Promoting compliance with tuberculosis drug therapy

The recent increase in the notifications of tuberculosis infections has focused the attention of healthcare professionals on reasons for the disease's resurgence. This article describes how directly observed therapy and an enlightened approach to health promotion for groups of people perceived as being at risk, could prevent further increases in incidence.

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In recent years, concern about the increasing numbers of notifications of tuberculosis has been noted worldwide. For example, the World Health Organization (WHO) (1993) claimed: 'Today, 40 years after the introduction of chemotherapy for tuberculosis, there are more new cases (8 million per year) than ever.'

In the UK, Hardie (1992) identified tuberculosis as an increasingly significant cause of illness and death. The number of annual notifications of the disease had been falling, but this decline halted in 1987. Furthermore, tuberculosis notification rates have increased in three of the four Thames regional health authorities in the past few years (Mangtani et al 1995). Notification rates are particularly high in inner city districts. For example, in Camberwell in south east London, tuberculosis notification is twice as high as it was ten years ago and five times the average of the rest of England and Wales (Seymour 1991).

It has long been acknowledged that certain factors are associated with an increased risk of contracting tuberculosis. These factors include overcrowding, deprivation, poor nutrition and inadequate health care (Hardie 1992).

Certain groups of people are at an increased risk of contracting tuberculosis, for example, older people, groups of certain ethnic origin, particularly immigrants from south Asia (Hardie 1992), homeless people (Hardie 1992) and those infected with the human immuno-deficiency virus (Hardie 1992, Iseman et al 1993, Seymour 1992). Inner city areas also receive refugees from countries with a high prevalence of tuberculosis, who may be at increased risk of developing disease as a result of physical and emotional trauma, especially if they have limited access to healthcare (Seymour 1992).

TREATMENT COMPLIANCE

Treatment of tuberculosis often involves the individual taking three different drugs, either on a daily or intermittent basis for six to nine months. A fourth drug may be added if drug resistance is a possibility. The WHO (1993) has expressed concern that despite the availability of drugs which are effective in treating the disease, cure rates remain unacceptably low in most developing and some developed countries.

The main reason for this is the failure of some patients to complete a full course of treatment. If a person infected with the disease fails to complete a course of treatment, for example, through a misunderstanding due to a language barrier or loss of contact with health professionals, drug resistance may occur with serious consequences for the individual patient and also for tuberculosis control in general. The WHO (1993) has described how, historically, long term institutional care was employed to ensure adherence to prescribed treatment, and has acknowledged that today, hospital-based treatment may no longer be feasible or suitable.

DIRECTLY OBSERVED THERAPY

The appearance of drug-resistant forms of the tubercle bacillus in the United States has caused concern, particularly in New York. McMillan (1993) described the mayor of New York pointing out those who are at the greatest risk as being those who are often the most difficult to engage in treatment. In response to this concern, the health department in New York city introduced a 'bridge to treatment' programme aimed at reducing the spread of tuberculosis (McMillan 1993). This approach involves tracing people who are infected with tuberculosis and, if necessary, watching them take their medication. This system is called 'directly observed therapy'.

A BBC Horizon television programme entitled The Forgotten Plague (BBC 1993) showed a directly observed therapy worker, employed by the Brooklyn Health Centre, going to meet a man in the park, where she watched him take his medications. Small sums of money were offered as incentive.

While New York city's plan focuses on encourag-
ing patient compliance with treatment regimes under conditions which are as minimally restrictive as possible, measures are available to ensure compliance in the form of detention orders which allow for non-compliant patients to be monitored in hospital (McMillan 1993). This is a controversial issue and McMillan (1993) described the alarm expressed by a nursing representative in response to detention and enforced treatment, when she suggested that any failure may be in the healthcare system, rather than the individual. It is important to consider that in the 1980s, approximately 40 million Americans had no health insurance and that 23 per cent of uninsured people were not registered with a GP (Quarn 1988).

Iseman et al (1993) described directly observed therapy as: ‘The practice of giving patients their pills and seeing that they are swallowed,’ and cited statistics for Denver, Colorado, where fewer than 10 per cent of patients were lost to treatment. In Denver, treatment was observed by a registered nurse. Iseman et al (1993) also stated that the six-month regimen of 62 doses of directly observed treatment practised in Denver cost $397 per patient. In contrast, a six-month self-administered daily regimen that required six visits to a nurse but an additional 120 days of medication, cost $327 per patient. They further stated that savings may be made in laboratory costs and use of X-ray services with a programme of directly observed treatment, as efficacy may not need to be monitored as closely as with self-administered medication. Thus, at least in the US, directly observed treatment does not have to be expensive.

Non-nursing therapy supervisors While in Britain directly observed therapy is currently performed by tuberculosis health visitors, some of the literature from overseas describes situations where the observation is performed by people who are not nurses. For example, this approach has been described by Boutotte (1993) as the most effective way to ensure patient adherence with prescribed treatment. Boutotte (1993) also stated that community outreach workers, especially those who are bilingual or bicultural, can be used in directly observed therapy, provided that they work under the supervision of a nurse.

Wilkinson (1994) described a community-based treatment programme of twice-weekly supervised treatment in Zululand, South Africa. Each patient chose a supervisor who was supplied with the requisite drug therapy, together with verbal and written instructions, and he or she was asked to watch the patient take the medication. A tuberculosis health worker visited each supervisor monthly. Over 600 patients were managed in the community, with more than half being supervised by non-health workers, and others by nurses in clinics and community health workers.

The WHO (1993) stated that in some situations fully supervised or directly observed intermittent treatment regimes have been shown to be feasible and successful and recommends that, where possible, all intermittent therapy be directly observed or supervised.

CULTURE AND COMPLIANCE
Naidoo and Wills (1994) described Becker’s Health Belief Model (1974), which has been used to predict protective health behaviour and compliance with medical advice. The model suggests that an individual, when faced with a decision related to health, may weigh up the perceived benefits against the perceived costs of complying with advice or treatment. Culture, among other factors, is acknowledged as a variable capable of influencing such decision making.

In Vancouver, in an area with a high incidence of social and economic problems, a screening programme has been developed to identify individuals with tuberculosis and to initiate and supervise treatment (McDonald and Ma 1987). McDonald and Ma (1987) described how choices relating to health issues were strongly influenced by social and cultural factors and individual responses to the healthcare system were affected by past experience, beliefs, attitudes and perceptions.

A charity working for homeless people, CRISIS, offered chest X-ray facilities at its Christmas shelter in London in 1993. The screening programme showed two in every 100 homeless people may have tuberculosis. Citron, a consulting physician, was quoted as saying (Crisis 1994): ‘If backed up by the latest round of screening, two cases per 100 people would be a rate not dissimilar to levels in developing countries and in New York.’

All groups of homeless people face difficulties in gaining access to appropriate health care (Davies 1993). Using Becker’s model, it could be argued that in such a situation the effort involved in acquiring and complying with medical advice or treatment could be perceived as too great a barrier to someone who has difficulty in gaining access to health care. Indeed, Citron et al (1995) cited problems with access to medical care, together with the reluctance of some homeless people to consult health services, as contributing to the high prevalence of tuberculosis among single homeless people. Furthermore, Seymour (1992) described how the homeless may be hard to trace and retain contact with during chemotherapy, while Citron et al (1995) also found that drug treatment for tuberculosis frequently fails in hostel residents and rough sleepers because of non-compliance with treatment.

Hardie (1992) suggested that in groups such as the homeless, compliance might be increased by supervised treatment regimes and that outreach clinics and mobile treatment facilities may need to be developed in some areas to get the services to the groups who need them. Others have recommended that an appropriate homelessness services worker should undertake directly observed therapy (Citron et al 1995).
Such an approach is compatible with some elements of the WHO's goal of health for all by the year 2000 (1992). Target 28 (Primary Health Care) aims for basic health needs to be met 'by providing a wide range of health-promotive, curative, rehabilitative and supportive services, and by actively supporting self-help activities of individuals, families and groups.' Included in the approaches which might be employed to meet this target are:

- The provision of care through locally organised delivery systems
- The provision of community groups with support to enable them to become active partners in primary health care
- The removal of financial, physical and cultural barriers to the use of primary health care
- The strengthening of active outreach to the community.

McDonald and Ma (1987) pointed to the importance of involving community networks when they described their success in getting Native American elders to screening and treatment when they worked with a Native American worker during their tuberculosis programme.

Access to health care is often a problem for refugees. This may be due to lack of knowledge of the services available as well as communication barriers (Kemp 1993). A study performed by the Audit Commission (1993) found that access to hospital services can be much reduced for people who do not speak English, either because they do not know the service exists or because they feel in some way that it is not intended for them. As such, refugees might form another group of people who might benefit from an approach such as directly observed therapy.

CONCLUSION

Tuberculosis is an important health issue in the UK (Hardie 1992) and the groups of people most at risk of contracting this disease may not always find access to health services easy. These groups may include cultures or subcultures whose beliefs about health and illness may not be congruent with those of mainstream society, or even healthcare professionals. In situations such as the resurgence of tuberculosis in a changing society, new approaches to the promotion of health, and the prevention and treatment of disease must be sought constantly. This is particularly important because new evidence suggests that the spread of drug-resistant tuberculosis may be increasing in certain sections of the British population (Davies 1995).

Although a thorough literature search is necessary to systematically review the advantages and disadvantages attached to directly observed therapy, it is clear that serious consideration to such an approach should be given in order that those groups recognised as being at risk have access to the requisite health care.

REFERENCES


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