



Tuberculosis

Quality standard
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This standard is based on NG33.

This standard should be read in conjunction with QS121, QS61 and QS145.

Quality statements

<u>Statement 1</u> People aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of tuberculosis (TB), are tested for latent TB infection when they register with a GP.

<u>Statement 2</u> Adults aged under 65 years who are diagnosed with HIV, are tested for latent tuberculosis (TB) infection.

<u>Statement 3</u> People who are referred to a tuberculosis (TB) service, who meet specific criteria, have rapid diagnostic nucleic acid amplification tests (NAATs).

<u>Statement 4</u> People who have imaging features suggestive of active pulmonary tuberculosis (TB) are assessed by the next working day.

<u>Statement 5</u> People with active tuberculosis (TB) from under-served groups are offered directly observed therapy.

<u>Statement 6</u> People with active pulmonary tuberculosis (TB) who are homeless are offered accommodation for the duration of their treatment.

NICE has developed guidance and a quality standard on patient experience in adult NHS services (see the NICE pathway on <u>patient experience in adult NHS services</u>), which should be considered alongside these quality statements.

Other quality standards that should be considered when commissioning or providing tuberculosis services include:

- Antimicrobial stewardship (2016) NICE quality standard 121
- Infection prevention and control (2014) NICE quality standard 61

A full list of NICE quality standards is available from the guality standards topic library.

Quality statement 1: Latent tuberculosis testing for people from high-incidence countries

Quality statement

People aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of tuberculosis (TB), are tested for latent TB infection when they register with a GP.

Rationale

Detecting latent TB infection in recent arrivals to the country is beneficial because they have a higher relative risk of progression to active, potentially infectious TB than the general population. The highest burden of TB disease and the largest proportion of new entrants from high incidence countries are aged 16 to 35 years. Early detection can lead to treatment of latent infection before it progresses to active disease. This can prevent onward transmission and the associated harms and costs of active TB.

Quality measures

Structure

a) Evidence of local arrangements to identify people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB, when they register with a GP.

Data source: Local data collection.

b) Evidence of local arrangements to ensure that people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB, are tested or referred for testing for latent TB infection when they register with a GP.

Data source: Local data collection.

Process

Proportion of people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB, who are tested for latent TB infection when they register with a GP.

Numerator - the number in the denominator who are tested for latent TB infection.

Denominator – the number of people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB, registering with a GP.

Data source: National data is collected in the Public Health England's <u>Database for the national</u> <u>latent tuberculosis screening programme in new migrants from high-incidence countries</u>. The data collection includes patient-level data about those people who have been offered screening and those who have taken up the screening.

Outcome

TB incidence.

Data source: National and regional data on TB incidence in England are collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

What the quality statement means for different audiences

Service providers (general practices) have systems in place to identify people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB, when they register with the practice. They should ensure that the people identified have latent TB infection testing.

Healthcare professionals (such as GPs and nurses) test for latent TB infection in people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB, when they register with a GP. If the practice cannot perform the test, they should refer to the person to a service where it can be done.

Commissioners (NHS England and clinical commissioning groups) ensure that they commission primary care services that identify people aged 16 to 35 years who have arrived in the country within the past 5 years, from countries with a high incidence of TB. They should ensure that these primary care services provide or facilitate testing for latent TB infection for the people identified.

People aged 16 to 35 years who have come to England within the past 5 years from a country where there are a high number of TB cases have a test to find out if they have TB.

Source guidance

<u>Tuberculosis</u> (2016) NICE guideline NG33, recommendation 1.2.3.1

Definitions of terms used in this quality statement

Five years

The time period of 5 years is based on Public Health England's <u>Collaborative tuberculosis strategy</u> for England: 2015 to 2020 and consensus of expert opinion.

High incidence of TB

The <u>Collaborative tuberculosis strategy for England: 2015 to 2020</u> defines this as countries with an estimated TB incidence rate of more than 150 cases of TB per 100,000 people per year.

Public Health England lists countries and their estimated TB incidence in <u>Tuberculosis (TB) by country: rates per 100,000 people</u>. People who were born in, or have spent more than 6 months in a high-incidence country, should be tested.

[Adapted from the Collaborative tuberculosis strategy for England: 2015 to 2020 and Latent TB testing and treatment for migrants: a practical guide for commissioners and practitioners]

Testing for latent TB infection

There are 2 types of test that can be used to diagnose latent TB infection. The Mantoux test should be used as the initial diagnostic test. It is a type of tuberculin skin test in which tuberculin is injected into the skin. The injection site is examined for signs of an immune response after 2 to 3 days.

If Mantoux testing is unavailable the interferon-gamma release assay (IGRA) test should be used. This is a blood test used to diagnose latent TB based on the response of white blood cells to TB antigens.

[Adapted from NICE's full guideline on <u>tuberculosis</u> (glossary) and recommendation 1.2.3.1]

Equality and diversity considerations

When offering testing to people who have arrived in the country within the past 5 years, healthcare professionals should be aware that people in this group may not speak or read English or have English as their first language. They should have access to an interpreter or advocate if needed.

Quality statement 2: Latent tuberculosis testing for adults with HIV

Quality statement

Adults aged under 65 years who are diagnosed with HIV, are tested for latent tuberculosis (TB) infection.

Rationale

People with HIV are considered to have a high risk of progression to active TB because they are severely immunocompromised. Testing people when they are diagnosed with HIV can lead to early detection and treatment of latent infection before it progresses to active disease. This can prevent onward transmission and the associated harms and costs of active TB.

Quality measures

Structure

Evidence of local arrangements to ensure that adults aged under 65 years who are diagnosed with HIV, are referred for testing for latent TB infection.

Data source: Local data collection.

Process

Proportion of adults aged under 65 years diagnosed with HIV, who are tested for latent TB infection.

Numerator - the number in the denominator who are tested for latent TB infection.

Denominator – the number of adults aged under 65 years diagnosed with HIV.

Data source: Local data collection.

Outcome

TB incidence.

Data source:Local data collection. National and regional data on TB incidence in England are collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

What the quality statement means for different audiences

Service providers (primary, secondary and specialist care services) have systems in place for adults who have been diagnosed with HIV, aged under 65 years, to be referred for testing for latent TB infection.

Healthcare professionals (such as specialists, GPs and nurses) refer adults who have been diagnosed with HIV, aged under 65 years, for latent TB infection testing.

Commissioners (NHS England and clinical commissioning groups) ensure that they commission services that refer adults who are diagnosed with HIV, aged under 65 years, to a service that undertakes testing for latent TB infection.

Adults with HIV, who are aged under 65 years, have a test to find out if they have TB.

Source guidance

Tuberculosis (2016) NICE guideline NG33, recommendation 1.2.1.3

Definitions of terms used in this quality statement

Testing for latent TB infection in adults with HIV

For adults with HIV, an interferon-gamma release assay (IGRA) and a concurrent Mantoux test should be used.

The Mantoux test is a type of tuberculin skin test in which tuberculin is injected into the skin. The injection site is examined for signs of an immune response after 2 to 3 days. The IGRA test is a blood test used to diagnose latent TB based on the response of white blood cells to TB antigens.

[Adapted from NICE's guideline on <u>tuberculosis</u>, recommendation 1.2.1.3, and the glossary from the full guideline on <u>tuberculosis</u>]

Equality and diversity considerations

Healthcare professionals referring adults with HIV for latent TB testing infection should be aware of and be sensitive to the fact that they may feel stigmatised because of their diagnosis of HIV.

Quality statement 3: Rapid diagnosis of pulmonary tuberculosis

Quality statement

People who are referred to a tuberculosis (TB) service, who meet specific criteria, have rapid diagnostic nucleic acid amplification tests (NAATs).

Rationale

Diagnostic test accuracy and time to diagnosis or treatment initiation are critical for decision-making. Using NAATs significantly reduces the time to identify pulmonary *M. tuberculosis* and rifampicin resistance. Delayed diagnosis can delay the start of treatment, which may in turn lead to greater risks of morbidity (both long and short term) and mortality.

Quality measures

Structure

Evidence of local arrangements to ensure that people who are referred to a TB service, who meet specific criteria, have rapid diagnostic NAATs.

Data source: Local data collection.

Process

a) Proportion of people referred to TB services, who are aged 15 years or younger, who have rapid diagnostic NAATs to detect *M. tuberculosis* complex in primary respiratory specimens.

Numerator – the number in the denominator who have rapid diagnostic NAATs to detect *M. tuberculosis* complex in primary respiratory specimens.

Denominator – the number of people who are referred to TB services who are aged 15 years or younger.

Data source: Local data collection.

b) Proportion of people with HIV referred to TB services, who have rapid diagnostic NAATs to detect *M. tuberculosis* complex in primary respiratory specimens.

Numerator – the number in the denominator who have rapid diagnostic NAATs to detect *M. tuberculosis* complex in primary respiratory specimens.

Denominator – the number of people with HIV who are referred to TB services.

Data source: Local data collection.

c) Proportion of people referred to TB services, who are identified as having risk factors for multidrug resistance, who have rapid diagnostic NAATs to detect rifampicin drug resistance in primary respiratory specimens.

Numerator – the number in the denominator who have rapid diagnostic NAATs to detect rifampicin drug resistance on primary respiratory specimens.

Denominator – the number of people who are referred to TB services who are identified as having risk factors for multidrug resistance.

Data source: Local data collection.

Outcome

Proportion of people with pulmonary TB starting treatment within 2 months of symptom onset.

Data source: National and regional data on the proportion of pulmonary TB cases starting treatment within 2 months of symptom onset is collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

What the quality statement means for different audiences

Service providers (laboratory services) perform rapid diagnostic NAATs on primary respiratory specimens for people who are referred to TB services, who meet specific criteria.

Healthcare professionals (such as nurses, secondary care doctors, specialists and paediatricians) request rapid diagnostic NAATs on primary respiratory specimens for people who are referred to TB services, who meet specific criteria.

Commissioners (clinical commissioning groups) ensure that they commission services that can do rapid diagnostic NAATs on primary respiratory specimens for people who are referred to TB services, who meet specific criteria.

Peoplewho are suspected as having pulmonary TB and meet specific criteria, have a sample of sputum that they have coughed up from the lungs, which is tested using a type of test that can quickly confirm if they have TB.

Source guidance

<u>Tuberculosis</u> (2016) NICE guideline NG33, recommendations 1.3.3.1, 1.3.4.1, 1.3.4.2 and 1.4.1.1

Definitions of terms used in this quality statement

Specific criteria

The specific criteria are that there is clinical suspicion of pulmonary TB and:

- the person is aged 15 years or younger or
- the person has HIV or
- the person has had a risk assessment that identifies risk factors for multidrug resistance or
- rapid information about mycobacterial species would alter the person's care.

[NICE's guideline on tuberculosis, recommendations 1.3.3.1, 1.3.4.1, 1.3.4.2 and 1.4.1.1]

NAAT

A test to detect fragments of bacterial nucleic acid, allowing rapid and specific diagnosis of *M. tuberculosis* directly from a range of clinical samples.

[Adapted from NICE's full guideline on tuberculosis (glossary)]

Quality statement 4: Assessment

Quality statement

People who have imaging features suggestive of active pulmonary tuberculosis (TB) are assessed by the next working day.

Rationale

Assessing people by the next working day helps to ensure that case management and infection control procedures start promptly. Delayed diagnosis can delay the start of treatment, which may in turn lead to greater risks of morbidity (both long and short term) and mortality.

Quality measures

Structure

Evidence of TB services having local arrangements in place to ensure that people who have imaging features suggestive of active pulmonary TB are assessed by the next working day.

Data source: Local data collection.

Process

Proportion of people with imaging features suggestive of active pulmonary TB who are assessed by the next working day after their results are received.

Numerator – the number in the denominator who are assessed by the next working day after their results are received.

Denominator – the number of people with imaging features suggestive of active pulmonary TB.

Data source: Local data collection.

Outcome

a) Proportion of people with active pulmonary TB starting treatment within 2 months of symptom onset.

Data source: National and regional data on the proportion of pulmonary TB cases starting treatment within 2 months of symptom onset is collected in Public Health England's <u>TB Strategy monitoring</u> indicators.

b) Active pulmonary TB incidence.

Data source:Local data collection. National and regional data on TB incidence in England is collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

What the quality statement means for different audiences

Service providers (secondary care services) have systems in place to ensure that people who have imaging features suggestive of active TB are assessed no later than the next working day after their results are received.

Health and social care practitioners (such as a respiratory physician or nurse) assess people who have imaging features suggestive of active TB no later than the next working day after they receive the results.

Commissioners (clinical commissioning groups) ensure that they commission services that have the capacity to assess people who have imaging features suggestive of active TB no later than the next working day after their results are received.

People who have a chest X-ray that suggests they have active TB have an assessment no later than the first working day after their results are received by a health or social care practitioner such as a respiratory doctor or a nurse.

Source guidance

<u>Tuberculosis</u> (2016) NICE guideline NG33, recommendation 1.8.9.8

Definitions of terms used in this quality statement

Imaging features suggestive of active TB

These include but are not limited to:

• evidence of extensive consolidation or cavities

• predominantly upper lobe involvement.

[NICE's guideline on tuberculosis, adapted from recommendation 1.8.9.8 and expert consensus]

Assessment

This type of assessment is done by a member of the TB service or the multidisciplinary team, or a person with expertise in respiratory medicine.

The assessment is to gather information about symptoms and general clinical information. Assessments are an ongoing process and should be reviewed and amended during the treatment period.

[Expert consensus]

Equality and diversity considerations

Healthcare professionals who are doing assessments on people who have imaging features suggestive of active TB should be aware that many of these people come from under-served groups. These groups may find it difficult to access TB services because of a lack of awareness of TB and its treatment and because of the stigma associated with a diagnosis of TB.

Quality statement 5: Directly observed therapy

Quality statement

People with active tuberculosis (TB) from under-served groups are offered directly observed therapy.

Rationale

The complex social and clinical interactions surrounding a person with TB can be a challenge to treatment participation and adherence. Suboptimal uptake of, and adherence to, TB treatment for people with active TB can lead to increased morbidity and mortality, increased infectiousness, and the emergence of drug resistance. Enhanced case management including directly observed therapy is key to improving treatment adherence and completion, in particular in relation to vulnerable groups or those at risk of non-adherence.

Quality measures

Structure

Evidence of local arrangements to ensure that people with active TB from under-served groups are offered directly observed therapy.

Data source: Local data collection.

Process

a) Proportion of people with active TB who are homeless who have directly observed therapy.

Numerator - the number in the denominator who have directly observed therapy.

Denominator – the number of people with active TB who are homeless.

Data source: Local data collection.

b) Proportion of people with active TB who misuse substances who have directly observed therapy.

Numerator - the number in the denominator who have directly observed therapy.

Denominator – the number of people with active TB who misuse substances.

Data source: Local data collection.

c) Proportion of people with active TB who have been in prison who have directly observed therapy.

Numerator – the number in the denominator who have directly observed therapy.

Denominator – the number of people with active TB who have been in prison.

Data source: Local data collection.

d) Proportion of people with active TB who are vulnerable migrants who have directly observed therapy.

Numerator - the number in the denominator who have directly observed therapy.

Denominator - the number of people with active TB who are vulnerable migrants.

Data source: Local data collection.

Outcome

a) Proportion of people from under-served groups with active TB lost to follow-up.

Data source:Local data collection. National and regional data on the proportion of people with drugsensitive TB who were lost to follow-up at last reported outcome are collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

b) TB treatment completion rates for people from under-served groups.

Data source:Local data collection. National and regional data on the proportion of people with drug-sensitive TB with at least 1 social risk factor who completed treatment within 12 months are collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

c) TB treatment completion rates for people from under-served groups with multidrug-resistant TB.

Data source: Local data collection.

What the quality statement means for different audiences

Service providers (secondary care services) ensure that people with active TB from under-served groups are offered directly observed therapy as part of enhanced case management.

Health and social care practitioners (such as a nurse or lay person supported by a healthcare professional) offer directly observed therapy as part of enhanced case management to people with active TB from under-served groups.

Commissioners (clinical commissioning groups) ensure that they commission services that have the capacity to provide directly observed therapy as part of enhanced case management for people with active TB from under-served groups.

People with active TB who are likely to find it difficult to take their medicine regularly are offered the choice of meeting a specific healthcare worker each time they take a dose of anti-TB medicine.

Source guidance

Tuberculosis (2016) NICE guideline NG33, recommendation 1.7.1.3

Definitions of terms used in this quality statement

Under-served groups

This term includes people of any age, and from any ethnic background regardless of migration status. Groups classified as under-served include:

- people who are homeless
- people who misuse substances
- people who have been in prison
- vulnerable migrants.

[Adapted from NICE's guideline on tuberculosis, 'Terms used in this guideline' section]

Directly observed therapy

This involves a trained health professional, or responsible lay person supported by a trained health professional, providing the prescribed TB medicine and watching the person swallow each dose. Directly observed therapy should be considered as an integral part of enhanced case management in complex cases such as those from under-served groups.

[Adapted from NICE's full guideline on <u>tuberculosis</u>, section 9.2.6 and glossary]

Equality and diversity considerations

Healthcare professionals, and lay people supported by healthcare professionals, who are involved in providing directly observed therapy for people with TB from under-served groups should be aware that people from these groups face barriers to treatment completion. They may find it difficult to express what these barriers are and may feel stigmatised because of their diagnosis of TB. All communication with people with TB from under-served groups should be sensitive to their needs.

Quality statement 6: Accommodation

Quality statement

People with active pulmonary tuberculosis (TB) who are homeless are offered accommodation for the duration of their treatment.

Rationale

Rates of active TB are high in people who are homeless. They also have a higher risk of delayed diagnosis, drug resistance, onward transmission and poor treatment outcomes. Providing accommodation for people who are homeless who have active TB helps to ensure they are not lost to follow-up for their TB care, promotes treatment adherence and completion of therapy, and reduces the probability that antimicrobial drug resistance will occur in the TB bacteria. It also helps them to have social stability and space to recover from their disease and to care for themselves.

Quality measures

Structure

a) Evidence of local arrangements to ensure that people diagnosed with active pulmonary TB who are homeless are identified.

Data source: Local data collection.

b) Evidence of local arrangements to ensure that people diagnosed with active pulmonary TB who are homeless are offered accommodation for the duration of their treatment.

Data source: Local data collection.

Process

Proportion of people with active pulmonary TB who are homeless who are provided with accommodation for the duration of their treatment.

Numerator – the number in the denominator who are provided with accommodation for the duration of their treatment.

Denominator - the number of people with active pulmonary TB who are homeless.

Data source: Local data collection.

Outcome

a) TB treatment completion rates for people with active pulmonary TB who are homeless at the time of diagnosis.

Data source:Local data collection. National and regional data on the proportion of people with drugsensitive TB and at least 1 social risk factor who completed treatment within 12 months are collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

b) TB prevalence rates.

Data source:Local data collection.

c) TB incidence in homeless people.

Data source:Local data collection. National and regional data on TB incidence in England is collected in Public Health England's <u>TB Strategy monitoring indicators</u>.

What the quality statement means for different audiences

Service providers (secondary care services) have systems in place to identify people with active pulmonary TB who are homeless and ensure that they are provided with accommodation for the duration of their treatment.

Health and social care practitioners (TB multidisciplinary teams) assess the living circumstances of people with active pulmonary TB. If there is a housing need, they work with allied agencies to ensure that the person who is homeless has accommodation for the duration of their treatment.

Commissioners (local government and clinical commissioning groups) fund accommodation for people who are homeless and diagnosed with active pulmonary TB using health and public health resources, in line with the <u>Care Act 2014</u>.

People with active pulmonary TB who are homeless, or living in overcrowded accommodation with people at high risk of undetected TB, are given somewhere to live while they are receiving treatment for TB.

Source guidance

Tuberculosis (2016) NICE guideline NG33, recommendations 1.8.11.1, 1.8.11.2 and 1.8.11.3

Definitions of terms used in this quality statement

Homeless

For the purposes of TB control, a broad and inclusive definition of homelessness has been adopted that incorporates overcrowded and substandard accommodation. It includes people:

- who share an enclosed air space with people at high risk of undetected active pulmonary TB (that is, people with a history of rough sleeping, hostel residence or substance misuse)
- who are ineligible for state-funded accommodation
- without the means to securely store prescribed medication
- without secure accommodation for the full duration of planned treatment.

[Adapted from NICE's guideline on <u>tuberculosis</u>, 'Terms used in this guideline' section and recommendation 1.8.11.3]

Accommodation

A secure, self-contained single room environment that is adequately heated and has facilities for bathing and for preparing food.

[Expert opinion]

Equality and diversity considerations

It is important to provide people who are homeless with accommodation for the duration of their treatment in order to prevent their homelessness from being a barrier to accessing services and completing treatment. Providing accommodation helps to remove the inequality between people who are homeless and people with secure accommodation.

About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

Information about how NICE quality standards are developed is available from the NICE website.

See <u>quality standard advisory committees</u> on the website for details of standing committee 1 members who advised on this quality standard. Information about the topic experts invited to join the standing members is available on the <u>quality standard's webpage</u>.

This quality standard has been incorporated into the NICE pathway on <u>tuberculosis</u>.

NICE has produced a <u>quality standard service improvement template</u> to help providers make an initial assessment of their service compared with a selection of quality statements. This tool is updated monthly to include new quality standards.

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Improving outcomes

This quality standard is expected to contribute to improvements in the following outcomes:

- access to tuberculosis (TB) services
- early diagnosis of TB
- treatment completion for TB
- incidence of TB

- prevalence of TB
- incidence of drug-resistant TB
- mortality rates for people with TB.

It is also expected to support delivery of the Department of Health's outcome frameworks:

- Adult social care outcomes framework 2015–16
- NHS outcomes framework 2016–17
- Public health outcomes framework for England, 2016-19.

Resource impact

NICE quality standards should be achievable by local services. The potential resource impact is considered by the quality standards advisory committee, drawing on resource impact work for the source guidance. Organisations are encouraged to use the <u>costing report</u> for the NICE guideline on tuberculosis to help estimate local costs.

Diversity, equality and language

During the development of this quality standard, equality issues were considered and <u>equality</u> <u>assessments</u> are available. Any specific issues identified during development of the quality statements are highlighted in each statement.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

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Endorsing organisations

This quality standard has been endorsed by the following organisations, as required by the Health and Social Care Act (2012):

• Department of Health

• NHS England

Supporting organisations

Many organisations share NICE's commitment to quality improvement using evidence-based guidance. The following supporting organisations have recognised the benefit of the quality standard in improving care for patients, carers, service users and members of the public. They have agreed to work with NICE to ensure that those commissioning or providing services are made aware of and encouraged to use the quality standard.

- British Infection Association
- British Thoracic Society
- Public Health England
- Royal College of Nursing
- TB Alert