

RESEARCH LETTERS

stipulated three doses of oral polio vaccine.

We found eight cases of unreported acute flaccid paralysis during our investigations. The 1999 investigations revealed substantial improvements in the understanding of surveillance for acute flaccid paralysis at the district hygiene stations compared with the investigations of 1996 and 1997, suggesting that annual training in surveillance for acute flaccid paralysis is effective. At the dispensary level, however, health workers still did not have a sound understanding of surveillance for acute flaccid paralysis. The 1999 nationwide survey of oral poliovirus vaccine coverage by district showed less than 30% coverage in 21 (14.8%) of the 142 districts, and less than 60% coverage in 70 districts (49.0%). These data indicate that the number of susceptible individuals will increase rapidly after the end of mass vaccination campaigns and after the declaration of polio eradication in the western pacific region.

The solid arrows in the lower right of the figure indicate the possible link between the last polio case in Laos in 1996 and the case found in Kon Tum province, Vietnam, in 1995. The two dotted arrows in the lower right of the figure show the potential importation routes of the 1997 Vietnam case. The possible entry point is Sepone district where the number of immigrants in 1999 increased three times compared with the number in 1997 (from 5600 to 16 500 per month). The last wild polio case in a neighbouring country occurred in Loei province, Thailand, in April, 1997, and border area investigations were done in two of the three adjacent districts in Laos (Kenethao and Botene; Xanakham district was not accessible at that time). The 1999 investigation revealed active contact between Laos and Thailand across the Mekong river that irrigates both sides of the country. The acute flaccid paralysis case in Lashio province, Burma, in April, 1999, which was reported initially as wild polio, was revealed to be a laboratory contamination. However, the episode raised the concern that polio could potentially be imported into Laos from Burma. The dotted arrows in the upper left of the figure show two potential transmission routes to Laos through Burma and Yunnan province, China. The coverage of oral poliovirus vaccine was around 30% in the villages adjacent to the border. In many such villages, residents regularly cross the border to visit relatives.

Our study showed the difficulty in raising public awareness of surveillance for acute flaccid paralysis and of exploring hidden unreported acute flaccid paralysis cases at the community level even in the final stage of polio eradication in the western pacific region. If a wild poliovirus is imported into Laos, poliomyelitis is likely to re-emerge because of the growing numbers of susceptible individuals. As the present open-door policy progresses throughout the country, increased population movement will also increase the risk of polio importation from the southeast Asia region.

Our mission is to ensure and sustain the achievement of polio eradication. We believe that more efforts towards surveillance for acute flaccid paralysis, and high coverage with oral poliovirus vaccine will be required from the very day of the Kyoto declaration, and the speeding up of global eradication will become essential.

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HIV seroprevalence by anonymous testing in patients with *Mycobacterium tuberculosis* and in tuberculosis contacts

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Having witnessed a large increase in *Mycobacterium tuberculosis* notifications in south London, we wanted to ascertain the prevalence of HIV and tuberculosis co-infection in our patients. All patients with tuberculosis and their contacts were anonymously tested for HIV in blood and saliva, respectively. 11.4% of patients (from various demographic groups) with tuberculosis who attend chest clinics in south London are HIV positive. In addition, 5% of individuals seen in the tuberculosis contact screening clinics and 4% new entrants are HIV positive. All patients with *Mycobacterium tuberculosis*, irrespective of background, should be urged to have an HIV test.

The incidence of *Mycobacterium tuberculosis* infection has increased in London since 1987, although disproportionately to the rest of the UK. The rate of tuberculosis in London in 1998 was four times higher than the rest of England and Wales.¹ HIV co-infection has been suggested as a major contributing factor to this increase. However, the UK Public Health Laboratory Service matched HIV infection and AIDS with tuberculosis denominator data and found co-infection rates of 4.6% and 5% in 1993 and 1998, respectively.^{1,2} In New York and Los Angeles, where tuberculosis

Ethnic origin	Men				Women			
	16-34 years	35-54 years	≥55 years	Total	16-34 years	35-54 years	≥55 years	Total
African	25	5	2	32 (29%)	21	4	0	25 (28%)
Indian	28	14	11	53 (47%)	18	17	9	44 (49%)
White	7	12	3	22 (20%)	2	8	6	16 (18%)
Other	2	1	2	5 (4%)	4	0	1	5 (5%)
Total	62	32	18	112	45	29	16	90

Table 1: Ethnic origin of patients with tuberculosis who were tested for HIV-1 infection

notifications showed a similar dramatic increase in the early 1990s, 18-23% of patients with tuberculosis in chest clinics were HIV positive.^{1,4}

Few data exist on HIV and tuberculosis co-infection in London and among different ethnic groups. There is no guidance about when patients with tuberculosis should be offered HIV testing or which patients should be tested. We therefore studied the prevalence of HIV and tuberculosis co-infection in three south London chest clinics. We also screened symptom-free individuals attending tuberculosis contact clinics and a tuberculosis screening clinic for new entrants and asylum seekers.

From December, 1998, to November, 1999, we prospectively collected blood samples, by unlinked anonymous methods, from all patients with microbiologically confirmed tuberculosis who were attending the chest clinics at St George's, St Helier, and Mayday Hospitals. In tuberculosis contacts and new immigrants, in whom routine phlebotomy is not done, saliva samples were taken. Patients or contacts already diagnosed with HIV infection were excluded. To prevent deductive disclosure, we collected demographic data on only age group, ethnic origin, and sex.

Blood samples were analysed for antibodies to HIV-1 and HIV-2 at St George's Hospital with a third-generation Abbott microparticle enzyme immunoassay (Abbott Laboratories, North Chicago, IL, USA). Reactive samples were confirmed by HIV-1-specific gel particle agglutination assay (Serodia, Fujireibo Inc, Tokyo, Japan) and Multitest HIV-1/2 (Sanofi Diagnostics Pasteur, Paris, France). Saliva samples were analysed at the Royal Free Hospital (London, UK) by Wellcozyme HIV1+2 Gacelisa (Murex Biotech Ltd, Dartford, UK). Positive samples were confirmed in triplicate.

202 patients with tuberculosis (112 men, 90 women) had blood samples taken. Demographic characteristics of the patients are shown in table 1. 23 (11.4%) of 202 patients were HIV positive, all of whom were infected with HIV-1. HIV seroprevalence did not differ among patients of African and Indian origin (table 2). All HIV-positive samples in patients of African origin were in patients aged younger than 34 years. However, in other ethnic groups the distribution of positive results between 16-34 years and 35-54 years was similar (table 2). Salivary testing showed that five (5%) of 97 contacts were HIV positive (one African, two from Indian subcontinent, and two white) and five (4.3%) of 115 new UK entrants were HIV-1 positive (two from sub-Saharan Africa, two from Indian

subcontinent, and one from Baltic states).

The seroprevalence of HIV-1 in tuberculosis patients is more than double previous estimates.^{1,2} Moreover, because we specifically excluded patients already known to be HIV positive, the true co-infection rate in south London may be as high as 17-20%. The similar distribution of HIV-positive patients across ethnic groups, age groups, and by sex is important. Traditionally, particularly for patients from the Indian subcontinent, the possibility of HIV infection as a potential reason for reactivation of tuberculosis has not been discussed. We hope that our findings will change this perception and that all patients with newly diagnosed tuberculosis will be encouraged to have an HIV test. The prevalence of HIV infection among individuals attending tuberculosis contact clinics has important implications for the interpretation of tuberculin skin tests and for the safety and effectiveness of BCG vaccination. The 4% rate among new UK entrants has serious implications for the provision of health care to asylum seekers, which in London is already overstretched.⁵

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Ethnic origin	n/total	Men (n=112)				Women (n=90)			
		16-34 years	35-54 years	≥55 years	Total	16-34 years	35-54 years	≥55 years	Total
African	8/57 (14%)	4	0	0	4 (4%)	4	0	0	4 (4%)
Indian	14/97 (12%)	6	3	0	9 (8%)	2	1	0	3 (3%)
White	2/38 (5%)	1	0	0	1 (1%)	0	1	0	1 (1%)
Other	1/10 (10%)	0	0	1	1 (1%)	0	0	0	0
Total	23/202 (11.4%)	11	3	1	15 (14%)	6	2	0	8 (9%)

Table 2: Patients with tuberculosis who tested positive for HIV-1