Part 1a.
Review of outbreaks of cryptosporidiosis in swimming pools

Scope of this document

The scope of this report is the description, analysis and interpretation of the epidemiology, microbiology and pool water treatment of swimming pools associated with outbreaks of cryptosporidiosis in the UK. The study was retrospective, and provides background information for prospective studies.

Executive summary

Eighteen outbreaks of the diarrhoeal disease cryptosporidiosis associated with swimming pools are known to have occurred in the UK between 1989 and 1999. Seven were during 1999. The DWI commissioned work to investigate these outbreaks since this could provide information pertinent to drinking water outbreaks and to the treatment of drinking water supplies. A retrospective review of reported outbreaks, including consideration of relevant pool treatment and pool operation data, was undertaken to provide the Inspectorate with information pool treatment and operation procedures, identification of any consistent failures in treatment products or processes and a sound basis for prospective studies.

All the reported outbreaks were in England, and the majority occurred during the summer and autumn. 14 of the outbreaks were associated with pool facilities on the basis of descriptive epidemiology, supported by the detection of Cryptosporidium in environmental samples in five outbreaks. The other four outbreaks were associated with swimming pool facilities by analytical epidemiology, with detection of the parasite in environmental samples from one pool location. While for many outbreaks there is strong evidence for the association with a swimming pool, in some the evidence is weak and it is recognised that there could be other causes. Similarly, while there is evidence that contaminated swimming pool water was the vehicle of infection in some outbreaks, other possibilities such as changing room/toilet hygiene should also be considered during outbreak investigations.

Outbreaks occurred associated with pools disinfected with chlorine and with ozone, and with pools reported to be poorly-managed and well-managed. Details of pool water treatment and bacteriological monitoring were often sparse. Recognised faecal accidents at the pool occurred in just four outbreaks although faecal contamination was known or suspected locally in five further outbreaks. Reporting systems for incidents were often lacking at the pools. The potential for swimming pool-associated giardiasis has been noted in the report. General recommendations and outline proposals for further research by the PHLS are made in the report.

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