Barriers to managing TB in emergency departments

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- Problems managing TB in emergency departments
- How education can help staff to recognise TB

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Improved management of tuberculosis is a key priority for Public Health England due to unacceptably high rates of the disease in the UK, particularly in London and other major cities. A survey of 20 staff in the acute medical unit at Queen Alexandra Hospital, Portsmouth, explored potential barriers to early TB detection and infection control in busy emergency departments.

Low awareness and little familiarity with TB among many emergency admissions staff increased the likelihood of transmission from undiagnosed patients in crowded waiting areas. The study suggested regular updates on TB so staff could refresh their knowledge and awareness, and help improve TB detection and infection control.

In 2013, there were 7,290 reported cases of tuberculosis in England, or 13.5 cases per 100,000 population. In some major cities, such as London and Manchester, as well as in the Midlands, rates were three to four times higher; 70% of TB cases are concentrated in 40% of the most deprived areas of the country (Public Health England, 2014a).

Despite a small decrease over the past two years, PHE says these rates are “unacceptably high” compared with those in the US and most other western European countries (PHE, 2014a). Earlier detection and improved management of TB is, therefore, one of its key priorities (PHE, 2014b).

As many as 73% of reported cases of TB occurred in people born outside of the UK, although only 15% were in recent migrants; nearly half (44%) of cases were in people not in employment, and 10% of patients had at least one social risk factor, such as a history of alcohol or drug misuse, homelessness or imprisonment (PHE, 2014b). More than one in four (28%) patients started treatment more than four months after the first symptoms appeared, a situation that had slightly worsened over three years (PHE, 2014b).

Failure to prevent, diagnose and adequately treat TB in the UK is leading to the development of drug resistance, the spread of the disease and outbreaks of multidrug-resistant TB (PHE, 2014a). To address this, Public Health England has published a five-year TB strategy in partnership with NHS England (PHE and NHS England, 2015), along with other initiatives to reduce the incidence of the disease.

More TB cases should be identified in primary care to ensure faster diagnosis and reduce the number of patients presenting at hospital emergency departments, while better awareness of TB among hospital staff could reduce the risk of transmission and speed up treatment for patients who do present in hospital (Griffiths et al, 2007).

TB can be spread by an infected person coughing and sneezing which releases small airborne droplets that can be inhaled by others who may then become infected. The droplets fall onto exposed surfaces and dry out, ready to be raised again as dust when disturbed. There is a potential for TB to be transmitted from undiagnosed patients in crowded emergency departments, where TB infection control measures are seldom prioritised (Escombe et al, 2010).
TB in emergency departments
The climate in UK emergency departments has become increasingly pressured over the past year. The sheer volume of patients presenting in them can make safe movement through departments difficult and often fraught, while crowded areas mean that patients and those accompanying them can be in close proximity.

The population groups disproportionately affected by TB – immigrants from countries with a high incidence of TB, homeless people, those with alcohol and drug misuse problems, ex-prisoners and frail older people – are likely to present in this environment (van Hest et al, 2014). In these overcrowded, pressurised departments, even staff who are familiar with TB may fail to notice if patients are showing symptoms of it, particularly when other people have urgent clinical needs or are behaving in a disruptive manner.

Common outward symptoms include a pale, thin appearance and frequent coughing but people with TB may not look acutely or seriously ill. On assessment, they may be mildly febrile and have a hoarse voice, but those symptoms may not raise the alarm in staff who have not been educated to look out for them. TB may occur to them as a potential diagnosis only if a patient reports coughing up blood.

Staff survey
As the infection prevention link on the acute medical unit at Queen Alexandra Hospital, I work closely with the emergency department. I decided to investigate staff knowledge of TB and potential barriers to early and effective TB management in a busy hospital emergency admissions unit.

In November 2014, I carried out a survey of 20 staff in my unit, including doctors, nurses, healthcare assistants and paramedics. This involved one-to-one interviews, which were conversational in style to allow discussion. These started with four basic questions:

» What are the common symptoms of TB?
» What population groups are vulnerable to TB?
» What immediate actions should you take if a patient potentially has TB?
» What are the protocols for nursing a patient with TB?

Results
Correct answers to the interview questions are outlined in Box 1. The survey showed staff knowledge of TB was highly variable, with many never having encountered patients with the disease. Eleven (55%) could identify four or more TB symptoms or knew the three actions they should take if they suspected TB. Ten (50%) could identify four or more high-risk groups and 12 (60%) knew the correct isolation protocols (Table 1).

Respondents commonly expressed that TB was no longer a threat, had been consigned to history and was relatively rare. However, as discussions progressed, it became clear that many staff knew a lot more than they realised and, once their memories had been jogged, they could call on a reassuring level of knowledge.

A number of potential barriers to early and effective detection and management were identified during the interviews.

Pressure on emergency departments
The fast pace in busy emergency admissions departments is a significant barrier to detecting TB. Many patients have acute problems needing urgent attention, which means those with TB symptoms may have to wait to be seen. Even when they are seen, unless they are assessed by a staff member who knows the symptoms of TB, they may be on a general ward for long periods until someone else recognises that TB is a risk.

Clinical guidelines state that a cumulative exposure of more than eight hours is required for the transmission of TB but this varies depending on individual susceptibility (PHE, 2013). In crowded emergency departments, a patient with TB may be in close proximity for hours to others who are vulnerable to infection for hours.

Other infectious diseases
Emergency department staff have to be vigilant for many other infectious diseases, which may have a higher profile than TB. In my unit, any patient with diarrhoea and vomiting is isolated immediately because of the well-publicised risks of C difficile and norovirus. Only a few years ago, we were on high alert for the symptoms of swine flu, while the epidemic in West Africa means ebola is also a concern, even though the risk of a patient presenting with it is low. These widely publicised diseases and the public fear they generate can push TB down the list of priorities.

Isolating patients
People with infectious TB should be nursed in a single room ventilated to the outside of the building; in the case of multi-drug-resistant TB, this should be a negative pressure ventilated room (National Institute for Health and Care Excellence, 2011). Patients cannot be transferred to a specialist ward until a suitable room is available, but emergency departments do not traditionally have many single rooms. Any emergency department cubicle vacated by a patient with TB needs a terminal clean, which causes delay and reduces capacity.

Personal protective equipment
Staff surveyed seemed unclear about the type of personal protective equipment they should use. NICE guidance says there

BOX 1. SURVEY RESULTS: STAFF TB AWARENESS

What are the common symptoms of TB?
- Haemoptysis
- Cough for three weeks or more
- Extreme fatigue
- Night sweats
- Weight loss
- Loss of appetite

What population groups are vulnerable to TB?
- People who are homeless
- Those who have arrived in the UK from countries with a high incidence of TB
- Those who are immunocompromised
- Those who have a history of drug misuse
- Those with previous TB infection or exposure

What immediate actions should you take if a patient potentially has TB?
- Isolate the patient
- Take sputum specimens on three consecutive days to carry out acid-fast bacillus testing
- Get a chest X-ray

What are the protocols for nursing a patient with TB?
- Isolate patient in a side room with negative pressure ventilation or ventilated to an outside window
- Only wear gowns and masks if performing aerosol-generating procedures or if the patient has multi-drug-resistant TB
- Ensure the patient wears a mask if moving outside the side room

Source: National Institute for Health and Care Excellence (2011)
is no need to wear masks and gowns unless the patient has multi-drug-resistant TB or aerosol-generating procedures are being performed (NICE, 2011).

Patients who have to leave their rooms for any reason should wear masks so any patient with suspected or diagnosed TB who is waiting for accommodation should also wear a mask until a room is found (NICE, 2011). However, patients are often reluctant to wear masks; they may:
» Feel stigmatised;
» Be short of breath;
» Feel claustrophobic;
» Find a mask cumbersome and uncomfortable if they require oxygen therapy.

If a patient is resistant, staff can find it hard to enforce this policy.

Confidentiality can be compromised on crowded wards if care is not taken when explaining why a mask is necessary.

**Patient concordance**

Patients may find being alone in a side room frightening and lonely; they may wish to leave the room to go to the hospital shop, see family or friends or to smoke, and so be unhappy or unable to do these things wearing a mask. One colleague had previously worked on an infectious diseases unit where a patient was so resistant to both being isolated and to her drug therapy that she had to be sectioned on a secure unit.

A disproportionate number of patients with TB have social disadvantages and chaotic lifestyles that make adherence to treatment particularly difficult for them to sustain. Mtui and Spence (2014) state that stigma is a barrier to take-up of care from TB clinics, and that poor adherence was anticipated in groups at risk of catching the disease, including the homeless and those who had experienced problems with drugs and alcohol.

**Staff awareness**

My research suggested that staff members’ knowledge and awareness of TB did not depend on how experienced they were, but on how recently they had encountered a patient with TB or been in a learning environment where it had been discussed. Once they engaged in a discussion about TB, most remembered with little prompting the signs to be aware of and the action they should take.

As an infection control adviser, I found it heartening that staff were interested in learning more about how they could protect patients from TB infection. However, it was also clear that staff members needed more education. Some had never encountered patients with TB and had a misguided impression that the disease is no longer common in the UK. Awareness of the population groups that are vulnerable was not always evident and some feared it could be seen as a form of prejudice if they singled out immigrant patients or those with social problems.

**Conclusion**

In busy emergency admission departments, low employee awareness of and familiarity with TB, combined with the need to manage competing priorities, may result in staff overlooking the disease’s symptoms and failing to put infection control measures in place. This can increase the risk of disease transmission and cause delays in diagnosing and treating patients with TB.

One way to address the problem is to give staff regular TB updates to refresh their knowledge and raise their awareness of the disease. This could ensure earlier detection of TB and better infection control and management for patients who present to hospital emergency units with the disease.

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**TABLE 1. STAFF SURVEY: LEVELS OF TB KNOWLEDGE**

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**References**


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