A recent report in AIDS Treatment Update describes how four HIV positive people were infected with multi-drug resistant tuberculosis (MDR-TB) in an AIDS unit at Chelsea and Westminster Hospital (1). A patient who was being cared for in a six-bed bay underwent a procedure to induce him to cough up sputum in an open ward. Although the patient had been diagnosed as having TB of a lymph node, medical staff suspected he had Pneumocystis carinii pneumonia rather than pulmonary TB.

This patient was subsequently diagnosed with multi-drug resistant TB. People who are co-infected with HIV and drug-resistant TB might face spending the rest of their lives in isolation rooms. Stephen Fim reports on this new challenge for nursing.
MDR-TB is no more or less infectious than drug sensitive tuberculosis, but the immunocompromised are at increased risk

as having MDR-TB and tests showed that four patients who were cared for in the same bay were infected. Paul Mayho was one of them and was later being cared for at St Mary’s Hospital, Paddington. He decided to go public in order to increase awareness of MDR-TB and the restrictions he must endure to prevent further spread of the organism.

When I last visited Paul he had been in isolation for over 50 days. It was impossible to escape this fact since he had marked one wall with lines indicating each day spent in isolation.

He was in a standard size hospital side room with an attached toilet and shower. These facilities are essential since infection control precautions prevented Paul from leaving the room. As well as this, the window and door had to be kept shut at all times. If Paul had insisted on discharging himself before he was free of TB, he had been advised that the Director of Public Health would be informed and he or she had the power to invoke the Public Health Act to detain Paul in the interests of public safety.

Before entering the room, visitors and healthcare workers had first to put on a particle resistant mask completely enclosing the mouth and nose. The masks protrude from the face like a beak, prompting one nurse to remark that this made everyone look like ducks.

Paul had only had contact with people wearing these masks since entering isolation and he remarked on how difficult it can be interpreting people’s comments and reactions when you can only see their eyes. Despite this barrier, Paul had not lost his sense of humour, and for good measure had ensured that his teddy bears were wearing their masks as well.

Paul was restricted to five nominated visitors, none of whom could be HIV positive, immunocompromised, children under 12 or pregnant women. As a result he had not seen his partner who has an AIDS diagnosis, or his sister who is pregnant, since entering isolation.

Paul’s contact with the outside world was via a telephone and he was determined to publicise his experiences. His case has been featured in the national media, and while he openly admits to courting media attention, since it gave him a sense of doing something positive about his situation, his decision to go public also attracted much less welcome interest. This included an anonymous letter insisting that Paul had only himself to blame. Such views are reminiscent of early reactions to people with AIDS and Paul confesses that the elaborate, albeit necessary, infection control procedures and the uncertainties surrounding his treatment and prognosis made him empathise with the feelings of those first people with AIDS.

Paul actually looked and felt very well, with no overt symptoms of either HIV disease or TB. His future is very uncertain, however. The prognosis for people co-infected with HIV and TB is poor, with an increased risk of developing active TB and more rapid HIV progression. Paul had to remain in isolation until his TB was non-infectious, but nobody was able to say when, or if, that would happen. One HIV negative person with MDR-TB has already been in isolation for 18 months.

**Significant increase**

MDR-TB can be defined as tuberculosis which is due to organisms resistant to first-line drug treatment. There has been a significant increase in MDR-TB reported in Asia, Africa and the USA. While individuals with drug sensitive TB usually respond to treatment within two to three weeks, those with MDR-TB are prescribed a combination of alternative drugs in the hope they might be effective.

Drug resistant strains can develop because of poor compliance, for example individuals not completing courses of one or more drugs. It can also be linked to inappropriate prescribing, such as insufficient dosage or prescribing one anti-tuberculous drug. In the UK, 42 cases had been reported before the current outbreak, with 38 of these affecting people who were infected with HIV (1). Thus far, cases in the UK are believed to be most strongly linked to people who have lived in areas where MDR-TB is more prevalent.

The mycobacteria which cause tuberculosis are transmitted via respiratory routes. The bacilli can float in the air for several hours after being expelled by an infected individual, particularly if they are in an enclosed room with poor ventilation. MDR-TB is no more or less infectious than drug sensitive tuberculosis, but anyone who is immunocompromised – whether
because of HIV or not — is at increased risk of acquiring TB.

Guidance published by the Centers for Disease Control in the US in 1990 stated that sputum induction in patients who might have TB should only be carried out in negative pressure rooms or booths (2). Medical staff involved in the TB outbreak in London have already stated that sputum induction will no longer be performed in open wards housing people who are HIV positive.

One of the main problems is knowing who might be infected with TB. Prevention of spread and effective management requires identification of those who might be infected, isolation of those with the disease, followed by treatment of the condition. Identification requires a high index of suspicion. This presents a dilemma since most people with HIV disease are likely to experience coughing or respiratory distress at some point, and TB can often resemble tuberculosis. Specialists agree, however, that any HIV positive person with a prolonged cough or respiratory illness who is known to have contacts with TB, or has lived in areas of high prevalence, should be treated as though they have TB. Local policies produced at St Mary's Hospital suggest that MDR-TB should be suspected in:

- People with contact with TB of known drug resistance
- Those with a history of erratic or incomplete treatment for TB in the past
- Those with persistently positive smears and/or cultures after three months of TB therapy
- Those who come from an area with a high rate of resistance, for example Asia, Africa, Latin America and certain south European countries.

This imperative to isolate all those suspected of having TB does not sit easily with efforts to treat people with HIV and AIDS the same as other clients...

Infection control procedures require all those entering the room of an infected person to wear high filtration masks. It appears, however, that these were not available in the first days after the outbreak and this highlights the need for all appropriate centres to maintain adequate stocks.

As already mentioned, restrictions on visitors include the exclusion of anyone who is immunocompromised, children under 12 and pregnant women. St Mary's policy states a maximum of five named visitors with no more than two at any one time. All staff must have received BCG and HIV positive and pregnant healthcare staff need to be informed of the risks.

St Mary's policy also states that all patients with MDR-TB should receive at least five drugs to which the mycobacterium is not known to be resistant and treatment must continue for at least two years, or longer if cultures remain positive. This could mean lifelong treatment and lifelong isolation. Directly observed therapy is mandatory which means the patient must be seen to take all medication.

The question of how and where to care for someone who might have to remain in hospital isolation for the rest of their lives is a daunting one. Clearly there is great potential for psychological distress, and this issue must be uppermost in the minds of those planning and providing care.

Whether it is possible to provide care in a community setting without risking spread of the organism is currently being debated. Even if a person is treated successfully and becomes non-infectious, St Mary's guidelines state that he or she must only be discharged to a 'non-vulnerable household'. Once again this excludes anyone immunocompromised, children and pregnant women.

Outbreaks of MDR-TB create great demands on both those infected and those providing care. It is clear that there is potential for an increase in cases in the UK and recent experience shows the need to prepare adequately for future outbreaks. This includes education and training of staff, availability of essential resources and facilities and the development of local policies and guidelines.

Recent research has suggested that there has been a significant increase in understanding of HIV and a decrease in negative attitudes among both health workers and the public. This could change dramatically if there are further outbreaks of MDR-TB among people with HIV. If this is reported irresponsibly without due regard to the protection offered by a competent immune system and BCG vaccination, progress towards greater acceptance of HIV and AIDS could be reversed.

The way in which the popular press reported the story of an Irish woman allegedly trying to spread HIV to male partners demonstrates the willingness of some parts of the media to print HIV related stories likely to spread panic without checking the facts.

Once again, nurses caring for people with AIDS related illnesses are going to be at the forefront of challenging fears and misconceptions and will need to develop innovative and sensitive responses to complex care needs.

For Paul Mayho the nightmare of hospital isolation is over. After more than 70 days his culture is clear and he has been discharged. But he is unable to return home because there are people there who are HIV positive.

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References

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