at risk sites has shown that a number of water supplies occasionally contain oocysts. The significance of these has always been questioned because the oocysts may be non-viable and may be of a species that is not commonly found in human cases. It remains possible that low counts of oocysts represent some risk of infection.

Laboratory methods

- 1.12 Evidence indicates that the routine laboratory staining methods currently used for screening human faecal samples for *Cryptosporidium* oocysts may be missing about a half of all the cases. In addition a number of hospital laboratories adopt restrictive selection criteria for testing faecal samples with the results that further cases may not be diagnosed.
- 1.13 The genotyping of isolates of *Cryptosporidium* to species level has provided clear information on the changing distribution of the two main species (*C. parvum* and *C. hominis*) within the human population. It has been useful in identifying species-specific risk factors. There is a strong case for adopting the strategy of typing all isolates in future.

1.14 Sub-typing *Cryptosporidium* oocysts at a level below species level has generated much new information and has the potential to provide new insights into the transmission of disease.

Surveillance

1.15 The improvements in the timeliness and completeness of reporting to national surveillance have increased the ability to detect national increases in cases in a timely manner. This improvement needs to continue.

1.16 The increase in the capture of the post-code of patients in a way that does not compromise patient confidentiality allows the ability to conduct geographic analytical studies that have not previously been possible. This should allow clearer investigations into the relationships between the risk status of water supplies and human disease.