Epidemiology

Report from the PHLS Communicable Disease Surveillance Centre

During October and November the expected rise in the number of *Mycoplasma pneumoniae* infections took place, but the expected epidemic of whooping cough did not develop. There was little evidence of influenza activity. An outbreak of legionnaires' disease was reported in Gloucester.

The epidemic of the acquired immune deficiency syndrome (AIDS) continued to increase: altogether 599 cases with 296 deaths were reported by the end of November. The recently established surveillance scheme of childhood illness by the British Paediatric Surveillance Unit achieved a substantial improvement in the recognition of several conditions, including childhood AIDS and Kawasaki disease.

Mycoplasma pneumoniae infections

Primary atypical pneumonia caused by *M pneumoniae* is monitored nationally by laboratory reports to the Communicable Disease Surveillance Centre (CDSC). These have shown a regular cyclical pattern with an epidemic every four years, and an expected rise was observed in the winter of 1985-6 (29 March, p 889). There was a fall during the summer of 1986 but a rise again in October and November (fig 1). If the epidemic follows the previous pattern a further rise may be expected in December with a peak early in the new year followed by a decline in the spring. The pattern suggests that another epidemic is likely to begin again in the winter of 1989-90 and reach its peak between December 1990 and February 1991.

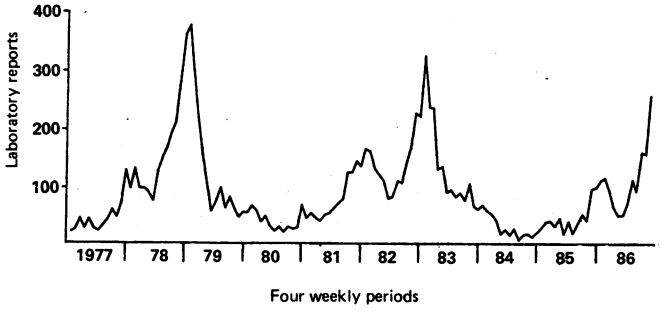

FIG 1—Laboratory reports of *Mycoplasma pneumonia* in England and Wales 1977-86.

Whooping cough

Statutory notifications of whooping cough have been used for the national surveillance of the disease since their introduction in England and Wales in 1940. There was a peak of over 170 000 cases in 1941 and another more sustained rise between 1948 and 1953, again with a peak of nearly 170 000 in 1951, at the time of the post-war increase in the child population. After the introduction of routine immunisation in childhood in the 1950s notifications declined by over two thirds, and a regular four yearly cycle became apparent (fig 2), with the smallest epidemic ever recorded in 1974. In that year the public controversy about the neurological complications of whooping cough immunisation began, after the publication of a report of 36 children who developed neurological abnormalities after immunisation and were investigated at the Hospital for Sick Children in London. In the same year the post of medical officer of health, which carried with it local responsibility for the childhood immunisation programme, was abolished in the reorganisation of the National Health Service. The rate of uptake of immunisation fell dramatically—from 77-81% of the child population in 1967-74 to 30% in 1976.

In 1978 the expected epidemic was over four times as large as that in 1974, and four years later, in 1982, it was again larger than any seen since the mid-1950s (fig 2). In 1985 a rise in the number of notifications suggested that an equally large epidemic would follow in 1986. In the peak four weekly period of the 1982 epidemic in October there were 10 726 notifications but in the corresponding period in 1986 there were only 2911; the expected epidemic had not materialised. This was evident also in laboratory reports of *Bordetella pertussis* and in reports of consultations in general practice recorded by the Royal College of General Practitioners, indicating that the observation was not an artefact of reporting.

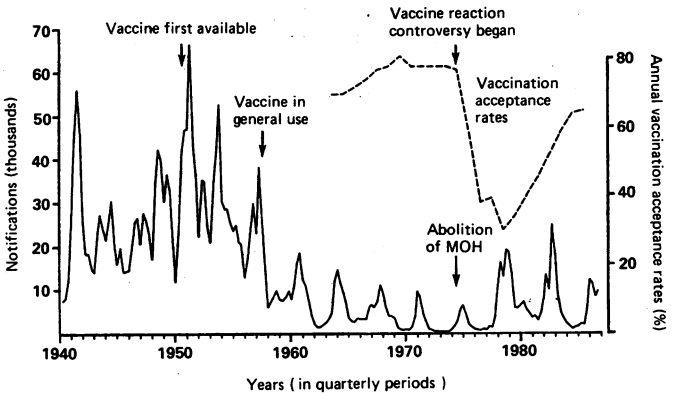

FIG 2—Quarterly notifications of whooping cough in England and Wales 1940-86.

The most recent data on vaccine uptake indicated that by the end of 1985 65% of children in England and Wales born in 1983 had been immunised against whooping cough. This varied between National Health Service regions from 53% to 73%; in those regions with an uptake of less than 60% the annual notification rate of whooping cough in the 12 months July 1985 to June 1986 was 112 per 100 000 total population, compared with about half this figure, 58 per 100 000 population, in regions with an uptake of 70% or more. This suggests that the outbreak has probably been curtailed by the rise in the uptake of vaccine and that even greater control of the disease would follow the universal increase to levels of at least 70%.

Influenza

There was little evidence of influenza activity in England and Wales in October and November; no rises were seen in "epidemic influenza" in the practices reporting to the Royal College of General Practitioners, nor was there a rise in the total number of deaths or those due to respiratory diseases. There were 26 isolates of influenza A reported by laboratories, 10 of them identified as subtype H_1N_1. Eight of these were in an outbreak of influenza in a boarding school in Essex and were identified as the new variant A/Singapore/6/86, which has caused illness in the far east; indeed several children in the school had returned at the beginning of the term from visiting their parents working in the far east. Three further sporadic cases of influenza due to this variant were reported in England but there was no other evidence of spread in this country. Larger outbreaks were reported, however, in Florida and in European Russia so further cases may be expected in Britain. The current vaccine offers some protection against this new H_1N_1 strain, but a monovalent vaccine made from the strain is being prepared in several countries.

Legionnaires' disease

Between the last week of September and early November five cases of legionnaires' disease were reported in Gloucester. Early investigation revealed no association with a single building but all the patients had visited the centre of the city within the incubation period of the disease. This finding led to a survey of all potential sources of legionella in the city centre, such as cooling towers of air conditioning systems, the sampling of these sources, and their immediate disinfection by the local environmental health department with specialist engineering advice.

Case searching by reviewing hospital and laboratory records and by requesting reports from general practitioners identified a further nine cases of legionella infection associated with the city. A case-control study of the 14 cases to identify more precisely the location of the source of infection began during November. In the mean time continuing surveillance has not detected any cases with date of onset after the end of October and the outbreak seems to have been controlled.

AIDS

The number of reported cases of AIDS in Britain rose to 599 with 296 deaths by the end of November; 533 (89%) of the cases were in homosexual or bisexual men (table).

Acquired immune deficiency syndrome in Britain to 30 November 1986

Patient characteristics	No of cases			No of deaths
	Male	Female	Total	
Homosexual/bisexual men	533	—	533	249
Intravenous drug abuser	7	2	9	2
Homosexual and intravenous drug abuser	3	0	3	2
Haemophiliac	22	0	22	20
Recipient of blood	7	4	11	9
Heterosexual contact:				
UK	2	2	4	4
Abroad*	8	6	14	8
Paediatric (intrauterine or perinatal infection)	0	2	2	1
Other	0	1	1	1
Total	582	17	599	296

*Includes 10 associated with sub-Saharan Africa.

Eighteen patients probably acquired the infection by heterosexual contact, four of them in Britain. Of 3746 people positive for human immunodeficiency virus (HIV) antibody reported to the CDSC up to 30 November, 41 were thought to have acquired the infection heterosexually: four were men, 36 were women, and in one the sex was not recorded. Thus although heterosexual spread has begun in Britain so far it appears to be limited. This conclusion was supported by data from the National Blood Transfusion Service in England and Wales and by the Scottish National Blood Transfusion Service. Up to 30 September 2557917 donations had been tested and 55 (0·0021%) had been shown to be positive. Of these 55 positive donors, 46 were men and nine women, and of 54 already interviewed only four, two men and two women, denied being in high risk groups, and only one of these was detected in the last quarter. Data on new donors available since February 1986 showed a fall in the number of positive cases to three in the last quarter, suggesting more effective exclusion of high risk groups from blood donation and providing no evidence of heterosexual spread to other groups.

Clinicians are invited to report cases or suspected cases of AIDS to the Communicable Disease Surveillance Centre (tel 01 200 6868) or to the Communicable Diseases (Scotland) Unit (tel 041 946 7120) so that this essential national surveillance can be maintained.

The British Paediatric Surveillance Unit (BPSU)

The BPSU was set up jointly by the British Paediatric Association, the CDSC, and the Department of Epidemiology of the Institute of Child Health early in 1986 with the object of concerning paediatricians in the surveillance of rare childhood diseases of national importance. Monthly mailing of paediatricians began in June and by the end of August there was a remarkable 85% response rate for reporting eight conditions under surveillance. These comprised AIDS in childhood, neonatal herpes, Reye's syndrome, Kawasaki disease, haemolytic uraemic syndrome, haemorrhagic shock encephalopathy syndrome, subacute sclerosing panencephalitis, and X linked anhydrotic ectodermal dysplasia. This new active surveillance system enabled increased case detection of some of the conditions—notably childhood AIDS and Kawasaki disease. Paediatricians will be aware that cases of AIDS reported to the BPSU are collated with reports from other sources at the CDSC and there is no need to report these cases directly to the CDSC.

Has tonometry ever been considered as a possible transmitter of acquired immune deficiency syndrome?

Human immunodeficiency virus, the aetiological agent of the acquired immune deficiency syndrome, has been found in various body fluids, including tears,[1] and has been recovered from conjunctival epithelial cells released from high water content contact lenses worn overnight.[2] Conjunctival and corneal epithelia are both squamous; they readily desquamate on mild abrasion and may slough directly on to any object or instrument in contact with the eye and possibly facilitate transmission. Although there is no evidence that this has occurred, precautions must be taken to minimise risks. Recommendations for preventing possible transmission have been made by the United States Centers for Disease Control.[3] Briefly, these include handwashing immediately after a procedure and between patients and the use of gloves when there are cuts, scratches, or other lesions; the cleaning of instruments coming into direct contact with the external surface of the eye followed by disinfection by: (*a*) a five to 10 minute exposure to a fresh solution of 3% hydrogen peroxide, (*b*) a fresh solution containing 5000 parts per million free available chlorine—a 1/10 dilution of common household bleach, (*c*) 70% ethanol, or (*d*) 70% isopropyl alcohol. The device should be thoroughly rinsed and dried before reuse, and contact lenses used in trial fittings should be disinfected between each fitting, with either commercially available hydrogen peroxide contact lens disinfectant or heat treatment (78-80°C) for 10 minutes provided that the lens is approved by the manufacturers for heat disinfection.—K G NICHOLSON, senior lecturer in infectious diseases, Leicester.

1 Fujikawa LS, Palestine AG, Nussenblatt RB, Salahuddin SZ, Masur H, Gallo RC. Isolation of human T-lymphocyte virus type III from the tears of a patient with acquired immunodeficiency syndrome. *Lancet* 1985;ii:529-30.
2 Tervo T, Lähdevirta J, Vaheri A, Valle S-L, Suni J. Recovery of HTLV-III from contact lenses. *Lancet* 1986;i:379-80.
3 Recommendations for preventing possible transmission of human T-lyphotropic virus type III/lymphadenopathy associated virus from tears. *MMWR* 1985;34:533-4.