



Public Health
England



UK Visas
& Immigration

UK Tuberculosis Technical Instructions (UKTBTI)

Securing our border
Controlling migration

Version 7

About Public Health England

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Introduction to the pre-departure TB screening programme for UK Applicants

This document is intended to provide guidance to those who conduct tuberculosis (TB) screening on behalf of the government of the United Kingdom and Northern Ireland (UK), under immigration legislation. Advice on the interpretation of any specific detail of the Technical Instructions can be obtained from Public Health England by contacting [tbscreening @phe.gov.uk](mailto:tbscreening@phe.gov.uk) Do not send X-ray films or applicant personal identifiable information.

Throughout this document, “screening” should be interpreted as the process of an applicant being assessed, even though that assessment may take several different forms.

The purpose of TB screening is to detect the suspected presence of active pulmonary TB in those who are applying to travel to the UK (the Applicant). The criteria for suspecting active pulmonary TB are described in section 3.

Screening will normally relate to those who intend to stay in the UK for over 6 months and have been resident in a country with an incidence of TB of 40 per 100,000 or more (identified by the World Health Organization) in the previous 6 months. Where an applicant has moved from a high-incidence country to a low-incidence 1 within the last 12 months, and there is any doubt as to whether they require screening or not, please contact Public Health England for advice.

On occasion the UK immigration authorities may require screening of others seeking permission to travel to the UK.

TB is caused by infection with a member of the *Mycobacterium tuberculosis* complex. It may exist as active disease, with clinical symptoms or signs, or latent infection, where the infection has not progressed to clinical symptoms.

This screening programme does not currently include identifying latent TB.

Role of the Panel Physician

Screening of applicants will be carried out by designated Panel Physicians in clinics which have been appointed by the UK authorities.

Administrative arrangements for Panel Physicians are contained in annex B.

The Panel Physician will screen applicants as set out in these Technical Instructions. Where there is no suspicion that active pulmonary TB is present in an Applicant, the Panel Physician may certify clearance by issuing a Clearance Certificate (as specified by the immigration authority).

No Certificate will be issued if there is any suspicion of active pulmonary TB. In cases of doubt, it is the Panel Physician's responsibility to take such steps as are necessary to resolve the issue.

It is the personal responsibility of the appointed Panel Physician to make a professional judgement as to whether an Applicant may be issued with a Clearance Certificate and also to oversee the entire screening process of an Applicant.

If active pulmonary TB is detected in an Applicant, the Panel Physician must ensure that the Applicant is given clear and unambiguous advice about the need to seek treatment immediately.

Where drug resistant cultures are reported by the laboratory (section 7) on any Applicant, the Panel Physician will notify this to the immigration authorities without delay.

Where required to do so by local law or professional practice, the Panel Physician must also report the diagnosis of active pulmonary TB to the local, regional or national authorities in the home nation and record this fact.

The screening process for TB in applicants

A flow diagram for the assessment process is shown in annex A

General arrangements

Applicants must be able to schedule an appointment within 10 working days, preferably within a few working days.

All Applicants shall be briefed on the purpose, nature and extent of the TB screening process. This may initially be through the use of information leaflets.

The Applicant must complete an Informed Consent Form (see section 4)

Where Applicants are family members and intending to travel together, the Panel Physician shall arrange for all the family members to be screened together. Children under 17 years of age must be accompanied by a parent or other legally responsible adult.

The CXR is the only acceptable screening tool for active pulmonary TB.

Other tests for active TB are not acceptable alternatives to CXR, nor are tests for latent TB, such as Mantoux test or Interferon Gamma Release Assay (Quantiferon-TB Gold or T-spot TB), even when the Applicant is prepared to pay for such tests. Prior receipt of Bacille Calmette-Guérin (BCG) vaccination does not change the screening requirements.

All Applicants who have findings on CXR of active or old pulmonary TB are required to have sputum examination.

Screening categories

There are different screening processes for 3 categories of Applicant, namely adults, pregnant women and children under 11 years old.

Adults

Screening of adults will include all of the following:

- a symptom screen (cough, haemoptysis, weight loss, night sweats, history of previous TB)

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- any history of recent contact with a case of active pulmonary TB (shared the same enclosed air space or household or other enclosed environment for a prolonged period for days or weeks)
- a physical examination where clinically indicated.
- chest x-ray (CXR).

Pregnant women

Screening of pregnant women will include all of the following:

- a symptom screen (cough, haemoptysis, weight loss, night sweats, history of previous TB)
- any history of contact in the previous year with a case of active pulmonary TB (shared the same enclosed air space or household or other enclosed environment for a prolonged period for days or weeks).
- a physical examination where clinically indicated.
- a CXR in the second or third trimester if the applicant consents.

During pregnancy there is a small risk of radiation to the unborn baby, particularly in the first trimester. It is not recommended to take CXRs during the first trimester. A pregnant woman has 3 options:

- postpone the CXR (and TB clearance) until after delivery
- opt for TB clearance based on negative cultures from 3 appropriately taken sputum samples
- continue with CXR with double shielding

It is essential that the woman is counselled and informed consent obtained and kept with the Applicant's record.

If the applicant has had a normal CXR taken at a UK approved screening clinic for UK TB screening purposes within the last 3 months, then this previous CXR may be used for TB clearance purposes, providing that the applicant has no signs or symptoms of TB and has not been in close contact to any TB case in the meantime. No CXR taken in an un-approved clinic may be used, nor any other screening test.

Children under 11 years old

Screening of children will include all of the following:

- a symptom screen (cough, haemoptysis, weight loss, night sweats, fever, history of previous TB,

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- any history of contact within the previous year with a case of active pulmonary TB (shared the same enclosed air space or household or other enclosed environment for a prolonged period for days or weeks).
- a physical examination

Where a child has symptoms or signs of active pulmonary TB, or a history of previous TB, or a history of recent contact with a case of active pulmonary TB, then the child is required to have EITHER a CXR OR 3 sputum samples OR gastric lavage (on 3 occasions) for laboratory mycobacterial examination.

The clinical expression of TB may be different in children than adults, and for children may only include generalised findings such as fever, night sweats, growth delay, and weight loss. Panel Physicians should be aware that children are more prone to extra-pulmonary TB, such as meningitis, lymph nodes, bones, joints, and skin.

If the child has any chronic respiratory disease, such as cystic fibrosis, or has previously had thoracic surgery, or has cyanosis, or respiratory insufficiency that limits activity, the Panel Physician may require a CXR followed, if required, by sputum testing.

Criteria for sputum examination (all applicants)

Where the CXR is suggestive of either active or old pulmonary TB (see annex D) 3 sputum samples must be taken. Additionally, sputum samples are required for individuals with signs or symptoms of pulmonary TB, or pregnant women who do not wish to have a CXR. The Applicant will be required to provide 3 early–morning sputum specimens on consecutive days for microscopy for acid fast bacilli (AFB) and culture for Mycobacteria at a laboratory designated by the UK, its international partners or the IOM for this purpose.

Consent for Screening

The Applicant must complete an Informed Consent Form (see annex F), supervised by a medical professional, and be signed by the Applicant before the screening process starts.). The consent form must be printed in a language understood by the Applicant or translated for them sufficient to be clearly understood before signing.

The consent form documents the agreement (or otherwise) of the applicant to proceed with TB screening in accordance with the UK protocol and for the purposes of his/her UK visa application. The consent is only valid if the applicant (or his/her parent/guardian) signed the form after sufficient explanation of the screening process. The person explaining the consent form must be professionally qualified to do so and must be overseen by the Panel Physician.

Information to be provided should cover the entire screening process, its benefits and risks and, if appropriate, the options or alternatives to the screening proposed.

Applicants should be told about any 'significant' (serious or frequently occurring) risks associated with the screening and potential outcomes. In addition, if applicants have particular concerns about certain types of risk, the panel physician should ensure that they are informed about these risks, even if these are very small or rare. The applicant should be given the opportunity to ask questions and be given sufficient time to reflect on the answers given. Applicants are entitled to withdraw their consent at any time after signing the form, up to the completion of the TB screening.

Where the Applicant has not reached the legal age of consent (ie the age at which they are legally independent) for the country concerned, or lacks the mental or other capacity to understand and sign the form, the form must be signed by their parent or legal guardian. All Applicants over the age of majority are presumed to be competent to give consent for themselves, unless the opposite is suspected by the Panel Physician. If an Applicant is mentally competent to give consent, but is physically unable to sign a form, the Panel Physician should complete the form on their behalf, and ask an independent witness (someone who is not clinic staff) to confirm that the Applicant has given consent orally or non-verbally.

The Panel Physician must ensure that the Applicant understands and accepts that any relevant personal information collected during the assessment process, including health records and chest X-ray may be shared with the UK immigration authorities, the UK Department of Health, Public Health England and the UK National Health Service.

The Panel Physician must retain the Informed Consent Form for 3 years and, upon request, make the form available to the UK authorities or those they direct.

Security

Supervision and identification of the Applicant must be carried out by appropriate staff of the Panel Physician at the following stages of the screening process; registration, medical examination, CXR, sputum collection and Clearance Certificate issue or treatment referral.

The identification must include the Applicant's valid passport or, exceptionally, an alternative photographic document with prior approval by the immigration authority.

At each stage, staff must take all reasonable steps to check the validity of the Applicant's passport and any other document(s) and satisfy themselves that the date of birth and the photograph in the document are consistent with the appearance of the Applicant and that the Applicant is the rightful holder of the document. The official signature from the document may also be used for additional identification.

When there are doubts as to the identity of the Applicant, the Applicant shall be requested to provide further documents to substantiate his or her identity. When the Applicant's valid passport is not available, eg it is in the possession of the UK authorities or where there are still concerns over the identity of the Applicant, the Panel Physician shall seek further advice from the UK immigration authority

For laboratory specimens, the laboratory shall take all appropriate steps to ensure that samples are clearly labelled as belonging to the Applicant and are tamper-proof.

Chest radiography

Applicants of 11 years of age and above should receive a standard postero-anterior (PA) view CXR. Further detail of the radiological process is contained in annex C.

All Applicants with any radiological result suspected of showing active or old pulmonary TB are required to have sputum testing. Further guidance is included in annex D.

CXRs should be interpreted by a designated radiologist and the report and image must be reviewed by the Panel Physician for correlation with the history and physical findings.

The radiologist's interpretation should be available within 1 day from when the CXR was performed. The radiologist should record details of all abnormalities observed, whether due to TB or otherwise.

CXRs of any Applicants, especially children, should be re-taken if the initial CXR is suboptimal due to factors such as incorrect penetration or motion artifact. The Applicant should not leave until the radiologist is satisfied with the film and that no further CXR angles are necessary.

Documentation of the results of the CXR must have adequate non-removable labelling, including full name, date of birth (or such other unique identifier as the UK authorities shall prescribe), date of examination and view.

Applicants below the age of 11 should have a lateral film in addition to the PA film.

In interpreting the results of the CXR, the radiologist shall have discretion to compare the results of the current CXR with any previous CXR taken for that Applicant for visa purposes at an approved clinic, either in respect of this or any previous entry clearance application for the UK, or for any of the UK's international partners.

Applicants who are unwilling or unable to undergo CXR screening, for instance because of pregnancy or physical disability, must provide 3 consecutive daily sputum specimens in a designated laboratory for smear and culture (see section 7).

Applicants whose CXR is free of any suggestion of old or active pulmonary TB may be issued with a Clearance Certificate by the Panel Physician (see section 8).

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Applicants with any radiological result compatible with active or old TB (see annex D) shall not be issued with a clearance certificate and shall proceed to laboratory sputum testing.

In countries, which have no access to an accredited laboratory service for TB, Applicants with a radiological result compatible with active or old TB shall repeat the CXR test after 3 months from the date of the original test. The results of the 2 CXRs shall then be compared by the Panel Physician who shall only issue the Certificate if there is no evidence of disease progression.

If the CXR findings show other respiratory disorders, eg cancer or emphysema, Panel Physicians must consider their duty of care to the Applicant and should advise or refer the Applicant as appropriate. Providing the CXR is free of any suggestion of active or old pulmonary TB, the Clearance Certificate may be issued without laboratory referral. However, the Certificate for such Applicants shall be annotated by the Physician to indicate that the CXR was abnormal and a sputum test was not done.

Where the CXR is abnormal, a copy of the CXR and an x-ray interpretation completed by the radiologist to describe the CXR result and diagnosis shall be given to the Applicant.

Sputum testing

Laboratory testing for active pulmonary TB may only take place in laboratories which have been accredited for that purpose by the UK, IOM or the international partners

Laboratory examination for TB disease must consist of at least 3 acceptable early-morning sputum specimens taken on 3 separate occasions, not less than 24 hours apart. Sputum collection must commence within 7 days of the CXR, otherwise the assessment process stops and is reported to the immigration authority.

Panel Physicians must either perform the specimen collection on-site or arrange for it in a designated laboratory. If the Panel Physician delegates this procedure to a nurse or assistant, the Panel Physician must ensure that they are trained and competent to do so. The Panel Physician remains accountable for the integrity of this part of the screening procedure. Sputum must never be collected from home.

Further detail of the procedure for correct sputum collection is contained in annex E.

Sputum samples should be securely and promptly transported to the designated laboratory with appropriate provision for cool-chain integrity. Applicants should not be allowed to transport specimens themselves. If not transported within 1 hour, samples must be refrigerated (but not frozen). When received by the laboratory, specimens should be processed with 24 hours of receipt.

Applicants who are unable to produce sputum specimens should repeat the process under supervision for 7 days. If still unsuccessful, Applicants must have alternative methods of sputum collection performed (eg induced sputum or early morning gastric aspirates) for their TB status to be established. If the

Applicant is still unable to produce sputum specimens, they shall be required to repeat their CXR after 3 months from the date of the original test and the results of the 2 CXRs compared by the Panel Physician who shall only issue the Clearance Certificate when there is no evidence of disease progression.

Laboratory practice

All specimens must undergo microscopy for acid fast bacilli (AFB) by an auramine stain (or, if necessary, by Ziehl-Neelsen stain) and must also be examined as a culture on liquid or solid media for mycobacteria and confirmation of the Mycobacterium species at least to the M. tuberculosis complex level.

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Specimens should be cultured for a minimum of 6 weeks in liquid media and eight weeks in solid media, unless a positive result is obtained earlier. Positive cultures need to be reported to the Panel Physician as soon as the results are known. If there is no growth in the times specified, the specimens can be reported as negative, with a final report produced within not more than ten weeks from the date of collection.

Positive *M. tuberculosis* cultures shall undergo drug susceptibility testing (DST) in the designated laboratory in accordance with World Health Authority guidelines. Panel Physicians must have access to DST results as soon as available or at maximum within 10 weeks of sputum collection. Any drug-resistant cultures must be notified to the Panel Physician without delay.

Outcome of screening

Applicants whose CXR is free of any radiological result compatible with active or old pulmonary TB may be issued with a Clearance Certificate by the Panel Physician allowing them to proceed with their entry clearance application.

However, Panel Physicians may use their clinical judgment in the evaluation of the Applicant and, if they suspect the Applicant to have active pulmonary TB, they may refuse to issue a Clearance Certificate (see pathway in annex A).

Applicants who refuse to start or complete the screening process shall not be issued with a Clearance Certificate.

Where the Clearance Certificate is to be issued after sputum testing, the Clearance Certificate must record this fact. The UK immigration authorities may also specify other criteria requiring to be reported.

Applicants who have active pulmonary TB, whether diagnosed by CXR or laboratory sputum testing, must not be issued with Clearance Certificates. The Panel Physician is under no obligation to treat the Applicant but the Panel Physician must give the Applicant clear and unambiguous advice about the need to seek treatment immediately.

The Panel Physician must give the Applicant a TB treatment referral letter (see Annex H).

Where the Panel Physician agrees to carry out TB treatment, such treatment shall be in accordance with WHO treatment guidelines as well as with any national TB protocol, using only quality assured drugs in accordance with the WHO Global Drug Facility for first-line drugs and the International Dispensary Association or WHO Green Light Committee for second-line drugs.

Applicants who have successfully completed a full course of approved treatment may restart the screening process by providing the Physician with a written treatment summary from the treatment provider. The re-screening cannot take place less than 6 months from the date of the original assessment. The screening process shall be repeated, at an additional fee (the standard test fee) to the Applicant. The Panel Physician shall compare the CXR taken at this application with the CXR taken at the previous application and where the Panel Physician is satisfied that the Applicant no longer has active pulmonary TB, they may issue a Clearance Certificate.

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Where required to do so, the Panel Physician must also report cases of active pulmonary TB to the local, regional or national authorities in the home nation in accordance with any national protocol. The Panel Physician must also report these cases to the UK immigration authorities as they shall direct.

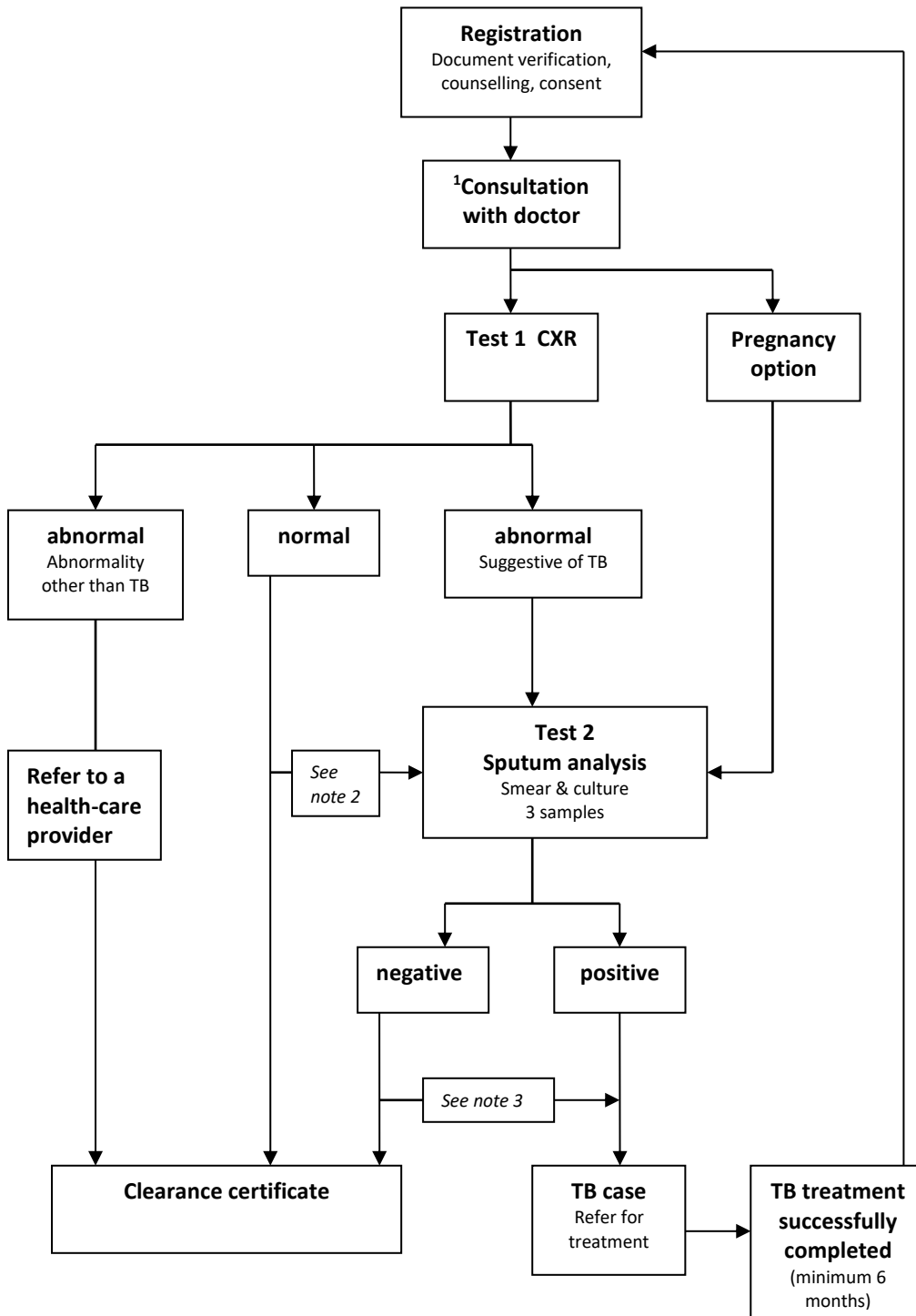
Clearance certificate

The Clearance Certificate shall be valid for 6 months from the date of the CXR (or initial medical assessment).

If an Applicant has required sputum samples to be taken, which turn out to be negative, the validity of the Clearance Certificate remains 6 months from the date of the CXR (or date of the initial medical assessment).

When a family member has active pulmonary TB, the validity period of the Clearance Certificate of other family members is affected. The Certificates issued to all other members of that family, or others who have shared with the same enclosed air space or household or other enclosed environment for a prolonged period (days or weeks) who do not have active pulmonary TB and who still intend to travel to the UK shall have a reduced validity period of 3 months and not 6 months.

Annex A: UK pre-departure immigrant TB screening flowchart



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Notes with respect to the flowchart:

1. Doctor may suspect TB clinically, but applicant would still go through tests 1 & 2 (see also notes 2 &3).
2. Even if test 1 was reported as normal, the doctor could still require test 2 (sputum examination) on clinical suspicion.
3. Even if the tests (CXR and/or sputum analysis) are negative, the clinician may still decide on clinical suspicion that the applicant requires treatment (ie should be classified as a TB case).

Annex B: Administrative arrangements

Administration

All Physicians must have full professional registration, in accordance with the laws of their country.

The Panel Physician will abide by the conditions agreed with the UK authorities.

All aspects of the screening process must be covered by comprehensive insurance and all clinical participants must observe the professional obligations and codes of practice of the country in which they work and maintain their professional registration.

The Panel Physician remains responsible for the TB screening process and for checking the identity of the Applicant, including all processes that are undertaken by others (eg laboratory testing).

The Panel Physician will participate in audit as required and will provide the immigration authority, or agencies acting on their behalf, with monitoring data as required, including test results, such personal data as the UK authorities may require to identify the Applicant and to contact the Applicant in the UK, as the UK authorities shall direct.

The Physician shall retain securely the original CXR together with the medical record form and consent form, as well as all result forms, referral letters and details of treatment where appropriate, for 3 years and make them available to UK authorities or as they direct.

Those Applicants with an abnormality suggestive of active pulmonary TB in their CXR result shall be provided with a copy of the CXR, the radiology report, the medical record form and referral letter (Annex H).

The Physician is also responsible for ensuring that the most up to date version of these Technical Instructions is adhered to.

The UK authorities, or others that they authorise or direct, may visit, audit and evaluate the processes and protocols of the Panel Physician, the clinic, the screening process and the laboratory site.

Costs

The Applicant shall be responsible for the cost of the screening process including the administration, counselling, examination, x-ray and laboratory testing and diagnosis and, where relevant, the issue of the Clearance Certificate or referral for treatment. It shall not include the cost of any treatment for active pulmonary TB.

All Applicants shall pay the same amount for the screening provided under this programme in that clinic.

Applicants who are required to provide sputum specimens may be charged an extra amount. The amount charged shall be in line with the accepted standards of the examination country but shall not exceed the sum (if any) set by the UK authorities.

The Panel Physician shall inform the UK authorities (as advised) of the full charge they intend to claim from the Applicant and immediately inform the UK authorities of any variation.

When the Panel Physician treats the Applicant in accordance with Annex , the amount charged shall be in line with the accepted standards of that country, is fair and reasonable and not in excess of prices charged to the general public in that country for services which are the same or similar to that being provided for the Applicant.

Annex C: Radiographic technical detail

With acknowledgement to Dr R.N. Bowry (Kenya), for the Department of Immigration and Citizenship, Australia

Radiological suites must have adequate and well maintained radiological equipment, appropriate self-protective equipment, radiation safety guidelines, abdominal shielding and facilities to protect patient privacy when Applicants are required to dress/undress including the use of an adequate curtain or screen and gown. It is preferable that they have provision for the safe-keeping of the Applicant's possessions.

Radiographic techniques:

- all CXRs should be taken in the postero-anterior (PA) projection to reduce cardiac magnification
- in a correctly exposed film, the penetration should be such that one should be able to see the first 4 vertebral bodies well (T1-T4), and the ribs, while the rest of the vertebrae should be just visible through the heart shadow
- in an over-penetrated film, faint soft tissue lesions can be easily missed
- in an under-penetrated film, pulmonary infiltrations can be over-diagnosed
- routine CXRs should be taken in full inspiration. This lowers the diaphragm to the level of the 10th or 11th rib posteriorly
- the position of the patient should be such that the medial ends of the clavicles are equidistant from the spinous processes of the thoracic vertebrae
- rotation of the chest can make the side nearer to the film appear less translucent
- scapulae should be clear of the lung fields
- CXR beam should be centred at T5 or T6 vertebral body
- distance of the CXR tube to the film should be 6 feet (150cm)
- CXRs should include costophrenic angles
- Apices should be clearly seen (without overlying clavicles)
- if the lungs are of different translucencies one should consider: rotation, poor screen/film contact in the cassette and absent breast
- ensure that the following artefacts are excluded: braided hair overlying the apices can mimic a lesion, development artefacts, static marks, dirty screens, nail marks and foreign bodies in cassettes
- When there is constant difference in the translucency between the right and left side of the CXR, ensure that the filter in the tube assembly is correctly positioned

Special views:

- an apical lordotic view should be done for suspicious opacities over ribs, clavicles or other structures and a lateral decubitus view for costophrenic angle blunting to exclude pleural effusion
- for children under 11 years of age, lateral views should be done in addition to PA view

Radiation safety

Please observe:

- routine use of lead shielding for all applicants and double shielding for children and pregnant women
- selection of correct film size
- CXR beam collimation (narrowing of the beam so that only the target area is exposed)
- not performing additional CXRs or scans unless clinically indicated, eg poor initial film, or requested by the UK or its international partners

CXR image identification

The CXR image must bear the date of the CXR, applicant's name in English, and name of clinic. The passport number should be included. The Gregorian calendar should be used.

Women

It is common to request CXR for women of reproductive age (some of whom will be unknowingly pregnant at the time of the CXR). Panel radiologists have an ethical obligation to ensure that these applicants are adequately protected, using double wrap around abdominal and pelvic shielding when appropriate. Please be vigilant in avoiding unnecessary radiation exposure.

Children

Radiation exposure should be kept to a minimum. Film size should be adequate to include the chest only.

Abdominal shielding and correct collimation should be used.

Annex D: Radiological interpretation of CXRs

Film examinations and reports

The CXR film is to be read by the designated panel radiologist. The correct name, date and anatomical side markers should be included. Look at the so-called hidden areas:

- Behind the heart
- Apices
- Costophrenic angles
- Both hila
- Paratracheal regions
- Below the diaphragms

Sometimes a nodule in the lower zones may be difficult to differentiate from a nipple shadow. Repeat CXR with nipple markers to confirm. The extent and likely activity of any disease present should be described and any necessary further investigations recommended. Radiologists should report all abnormalities in the CXR film and their possible interpretation and cause.

If significant abnormalities, such as changes suggestive of active pulmonary TB, are detected, the radiologist should advise the Physician to refer the applicant to an appropriate specialist immediately.

Requirements of examining radiologists

Panel radiologists must ensure:

- they accurately record date and place of examination
- the panel radiologist's name appears clearly
- the results of their radiological examination are recorded fully and in consideration of the examination and any additional investigation which may have been performed
- the radiologist acknowledges responsibility for the integrity and quality of the radiological examination process (The UK and its international partners randomly audits all radiological examinations and any evidence of failure to maintain integrity and quality of the examination will result in closer scrutiny of the radiologist and possible disbarment from further UK-related activity)

Recording of radiographic findings

With acknowledgements to Citizenship and Immigration Canada

If any of the following abnormalities are present, radiologists are required to annotate their reports with the following numerical codes;

Minor findings:

- 1.1 Single fibrous streak/band/scar
- 1.2 Bony islets
- 2.1 Pleural capping with a smooth inferior border (<1cm thick at all points)
- 2.2 Unilateral or bilateral costophrenic angle blunting (below the horizontal)
- 2.3 Calcified nodule(s) in the hilum / mediastinum with no pulmonary granulomas

Minor findings (occasionally associated with TB infection):

- 3.1 Solitary Granuloma (< 1 cm and of any lobe) with an unremarkable hilum
- 3.2 Solitary Granuloma (< 1 cm and of any lobe) with calcified / enlarged hilar lymph nodes
- 3.3 Single / Multiple calcified pulmonary nodules / micronodules with distinct borders
- 3.4 Calcified pleural lesions
- 3.5 Costophrenic Angle blunting (either side above the horizontal)

Findings sometimes seen in active TB (or other conditions):

- 4.0 Notable apical pleural capping (rough or ragged inferior border and/or \geq 1cm thick at any point)
- 4.1 Apical fibronodular / fibrocalcific lesions or apical microcalcifications
- 4.2 Multiple / single pulmonary nodules / micronodules (noncalcified or poorly defined)
- 4.3 Isolated hilar or mediastinal mass/lymphadenopathy (noncalcified)
- 4.4 Single / multiple pulmonary nodules / masses \geq 1 cm."
- 4.5 Non-calcified pleural fibrosis and / or effusion.
- 4.6 Interstitial fibrosis/ parenchymal lung disease/ acute pulmonary disease
- 4.7 Any cavitating lesion OR "fluffy" or "Soft" lesions felt likely to represent active TB

Annex E: Sputum collection

Administrative arrangements:

- confirm the identity of the applicant
- explain the collection procedure to the applicant
- use appropriate disposable equipment.
- safe storage and disposal of clinical waste
- accurate specimen identification using non-removable labels

Sputum collection:

- sputum collection must start within 7 days of the CXR
- sputum specimens of 5-10 ml
- preferably early morning specimens
- three specimens must be collected at least 24 hours apart, preferably on consecutive days
- must be directly supervised in the clinic or laboratory
- must be collected in a safe environment and not brought from home
- applicants should rinse their mouths with purified water before providing a sputum specimen (check sputum collected, not just saliva)
- a specimen of saliva must never be accepted as a sputum specimen. This will result in a false negative report
- applicants must not clear their nasal passages into the back of their throat and present this as sputum specimen
- specimens must never be pooled

The collector or the supervisor of the laboratory or the laboratory technician preparing the specimen can discard any specimen found to be saliva and not sputum. In this case the applicant needs to return the following day for collection.

All applicants need to be instructed to take 3 deep breaths, and on the fourth deep breath to cough. The cough should use an abdominal contraction and not be just from the upper chest or throat.

The collector needs to listen to the applicants coughing to ensure that the cough comes from the stomach and not from the chest or throat. If an applicant continues to cough from the throat or is unable to cough from the stomach, they should be asked to return the following day.

Use of induced sputum:

For applicants who have difficulty producing sputum, there are several methods of obtaining a specimen. Inhalation of an aerosol of sterile hypertonic saline (3-15%), usually produced by an ultrasonic nebuliser, can be used to stimulate the production of sputum.

Even though aerosol-induced specimens may appear thin and watery, they should be processed. The specimen should be clearly labelled as “induced sputum” so that it will not be discarded by the laboratory as an inadequate specimen. Even when alternative methods are used, 3 specimens are required at least 24 hours apart, preferably on consecutive days. Also:

- sputum induction can be used for children as young as 3 years old
- a gastric aspirate can be used for all ages (but sputum is preferable in adults) and may be especially helpful for young children

Specimen handling:

- the collector should be wearing an appropriate mask and well fitting gloves during the collection process
- specimens should be sent to the laboratory in a metal container with a lid that can be sealed. All specimens need to arrive at the laboratory within 4 hours of collection
- sputum samples should be transported to the laboratory promptly
- if not transported within 1 hour, samples should be refrigerated (but not frozen)
- if specimens need to be transported to another site they must be sent as soon as possible in a cold container containing ice packs
- specimens should be in a rack to prevent spillage and be protected from heat at all times (specimens must never be frozen)

Safety measures

It is preferred that collection take place outside in a sunny, well ventilated situation. The place should be private and free of passersby and onlookers to protect the privacy of the applicant.

The waiting area should be away from the collection area and applicants be allowed to sit before collection and to read the collection technique instructions.

All collectors must wear appropriate masks (not surgical masks) and well fitting gloves for the process.

If specimens must be collected inside, they must be collected in a booth or room with negative airflow. There should be 12 to 18 complete room air changes per hour.

A small strip of single layer tissue paper can be placed on the door of the booth, if the paper moves at 45 degrees to the door, then adequate ventilation is provided. The tape needs to be kept there for daily check on negative air flow.

Disinfectant solutions based on phenol or alcohol can be used to disinfect the surfaces in the booth.

Ultra violet light can also be used provided that it is cleaned once a week to prevent dust build-up and that the wavelengths of 254 nm are emitted. The UV light needs to be on for 1 hour after work has finished in the booth. It must be noted that this only disinfects the surfaces in the booth and benches should be kept to a minimum area, and the booth must be free of all other materials.

Sputum specimen processing:

- ideally, specimens received in the laboratory should be processed within 24 hours of receipt
- sputum specimens should be centrifuged before smears are performed

Annex F: Consent form



UNITED KINGDOM PRE ENTRY TUBERCULOSIS SCREENING PROGRAMME

Name:
Date of birth
Clinic location:

Applicant's Declaration:

I understand that:

- I am required to undergo testing for pulmonary tuberculosis (TB), involving an X-ray and possibly sputum tests, prior to applying for entry clearance to go to the UK;
- If my chest X-ray is abnormal, I will receive individual counselling and an explanation of the further testing procedures.
- If my chest X-ray is abnormal, and changes are suggestive of tuberculosis, regardless of whether these changes are old or new, or if there are other clinical reasons to suspect TB, I will have to provide 3 sputum samples which will be tested for TB with smear and culture. I understand that the results of sputum cultures may take up to ten weeks
- If sputum samples are necessary, I will be required to return for sputum collection on 3 consecutive mornings starting within 7 days of my chest X-ray. If I fail to return within 7 days, I will forfeit the opportunity to obtain a TB Certificate.
- If the smear or culture shows the presence of TB bacteria, I will be referred for TB treatment. Treatment shall be at my own expense; I will inform the TB treatment facility that I have close family contacts, who may need evaluation for TB.
- I have the right to refuse to undergo the TB assessment procedure and TB treatment, but accept such a refusal may adversely impact on my UK visa application.
- I understand that the physician has the final decision about whether I receive a Certificate

Female applicants

All female applicants will be asked about their last menstrual period to identify applicants who possibly may be pregnant:

- If I could be pregnant, I will be offered several alternatives; 1) a chest X-ray with protective shield; 2). I can postpone the CXR (and TB clearance) until after delivery or 3) I can opt to provide 3 sputum samples for laboratory examination.
- I acknowledge that a CXR can carry a risk for the unborn child, but that this risk is quite small in the second and third trimester. I am therefore advised to consult the panel physician and may wish to consult my gynaecologist to understand the risks before I take a chest X-ray. If I decide to submit to an X-ray, this shall be at my own risk.

I hereby:

- consent to undergo TB testing;
- authorise you and your designated laboratory to store all relevant personal information collected during the assessment process, including health records and chest X-ray;
- authorise you and your designated clinics to share my personal details and assessment results with the UK immigration authorities, the UK Department of Health, Public Health England and the UK National Health Service.
- I authorise you to share my assessment results with the health authorities of my country of residence, where this is required by my country's laws. I release and hold harmless the UK Government and you from any liability for loss, injury suffered or other harm during, or as a result of, the TB assessment procedures

I have read this consent form, or had translated for me. I was invited to ask questions to clarify what was not clear to me. I understand the content of this declaration.

Applicant's signature

Date

Please print your name

For children, or adults without the mental capacity to give consent, I confirm that I am the parent or legal guardian of the applicant and confirm that I give my consent
For adults who are not able to physically sign the form, I confirm that I am an independent witness and the applicant has given their consent orally or by other non-verbal means

Signature

Date

Please print your name
Relationship to applicant

Statement of interpreter (if required); I have translated the content of this document for the applicant to the best of my ability and in a way in which I believe s/he can understand.

Signed

Date

Please print your name)

For female applicants who might be pregnant; I confirm that I have had the risks of having a chest X-ray in pregnancy explained to me and I wish to carry on with the chest X-ray.

Signed

Date

Please print your name

Statement of Physician (if required); I have explained the content of this document to the applicant and confirm that the applicant has declined to go ahead with the assessment.

Signed

Date

Please print your name

Annex G: United Kingdom pre-entry TB screening programme medical record

Symptom screen, history of contact with TB and discretionary medical examination (all applicants)

Symptom screen

Has the applicant (or their child) had any of the following symptoms in the last 3 months

- cough
- haemoptysis
- night sweats
- weight loss
- fever

For children only; is there any history of the following:

- any chronic respiratory disease, such as cystic fibrosis
- previously thoracic surgery
- cyanosis
- respiratory insufficiency that limits activity

For all applicants:

- is there any history of previous TB?
- has anyone in the household been diagnosed with TB in the last 2 years?
- is there any history of recent contact with a case of active pulmonary TB (shared the same enclosed air space or household or other enclosed environment for a prolonged period for days or weeks)?

Physical Examination (at the discretion of the physician).

Physician's signature

Date

Please print your name

Annex H: Referral letter for applicants thought to have active pulmonary TB

Dear Colleague,

Name:

Date of birth:

Clinic location:

I refer to you the above named applicant who underwent tuberculosis testing as a part of the UK visa application procedure and was found to have:

- X-ray signs of possible pulmonary tuberculosis
- positive sputum smears
- positive sputum cultures I kindly request you:
- monitor and investigate as appropriate
- undertake contact tracing as required
- initiate treatment as indicated

in accordance with the national policy and WHO guidelines.

We would appreciate it if, upon the completion of the treatment, you provided the patient with medical reports, reflecting the following information:

- For the patient: treatment regimen (drugs, doses, frequency, total number of doses, treatment period), complications, compliance, results of pertinent investigations, treatment outcome and recommendations.
- For the family contacts: period of follow up, pertinent investigations, chemoprophylaxis or treatment regimen (if applicable) and recommendations for further follow up.

Please note that these reports are required for future visa applications.

Thank you for your cooperation.

Yours truly,