Growing danger from Cryptosporidium poisoning in water

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Last week, new measures to protect the public against Cryptosporidium--a sometimes fatal parasite that causes diarrhoea, fever and vomiting--were announced by the British Labour government.

They were based on the report of an 'expert group' investigating contaminated water supplies in north London last year. From now on, water companies must continuously monitor water treatment plants deemed to be at high risk, and they face unlimited fines if unacceptable levels of Cryptosprodium are found. People who are immuno-suppressed, such as the aged, were told they should always boil their water.

There is presently no cure for illnesses brought on by Cryptosprodium. The parasite is common in farm animals and regularly occurs in rivers as resistant oocysts--an egg-like shell that the Cryptosporidium secretes around itself as protection from the environment. After ingestion this breaks open in an animal's stomach to release the parasite. High concentrations or pulses of oocysts can occur during rainfall or from leaking farm waste.

They can contaminate water supplies if there is insufficient protection of water sources or treatment processes break down. There have been several outbreaks of Cryptosoridium poisoning in Britain and throughout the world. In 1993 a quarter of the population of the US city of Milwaukee, Wisconsin became ill when they drank contaminated water. One hundred people died as a result. This year, the inhabitants of Sydney, Australia were told to boil their water after another outbreak.

The industry magazine *Water Bulletin* says the government department responsible for checking water quality, the Drinking Water Inspectorate (DWI), adopted a softly-softly approach after an outbreak occurred in 1990, soon after the industry was privatised. The magazine applauded the 'close, professional relationship' between the DWI and the water companies. Rather than seeking retribution, 'information letters' were sent out. 'Keen to avoid similar embarrassment, chairmen leaned on managing directors, MDs leaned on heads of drinking water quality and the warning filtered out to the operators: don't screw up on crypto.'

Last week's Channel Four television programme *Dispatches* showed that the water companies have indeed 'screwed up' on Cryptosporidium 11 times since 1990 and that the DWI has been unable to prosecute a single one of these companies for the breaches.

Legally, it is difficult to prove a direct link between contaminated water and an outbreak. By the time people show symptoms the contaminated pulse of Cryptosporidium has passed through the water system and samples of water leaving a treatment plant are free of oocysts.

The programme described several outbreaks, including one in 1995 in the holiday resort of Torbay. During the DWI's investigation into the outbreak, it was discovered that the water company was aware of problems at the treatment plant supplying the resort. It had not reported an outbreak three years previously. When a *Dispatches* reporter asked Roger Furniss, the water company spokesman, about the previous incident, he replied, 'I don't know. I wasn't involved.' In August of this year the parasite was identified again in a sample from the plant.

Protection of water sources is a basic requirement to prevent sudden high concentrations/pulses of pollution overwhelming treatment processes. However in Yorkshire, where most outbreaks have occurred, the water company no longer inspects or maintains its water-collecting channels up on the moors. The

programme showed a dead sheep that had been lying in one such channel for a long time. John Layfield of Yorkshire Water Services said, 'We now have excellent modern, state-of-the-art treatment facilities. We no longer feel it is necessary to patrol.' Yet the water companies plead for leniency if treatment plants are threatened by 'unusual' circumstances and water supplies are affected.

The *Dispatches* programme alleges there are many more unreported incidents. An unpublished report from the water company supplying the city of Manchester shows a high correlation between illnesses in the area and a nineteenth century aqueduct. The aqueduct carries treated water from a lake and treatment plant 100 miles away. Potentially infected water is believed to leak into it from surrounding agricultural land.

Although the programme gave the background to the government's new measures, it did not really ask whether these would work or question the shift in policy. In 1980 regulations were drawn up in Europe stating that water intended for human consumption should not contain parasites. The government has ignored this, saying 'It would be attractive to set a zero standard for the treated water leaving the treatment plant. But current treatment processes cannot guarantee that no oocysts would be found.' The water companies presently find a level of one oocyst in every 10 litres of water. The government has agreed that this is what should represent a safe level. This standard has been set even though it is difficult to tell at what stage an oocyst is infective or how many are needed to cause illness. The burden has fallen on the vulnerable who must now boil their water.

The government has said one in four plants are at risk and need additional treatment. But the way risk assessment is carried out is unreliable. The DWI noted that in the North London outbreak, the 'source water circumstances of this case have not been observed before'. It was a deep borehole that was previously thought to be a very low risk.

The new measures will cost £10-20 million. It has taken 10 years, 11 outbreaks and three expert reports to extract this money from the water companies. Whether even this minute amount in comparison to the billions in profit made by the water industry will actually be spent is open to question. The government's industry regulator is proposing to reduce water bills by 20 percent in the year 2000. The companies will be under further pressure to maintain dividends by cutting costs, the number of workers and research into new methods of treatment. Anglian Water finance director Elliot Mannis warned that the cuts would have 'serious implications' for the company's ability to make improvements.

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