(Cosivi *et al.*, 1995). Information on the impact of such a disease on human health is even more limited, principally because few laboratories isolate tubercle bacilli and even fewer have the facilities or incentive to distinguish between the human and bovine types. Human tuberculosis due to *M. bovis* certainly occurs in the developing world, but few detailed epidemiological studies have been conducted (Cosivi *et al.*, 1998). There is a theoretical possibility that a high incidence of HIV infection could render communities more susceptible to the development of this form of tuberculosis after exposure to infectious cattle and that it might increase the risk of human-to-human transmission (Daborn *et al.*, 1996). Thus, further epidemiological studies on this form of tuberculosis in humans and a consideration of the cost effectiveness of programmes to eradicate it from cattle are required.

Comparison of the Problems of Tuberculosis Control Facing Industrialised and Developing Countries

The burden of tuberculosis is principally borne by developing nations where 95% of all cases of this disease and 98% of deaths due to it, occur.

Developing countries are faced with an enormous burden of disease of which tuberculosis, though one of the most prevalent, is nevertheless just one of many issues competing for very limited financial resources. In Uganda, for example, US$2.50 is spent annually per head of the population on health whereas US$30 is spent on paying interest on loans from the wealthier nations. In many countries, patients must pay for treatment and meet other expenses, such as travel to the health centre. Although the costs are small by Western standards, they may be very burdensome to poor people (Bevan, 1997). Successful tuberculosis control programmes based on subsidised directly observed therapy have been conducted in China and Bangladesh and a further one is in progress in India, but all are dependent on loans from the World Bank, thereby adding to the burden of international debt.

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In industrialised countries, by contrast, tuberculosis has become an uncommon disease. Even though many such countries have experienced small increases in incidence since the mid 1980s, the number of cases remains very low relative to the developing world. The demographical characteristics of tuberculosis in industrialised countries have changed considerably during the course of the 20th century. As the incidence of the disease in the indigenous population has fallen, tuberculosis has become relatively more prevalent in certain minority groups, notably immigrant populations and refugee populations. As discussed in detail in Chapter 13, the management of the disease in these populations poses a considerable challenge to established medical practice, particularly with respect to effective communication. As a general principle, the impact of HIV-related tuberculosis has not been as evident as in developing nations as the majority of patients are not in the age group at risk of becoming infected with HIV, although important exceptions occur. The particular association between tuberculosis, socio-economic deprivation and HIV-related tuberculosis in New York City has been described above.

A further problem facing industrialised nations is generated by the very fact that tuberculosis is an uncommon disease. As discussed in a classic paper by Reichman (1991) entitled 'The U-shaped Curve of Concern', loss of interest in, and diagnostic awareness of, a disease that is both uncommon and declining in incidence is more or less inevitable. This leads to delays between the onset of symptoms and commencement of therapy (Pirkis *et al.*, 1996), a loss of clinical experience among physicians, a dismantling of dedicated treatment facilities and a reduction in screening and surveillance measures, thereby enabling the incidence of tuberculosis to rise unobserved until, as has happened in the USA, a serious outbreak jolts the medical profession out of complacency and into a state of concern. These problems are not easily resolved, especially as so many other medical problems clamour for the time of physicians in an increasingly complex and stressful environment in which financial constraint is a regrettable but unavoidable reality.

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