Dutch whooping cough epidemic puzzles scientists

Tony Sheldon, *Utrecht*

Dutch scientists are struggling to identify the exact cause of an epidemic of whooping cough that has swept through the country despite vaccination rates as high as 96%. Similar problems are also being reported from Norway and Denmark.

The incidence of whooping cough in the Netherlands had been relatively low, but reported cases increased from 321 in 1995 to 2778 (18 per 100 000 population) in 1996. By the end of November last year 3747 cases had been reported.

Reports have been widespread, with no clustering in areas of low vaccination. Neither has evidence been found for a similar increase in whooping cough in Belgium near to the Dutch border.

Latest figures show that the epidemic is abating, though it is feared that the underlying level is still too high. Epidemic cycles are expected every three to five years—this latest epidemic has come early.

Medical microbiologist Joop Schellekens of the National Institute of Public Health and the Environment said: "We still do not know the cause. We can

only speculate on likely factors." Though the incidence is still relatively low, he said: "It is the principle which worries us. We cannot understand why this happens and it may have consequences for the future."

He denied reports that the epidemic was solely the result of the emergence of a mutated strain of the bacterium *Bordetella pertussis*. Scientists have found an increasing incidence of strains of *B pertussis* with a mutated surface protein, pertactin—so called B and C strains. But at present no proof exists that the mutations affect the immunity induced by the Dutch vaccine.

Dr Schellekens argues that the new strains emerged in the 1980s and are likely to be found in other countries, not just the Netherlands.

The Dutch ministry of health instructed the National Institute of Public Health and the Environment to check the quality of the whole cell vaccine that it produced. The institute has established that the Dutch vaccine produces a mixed antibody response to the different virulence factors, which compares unfavourably with vaccines used in Britain and France. An improved vaccine was quickly introduced in November. It is hoped that improvements in the way the Dutch vaccine is produced will broaden its immunogenicity profile.

The institute is also conducting research into the possibility

of introducing an additional acellular booster vaccine programme for all 4 year olds.

Dr Schellekens said that the epidemic has shown that "even in a highly vaccinated population, pertussis keeps on circulating, which opens the possibility of long term antigenic changes." This was not yet "an established fact but needs to be monitored."

Meanwhile Norway's National Institute of Public Health has

reported a "dramatic increase" in notifications despite vaccination coverage of 85-90%. The incidence of whooping cough increased from 2.1 per 100 000 population in 1996 to 26.8 by the last week of 1997, a total of 1158 cases. In addition, figures from Denmark's Statens Serum Institute, in Copenhagen, show 70 notifications in the first half of 1997, compared with 25 for the same period in 1996. □

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A mutated strain of *Bordetella pertussis* has emerged

Doctor's hunger strike fails to win funds

Carl Kovac, Agota Hajnal, *Budapest*

The cardiac surgery department of a county hospital in western Hungary remains in financial difficulties despite a week long hunger strike by an eminent heart surgeon last month.

Dr Lajos Papp, professor of cardiology at the Medical University of Pécs, abandoned his hunger strike only after learning that some of his patients planned to take similar action and that the welfare ministry might provide additional funds for his department.

Dr Papp was instrumental in establishing the cardiac surgery department at Zala County Hos-

pital in Zalaegerszeg, where budget cuts had halted all but emergency heart surgery since 17 November.

After the Hungarian media picked up on the story, the welfare minister, Mihály Kökény, appeared on television promising that funds to permit the resumption of cardiac surgery at the hospital would be forthcoming. The National Health Fund, however, denied that the hospital would get any money before its budget allocation in January.

At the time, 12 patients had been scheduled for surgery and 18 others were on a waiting list.

One of the political parties, the Hungarian Democrat Forum, donated five million Hungarian forints (£15 832) to the hospital, enabling the scheduled operations to take place.

Zala County Hospital is one of seven centres in Hungary where open heart surgery is performed. The others are five universities and the National Cardiological Institute in Budapest. All these have "much bigger budgets" than the county hospital, said Dr Gábor Kecskés, a member of the cardiology staff at Zala County Hospital.

The decision to suspend heart surgery at the hospital was necessary to avert a financial crisis and possible bankruptcy, said László Varga, president of the county assembly, which administers state funding at the cardiac unit. He said that doctors there had car-

ried out more operations than planned for the financial year 1997, thus exceeding its budget. Doctors at Zala County Hospital performed more than 430 cardiac operations in 1997, compared with 273 the previous year and 265 in 1995.

Zala County Hospital's troubles reflect the financial ills plaguing Hungary's healthcare system as a whole. An internal report by the State Audit Office last September blamed mismanagement and confusion at the National Health Fund and welfare ministry for the health fund's deficit of 43.5bn forints in 1996 and predicted that the aftershock will be felt for years to come. "Our opinion is that the healthcare system will not be able to survive the shocks of 1996 without permanent damage," the report stated. □