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Tuberculosis in Britain today

Notifications are no longer falling

After a period of relative dormacy in the West interest in tuberculosis has been reactivated as the disease has become a clinical and public health problem and the subject of renewed research worldwide. In parts of Africa tuberculosis was beginning to respond to control programmes until the recent emergence of the HIV epidemic.[1] In the United States much of the excess of reported cases of tuberculosis since 1985 has been attributed to the HIV epidemic.[2] Poverty and homelessness in inner city areas of the United States, however, and erosion of the resources for antituberculosis programmes in those areas have also been blamed for some of the recent increase.[3,4] In some European countries a slowing in the fall in the incidence of tuberculosis has been reported in the past few years, but the reasons for these changes are unclear.[5] The problem has been compounded in some countries by an increase in infections due to multiresistant strains of *Mycobacterium tuberculosis*, and outbreaks have been reported in both the United States and Europe.[6-8]

To what extent are these problems applicable to Britain? In the late 1980s notifications of tuberculosis in England and Wales stopped their former steady decline. An annual average of 6266 notifications was received in the three years 1983-5, falling to 5413 in 1986-8 but to only 5357 in 1989-91.[9] Between 1988 and 1990 increases in notifications were not seen in any age-sex group other than women aged 15-64, and these increases were small. The preliminary figure for total uncorrected notifications in 1992 is 5% higher than the equivalent figure for 1991.[10] Deaths from tuberculosis have continued to fall during this period: there were 493 deaths in 1983-5, 460 in 1986-8, and 418 in 1989-91.[5]

In 10 health regions in England and Wales notifications have remained little changed during this period or have continued to fall. But in four regions (North East and South East Thames, Yorkshire, and West Midlands) annual notifications have risen. Greater changes have been observed in individual districts, but these are difficult to assess owing to small numbers and year to year variability. In London, increases have been greater in inner than outer areas.

Notification rates of tuberculosis in England and Wales are 20 to 30 times higher in people of Indian subcontinent origin than in the indigenous white population[11] and still higher in immigrants who have recently arrived.[12] The absence, however, of data on ethnic group, country of birth, and year of migration in routinely collected information on tuberculosis makes it difficult to assess the likely contribution of immigrant groups to recent changes in the numbers of notifications of tuberculosis. In the last detailed survey, conducted in 1988, notification rates were observed to have fallen at a similar rate in both white people and people of Indian subcontinent origin (after appropriate standardisation).[11] Increases in notifications have been observed in some districts with large populations of Indian subcontinent ethnic origin, but changes in the size and structure of this subgroup and other local factors may have contributed to these increases. A recent increase in refugees from Africa and other places currently affected by conflict has also led to an increase in notifications in some districts.

Tuberculosis is also a well recognised problem in homeless people, whose numbers have increased in recent years, particularly in London.[13] Because reliable data on tuberculosis in this group are difficult to obtain the contribution of homelessness and other factors associated with poverty to the rate of notification of tuberculosis in deprived areas cannot be determined with certainty.

The association between HIV infection and tuberculosis has been recognised for some years.[14] Extrapulmonary tuberculosis with HIV infection has been part of the surveillance case definition for AIDS since 1987,[15] and pulmonary tuberculosis was included in the revised American definition at the beginning of this year.[16] Most cases of tuberculosis in patients with HIV infection are likely to result from reactivation of tuberculous infection often acquired many years before.[17] Overlap between the population with HIV infection in Britain (mainly younger white men) and the population with previous tuberculous infection (mainly elderly people and those of Indian subcontinent origin) is likely to be limited at present.[18] Only about 5% of patients with AIDS in England and Wales develop tuberculosis,[19,20] although this proportion could increase if the distribution of the population with HIV infection changed to include a larger proportion of groups with high rates of previous tuberculous infection, including immigrants from parts of the world where both infections are common. At present, however, tuberculosis associated with HIV infection is unlikely to contribute many notifications in Britain.

Infection with strains of *M tuberculosis* resistant to two or more of the standard antituberculous drugs, particularly isoniazid and rifampicin, pose problems for clinical management. Outbreaks due to multiresistant strains have been reported in hospitals and prisons in other countries.[6-8] These have affected patients with immunosuppression due to HIV infection and also health care and other workers, whether

infected with HIV or not. Mortality in these outbreaks has been high, and measures to control tuberculosis are therefore being urgently reviewed in the United States. In the Medical Research Council's surveys of notifications of tuberculosis in England and Wales in 1978-9, 1983, and 1988, 95% or more of initial isolates of *M tuberculosis* from respiratory specimens from previously untreated patients were fully sensitive to isoniazid, rifampicin, ethambutol, and streptomycin.[11 21 22] In the 1988 survey resistance to isoniazid was present in only 1% of specimens from white patients and in 3% of those from people of Indian subcontinent origin. In only seven patients (0·8%) were strains isolated that were resistant to more than one drug; none was resistant to both isoniazid and rifampicin.

The Mycobacterium Reference Unit of the Public Health Laboratory Service reports a small increase in strains resistant to isoniazid in 1991 (unpublished data), but it is too early to assess the importance of this increase. Although a small number of multiresistant strains have been received by the Mycobacterium Reference Unit from various parts of England and Wales, none has been formally reported in association with HIV infection and no outbreaks are known to have occurred. The experience in the United States, and particularly in New York, makes it essential that vigilance for such cases should be maintained and procedures to control infection reviewed.[23]

Though undernotification of tuberculosis in Britain is well recognised, its extent is unknown. Some 27% of cases were not notified in a recently published study of over 600 cases in east London; in another inner London district 18% of 438 cases were not notified.[24 25] Little information is available for other parts of England and Wales. In a Scottish study in 1981-4, 40% of 69 histopathologically confirmed cases of tuberculosis were not notified.[26] The scope for improvement is therefore considerable. The appointment of a new cadre of consultants responsible for communicable disease control may have increased the proportion of cases notified, but there is no way of knowing this.

A further national survey of notifications of tuberculosis is being conducted in England and Wales this year,[27] with a parallel study planned for Scotland. This will estimate notification rates in different ethnic groups, assess trends over time, and obtain information about clinical features and treatment. A new feature of this survey is that the prevalence of HIV infection will be estimated in all adults aged 16 to 54 notified with tuberculosis during the year, using the well established unlinked anonymous HIV testing methodology.[28] Information from this year's survey will help clinicians in their approach to investigating and managing suspected tuberculosis. It will also assist in the planning of future measures to control tuberculosis, including BCG immunisation policy (see editorial below).[29]

Different factors seem to be responsible for the recent changes in notifications of tuberculosis worldwide. These changes may have relevance to Britain, and we must maintain vigilance. Notification of all cases of tuberculosis remains essential not only for local control but also to strengthen our understanding of the occurrence of the disease through epidemiological surveillance.

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BCG vaccination against tuberculosis: international perspectives

Vaccinate the newborn in developing countries and those at risk in developed countries

The risk of tuberculosis in young white adults in England and Wales has fallen greatly over the past 20 years, and as a result the discontinuation of BCG vaccination at the age of 13 has been proposed.[1] A national survey of notifications of tuberculosis in England and Wales is to be conducted this year before any decisions are made, but in the meantime controversy continues over the shape of the BCG programme in the United Kingdom. At least in the United Kingdom the evidence of the vaccine's efficacy is strong. In developing countries, where evidence on efficacy is less clear cut, a different controversy exists over whether BCG vaccination programmes are useful at all.

In England and Wales in 1969, 460 vaccinations were needed to prevent one notification of tuberculosis whereas in 1989, 3600 were needed. A decision to discontinue vaccination for 13 year olds will depend on anticipating a contin-