Interim Guidance for Medical Schools on health checks for active and latent Tuberculosis in medical students returning from elective periods overseas

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1. Basis of Guidance
This document has been developed in light of the risk of a medical student contracting TB and at some point in the future, an active infection developing which poses threats not only to the student, but to potentially vulnerable patients.

This guidance is based upon the current Department of Health England and Wales’ guidance relating to employees of the NHS. Similar guidance applies in Northern Ireland and Scotland and as such this document should apply to all UK medical students working within the NHS UK. The following paragraphs are the appropriately relevant sections considered.

1.1 22 The need for additional health checks for any particular healthcare worker who is returning to work in the NHS and who may have been exposed to serious communicable diseases while away should be based on a risk assessment. This should be carried out by the Occupational Health department. The timing of any tests should take account of the natural history of the infections (ie the ‘window period’).

1.2 23 Some examples of healthcare workers who might be considered ‘returners’ include those returning from research experience (including electives spent in countries of high prevalence for TB), voluntary service with medical charities, sabbaticals (including tours of active duty in the armed forces), exchanges, locum and agency work or periods of unemployment spent outside the UK.

2. Understanding the disease
2.1 It is considered a key factor in the understanding and implementation of this guidance to be clear as to the differences between Latent TB and Active TB and how they are managed.

2.2 Active tuberculosis occurs when an infected individual manifests signs and or symptoms of the disease usually confirmed by microbiological testing. There is an immediate health risk to the individual
and potentially to others who may in turn become infected. Urgent treatment is required to manage both the personal and public health risk.

2.3 Latent tuberculosis occurs when an individual is infected with *Mycobacterium tuberculosis* but does not express any signs or symptoms of disease. There is no immediate health risk to the individual or to others. The lifetime risk of a person with latent TB developing active disease is estimated at about 10%. The risk of latent TB is therefore to the infected individual at some time in their life.

### 3. Suggested approach to health checks for TB

3.1 In light of the DH guidance, discussion, the advice of the experts listed above, and lack of research evidence, it is suggested that medical schools use a risk assessment approach to TB health checks. Key factors to be considered in this are: incidence of TB in the country of elective placement, the type of patient contact and length of stay (Appendix 1).

3.2 In relation to TB health checks, **medical schools** are responsible for:

- Providing adequate health advice to students intending to spend periods of study overseas
- Providing appropriate screening in line with NICE/DH guidance
- Having an established process for those returning from high risk areas in line with a risk assessment approach
- Ensuring that students going to high risk environments are fully informed of the risks and infection control procedures which reduce risk and are aware of the occupational health procedures described in this document for assessing students who have undergone significant TB exposure whilst on elective’. Refer to appendix 1A for examples of how risk can be reduced.

3.3 **Medical students** have the following responsibilities:

- Duty to comply with control of infection policies of hosting organisations and good clinical practice
- To comply with medical school health checks on return from elective
- To minimise risk to self and patients in line with GMC guidance
- To seek medical advice if symptoms of TB are suspected

### 4. TB awareness and risk assessment for medical students on elective

4.1 A suggested approach is included below for medical students at stages both prior to and post elective (Appendix 2). This combines both education and assessment. Key features are as follows:

4.2 **Reminding students of measures to reduce risk when exposed to high risk patients during their elective.** In essence, this means complying with infection control policies such as the wearing of masks and minimising contact time and/or exposure in high risk situations.
4.3 Reminding students of symptoms and the need to report symptoms: Medical students should be reminded of the symptoms of active TB and the need to report significant exposure or symptoms to Occupational Health (OH). This should happen prior to placements and on return and could be delivered through factsheets, emails, presentations and/ or interviews. Please note that this should apply to students arranging informal placements as well as those going on formal elective or research placements. It may be worthwhile to remind all students going on overseas placement of the symptoms and the need to report, not only those travelling to high prevalence countries. Though placements may be in a low prevalence country there could be areas of local high incidence or specific risks of exposure. The level (frequency, detail etc.) and format (interview, factsheet, email etc.) of reminder of symptoms should be adjusted based on the likelihood of exposure. An example TB symptom reminder is included as Appendix 3.

4.4 Assessing the risk: There is currently no evidence base to guide best practice in the risk assessment of medical students returning from elective. There are no data on the national incidence of active TB in returning medical students on which to calculate the risk to students. In the case of latent TB there is also an absence of data or evidence on which to base recommendations for screening on return from elective.

In the UK, high risk is assessed as a composite of the timed exposure to patients with infectious TB. Although the risk of contracting infection is relatively small for health care workers, a cumulative exposure of 8 hours or more with an infectious patient is generally accepted as sufficient risk to warrant screening for tuberculosis and to treat if the results suggest active or latent infection. A lesser contact time may be significant if exposure occurred on elective in high incidence countries, and/or where working in high exposure departments e.g. HIV, TB clinics etc, and/or where there is exposure to procedures where sputum is aerosolised e.g. sputum induction, bronchoscopy, intubation. It is suggested that if possible these and other factors specific to the individual student experience are taken into account within an assessment.

We recommend that individual Medical School leads agree with responsible Occupational Health leads a system that is clear to students and staff. The detail of that system will depend upon local resources and agreed practice. A suggested pathway is given in Appendix 2. Regardless of the system in place it is essential that students who manifest ‘red flag’ symptoms (active TB symptoms) are identified, and an immediate OH appointment arranged.

5. Taking action to detect TB based on risk assessment

5.1. Active TB
Symptomatic students should be considered at risk of active TB and always referred urgently for clinical evaluation.

5.2. Latent TB
Students returning from high risk exposure but who do not have symptoms may require further testing depending on the outcome of the risk assessment. A number of actions may be required. The following applies only to students tested for latent TB. There are several important issues to consider:

5.3 **The most appropriate type of test to employ:** If deemed necessary to test for latent TB, IGRA testing is usually a more appropriate tool than Mantoux testing as the latter has poor specificity in subjects who have received a prior BCG vaccination, and IGRA have operational advantages such as no need to physically recall the person to read the (skin) test result. Different and equivalent commercial IGRA tests are available. The most cost-effective will vary according to local procurement/purchasing policies. Schools are advised to consult with their Occupational Health teams with regard to the most appropriate test.

5.4 **Timing of testing and next steps:** If deemed necessary to test for latent TB, we recommend (in line with national screening guidance) that testing is carried out not less than 6 weeks after the end of the risk period (return from placement). Screening to identify those who should be tested (e.g. through questionnaire assessment) should be carried out as soon as possible after return, but testing too early may produce false negatives. Students who are test-positive will need to be referred to a TB service (usually led by a respiratory or infectious diseases physician) for assessment and consideration of treatment for latent or active TB according to the clinical findings.

**References**

2. Clinical diagnosis and management of tuberculosis, and measures for its prevention and control. NICE clinical guideline 117; 2011.

A key finding of this working party has been the absence of evidence relating to the risk assessment of medical students returning from elective periods overseas. The group strongly recommends that research in this area be supported to address the following issues.

1. To assess the risk of developing active TB following elective placement in various settings.
2. To assess the risk of developing latent TB conversion following elective placement in various settings.
3. To investigate the value of an Occupational Health screening tool used on return from elective.

The MSC Electives Council has been asked to consider supporting research into these areas so that this suggested guidance may be revised on the basis of scientific evidence.
Appendix 1: Rationale for consideration of risk

Assessing the risk posed by the incidence of TB in a given area: High incidence is generally defined as more than 40 cases per 100,000, per year in a population. There are several urban areas within the UK with an incidence higher than 40 per 100,000 per year. There are developing countries with an incidence of >250 per 100,000 per year. Increased incidence is likely to confer increased risk of exposure to tuberculosis to the individual student. This risk factor alone should not trigger testing but should be considered in conjunction with other risk factors outlined below.

Assessing the risk posed by the length of stay in a high incidence area: There is no recommendation in NICE or DH guidelines about the length of stay in a high incidence area that would automatically lead to testing.

Assessing the risk posed by the type and duration of patient contact: Considerations here relate to the nature of the placement (e.g. TB/HIV ward versus a community obstetric unit) and/or specific occurrences of significant exposure to someone with TB (e.g. induced sputum, bronchoscopy, intubation etc). Length of contact with an infectious individual is considered relevant with standard practice to regard 8 or more hours cumulative contact as significantly increasing risk of transmission of TB. Where good clinical practice infection control policies are either not followed or where there are not facilities available to do so, risk would be considered as higher.

Appendix 1A: Examples of what medical students could do to reduce their risk of TB exposure on elective

- Be aware of the symptoms of TB
- Establish the prevalence of TB in the destination community
- Ascertain at the start of the placement what procedures are in place for TB infection control
- Adhere to local infection control procedures
- Seek to limit contact with TB patients to no more than 8 or more hours of cumulative contact
Appendix 2: TB health check pathway for medical students returning from elective

Departing and returning student reminded of risk factors and symptoms

Post elective ‘Red flag’ active TB symptoms
- OH assessment required
  - Referral to specialist TB services for assessment

High risk exposure during elective but no red flag symptoms
- OH risk assesses student
  - Offer IGRA test
    - IGRA test positive?
      - Yes: Refer for specialist TB assessment and possible treatment for latent or active TB
      - No: Reminder of symptoms

Low risk exposure during elective and no red flag symptoms
- No further action

N.B. Very few students will need to be routed through the ‘middle arm’ of this pathway. Medical schools should follow their own agreed procedures for reporting and assessing risk post-elective.

See appendix 3 for list of potential red flag symptoms
Appendix 3: Example reminder of TB symptoms
(adapted from http://www.nhs.uk/Conditions/Tuberculosis/Pages/Symptoms.aspx)

It is important both for your own health, the health of colleagues and patients, that you report symptoms of TB to [insert medical school/Occupational Health contact details]

Pulmonary tuberculosis (TB)
TB infection and disease of the lungs is known as pulmonary TB. Symptoms of pulmonary TB include:

- a persistent cough often with sputum, which can be bloody

and systemic symptoms of:

- weight loss
- lack of appetite
- a high temperature of 38C (100.4F) or above
- night sweats
- extreme tiredness
- a sense of feeling unwell

Extrapulmonary tuberculosis (TB)
In some cases, TB infection can spread from the lungs to other parts of the body. TB disease that occurs outside the lungs is known as extrapulmonary TB. This can involve the lymph nodes (LN), bones, GI tract, GU tract, CNS or skin. Symptoms often include the systemic symptoms of pulmonary TB plus symptoms specific to the organ system affected e.g. glandular swelling for LN TB.